

# Our Group

epm·Group

 [www.sostenibilidadgrupoepm.com.co/english](http://www.sostenibilidadgrupoepm.com.co/english)



# About us

## Our Group

### Our businesses

Grupo **epm**

  
EPM Group  
jobs

11,708

6 countries  
7 businesses  
48 companies

-  Power Generation
-  Power Transmission
-  Power Distribution
-  Solid Waste Management
-  Institutional
-  Natural Gas
-  Wastewater Management
-  Water Supply

### Some management indicators

 Business transparency  
78.23

 Environmental management index  
85%

 MERCOR Ranking Reputation  
846

 EPM Group's CSR evolution  
66%



# Operations in Latin America

Mexico

**epm**<sup>®</sup>   
Mexico

**Ticsa** 

## Guatemala

**EEGSA** 

## El Salvador

**DELSUR** 

## Panama

**ENSO** 

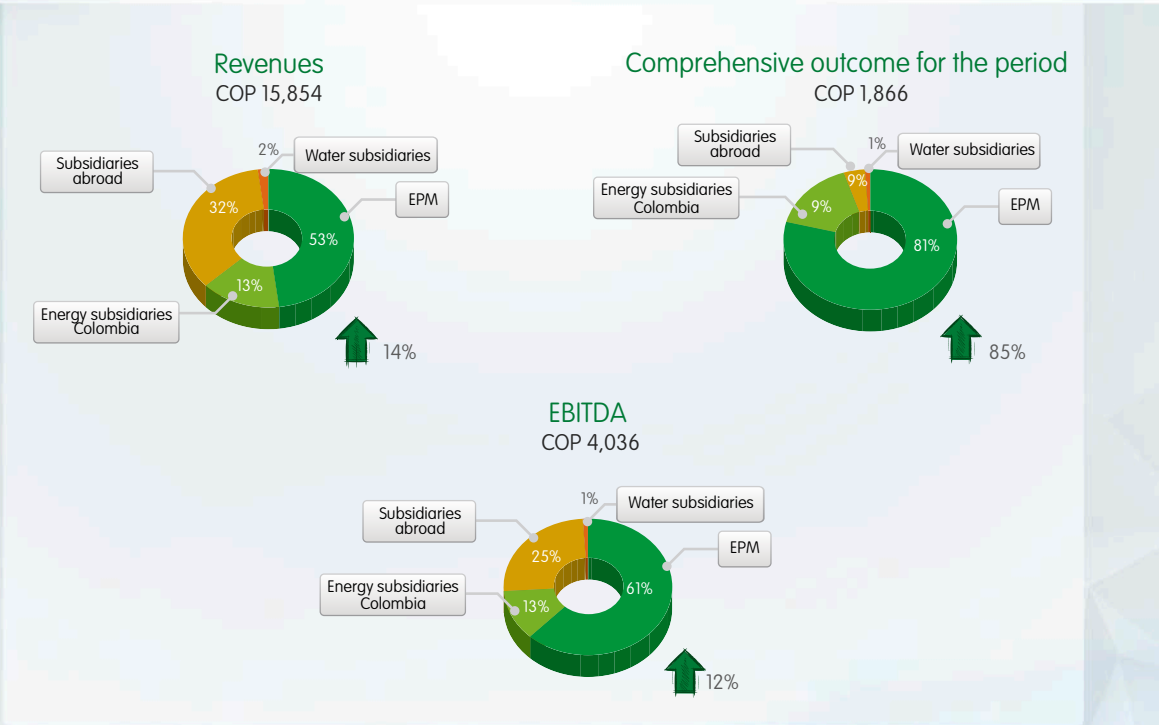
**Promobiliaria** 





# EPM Group's financial results

Figures in COP billion



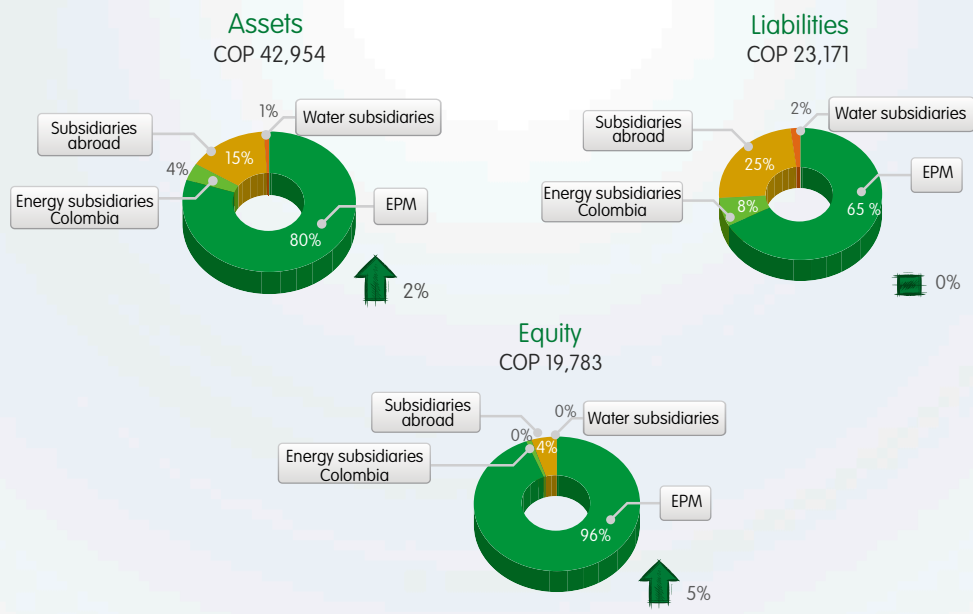
↑ Variation compared to the previous year





# EPM Group's Statement of financial position

Figures in COP billion



↑ Variation compared to the previous year



# Electrical energy

## EPM Group's Power Generation efficiency indicators

EPM ESSA CHEC HET



### Wind energy efficiency

Use of plant at full load **31.50%**

### Thermal energy efficiency

Actual availability / Availability **80.94%** **99.05%**

Energy penalized / Energy generate **0.48%** **0.75%**

### Hydraulic energy efficiency

Actual availability / Projected availability **99.93%** **115.20%** **94.90%** **110.30%**

Energy penalized / Energy generated **0.09%**

Source: Vice Presidency of Power Generation

## Installed Capacity for Power Generation 2016

Grupo EPM EPM

### Wind Energy Distribution

Power plants	<b>2</b>	<b>1</b>
Effective capacity (MW)	<b>128</b>	<b>18</b>

### Thermal Energy Generation

Power plants	<b>2</b>	<b>1</b>
Effective capacity (MW)	<b>496</b>	<b>445</b>

### Hydraulic Energy Generation

Plants (above 20 MW capacity)	<b>11</b>	<b>7</b>
Plants (below 20 MW capacity)	<b>25</b>	<b>18</b>
Effective capacity (MW)	<b>3,569</b>	<b>3,281</b>

### Total Power Generation plants

**40** **27**

### Total Power Generation capacity (MW)

**4,193** **3,744**

Source: Vice Presidency of Power Generation




## Net Electricity Generation 2016 (GWh)

Grupo EPM EPM

 Wind Energy Distribution

258.90 52

 Thermal Energy Generation

1,087.50 987

 Hydraulic Energy Generation

12,288.20 11,558

**Total Net Electricity Generation (GWh)**

13,634.60 12,597



Source: Vice Presidency of Power Generation


## Installed capacity for Power Transmission and Generation 2016

Grupo EPM EPM

### Electrical energy service coverage

 Service Coverage - Colombia

4,162,893 Total Customers  
98.77% Service Coverage (%)

 Service Coverage - Other countries

2,003,261 Total Customers  
93.66% Service Coverage (%)



 Power Transmission and Distribution networks (km)

231,736 88,797

 Power distribution transformers

330,915 134,006


 Total transformers capacity (MVA)






17,204 7,785


Source: Vice Presidency of Power Generation






## Detailed Electrical Energy service coverage per company

 Service Coverage - Colombia

Company	Total customers	Service coverage (%)	Company	Total customers	Service coverage (%)
 epm	2,291,716	99.00%	 CENS	474,670	97.84%
 chec	465,997	99.83%	 ESSA	750,854	98.16%
 edeq	179,656	99.00%			

 Service Coverage – Other countries

Company	Total customers	Service coverage (%)
 DELSUR	378,507	87.00%
 ENSO	436,445	94.74%
 EEGSA	1,188,309	99.25%

## Water supply and sanitation

### Indicators of installed capacity for water supply EPM Group 2016

Grupo EPM  EPM 



#### Installed capacity

Drinking Water Treatment Plants	34	12
Capacity for Drinking Water Treatment (m <sup>3</sup> /s)	21.84	17.45

#### Water Distribution

Primary Distribution Networks (km)	491	263
Secondary Distribution Networks (km)	5,450	3,513

#### Net Production of Drinking Water (m<sup>3</sup>/s)

11.66	8.87
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## Indicators of installed capacity for sanitation service EPM Group 2016

Grupo EPM EPM

### Installed capacity

Wastewater Treatment Plants	16	1
Capacity for Wastewater Treatment (m <sup>3</sup> /s)	9.80	1.80

### Waste collection

Tons transported	628,572	N.A.
Tons admitted to landfill La Pradera for final disposal	1,080,958	N.A.

### Distribution

Collection and Transport Networks (km)	671	384
Redes recolección y transporte (secundaria) (km)	5,561	4,179

### Net Treatment of wastewater (m<sup>3</sup>/s)

5.49	5.49
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Source: Vice Presidency of Water Supply and Sanitation

## Water supply and sanitation service coverage 2016

Water supply Sewerage Waste collection



	Water supply	Sewerage	Waste collection
Total customers	1,145,313	1,120,945	N.A.
Service coverage (%)	95.09%	93%	N.A.
Total customers	4,679	4,612	N.A.
Service coverage (%)	100%	100%	N.A.
Total customers	16,824	13,145	N.A.
Service coverage (%)	100%	89.61%	N.A.
Total customers	68,508	51,561	N.A.
Service coverage (%)	89%	68.04%	N.A.
Total customers	22,179	17,855	N.A.
Service coverage (%)	90.19%	74.13%	N.A.





emvarias®

Total customers	N.A.	N.A.	865,555
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Service coverage (%)	N.A.	N.A.	99%
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aguas  
antofagasta

Total customers	171,692	171,174	N.A.
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Service coverage (%)	100%	99.80%	N.A.
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<b>Total customers</b>	<b>1,429,195</b>	<b>1,379,292</b>	<b>865,555</b>
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Source: Vice Presidency of Water Supply and Sanitation


Note: Ticsa has no direct customers, but it indirectly serves 1,526,760 customers through the operation of 10 wastewater treatment plants.


## Gas

### Installed capacity for gas service EPM Group

Grupo EPM

 Pressure regulating stations  
88

 Compressor station (2,000 m³/h)  
2

 Polyethylene pipes Antioquia (km)  
7,378



### EPM's Gas service coverage

 Total customers  
1,065,705

 Service coverage  
77.2%

Source: Vice Presidency of Gas

epm Group

Colombia • Panama • El Salvador  
Guatemala • Mexico • Chile



# Our Story

epm Group

1955

The **EPM Group** originates from **EPM**,  
*a public company owned by  
the Municipality of Medellín.*



1997

EPM is transformed  
into an industrial and commercial  
company of the State

*to comply with Law 142 of 1994.*



1999

The company  
**Aguas del Oriente** is born

*to meet the demand of water supply and  
sewerage in the Municipality of El Retiro.*





# 2000

**EPM**  
becomes the parent company  
of a business group.

# 2002

EPM Bogotá Aguas is created;  
later on it would turn into:



# 2003

**EPM purchases**  
and creates EPM Inversiones S.A.



**chec**

(Central Hidroeléctrica  
de Caldas)

**edeq**

(Empresa de Energía  
del Quindío)



(Hidroecológica del Teribe,  
Panamá)

# 2005

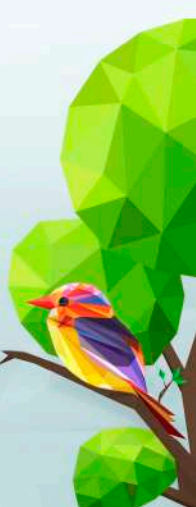
EPM adopts a new strategy  
and changes its organizational structure.



**une**

UNE EPM Telecomunicaciones S.A.E.S.P. is created.

# 2006





## 2006 - 2007

**EPM becomes a business partner of the regional companies**

*Aguas de Urabá y Aguas de Occidente.*



## 2007



**EPM is included into the regional electricity market of Antioquia.**



## 2009

**EPM purchases and participates in the creation of Empresas Públicas de Oriente.**



*(Centrales Eléctricas del Norte de Santander)*



*(Electrificadora de Santander S.A.)*



## 2010

**EPM invests in electric power companies of Central America**

*that have already been operating in the region, and acquires*

**holding DECA II and its subsidiary companies.**



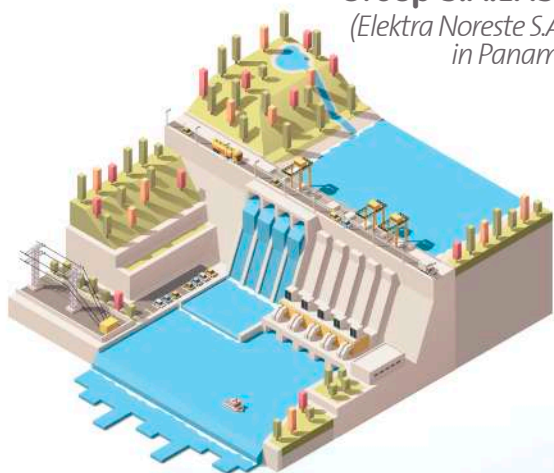


# 2011

**EPM purchases, through DECA II, the company El Salvador Holdings Ltd.**

*which in turn owns Delsur (Electricidad Del Sur) in El Salvador*

**and through the acquisition of Panamá Distribution Group S.A. ENSA (Elektra Noreste S.A.) in Panama**



**EPM formally takes on the financing, construction, maintenance, operation and commercial exploitation of the Ituango Hydroelectric Project**

*which will be the largest power generation station in Colombia with a capacity of 2,400 megawatts and will be operational in 2018*

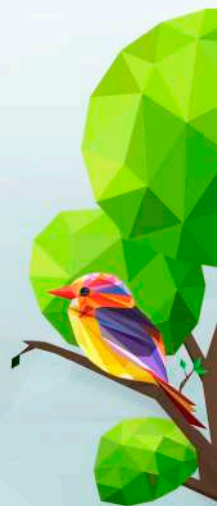
**EPM acquires 85% of the public company Aguas de Malambo S.A. E.S.P.**



# 2012

**EPM México is created as a platform for the different projects that can be developed in that country.**

*After an early achievement of its big hairy audacious goal in 2011, the Group defines a new strategic planning, projected for 2022, and undertakes a transformation process.*

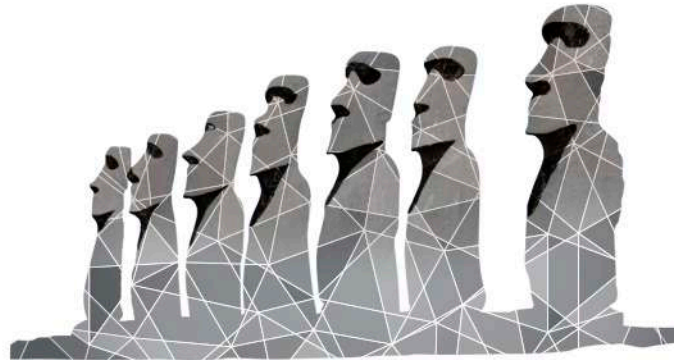




# 2013

**EPM Chile is born as a holding company**  
*in order to leverage the growth plan of the company in South America.*

*Through this company, the EPM Group starts the construction of Los Cururos Wind Farm with 109.6 megawatts, in the region of Coquimbo, Northern Chile, through a "turnkey" contract with the Danish firm Vestas.*



# Ticsa

**The EPM Group transforms itself to achieve the goals set for 2022.**

*EPM becomes the majority shareholder of Ticsa, in Mexico. This company focuses on design, construction, operation and start up of waste water treatment plants.*

**Upon acquiring Emvarias,**

*the EPM Group expands its portfolio to solid waste collection and sanitation services.*







# 2014

**The EPM Group, through its affiliated company EPM Chile, opens Los Cururos Wind Farm with 110 MW.**

**The EPM Group consolidates its new administrative structure.**



**UNE – Millicom seal the merger to create new digital alternative in Colombia.**

# 2015

**EPM strengthens its presence in Chile purchasing Aguas de Antofagasta**





2016

**Regional de Occidente and Aguas de Urabá** merge, and the corporate name of the merger becomes **Aguas Regionales EPM**.



**epm**·Group



# Strategic thinking

## Corporate Strategic Planning

Strategic Planning seeks to guide the EPM Group and lead it to its desired future position, making planning a continuous process and a natural part of the organizational culture. This process comprises the activities necessary to define a strategic framework, propose strategies to be further developed and realize the long-term challenges so as to ensure their compliance by implementing planning activities in the businesses and vice presidencies of corporate services and their translation into specific goals and commitments to results down to the individual level.

Therefore, it is essential to have elements of planning clearly defined and understood by the whole EPM Group, so that it is possible to focus efforts throughout the organization and so that these elements become references for decision making at all levels, in accordance with the Group's philosophy and its purpose and the direction it is intended to have.

The meaning and, above all, the content of the elements of Strategic Planning have been presented in a clear, specific and complete manner and in a plain and motivating language that facilitates its understanding by the EPM Group people and creates a common meaning and a shared vision. For this purpose, the strategic planning for the Group has been defined as Corporate Strategic Planning, and for each business as Competitive Strategic Planning, identifying in each case elements that guide the work of the Group.

Corporate Strategic Planning is understood as the set of elements, decisions and actions that define global choices in a multi-business group, seeking to create value through the configuration and coordination of its activities in multiple markets.

The reading and analysis of the signals delivered by the environment, in combination with the expectations of the owner and the stakeholders, mark the starting point for the analysis and definition of the Strategic Planning of the Group and its businesses and, in turn, for the alignment of the intentions of result and performance of its companies.

For the EPM Group, Corporate Strategic Planning is grouped in three dimensions: identity, action and results. Each of which contains two elements, as follows:

- **Elements of identity:** Identity is established through those elements representing the corporate philosophy. It consists of values and business purpose.
- **Elements of action:** They allow the realization of the statements included in the elements of identity. They are expressed through the strategy and the businesses in which it has been decided to participate.
- **Elements of results:** The achievements that the EPM Group hopes to make are defined. They comprise the BHAG and the strategy map.



**Identity**

What we decide to BE:

- Values
- Purpose



**Values**

Transparency / Responsibility / Innovation / Commitment / Warmth / Reliability / Service

**Purpose**

In the EPM Group, we seek to endure over time by contributing to the development of sustainable and competitive territories, generating welfare and development with equity in the environments where we participate. This, by developing infrastructure projects and providing our clients and users with solutions regarding electricity, gas, water supply and sanitation, supplemented, through business agreements, by Information and Communication Technology (ICT) services, through a business plan that reconciles social, environmental and financial results.

**Action**

How we decide to DO IT:

- Businesses
- Strategy



**Strategy**



**Businesses**



Power Generation – Power Distribution – Power Transmission – Gas – Water Supply – Wastewater Management – Solid Waste Management

**Results**

What we decide to ACHIEVE:

- BHAG
- Strategic Goals



**BHAG**

In 2025 the EPM Group will be growing efficiently, sustainably and innovatively, ensuring access, to 100% of the population, to the services it provides in the territories where it is operational; protecting 137 thousand new hectares of watersheds, in addition to its own, with a carbon neutral operation and generating an EBITDA of COP 12.6 trillion.



Our Balanced Scorecard (BSC), with its strategic goals, is shown below.










## Competitive Strategic Planning

Competitive Strategic Planning refers to a group of integrated choices that seek an explicit intention to position the business in the target market. It includes the strategic imperative and the business model:

### a. Strategic Imperative:

It is defined within the fundamental mandate that the business needs to develop to respond to the ambitions set out in the business group's Strategic Planning.

For each business, a strategic imperative has been defined, as follows:

				
<b>Distribution</b>	<b>Transmission</b>	<b>Gas</b>	<b>Generation</b>	<b>Water Supply and Sanitation</b>
To grow nationally and internationally, consolidate the business in Colombia and make operations profitable in all territories.	To grow in the national and international markets.	To grow nationally and internationally and strengthen the business' positioning and increase business coverage in Medellin and Antioquia.	To grow in a sustainable manner through the development of projects, the production and commercialization of energy and the timely incorporation of new technologies.	To make operations profitable in the current markets and grow nationally and internationally where the market generates opportunities. To promote sectoral public policy changes that enable a sustainable growth in the national market.

### b. Business Model:

It describes how the business chooses to create, deliver and capture value. It is based on the identification of competitive advantages and their potential of use in the market so that the business reaches a position higher than that of the competition. This work involves a collective exercise within the organization.

In order to define its business model, the Group has used the "Canvas" methodology, introduced by Alexander Osterwalder and Yves Pigneur in their book "Business Model Generation."





# Challenges



## Challenge

The following are the main challenges faced by the organization:

- Consolidating itself as a business group by strengthening the relationship between its companies and positioning itself in the territories where it operates.
- Preparing the Group and its businesses to face the challenges raised by the emergence of new technologies.
- Achieving universalization in the provision of the services offered, reaching 100% of the population, in the territories where it operates.
- Contributing to the safeguarding of the environment through the protection of watersheds and with a carbon neutral operation.
- Making teamwork a true culture.

## Macro-trends

The main events and trends of the Group's environment and its businesses and their possible impact on the Group's strategy in terms of opportunities and risks are described below. This exercise is essential in strengthening the actions embodied in the 2015-2022 EPM Group's Business Plan.

## Commercial Events

- Pressure to lower energy prices. It is a global trend that, in some regions, is supported through subsidies to supply and demand, through public policies.



- Regulatory obligations in Colombia: Equal frequency in reading and billing represents a barrier to adapting billing to customers' needs.
- Low banking activity and use of virtual and mobile networks by low-income users.
- Potential efficiencies with users in the joint billing of public utilities and related activities in Antioquia.

## National and International Political Context

- Political instability due to changes of government: The triumph of Donald Trump in the US not only threatens to close the borders with Mexico, but to protect the national industry and turn away from the climate change policies encouraged by the previous administration. Although his speech has kick-started stock markets to unexpected records, local uncertainty and international instability have become the most common reality in these times. In addition to this, Brazil is in a deep recession, coupled with a major corruption and government crisis, after the impeachment of its president Dilma Ruseff and the weakness of the government in her replacement –Michel Temer.
- In Colombia, the 2014-2018 National Development Plan of Juan Manuel Santos' Administration is based on three pillars: equity, peace and education. Its execution involves important demands of public infrastructure, water supply, sanitation and natural gas, among others.
- Political interference persists in the industries of the services provided by the EPM Group in its target market.

## Social Context

- Peace process in Colombia. Reduction of public expenditure on defense activities and increase of national productivity, competitiveness, foreign direct investment and demand. Post-conflict will demand investment pressures in the most affected regions.
- Special conditions of public order in the region. Social and environmental pressures and demands in project areas in Colombia, as well as strikes by energy and mining workers, low-income population and young people due to living costs and quality of education in Chile and Brazil.
- In Mexico and Central America, latent events of violence and drug trafficking, illegal migration and population displacement, a result of the high levels of corruption and low institutionalism, which affects the Group's investment interest.



## Economic Context

- Slowdown in international economies: The economic growth rate in developed countries and in major economies has decreased, having an impact on international trade and flow of capitals and investment towards other countries. The International Monetary Fund predicted a growth in the global economy of 3.1% in 2016, slightly lower than that recorded in 2015 (3.2%).
- In Colombia, the slowdown in economic activity, which started by the end of 2014 due to the sharp decline in oil prices, intensified in 2016. According to DANE, the Gross Domestic Product (GDP) grew, in 2016, at a rate of 2%, lower than that recorded during the same period in 2015 (3.1%). The strong supply shocks that occurred during the first semester of 2016, such as El Niño, the truck drivers strike and the devaluation of the exchange rate, influenced this reduced expansion pace of the economy, negatively impacting the prices and the productive activity. According to DANE, the unemployment rate in 2016 was 9.2%, increasing by 0.3 percentage points compared to that recorded during the same period a year earlier (8.9%). The target inflation range (2% to 4%) fixed by the central bank of Colombia was not met for the second consecutive year.

## Environmental and Social Scenario

- Projects to reform the requirements for licensing of projects, community participation and institutional development. As in Colombia, in countries such as Chile, these reforms tend to speed up concessions with greater flexibility. However, regulatory and social difficulties persist in Central American countries.
- Incentive for the use of non-conventional renewable energy (NCRE) -geothermal, wind, solar and nuclear, and a tendency to punish NRE (non-renewable energy) through public policies in Europe and the United States. Laws have been enacted in Colombia, Chile and Brazil to favor the entry of these technologies, while they have been in force in Mexico for a couple of years and have been enhanced with new energy policies. In Central America, this incentive is evidenced by its opportunity cost with respect to fossil fuels and their derivatives, traditional energy base in most of this region. Different international cooperation programs support governments to work on this cause.
- Shortages and changes in the water resource availability patterns due to climate change, inadequate land use and excessive increase in demand due to population migration or non-budgeting. In this regard, due to climate change and less availability of water resources, companies or municipalities must become more efficient in their use. There is a great opportunity here for the water industry.



## Legal and Regulatory Scenario

- Institutional setting for the public utilities industry clearly established and with defined roles in Colombia.
- Tax imbalances in target countries with high economic dependence on commodities, caused by price volatility and supply and demand of raw materials: oil, gas, coal, copper, steel, agricultural products, etc.
- Regulatory obligations that do not adapt to the needs of the market, for example, frequency of reading and billing. Low banking activity and use of virtual and mobile networks by low-income users.

## Technological Scenario

- Increased incentives for the use of state-of-the-art technologies in the public utilities supply chain (upstream and downstream).
- Incentives for and needs of research and innovation in all public utilities activities. The world's major companies join forces to create and develop innovation centers, in order to improve efficiency and meet the needs of customers and users who are becoming increasingly close to cutting-edge technology.
- A window of opportunity for new sources of generation, new products and services and reuse and inclusion of more efficient ways of providing services.

## Comprehensive Risk Management

During 2016, the Group achieved greater maturity in risk management, consolidating the context analysis stage. An exhaustive exercise was carried out to study in detail the trends and risks of the environment, and a foresight study for 2030 was carried out to identify events from variables that could have an impact on the results of the organization and its competitiveness.

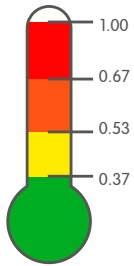
Based on the results of these exercises, the EPM Group's risk matrix was updated. Some risks were quantified and their characterization was adjusted. Moreover, the support scheme to advise those responsible for the Group's risks was strengthened, improvement actions aimed at mitigating the risks were formulated and the Group's risk profile in the Balanced Scorecard in the performance goals was displayed for those responsible for the risks.

The adjustments made to the risk matrix were validated with the Board of Directors and previously on the Audit Committee of the Board, with the CEO and with the vice presidents in the Planning Committee session. According to some defined criteria, some risks were prioritized and they will be monitored periodically by the Board in sessions defined for their monitoring.



## EPM Group's Risk Matrix

Probability	Consequence					Color convention of the risk level
	Minimum	Smaller	Moderate	Higher	Maximum	
Very high			R9			
High	R10	R1,R27	R16,R21,R26	R7,R8,R11		Extreme
Intermediate		R18,R28	R5,R19,R23,25	R4,R22,R29	R3,R13	High
Low		R17,R28	R12,R14	R15	R24	Moderate
Very low		R17,R20				Low



0.607

Risk profile	
High	High priority for resource allocation, definition of treatment measures and monitoring of risks.

The risk profile for the EPM Group represents the general exposure of the business group to a certain number of risks at any given time and measured on the basis of the risk ratio, a number that can take values between 0 and 1, with 0 being minimal risk and 1 maximal risk, which represents the risk level of the matrix as a whole.



## EPM Group's Top 10 risks

EPM Group's Top 10 risks		
Risk Code	Category	Risk
R3	Planning and Growth	Difficulties in infrastructure project management.
R13	Public Order	Negative impact on the integrity of individuals and/or damage to infrastructure.
R7	Information Management	Inadequate management of information at the EPM Group.
R8	Natural and Anthropoc	Shortage of or difficulty in accessing natural resources for the provision of services or development of projects.
R11	Political	Political actors' interference on the business group management, which would jeopardize the achievement of strategic goals or limit budgetary, financial and administrative autonomy.
R24	Natural and Anthropoc	Natural disasters affecting the operation of the EPM Group.
R4	Business Group Management	Inadequate implementation of the engagement model designed to act as a Group.
R22	Supply Chain Management	Deficiencies in the supply of goods and services required for the provision of the service by the companies of the EPM Group at national level and inability to address the requests submitted by foreign companies.
R29	Legal and Regulatory	Adverse changes in tax regulations.
R9	Money Laundering	Development of activities to make resources of illicit origin seem to be licit (money laundering).





## Emerging Risks

During the process of updating the 2016 Group’s risk matrix, we observed that the following risks remain emerging— their main features are that they are relatively new, with a high degree of uncertainty and a tendency to increase their risk level—:

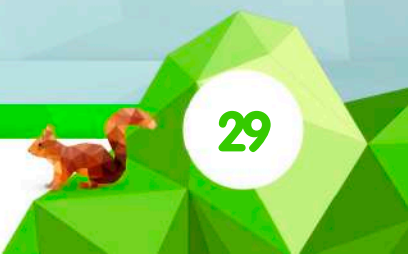
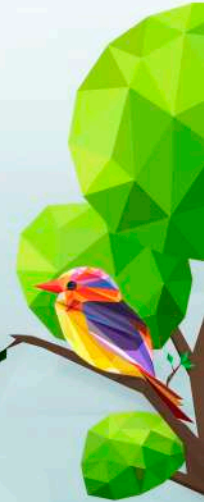
Emerging Risks		
No.	Category	Risks
8	Natural and Anthropogenic	Shortage of or difficulty in accessing natural resources for the provision of services.
24	Natural and Anthropogenic	Natural disasters affecting the operation of the EPM Group.
26	Information Security	Cyber attacks.
28	Fraud	Action or omission contrary to the truth or honesty, which affects the interests of the EPM Group.
29	Legal and Regulatory	Adverse changes in tax regulations.

**Sources for the definition of emerging risk:** *Risk and Insurance Management Society, Inc. (RIMS). RIMS executive Report – The risk perspective. Emerging risks and enterprise risk management, New York, NY 10018.*

## Actions Proposed to Mitigate Risks

Each of the risks identified in the EPM Group’s risk matrix has a person in charge of it who holds a position as a vice president of EPM and is responsible for defining the improvement actions to mitigate the risk and incorporating the actors that play a the relevant role in its management. At the end of 2016, improvement actions were proposed to address the Group’s risks and each was documented in detail with a clear expected result, start and due dates, leader in charge and person responsible for its implementation.

Below are some examples of actions that will be implemented to mitigate risks:





Risk code	Group's risk	Action
3	Difficulties in infrastructure project management.	<ul style="list-style-type: none"> <li>• Implementation of a model for infrastructure project management.</li> <li>• Implementation of the asset management system in infrastructure project management.</li> </ul>
8	Shortage of or difficulty in accessing natural resources for the provision of services or development of projects.	<ul style="list-style-type: none"> <li>• Evaluation of the supply/demand/infrastructure for catchment for the period 2016-2050.</li> <li>• Alliance with CuencaVerde Corporation.</li> </ul>
11	Political actors' interference on the business group management, which would jeopardize the achievement of strategic goals or limit budgetary, financial and administrative autonomy.	<ul style="list-style-type: none"> <li>• Articulation of local and regional development plans, as well as LUPs.</li> <li>• Mechanisms for the strengthening of relations with the Medellín Council.</li> </ul>
13	Negative impact on the integrity of individuals and/or damage to infrastructure.	<ul style="list-style-type: none"> <li>• Security management in a comprehensive way.</li> <li>• Promotion of relations with law enforcing authorities.</li> </ul>

### Achievements of the 2016 Comprehensive Risk Management:

The risk map of the EPM Group is the main input for updating the maps of the management levels defined in the comprehensive risk management model, such as:

- Risk Map of Businesses: Generation; Transmission and Distribution; Gas; Water Supply; Waste Water Management and Solid Waste Management.
- Risk Map of National Companies: CENS, ESSA, CHEC, EDEQ, Aguas de Malambo, Aguas de Oriente, Aguas Regionales, Aguas Nacionales and Emvarias.
- Risk Map of International Companies: Los Cururos Wind farm, Adasa, Emvarias, HET, Ticsa and Delsur. This year, the first version of the risk map for ENSA, a subsidiary of the EPM Group in Panama, was developed.



Also, the following results were achieved:

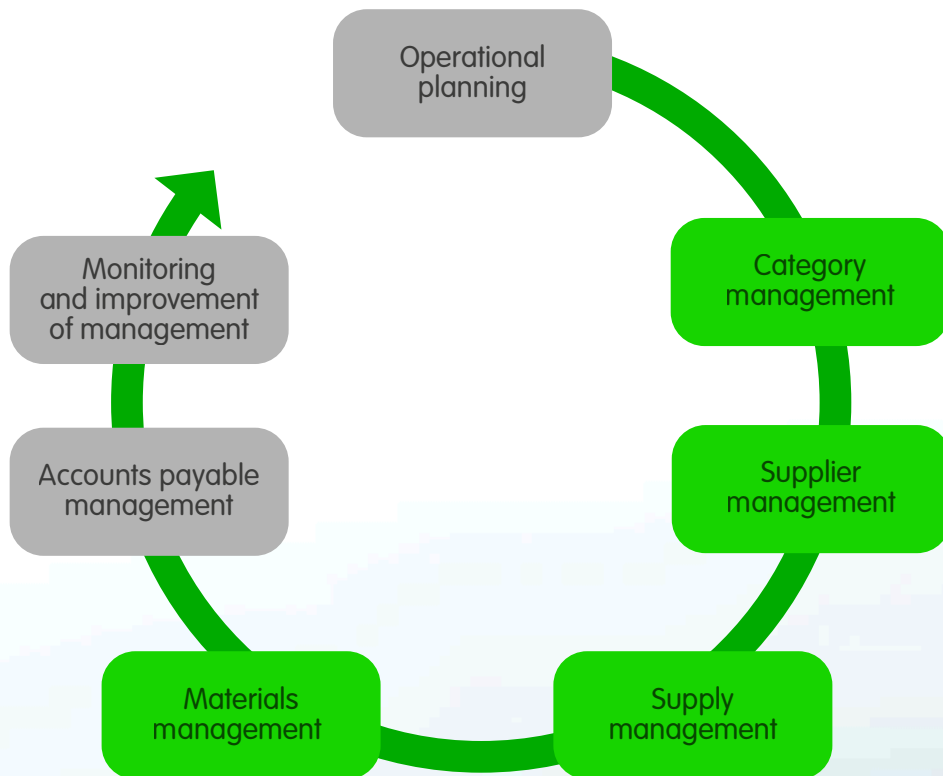
- Updating of risk maps of the documented and prioritized processes in the Group's companies.
- Risk analysis in 74 projects.
- Risk analysis in 87 contracts with values above 5,000 monthly minimum wages in EPM.
- 54 analyses of specialty risks.
- Cross-cutting risk analysis on issues such as staff shortages and Health and Safety at work.
- Creation of procedures for the management of exchange risk from contracting, and application in tenders published during 2016.
- Standardization of the process documentation under the new process model: ESSA, CENS and Emvarias.
- Updating of the comprehensive risk management methodology, documenting of the methodology of correlations and survey of the risk library.
- Implementation of the Business Continuity Plan, in which an impact analysis of the businesses of Transmission and Distribution (EPM - EDEQ), Water Supply and Wastewater EIA has been conducted; updating of the Protocol of Assistance to Events and Crisis - (abbreviated PADEC in Spanish) and training of managers.
- Consolidation of the insurance and brokerage program for all national subsidiaries, maintaining optimized technical and service conditions and with savings of COP 709.9 million and USD 0.87 million.
- Structuring of the Multilatina insurance policy of non-contractual civil liability, including subsidiaries in Chile, Panama and Mexico, allowing progress in the consolidation of the Multilatino insurance program for the most relevant policies of the operation.
- Structuring a procedure to acquire special goods and services of insurance contracting and development of this year's contracting process through such procedure, achieving efficiency in the time spent in contracting processes and adjusting the contracting procedure and supporting documents to the particularities of insurance contracting.
- Maxseguros, the captive company of the EPM Group, was granted a higher credit quality ranking by AM Best: A-, which demonstrates confidence and security in its performance. It is important to highlight that Maxseguros, as a specific-purpose vehicle and risk management tool, has managed to obtain significant benefits by lowering insurance costs, which has generated value for the EPM Group over the past three years. Likewise, by participating in one of the reinsurance layers of the material damages and loss of profit policy in which it assumes a percentage of the risk in such placement, it has been able to demonstrate total confidence in the EPM Group in its comprehensive risk management, allowing a greater approach with international reinsurers.
- Maxseguros managed to be considered an additional reinsurer, which allows obtaining first-hand information.

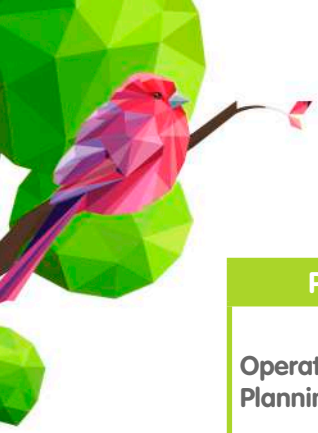


# Our supply chain

## Goods and services supply cycle

EPM implements a cycle for supplying the goods and/or services required by the business group in the most optimal conditions of quality, quantity, opportunity and price, in order to achieve the consolidation of its businesses in the market and, thus, increase value for its stakeholders.





Process	Goal
<b>Operational Planning</b>	To comprehensively identify, plan and schedule the management focuses, projects, operational and improvement plans aligned with the corporate and competitive strategic planning, allocating the necessary resources to meet the short- and medium-term goals.
<b>Category Management</b>	To identify opportunities to achieve synergies and optimize operating costs by means of specialized knowledge of the elements that comprise the required goods and services.
<b>Supplier Management</b>	To improve the performance of suppliers and their satisfaction in their relationship with the EPM Group.
<b>Supply Management</b>	To negotiate the acquisition of goods and services in order to meet the needs of the organization and ensure compliance with the subject of the contract.
<b>Materials Management</b>	To manage the logistics of the required movable assets, receive, re-stock, safeguard and supply movable assets according to the needs of the users.
<b>Accounts Payable Management</b>	To comply with the payment mandate of the different administrative areas of EPM and its subsidiaries in an agile and safe manner, fully meeting financial obligations, ensuring proper management of resources, optimizing the economic benefit for EPM and its administrative subsidiary and guaranteeing the satisfaction of suppliers and other stakeholders.
<b>Monitoring and Improvement of Management</b>	To analyze the metrics and data associated with the execution of processes, in order to define the necessary improvement actions for the achievement and optimization of the planned results.






## Read more:

- Responsible Contracting for Local Development
- Impact on Contracting
- Social Contracting
- Local, Regional, National and International Contracting
- Supply Chain Implementation and Impact
- Supplier Strengthening and Development
- Relationship with Suppliers and Contractors

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# 2016 Management Report

Presented by the EPM Chief  
Executive Officer

epm·Group

 [www.sostenibilidadgrupoepm.com.co/english](http://www.sostenibilidadgrupoepm.com.co/english)





Medellín, March 14, 2017

Dear  
Members of the EPM's Board of Directors

2016 was a year that represented big challenges for the EPM Group. With the rigor and commitment that characterizes this beloved organization, we faced adverse situations such as the El Niño phenomenon and the incident that took place at the Guatapé power plant. Those were difficulties that we successfully overcome thanks to the effort of our team, faithful representatives of a business culture that is a model for Colombia and the world.

In this report of our management during 2016, the first thing is to thank and congratulate all these people, the EPM Group's People, but also the community, the companies and the institutions that have been with us. In a special way, I thank the EPM's Board of Directors, which, with certainty, outlines the destiny of the organization with its knowledge, experience and enormous dedication.

This report meets the requirements of the "Communication on Progress" in line with the EPM's commitment to the Global Compact to report on the dissemination and implementation of the principles in its strategy and operations. It should be noted that it was in 2014 when EPM reaffirmed its willingness to join the United Nations Global Compact and its commitment to the ten principles on human rights, labor, environment and anti-corruption.

These elements cover these pages in which I want to highlight the presence of our people: workers, managers, engineers, administrative assistants. Because people represent the strongest pillar of the organization; the column that supports and, at the same time, provides the balance necessary to face the biggest challenges that we have assumed. More than technology, figures, methodologies and concepts, we are a human group with the mission to do important things for the world we live in.

Closeness, coverage, consolidation, care for the environment and growth (4C+1G). All these words define the main aspects of our current model of action.

The 4C+1G of our model of action speak of a dynamic company, focused on boosting its development and working always with people, in order to bring more quality of life to the places where we are present as a business group.

We want to get closer to our customers, users, suppliers and contractors. As members of the company, we also strengthen ourselves as a team to better serve citizenship.

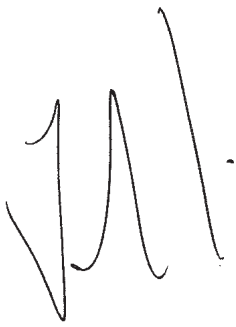
In coverage, we are working to achieve within these four years (2016-2019) the connection of 40,200 of the 70,000 homes that today do not have the services of water and sewage in Medellín. We also pay very special attention to Eastern Antioquia and Urabá.



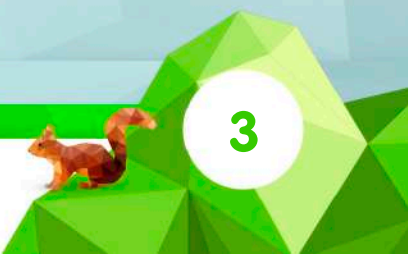
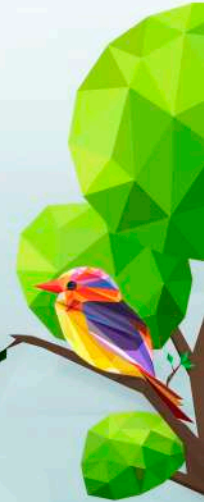
Today we focus on growing in Colombia with important infrastructure projects that include the Ituango hydroelectric power station. At the same time, we consolidate the transformation of the company to be more productive and take care of basins because water is the main character of everything we are and do.

That is our 4C+1G strategy; five keys to advance as a company and as a country. Our work continues and every day we learn and are surprised about the many spaces that EPM opens to provide communities with services that mean quality of life and opportunities for social and economic development.

For all of the above reasons, I present with satisfaction the figures, facts and achievements of a company that goes ahead. As a business group and as a team, we say thank you for making all these dreams and achievements possible.



Jorge Londoño De la Cuesta  
EPM's CEO





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## Business Purpose

The EPM Group seeks to **remain through time** by contributing to the development of sustainable and competitive territories, **fostering well-being and equitable progress** in the places where it operates. Therefore, the Group focuses on developing infrastructure projects and offering our customers and users electricity, gas, water and sanitation solutions supported on business agreements with information and communication technology services comprising business **activities that harmonize the financial, social and environmental results.**

Within this business purpose, we have set ourselves a Big Hairy Audacious Goal (BHAG) comprising three dimensions: social, environmental and economic. The new business group's BHAG was approved in August 2016:

"In 2025, the EPM Group will be growing efficiently, sustainably and innovatively; **ensuring access to its services to 100 % of the population** in the territories where it operates; protecting **137,000 new hectares** of basins, in addition to its own, with a **Carbon Neutral operation**; and generating **COP 12.6 billion EBITDA.**"

For the period 2016-2019, in order to get closer to our business purpose and BHAG, the actions and challenges were prioritized and grouped in five concepts defined as the **"4C+1G,"** from which we focus on being **closer** to our customers and users, suppliers and contractors, and EPM Group people. We work on the improvement of our **coverage** in the territories where we operate, we take **care of the environment** with the protection of water basins and the search for a Carbon Neutral operation; we **consolidate** ourselves through projects that generate efficiency in processes and new capacities required by the organization, and we **grow** giving priority to the development of infrastructure projects, strengthening our presence in Urabá and Eastern Antioquia, and taking into account business opportunities that may arise.

This is what we are developing with our "4C+1G" approach.



## Closeness

Building **credibility and trust** to strengthen relationships with our stakeholders is part of the EPM Group's sustainability. That is why, starting in 2016, the organization will continue to **strengthen the relationship** with customers and users, EPM Group's people and suppliers and contractors.

For each of these stakeholders, we have established programs and actions that, throughout 2016, gave our management the following results:

### Customers and users

The EPM Group has set as one of its priorities to strengthen the relationship with customers and users. This is how, in 2016, we carried out different activities aimed at understanding their needs and preferences, as well as developing solutions that will satisfy them and raise awareness of the efficient use and care of public utilities.

- In Valle de Aburrá, Urabá and some municipalities of Antioquia, we reached 354,000 people with educational campaigns and activities among which we highlight:
  - As part of the **"We are there for you"** program, which includes an **educational and relational intervention in the territory** and ends with a special recreational and awareness session, 13 events were held during the year and more than **12,600 people** took part in activities for the **promotion of good behaviors and knowledge** of EPM processes and its value propositions.
  - Roundtables, educational meetings, visits to EPM projects, among other activities were carried out within the **"Friend Leaders"** program, in order for those who are recognized in their communities to **know the basic and human aspects of the EPM brand**, as well as its services and procedures, so they can share them with their communities. More than 2,800 people got involved in 49 activities.
  - In the **UVAs (Articulated Life Units)** and their neighboring sectors, the company promotes the offer of the EPM services, motivates the fulfillment of commitments and encourages the adoption and respectful enjoyment of public spaces. Six meetings called "Parche UVA" were carried out with more than 2,000 participants.
  - Nine **educational meetings** for 728 readers were conducted within the framework of the "Reading at your measure" program, which trained more than **190,000 people** to read and understand meter data and promoted efficient use of residential public utilities.
  - Looking for the adoption of responsible habits and the recognition of EPM as a social, close and responsible trademark, diverse activities were carried out in educational institutions through the **"World's protector in your school"** strategy. They counted on the participation of more than 41,000 beneficiaries among students, parents and teachers.



- In alliance with the **Parque Arví Corporation**, recreational and educational activities were developed with visitors in this green lung of the city, in order to **generate knowledge and promote responsible behaviors towards natural resources and residential public utilities**. A total of 21,000 people had access to educational content.

- **40 self-management modules** were installed in 37 EPM service offices, in order for customers to generate by themselves their payment ticket. At the end of the year, 128,625 payment tickets had been generated with this tool.
- **Service** in EPM's offices was improved thanks to **the virtual service modules**, where customers are remotely assisted from other offices. 58 modules have been installed, with a total of 83,504 transactions up to December 2016.
- EPM implemented Helios, an application that provides real-time information about the transactions, service indicators and measures of productivity levels of the face-to-face and virtual service channels.
- The **Diploma in Customers**, a program that promotes a closer relationship with this group, this year counted on the presence of 221 executives and team managers in the service offices, the contact center and the support in activities including suspension, inspection to the suspension, disconnection, reconnection and constructors channel. The above, in order to gain a **better understanding of the market** and the EPM services.
- **"Somos"**, the loyalty and rewarding program by the EPM Group, **enrolled 229,000 new customers**, for a total of **701,000 customers**. During the year, EPM granted credits to homes for COP 74.58 billion and to MSEs for COP 222 million.





- The Constructors Service Channel was approved to support construction entrepreneurs, in commercial aspects and in a preferential way, in the projects with the affiliated companies CHEC, EDEQ, ESSA, CENS and Aguas Nacionales.
- In **EDEQ, spaces of closeness and trust were strengthened** in participation and constant dialog scenarios with the customers, the community and the State, through programs such as “Let’s read together” and “**EDEQ in my town,**” working groups, spaces of inclusive education for social control spokespersons, educational spaces for customers and presentation of projects with impact among customers and others, with the participation of **44,979 people**.
- During 2016, national **affiliates started to implement on-site billing**. CHEC and EDEQ implemented it in their entire rural areas (122,211 and 17,296 customers-users, respectively); while ESSA reached 144,449 customers-users and, additionally, expanded its customer service channels, including digital tools such as mobile APP and online chat.
- **CHEC** implemented the **Company’s Education Plan** that impacted **36,274 people** with all its educational strategies, which contributes to promoting desirable behaviors as customers and to strengthening the civic culture in the territory.
- **CHEC** created 70 **spaces for dialogue and accountability**, which counted on the participation of 2,675 social and community leaders from the 40 municipalities of its area of influence.
- In **Aguas de Malambo** and **Urabá**, awareness-raising activities on the **adequate use of water** were performed with the participation of **93 and 24,471 people**, respectively. In addition, some campaigns to prevent defraud of fluids were carried out, and customers were provided with tips on issues related to the use of resources, service channels, rate changes, fraud, among others.

## EPM Group People

In order to **enhance the leaders’ skills** for the management of themselves and their relationships, as well as for the achievement of results, the following actions were carried out during 2016:

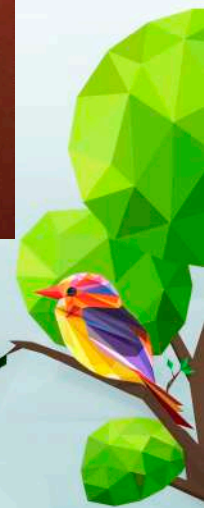
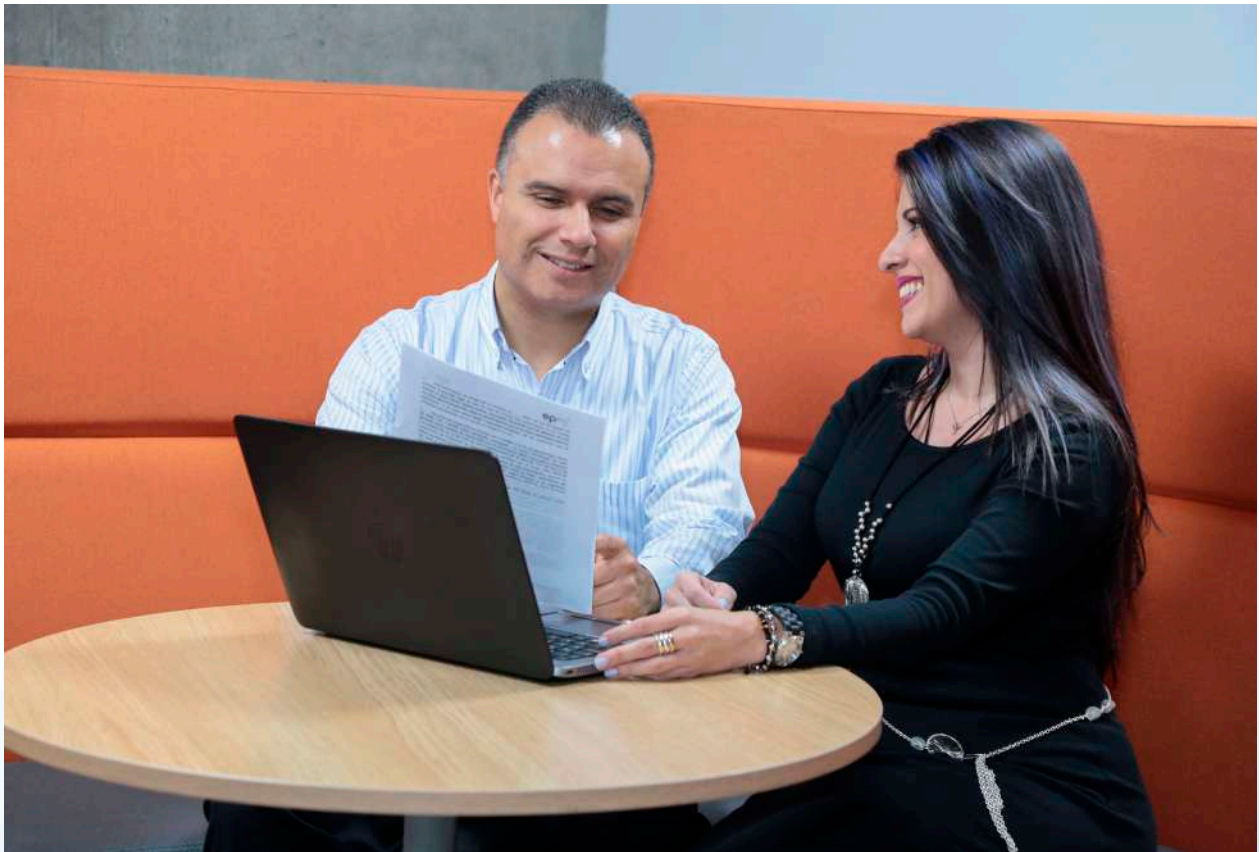
- Scheduled training within the framework of the Leadership School: 46 groups and 8 modules, with the participation of 924 people, among managers and leaders.
- Training of managers and leaders on the 2016 **performance commitments** opening conversations, and preparation of development plans for each member of their teams, aligned with the challenges and performance expectations.
- Carrying out of **executive coaching** sessions with the participation of 87 managers.





As a step to **achieve greater flexibility and mobility** for employees within the Group, the following actions were taken:

- Development of a national and international **appointment** model with well-defined business rules and guidelines.
- 74 promotions from the support curve—assistants, technicians and technologists—to the professional curve; and 89 internal promotions.
- Appointment of four EPM employees at affiliated companies in Mexico, Guatemala, Panama and Chile.
- Adjustment to the internal regulation of the **Human Resource Engagement** process, in order to boost the development of the internal human talent.







Regarding the management of benefits during 2016, we highlight:

- **Approval** of 617 housing loans to the value of COP 69.39 billion.
- **Increase** of 11.06% in the number of benefits and 18.11% in the amount of money granted.
- Celebration of special dates such as: Secretary's Day, Family's Day (both in the metropolitan area and the regions), EPM Classic Day, Children's Day, and tribute to retirees and pensioners.
- **Measurement of organizational climate**, which counted on the participation of 78.4% of the population. The score obtained was 54.2 and is located at the mid-high level of the scale, which indicates an **increase of 1.3 points** compared to the previous year.

## Suppliers and Contractors

Taking into account one of the priorities of the new administration, a strategy called **"Sustainable ecosystem for suppliers development"** was structured with the objective of increasing productive chains' **competitiveness and sustainability in the short**, medium and long term, through the **establishment and consolidation** of relationships between the EPM Group and its **suppliers and contractors**. In this way, bonds of **trust are established** to create processes of specialization and productive complementation that benefit the parties, complementing the strategic planning of the EPM Group with that of its suppliers and contractors. This initiative involves the following actions:

- Within the **framework of suppliers and contractors development**, the group worked on initiatives that include the development pilot of 16 suppliers with **Renault Consulting**, the **engagement of 63 suppliers** for their development with different allies, and the participation in the school for linemen through the Network Group (Electric Energy Cluster, ISA, Isagén and EPM) and under the management of the Tener Futuro corporation, to train a total of 500 technicians in transmission lines within three years, 40 of which already graduated in 2016.
- **Different events** were carried out with suppliers and **contractors about subjects such as Contracting, Human Rights, Code of Conduct and Corporate Social Responsibility**. The general purpose was for the contractor to be able to increasingly implement these initiatives when hiring its personnel and executing the contract. 1,700 suppliers and contractors get involved in 2016.
- In health and safety, we provided advise and support to suppliers and contractors for the implementation of the Occupational Health and Safety Management System (OHSMS). Additionally, we worked on the definition of the Disabling Injury Frequency Rate (DIFR).
- **The 8th and 9th Meeting of Suppliers and Contractors was held at EDEQ** with the presence of 138 attendees. Participants addressed relevant subjects related to the development of suppliers and contractors; deployment of new initiatives that include the implementation of the Ariba platform; human rights policies; procurement of goods and services; local, regional and national contracting; and results of satisfaction, reputation and transparency surveys. The "Zero tolerance to corruption" program was also discussed during the event.
- CENS carried out four **meetings and educational and involvement sessions** for our suppliers and contractors. 263 people attended the events.
- As part of the engagement policy of **CHEC** with its suppliers and contractors, the company performed the **"7th Annual Meeting with Suppliers and Contractors,"** which counted on the participation of 193 people. This was a perfect scenario to form working groups for the joint construction of proposals on six key subjects related to sustainability: Corporate Social Responsibility, engagement, local and regional contracting, occupational safety and health, weighting factors and care for the environment.



- Two meetings with suppliers and contractors took place in **Aguas Nacionales**, where **interaction and communication channels were improved**. A territory appropriation meeting was also held with this group of interest in the recently built Aguas Claras UVA. This added to two additional activities aimed at improving the relationships, reaching the goals and internalizing the values, principles and policies of Aguas Nacionales.





## Coverage

The EPM Group states in its BHAG: “...ensuring access to its services to 100% of the population in the territories where it operates.” This reflects the commitment to universalize the service, with a view from the citizen that leads us to the great challenge of developing solutions in an innovative way.

The EPM Group seeks to reach the goal of **universalizing public utilities**, through joint work and coordination of variables such as: **the connection of new customers**, the **affordability** of the services (that allows customers to keep enjoying them according to their economic capacity), and **the connection of those populations that today cannot access the service** due to **technical or legal limitations** in their locations.

In 2016, the universalization reached a coverage greater than 95% in the case of energy, water supply at the Group level and solid waste management in Medellín. The wastewater service in the Group reached a coverage of 91%, while in gas it was 77% at the regional level.

As for the connection of new services in **EPM**, the following are the results achieved during the year: **35,922** new customers-users of the **water supply** service and **35,463** of the **sewerage service**, for a total of 1,145,313 and 1,120,945 customers-users, respectively.

**67,472** new customers-users were connected to the **gas supply** in Antioquia, for a total of 1,065,705; which turned EPM into the second largest gas distribution company in Colombia, with a national participation of 13%. Regarding **electrical energy**, the company reached **60,127** new customers-users, accumulating a total of 2,291,716.

Additionally, the **rural electrification** program obtained the following outstanding results:

- **EPM** connected 2,184 customers-users through the program.
- **ESSA** presented the “Let’s illuminate Santander” project and achieved rural electrification of 6,803 customers-users.
- **CENS** made an investment equivalent to COP 3.35 billion for rural electrification projects and benefited 825 customers-users. Additionally, this Group’s affiliated company promoted the legalization of 3,500 customers-users located in subnormal areas, mostly because of the social situation in Venezuela.
- **EDEQ** executed the construction of 6 km of primary distribution network and 1.2 km of secondary distribution network, with a total investment of COP 185.4 million.
- **Delsur** carried out 11 rural electrification projects during the year, seven of them under the figure of co-investment in conjunction with municipal governments. The other four were developed in coordination with the Social Investment Fund for Local Development and the compensation funds.







On the other hand, EPM contributed to improving the quality of life of 15,355 families that did not have public utilities, distributed as follows: 4,804 with water supply, 4,611 with sewerage, 1,323 with energy and 4,617 with gas. This was possible thanks to risk mitigations actions, authorization of use of areas with technical or legal restrictions by the municipality of Medellín, the Social Institute for Housing and Habitat of Medellín (Isvimed), the Enterprise of Urban Development (EDU), among other organizations, the investments in infrastructure and the jobs offered by EPM. It was also possible thanks to programs such as “United for Water” whose goal is to provide access to drinking water and sewerage, through initiatives of community water supply, building recognition and comprehensive improvement of neighborhoods.

In terms of **purchasability**, a total of **76,278 customers-users** were engaged to **EPM**. The “**Pay according to your needs**” program registered **41,954** new customers-users; “**Prepaid water**”, **8,923**; and “**Prepaid Energy**”, **25,400**, for a total of **65,954**; 16,275 and 220,872 customers-users respectively.

**CENS**, for its part, implemented the Prepaid Energy initiative and managed to connect **488** customers-users in 2016; while **ESSA** connected **3,770** customers-users during the year, for a total of 8,881.

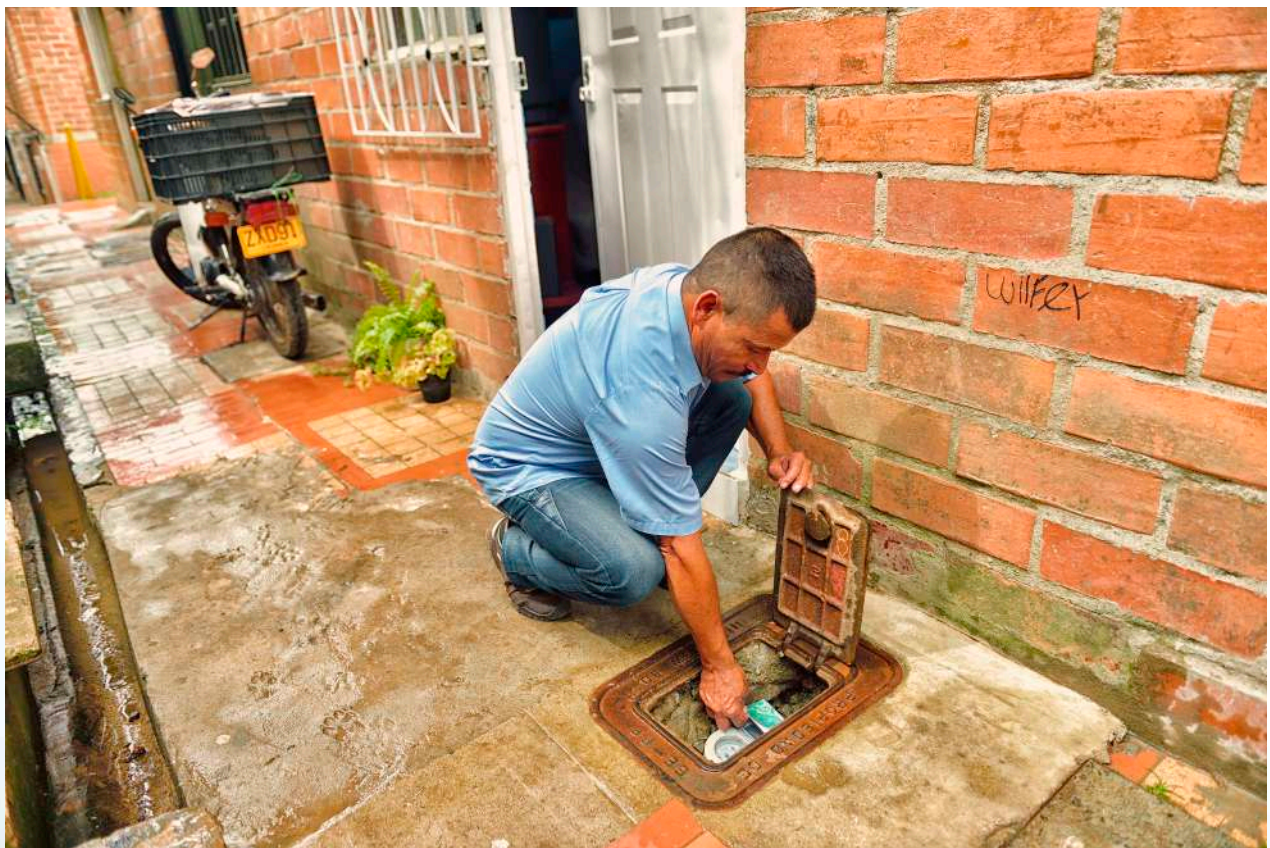
For the Prepaid **Energy customers**, a new **initiative called “Friend PIN”** was launched; so that, in cases of emergency, users can add credit through the cell phone and pay later. The service was used **32,861** times during the year; in addition to 40,140 micro-payments or top-ups for prepaid energy pins through the EPM pay phones.

Under the premise of ensuring the enjoyment of residential public utilities to customers, the Group implemented strategies aimed at **reducing service suspensions and disconnections**. The following were the most effective strategies:





- Pre-suspension visits to motivate customers to pay without coming to the suspension of the service. Visits also contribute to the dynamics of closeness with this group of interest.
- Online communication with our contractors' terminals, in order to avoid suspensions or to quickly reconnect the service once the customer has made the payment in our collection network. Thus, avoiding unnecessary costs for the company and cultivating a closer relationship with our clients.
- Non-payment risk models were implemented for each customer-user in Antioquia, which allowed us to reach a more targeted performance during the collection management, avoid overruns and offer the most suitable options to each of our customers-users, according to their situation.
- Permanent monitoring of the suspension in order to prevent misuse of the service. In this way, we encourage customers to pay and provide financing options or offers, including prepaid methods.







## Care for the Environment

**Sustainability** constitutes the EPM business purpose and, in order to achieve it, the Group has defined its strategy: **“Growing and optimizing operations with CSR criteria.”** This refers to the what and the how of the organization’s actions in the territories where it develops its corporate purpose and business goals, which must be compatible with its ultimate goal: sustainable human development.

The EPM Group focuses today on **caring for the environment**, through the **protection of the water resource** and the search for a **Carbon Neutral** operation.

### Water protection

The environmental conditions of **the basins** have a direct impact on **water supply sources of reservoirs and other systems**. To help improve these conditions and prevent the risks associated with the **availability of water resources** for the populations that it serves, the EPM Group, along with other actors, undertakes a series of **programs and projects** including: **forest conservation**, riparian vegetation **recovery**, forest **restoration**, erosion control, rural basic sanitation, springs protection, **forestry development**, water resource and biodiversity management, **environmental awareness** and monitoring.


In 2016, diverse initiatives were implemented for the **protection of water resources** in the basins of **Porce** (Riogrande, Aburrá, Porce-Alto, Nechí rivers), **Nare** (La Fe, Negro-Nare rivers), **Cauca** (Ituango Project influence area), and the supply basins of **Aguas de Urabá, Chinchiná**, among others; with an impact on **13,461 hectares**, distributed by strategies as follows:

- In forest conservation (public and private protected areas, BanCO2): 4,633 hectares.
- In restoration and reforestation: 3,512 hectares.
- In sustainable practices and uses (silvopastoral and agroforestry systems, live fences and barriers, isolated trees, good agro-environmental practices, erosion control, rural basic sanitation systems): 1,601 hectares.
- In environmental offset and new protected areas (purchase of lands for offset and protection, new areas for the protection of reservoirs): 3,715 hectares.

#### Other activities performed during the 2016 management:

- Signing of 85 agreements to take water protection programs to 1,700 hectares, as described above. Special mention should be made of the agreements with Corantioquia, Cornare, Corpocaldas, Corpourabá and some municipalities for the protection of river basins that supply reservoirs and other systems of the EPM Group.



- 
- Workshops and seminars on environmental education and training, with the participation of 10,624 people.
  - Implementation of 70 domestic wastewater treatment systems.

## Carbon Neutrality

The EPM Group seeks to **counteract**, through different steps, the **emissions** resulting from its activities, in such a way that the **balance between the emissions generated and those avoided or compensated is neutral**.

To achieve a Carbon Neutral operation to 2025, the EPM Group has taken the following steps:

**Emissions inventory:** The inventory of greenhouse gas emissions (GHG) was carried out using a calculation methodology approved for the EPM Group, and including data from the national and some international affiliates.

**Emissions reduction:** To date, the EPM Group has registered and validated six emission reduction projects in different standards, as follows:

- Jepírachi wind farm (Guajira).
- La Vuelta and La Herradura hydroelectric power stations (Antioquia).
- REDD+ (Antioquia).
- Ituango hydroelectric power station (Antioquia. Currently under construction).
- Bello waste water treatment plant (WWTP) (Antioquia. Currently under construction).
- Los Cururos wind farm (Chile).



**Emissions offset:** Actions taken on this matter during 2016 were:

- Estimation of reduced emissions thanks to the implementation of the registered projects.
- Emission reduction verification process based on the operation of the La Vuelta and La Herradura hydroelectric power stations and the Los Cururos wind farm by Icontec, operational entity designated and authorized by the UN.





# Consolidation

## Businesses

### Power generation

The months of the first half of the year suffered the effects of the **El Niño phenomenon** and the unavailability of the **Guatapé power station** due to fire in the power cables. The **impact** on the target **hydroelectric power generation** was significant and resulted in an increased thermal energy generation for both the overall system and EPM in particular.

Under these conditions and thanks to an intense work, **EPM managed** to quickly **restore** the operation in the Guatapé power station, the pumping of water from the El Peñol reservoir to the other **power stations** of the Nare-Guatapé chain and the operation of the other **hydroelectric power** generation stations and their associated reservoirs, as well as the **obtaining of fuel** for thermal energy generation, not only at the La Sierra and Dorada stations but also at the Barranca power plant, property of ESSA. These actions reduced the economic impact and contributed to the reliability of the service.



Despite the difficult conditions of the operation, the electricity generation business fulfilled by 92% its Ebitda budget, due to the management of the water resources during the second half of the year, along with the payment of the loss-of-profits policy within the same year of the event.

The **change in the environmental and social management** approach in the areas of influence of the power generation plants also played an important role, materialized in the **signing of agreements with allies** having a high position and impact in the regions, such as the United Nations Development Programme and the Prodepaz Corporation. These agreements focus on a comprehensive **view of the territories of interest**, through the **implementation of medium and long-term development agendas**, seeking to carry out projects in collaboration with third parties, with a regional approach, in order to **improve the quality of life** of people who live there.



## Transmission and Distribution

In the Transmission and Distribution business, **the Comprehensive and Sustainable Management of Energy Loss Control program**, through which users in subnormal neighborhoods are legalized and energy is recovered, generated **savings in EPM for COP 41.57 billion** and 90.18 GWh throughout the year.

**National affiliated** companies made progress in **implementing the investment plan**, whose execution amounted to COP 745.99 billion in 2016. EDEQ obtained for the sixth consecutive year the **regulatory incentive for continuous improvement** of the Quality of Energy Supply, close to COP 3.0 billion per year.

At the international level, **ENSA** (Panama) **standardized its networks** in sectors of Colón, as part of the comprehensive plan for the province. In this way, the service quality levels increased and the waiting times in branch offices and the contact center decreased by 300%. For its part, **Eegsa** (Guatemala) lowered its rates by 2% thanks to the **improvement** in the **energy procurement** bids. **DECA** renewed the energy procurement contracts for Comegsa and, that way, achieved rates that favor the competitiveness of the company. Additionally, the comprehensive risk management scheme was strengthened in the companies of the DECA Group.

Finally, **Delsur** (El Salvador), with the advice of the Corporate Core, contracted the new geographic information system.





## Water and Sanitation

The goals of the integrated management of **Non-Revenue Water were surpassed** thanks to strategies oriented to **reduce the technical and commercial losses**. Additionally, **modernizations** were made in the San Fernando waste water treatment plant, which favored the reliability indexes and contributed to the **reduction of operating costs**, reaching an average of 40.9% of self-generated electrical energy. Furthermore, the model for the management and control of effluents of Non-Domestic Waste Water (NDWW) was implemented.

In **Aguas de Malambo**, the commercial management was strengthened by **the implementation of the “Deduct from your bill”** program, which offers different payment options to defaulters. In **Aguas de Oriente**, an **operational intervention was conducted to detect and fix more than 30 leaks**, which helped reduce the losses from 40% to less than 20%. In **Aguas de Urabá**, 100 of our Group’s employees were certified in the skills related to the **procedures of operational activities** of the water supply system networks and the implementation of the current technical standards in the intervention of the water supply system networks.

In **Aguas de Urabá**, the continuity of the water supply service improved in Carepa and El Reposo, going from 17.6 and 6 hours respectively to 24 hours, and in Turbo, from 3.6 hours to 5 hours. Additionally, **losses were reduced** in 5.15 points thanks to the implementation of good operating practices and the effectiveness of the commercial management. For its part, **Aguas Nacionales increased the continuity of the water supply service** in the city of Quibdó (Chocó), going from 10 hours to 11.7 hours.

Regarding the **solid waste** management, with the implementation of the renting plan in **Emvarias**, the **availability of vehicles increased** from 79% to 91% and the delay of the main routes decreased by 94%, which helped reduce the complaints by 11% compared to the previous year.

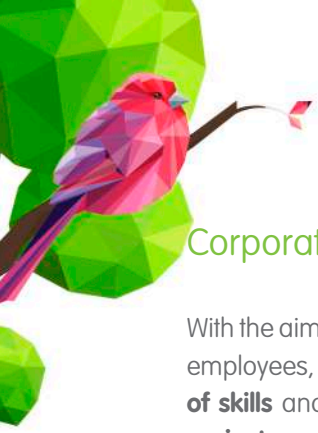
The **Adasa** affiliate (Aguas Antofagasta, Chile) achieved the five-year rate **negotiation of the regulated market and the completion of the desalination plant expansion**, with an increase of the non-regulated market revenue. Additionally, **Ticsa Colombia** was established with around USD 45 million, and it started the commercial management in the business of industrial waters.

## Gas

**Consumption increased** in the gas business, especially in the **secondary market**, with the sales of gas for the generation of energy, which helped getting over the emergency caused by El Niño and the incident in the Guatapé power station.

2016 ends with **consumptions exceeding 802 million m<sup>3</sup>**, of which around 170 million m<sup>3</sup> are of gas to the thermal power stations, which represented revenues of COP 122.09 billion.





## Corporate transformation projects

With the aim of **improving** the **Group's governance and competitiveness** and in turn helping clients, users, owners, employees, the community and other EPM's stakeholders, through the **integrated operation**, the **development of skills** and the **optimization of processes**, progress was made in the execution of **corporate transformation projects**.

These are the main advances in their projects:

In 2016, **profits of the "Field Productivity"** project were close to **COP 35 billion**. The main advances include the completion of the analysis and design phase in the implementation of the FSM (Field Service Management), the completion of the pilot in Emvarias and the implementation of improvements in the field processes of the gas business and in the seven regions of Antioquia of the transmission and distribution business for the maintenance process.



Within the execution of the **"Implementation of the supply chain"** project, the EPM Group uses the Ariba information tool implemented in EPM. This tool will optimize **the management of strategic purchases** and will enable the standardization of processes and the analysis of expenses of the Group's companies. Additionally, during 2016, the first and second phase of the unification of the catalog of goods and services came to an end, which generated a unique code for both goods and services. Significant progress was also achieved regarding the **standardization of recruitment processes**, small purchases and procurement for EPM and national affiliates. At the international level, the supply chain integration of the international affiliates continued through the development of two meetings of international engagement and the identification of possible goods to make Group purchases. Lastly, during the development of this project, **profits** in 2016 reached **COP 182.54 billion**.

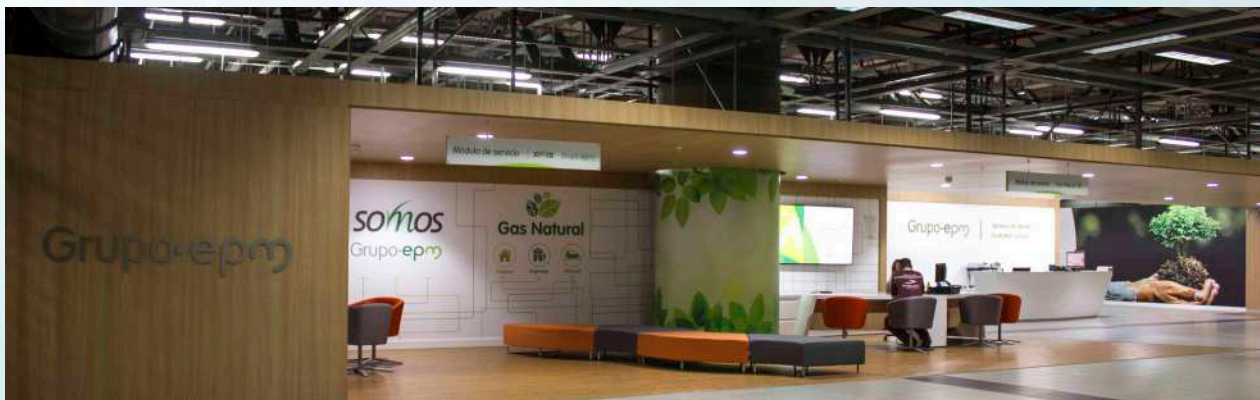


The **“Implementation of a shared services center for the business group”** project has been supporting the operation of EPM Group Services with the consolidation (design, implementation, stabilization and evolution) of **19 transaction services** supported in the implementation of: 1. a Group-unified platform called “Te Guío,” for customer service by telephone and in person; 2. a BPMS (Business Process Management Suite) tool as a flow manager to facilitate the compliance with the SLAs (Service-Level Agreements) and the achievement of efficiencies in the operation of the services; 3. the “Mercurio Multiempresa” tool for the Group-unified document management, which started operating in EPM, CHEC, ESSA, EDEQ and Emvarias; and 4. a platform for the reception and control of RCCs from clients of EPM Group Services at the national level, intended to improve the services and the engagement with the clients. Additionally, in the operation and evolution of the services, synergies have been captured and the actual costs of the services at the Group level have been indicated.

The **“Asset Management”** project defined the Asset Management Strategic Plan (SPAM), and methods were developed to manage the Group’s productive assets such as “Fault analysis,” “Maintenance plans” and “Asset criticality.” Furthermore, the analysis of requirements phase for the implementation of the EAM (Enterprise Asset Manager) software was completed. During 2016, advances and actions implemented represented **profits of COP 19.83 billion**.

In the **“Human Development”** program, the **service model** was implemented, the service portfolio was adjusted, the Vice-Presidency of Human and Organizational Development was restructured and the assessment of talent in the executive, professional, assistant, technologist technician and support positions was performed. This program intended to assess 2,772 people, but extended the assessment to 4,061 since the assistant and support positions were included in the assessment scope. Moreover, the group of activities of management of employee benefits and **the redesign of the talent recruitment process** for EPM and the energy affiliates were standardized. Additionally, the model of national and international appointment was defined and the first phase of the HCM tool, which supports the processes of talent recruitment and performance and development and the activities of plant management in this stage, went live in EPM.

As part of the **“Interior renovation of the EPM building”** project, basement 2, or the customer service area, and floor 3, named the “service floor,” were placed at the service of the whole community during 2016, both stories **completely renovated** and with excellent spaces and finishes. Likewise, floor 4 was also renovated and placed at the service of all our collaborators, and civil works in floor 10, where the Group’s CEO’s office will be located, were completed.







On the other hand, the **“Digital Connection”** project put in operation the mobile apps Factura web (e-bill), Reporte de daños (Report of damages) and Reporte de fraudes (Report of frauds) for clients and E1 (OW), Reporte de tiempo (Report of time) and Mi bitácora exprés (My express log) for employees. Likewise, **unified communications** were implemented in the Fepep (EPM Employee’s Fund), EPM Foundation, District Cooling, national affiliates of waters and Skype for Business for the EPM Group in Colombia.

In addition, there are **virtual workstations** in the affiliates CENS and ESSA and pilots in EDEQ and CHEC and a private cloud for development and test environments. At the same time, **the e-meeting rooms** of EPM were integrated with EPM Chile, Adasa, Ticsa, ENSA and Eegsa. **Office 365** is available for EPM Group at the national level.

## Corporate Governance

At EPM Group, corporate governance is the set of **provisions, practices and measures that delimit the appropriate balance between ownership and management of the company**, in order to ensure sustainability and growth, investors’ and partners’ rights, transparency and ethics in our actions and balanced access to information for our stakeholders.

During 2016, as a consequence of the municipal administration change, some modifications took place in the **structure of the Board of Directors**, EPM’s highest governing authority. Such **changes**, and those implemented in the administration team, were implemented without affecting the alignment of the owner’s interests with the company’s senior management, taking into account the **strengthening of corporate governance practices**, with the intention of ensuring that the relationship between the company’s governing bodies be effective and transparent.

Likewise, regarding the **Group’s affiliates**, some **modifications came up in their governing bodies**. Particularly, some of the more significant changes in the Group’s shareholding composition, such as the **merger of the companies Aguas de Urabá and Aguas de Occidente**, encouraged adjustments in the governing bodies of the merged affiliate Aguas Regionales in terms of governance.

Moreover, a plan of engagement with EPM’s partners took place in 2016 in the affiliate companies, that, in the case of national affiliates, are mostly territorial authorities that also changed their representation this year due to the election dynamics of the democratic system in Colombia. This plan, led by EPM’s CEO, sought, among other things, to align EPM’s positions as a majority shareholder of the Group’s companies with the other partners’, to contribute to the best development of the societies and territories where this companies are present.

With regard to the **EPM’s Governance Agreement**, 2016 was a strengthening year in which the EPM Group’s companies signed agreements to encourage synergies. Additionally, the **company EV Alianza Energética** adhered to this agreement, the Group’s first approach to the energy **efficiency business**.

Finally, it is highlighted that, during 2016, most of the Group’s companies adopted, through their boards of directors, the **“Manual of conflicts of interest and treatment of decisions of interest for the Group”** which standardizes this good practice within the business group.





## Growth

**Growing** is part of the strategy defined by EPM Group and, during 2016, that growth took place particularly through the following initiatives:

### Infrastructure projects

#### Ituango Hydroelectric Project

This project is not only a transcendental infrastructure work for Colombia, but also **a regional development** initiative that benefits 12 municipalities directly and over 160,000 people in its area of influence. In 2016, COP 1.3 trillion was invested in the construction of this work that will **contribute 2,400 MW to Colombia**.



This investment has materialized in the following:

- Progress of 47% in the dam filling with 9,157,750 m<sup>3</sup>.
- Progress of 81% in the excavation of the spillway and progress of 67% in the concrete of the spillway.
- Excavation of headrace tunnels.
- Completion of excavations in the mechanical room.

In 2016, COP 79.95 billion were invested in the environmental, social and sustainability management; COP 2.25 billion, in Antioquia Illuminated; COP 7.22 billion, in the Aldeas program; and COP 104.7 billion in construction, improvement, reinstatement and maintenance of roads.

To December 31st, 2016, the **progress** of the Ituango Hydroelectric Project was **63.8%**, with a total investment since the beginning of the project of **COP 5.7 trillion**.



## Nueva Esperanza Project

EPM continues with the challenge of developing, as part of the National Transmission System (STN), the project of Nueva Esperanza power transmission, in which **COP 120.42 billion** have been invested during **2016**. These are its advances during the year:

- 89.3% in NE - Guavio line plus reconfigurations 230 KV.
- 70.2% in NE - Bacatá line 500 KV.
- 99% in substations.
- The Nueva Esperanza substation was fire up in May, 2016.
- 2,732 direct jobs and 516 indirect jobs.
- Development projects with communities with agreements of over COP 3 billion in 18 municipalities of the area of influence of the project.

**The progress of the project is 91%** with an investment, since the beginning, of **COP 392.63 billion**.





## Bello–Guayabal–Ancón Transmission Line

Power transmission project that will improve the **reliability on the power supply** in the Valle de Aburrá and will strengthen the National Transmission System, offering greater capacity to the **transportation of power generated in northern Antioquia** to benefit millions of Colombians in the south of the country. In 2016, COP 65.43 billion were invested in the following aspects of the project:

- 100% of materials purchased for the construction of lines and substations.
- Progress of 78% in property management.
- Progress of 79.6% in substations.
- Progress of 75% in civil work of the underground line.
- 100% in environmental licensing.
- Social management: COP 6.18 billion.
- Environmental management: COP 6.97 billion that will be invested in the municipalities of the area of influence of the project.
- 261 direct jobs.
- Over 13 hectares of environmental offsets.

The progress in the development of **the project is 77%** by the end of the year with an **investment**, since the beginning of the works, of **COP 79.57 billion**.

## EPM's Aguas Claras Waste Water Treatment Plant Park

The Water Square opened on June 21st, and it will allow the Aguas Claras Waste Water Treatment Plant to be more than an infrastructure work and become a space that enables the community's active participation.

The advances of the project include:

- Completion of the North Interceptor (Interceptor Norte) with 8.2 km, including the collector junctions.
- Progress of 81.67% in the construction of the wastewater treatment plant.
- Construction of 3,814 meters of pipe branches.

In 2016, progress was made in important works that make up the Medellín River sanitation program, with investments of around **COP 1.2 trillion** since the beginning of the project. To December 31st, the progress in the development of the project was **75.9%**.

## Proyecto Valle de San Nicolás

The aim of this project is to provide the **services of water supply and, partially, sanitation** in the rural and suburban sectors of the center-western area of the **Valle de San Nicolás and the municipality of Envigado**. Investments of **COP 57.51 billion** are registered during 2016 as well as the startup of operations of the project's first stage: water supply in Alto de Las Palmas (Envigado):

- 1 catchment
- 1 raw water pumping station
- 1 water purification plant
- 3 drinking water pumping stations
- 1 suction tank
- 3 storage tanks
- 7 km of impulse piping
- 13 km of headrace tunnels
- 33 km of distribution networks

To December 31st, 2016, the **progress** of the works was **77%**, and, since the beginning of the project, **COP 127.83 billion** have been invested.



## Growth in Urabá

These are the main investments of the EPM Group in the Urabá region during 2016, aimed at serving the growth in this area of the department of Antioquia:

- **Expansion and modernization** of the San Pedro de Urabá **substation** with a budget of COP 2.74 billion; their progress is 65%.
- **Expansion and replacement of general-purpose networks.** COP 6.6 billion were invested.
- As for **rural electrification**, COP 1.87 billion was invested, and 384 homes were electrified in the municipalities of Apartadó, Arboletes, Carepa, Mutatá, Necoclí, San Juan de Urabá, San Pedro de Urabá and Turbo.
- COP 929 million were invested in the laying of 25 km of **distribution networks of natural gas** to increase EPM's coverage of the service.
- **Reduction in the index of non-revenue water** (loss reduction) that has dropped 5.15 points in the last 12 months.



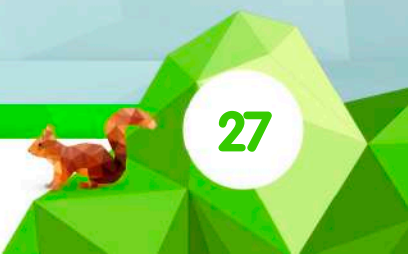
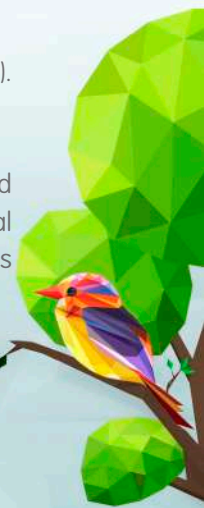
- Management and investment of **resources** for the service of **water supply and sanitation** of **COP 48.55 billion**, of which 79% are under condition and 21% are owned.
- Approval by the **environmental corporation Corpourabá** of the Sanitation and Wastewater Management Plans (SWMP).
- Signing of the COP 530-million **inter-administrative agreement with Corpourabá** to **protect the supply basins** in the Urabá region. With this BanCO2's method, the environmental, community services will be preserved, and 249 hectares will be restored in the Abibe mountain range.
- In partnership with Incoder, **study of an irrigation district** to serve approximately 60,000 hectares of agricultural production.
- Acquisition, with own resources, of the plots to build the waste water treatment plants (WWTP) in the municipalities of Chigorodó and Apartadó—the plot in Carepa was already acquired. The purchase of the plots in Turbo and Mutatá are currently in progress.
- Start-up, with own resources, of two more wells in Turbo, for a total of four, which have noticeably improved the continuity in the municipality, especially during the 2016 El Niño.
- Start of the **“aerial water piping” pilot project** in Aguas de Urabá, so that new clients-users of the municipality of Turbo that have no access to the service for technical conditions can have access to it.
- In partnership with the Antioquia Governor's Office and Corpourabá, contribution of the resources for the **consultancy of the sources (regional water supply)** as a long-term solution to the supply in the municipalities of Carepa, Apartadó and Turbo, as well as in the small towns of the area, considering the future logistic and industrial growth.

## Growth in Eastern Antioquia

EPM will expand and improve the provision of **the residential public utilities of water and sewerage in the Valle de San Nicolás zone and the Alto de Las Palmas area**, in the municipalities of Envigado, El Retiro and Rionegro, with a total investment between 2016 and 2019 of COP 145.07 billion in water piping and collection and transportation of **waste water, as well as in a water purification plant and two waste water treatment plants. COP 57.51 billion were invested during 2016.**

COP 436 million were invested in projects for the water and sanitation business in Aguas del Oriente (El Retiro). Moreover, contributions were made to close the gaps in the provision of the water and sanitation services.

As part of the EPM Group's commitment to the region, Empresas Públicas de Rionegro were advised and supported in activities that allow them to overcome some difficulties regarding the provision of the service and other critical matters of their management. In parallel, the possibility that EPM starts to provide the water and sanitation services in this municipality is currently considered.







## Growth in Businesses

### Transmission and Distribution

In August, 2016, the modernization project of **CHEC's Anserma power substation was completed**, with a total investment of COP 948.8 million. Its goal is to offer greater service reliability, improving the quality of the service for the users of the municipalities of Anserma, Risaralda, Belén de Umbría and Mistrató.

In Santander, in alignment with the purpose of **improving the quality of the service** and ensuring the satisfaction of the demand, **COP 165.42 billion** were invested in ESSA, of which COP 139.96 billion correspond to electrical grid.

With the awarding of the **ENEA 230 kV project of the UPME call**, **CHEC** will enter the transmission market. This project includes the construction, operation and maintenance of the aforementioned connection and is part of the 2014-2018 Generation-Transmission Reference Expansion Planning of the Ministry of Mines and Energy (MME). In this way, the affiliate will be able to capture operation and administrative synergies and an annual income of USD 239,795. Likewise, EPM was awarded the **La Sierra Substation** of the 08-2016 UPME call. The geographical location of this substation will allow EPM to leverage other distribution projects and capture operation synergies and an annual income of USD 145,000. Additionally, the expansion plan of the transmission business in Trelec (Guatemala) is in progress.



## Water and Sanitation

In the water business, there have been advances with the national affiliates regarding the **management of resources under condition**, which have been mainly used in infrastructure for catchment and works of water and sewerage piping.

Projects of **COP 38.42 billion for Aguas Regionales** and—with resources of the Regional Autonomous Corporation of the Atlántico, specifically for sewerage works—of **COP 4.97 billion for Aguas de Malambo** were made viable. For its part, **Aguas de Oriente** carried out infrastructure works to address problems of continuity and replacement and expansion of sewerage piping, with an accumulated investment of **COP 436 million**.

In Emvarias, investments were made in two projects: the acquisition of **12 systems of underground waste containers**, that ensure the user waste disposal 24 hours a day 7 days a week, and **Puntos Naranja**, whose construction started in the venue Centro B, space designed to provide the citizen with a free-cost alternative to dispose of special waste that is not included in the regular waste collection, ensuring the appropriate treatment according to the type of waste.

## Gas

The **sustainable mobility** strategy, with programs and **vehicular gas service stations**, is part of EPM's commitment to the city and the environment. By the end of the year, EPM had 17 EPM-branded service stations with the start-up of operations of the station in the José María Córdoba airport. During the year, **1,254 vehicles were changed to natural gas vehicles**, for a total of **54,941** that contribute every day to a better air quality. An income of COP 34.77 billion, consumptions of 37 million m<sup>3</sup> and reductions of particulate matter (PM) and volatile organic compounds (VOCs) of 26.81% and 66.87%, respectively, have been obtained in this business unit.

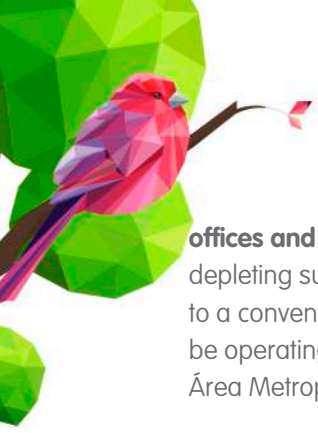
**16 gas vehicles of mass transit started operations** in 2016 and, added to the 107 buses of Masivo de Occidente and the 192 of Sistema Alimentador Oriental, helped reduce emissions of VOCs by 28.91%, PM by 90.24% and CO<sub>2</sub> by 21.14%.

As for **Metroplús**, with 77 (standard and articulated) vehicles, there were reductions of 45.54% for VOCs, 91.55% for MP and 21.14% for CO<sub>2</sub>.

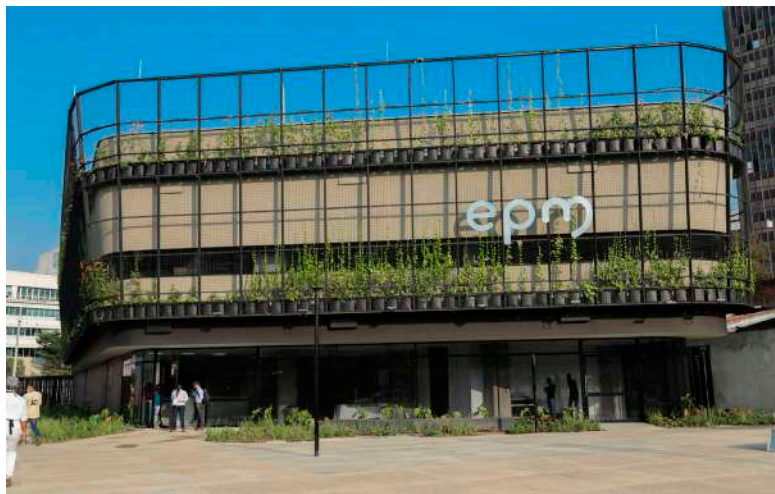
40 waste **collection natural gas vehicles** were included in the **Emvarias'** fleet, for a total of 63 trucks, and started operations helping to reduce emissions of VOCs by 45.54%, PM by 91.87% and CO<sub>2</sub> by 21.14%

These emission reduction estimations are obtained by comparing the reduction in emissions when using natural gas (as a substitute for diesel) with the Euro IV technology and, in the converted vehicles, by comparing the natural gas emissions with the gasoline emissions.

Furthermore, EPM's first incursion into the provision of the public service of thermal energy, **La Alpujarra District Cooling**, started operations, in this case, generating cold water to be used in the systems of air conditioning. It is the first district cooling of its kind in Latin America. Its air conditioning system is now operating in the **DIAN**



**offices and the Antioquia Governor's** Office in the city of Medellín, contributing to the reduction by 100% of ozone-depleting substances (ODSs), by 99.9% of greenhouse gases (GHGs) and, specifically, by 21.84% of CO<sub>2</sub> compared to a conventional system. These percentages are reductions per building. In the next months, the system will also be operating in the Medellín Mayor's Office, the Medellín Council, the Province of Antioquia Assembly Hall and the Área Metropolitana del Valle de Aburrá building.



## Development of the Energy Efficiency Business in LATAM

The company EV **Alianza Energética** was constituted in Panama to develop **energy efficiency business units in Latin America following the ESCO model (Energy Services Company)**, with the purpose of developing, implementing, financing, operating and maintaining projects to improve energy efficiency and competitiveness of companies in the region.

The branch of **EV Alianza Energética** was created in Colombia to guarantee its presence in the local market. In addition, with the **commercial deployment** of the business in the year, **86 potential clients** were initially contacted, of which 64 were analyzed and 5 were provided with concrete solutions.

## Future Perspectives

Through **retrospective studies** of the last 15 years of EPM and the public utilities sector, the **analysis of the current situation and a look into the future in 2025**, a series of **driving forces in the corporate environment** were identified: policies addressing climate change, **disruptive technologies, digital revolution**, more productive clients in terms of **use and consumption** and clients with a more autonomous and "clean" lifestyle.

In this way, EPM studies the **development and implementation** of a series of initiatives structured with these premises that aim at **improving the efficiency** of current operations and **expanding its business portfolio** with added-value criteria for its stakeholders.





In line with the aforementioned, the following initiatives are being executed, in different stages, in the portfolio of **Development and Innovation**:

- Search of solutions with the offer of **distributed energy generation**.
- Diversification of the portfolio of generation sources. **The solar and wind energies are being explored with new technologies**. The following advances were achieved during 2016:
  - Initial studies of wind energy with new technologies to take advantage of medium-speed or significant-height winds.
  - With the University of Antioquia and other two companies of the city, development of the first successful experimental nanostructured-cell photovoltaic solar module.
- **Sustainable mobility**: regarding the promotion of sustainable territories, we want to be the main supplier of **private and public cargo solutions** to create new demand of energy and generate new income associated with the infrastructure. In this regard, an agreement between Metro de Medellín, Metroplús, Área Metropolitana del Valle de Aburrá, the municipality of Medellín and EPM was signed for the purchase of two electric buses that will be included in the transportation fleet to encourage even more the efficient use of energy, the care for the environment, the clean fuels and the health of the inhabitants of the department of Antioquia and, in turn, analyze its technical performance, so that we can promote their mass use.
- **Other initiatives**:
  - Successful pilot projects for the incorporation of **smart systems into the networks** to detect real-time fraud.
  - Technological development of a patentable diagnosis system of operating **rotors in the hydraulic power plants**.
  - Exploration of initiatives for the treatment of wastewaters using microalgae. Additionally, distributed solutions of waters and non-conventional treatments are being structured to become more efficient in that regard.
  - Launching of the **certified Renewable Energy** business model for EPM's clients. In addition, the certified renewable energy contributes to achieving the Group's environmental BHAG to become carbon neutral in 2025.
  - Use of the **solid organic waste to produce a fertilizer**.



- Contribution to the **agricultural and industrial** sectors: during 2016, several pilot projects took place in order to try new uses, including agricultural business such as milling, coffee drying and poultry and porcine farming, that have required **creative solutions to use natural gas in their processes**, thereby improving quality and competitiveness.



## Financial Results

### Macroeconomic Behavior

During 2016, the world economy offered a poor performance, partly explained by **the international trade stagnation** and the weakness of investments, demand and productivity. Advanced **economies grew** moderately and had low inflation levels. Emerging and **developing economies** continued adjusting to low prices of raw materials and to the **weakening of their currencies**. It was a year of geopolitical shocks, such as the United Kingdom's withdrawal from the European Union ("Brexit") and the USA presidential elections. The **price of oil recovered by the end of the year** and in average got to USD 52 per barrel after the agreements with the OPEC and other countries to cut back the production of crude during the first semester of 2017. In that scenario, the International Monetary Fund estimates that the world economy would have grown 3.1% in 2016, slightly less than in 2015 (3.2%).

**In Colombia**, the downturn in the economic activity, that started by the end of 2014 due to the strong **drop in oil prices, was intensified in 2016**. According to DANE, the Gross Domestic Product (GDP) grew in 2016 at a rate of 2%, lower than the growth occurred during the same period in 2015 (3.1%). The strong supply shocks presented during the first semester of 2016, such as El Niño, the truck drivers strike and the devaluation of the exchange rate, influenced this slow expansion pace of the economy, negatively impacting the prices and the productive activity.

Regarding the supply, the sectors that marked the economic growth in 2016 were the manufacturing and the construction industries and the financial sector, whereas the sectors that presented the biggest decline were mining, farming, power, gas and water supply and trade. As for the domestic demand, the lowest growth of the economy was related to a **contraction of the fixed investment and a strong cutback of government and household consumption**. With regard to the labor market, according to DANE, the unemployment rate in 2016 was 9.2%, increasing 0.3 percentage points (8.9%) compared to the same period the previous year.

**In terms of inflation, prices were prone to rise** during the first semester of the year. This behavior was related to the aforementioned supply shocks. Since August, that tendency reversed and prices dropped until the end of the year with a variation of 5.75%, 1.02 percentage points less than the inflation in 2015 (6.77%). With this result, the target inflation range (2% to 4%) fixed by the central bank of Colombia is not met for the second consecutive year. In response to the acceleration of prices observed during the first semester of 2016, the central bank of Colombia increased the intervention interest rate, which was 7.50% by the end of the year, 1.75 percentage points above the final rate of 2015 (5.75%).



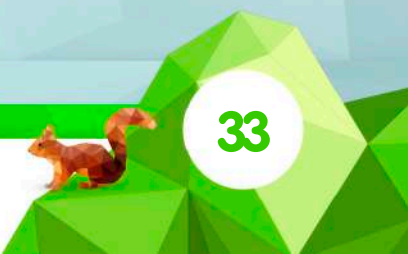
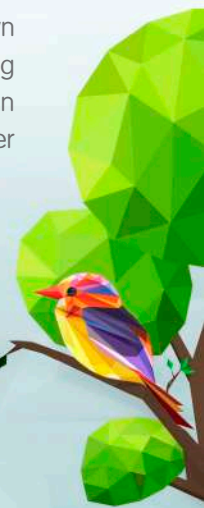


**In the foreign exchange market**, during the first three months of 2016, the tendency of the local exchange rate **was towards devaluation, explained by the strong drop of oil prices**, falling below USD 30 per barrel. Between the second and third quarters of 2016, the tendency of the market representative rate (TRM) reversed towards appreciation. This weakness of the US dollar was caused mainly by the rise of oil prices, the stabilization of the economy growth in China and the expansionary currency policy of Europe and Japan. During the last quarter of the year, the TRM showed a mixed behavior: it was devalued due to the unsteadiness the USA presidential elections generated on the markets. Nevertheless, in December, the TRM rose again, encouraged by the increase of oil prices that took place after the approval of the oil production cutback agreement signed by the OPEC, which rose the WTI above USD 50 (the highest price reached during the year). In this scenario and compared to the TRM of 2015 that was COP 3,149, the year closed with a TRM of COP 3,000.71, reaching an annual appreciation of -4.7%.

Another aspect of **high uncertainty** during 2016 that will have its effects in 2017 is the structural tax reform, adopted through **Act 1819 of December 29, 2016**, which will generate impacts on the EPM Group, being particularly significant, among others:

- **The unification of the income tax and the income tax for equality (CREE)** into the income tax, reducing the nominal rate of legal entities to 34% for 2017 and 33% for 2018 and the following years. Additionally, an income tax surcharge of 6% and 4% for 2017 and 2018, respectively, is created for taxpayers that report a tax base above COP 800 million. This surcharge is subject to an advance of 100% of its amount.
- The activity of power generation of EPM, which has a **legal stability agreement** valid until 2028, and will be able therefore to continue applying the stabilized rules in the terms defined in 2008 when the agreement was signed. The income tax rate valid since day one of the agreement is 33%.
- **The wealth tax that will not be valid after 2017.**
- The modification of the **general VAT rate from 16% to 19%**. The reform established that the sales tax applicable to the agreements entered into with public or government entities will be the valid rate the date of the resolution or contract award, or signing of the corresponding agreement. If additions are included in these agreements, the provisions existing at the moment of the signing of the addition are applicable to such additions.

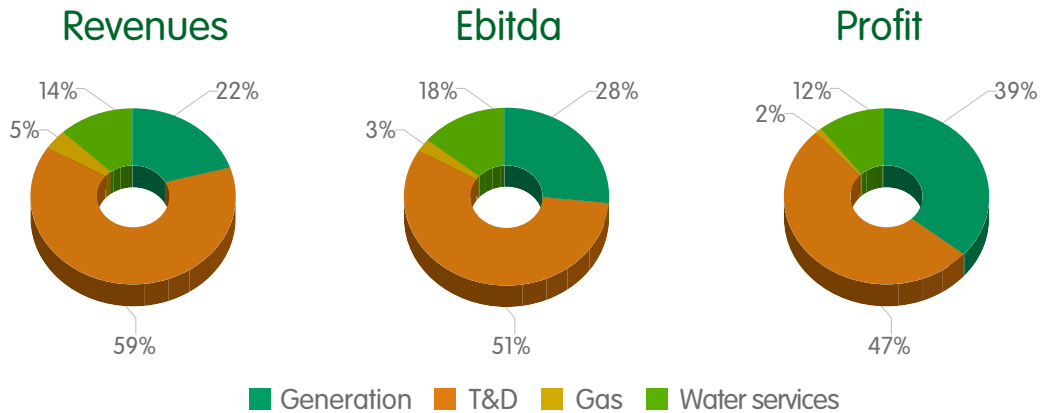
With this outlook, the prospects for 2017 project a growing Colombian economy, adjusting itself to a slowdown process. At the international level, a moderate growth is expected mainly because of the recovery of emerging markets and developing economies and the rise of raw material prices such as oil. Strong liquidity investments in Europe and Japan are expected, and, additionally, the target and impacts of the USA economic policies are rather uncertain.





## EPM Group Results

During 2016, the companies of the Group have faced economic and political environments of ups and downs that have had an impact on their results. Notwithstanding this scenario, the Group achieved revenues of **COP 15,854 billion**, an increase of 14%; an **EBITDA of COP 4,036 billion**, 12% higher than that of 2015, and a result of **COP 1,866 billion**, which means an **increase of 85%**.



The **Generation** business of the Group **achieved EBITDA of COP 1,155 billion**, a growth of 5% compared to 2015, which registered a growth in revenues of 16%. The results are mainly marked by the generation business of EPM (parent company), which showed an increase in revenues of 18% which highlights a higher value due to the provision of the frequency regulation service, due to a better settlement price and greater allocation. The incident at the Guatapé hydroelectric power plant was reasonably covered by the insurer. The actual costs and expenses of this business in the Group showed a variation of 19%, explained by the increase in energy purchases on the stock market, gas and ACPM purchases due to lower generation, and by the valuation of the El Limón–Anorí road, located in the area of influence of the Porce III hydroelectric power plant, of COP 78 billion.

The **EBITDA** of the **Transmission and Distribution (T&D)** business was **COP 2,145 billion**, with a variation of 11% due to higher revenues generated by increases in consumption by customer of the non-residential regulated market and the favorable performance of the PPI both in EPM and in the national subsidiaries.

The **Water service business**, on the other hand, **generated EBITDA of COP 740 billion**, with a variation of 29%, explained by the application of the new pricing framework in Colombia and the incorporation of Adasa's 2016 results, which contributed with an EBITDA of COP 242 billion.

The **Gas business achieved EBITDA of COP 122 billion**, which shows a good year for this business due to higher sales to the secondary market to thermal generators due to the El Niño phenomenon.

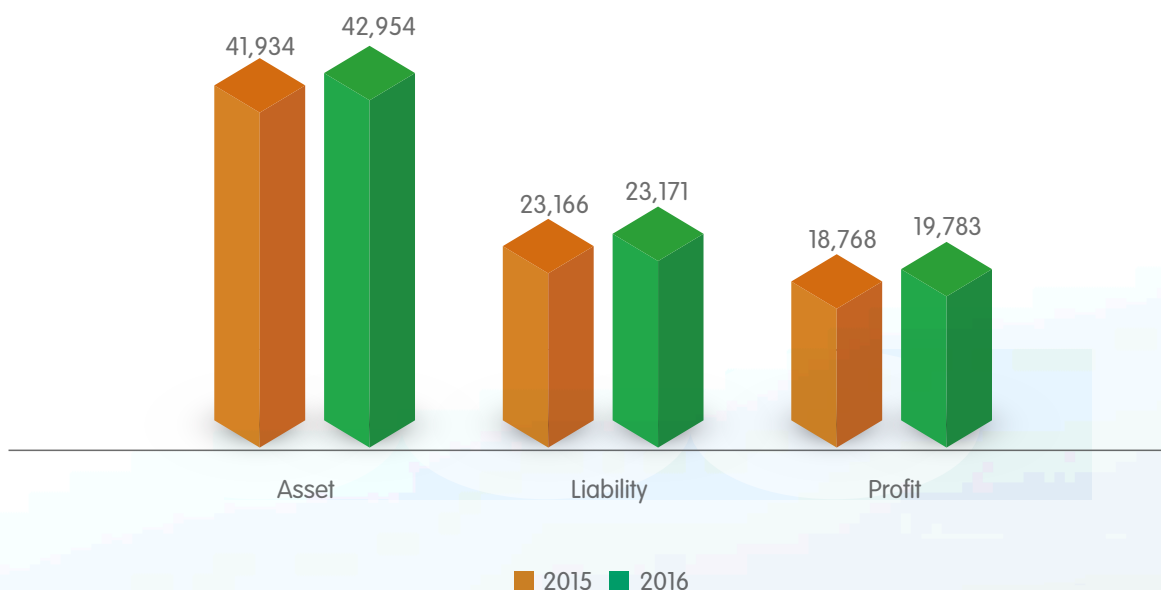


**The net result shows a growth of 85%, equivalent to COP 857 billion**, explained by the operating dynamics reflected in a variation of the Group's EBITDA at COP 427 billion and a variation of other items, where we can highlight the behavior of the exchange rate, which, along with the debt currency hedging, made it possible to reach an income from exchange differences and a higher provision from income tax.

**Transfers to the Municipality in 2016 amounted to COP 817 billion**, of which COP 445 billion correspond to ordinary transfers and COP 372 billion to extraordinary transfers.

## Statement of financial position

In 2016, **growth in assets was 2%**, from COP 41,934 billion to **COP 42,954 billion**; liabilities remained stable, from COP 23,166 billion to COP 23,171 billion and equity **increased 5%**, from COP 18,768 billion to **19,783 billion**.



**The non-current assets of the Group increased by 3%**, which is explained by a combined effect of increased investments in infrastructure by EPM in the Ituango Hydroelectric Project and the Aguas Claras Wastewater Treatment Plant, compared to a decrease due to the sale of shares of Isagén. EPM holds 84% of the Group's total non-current assets. Current assets decreased by 2%.

**The Group's total liabilities remained stable.** The Group's financial indebtedness closed at COP 15,736 billion (36.6%) with an increase of COP 322 billion. **The Group's Debt/EBITDA indicator stood at 3.69 versus 3.76 in 2015.** The performance of the indicator is the result of a better EBITDA and a stable behavior of the debt acquired to finance investments.



## Credit risk ratings

As a result of the actions taken in operational and Corporate Governance matters, the ratings of the EPM Group companies have remained at expected levels.

For EPM, **ratification of local and international risk ratings, 'Baa3' by Moody's** since 2009, was achieved during 2016, with a stable outlook for four consecutive years; and with **Fitch Rating, a rating of 'AAA' locally** and since 2014, an international rating of 'BBB+', indicating that investors' confidence and trust is maintained. The ratings granted fully supported the 2016 financing strategy, which **includes disbursements of USD 611.4 million with the international financial sector** for the general investment plan and the Ituango Hydroelectric Project.

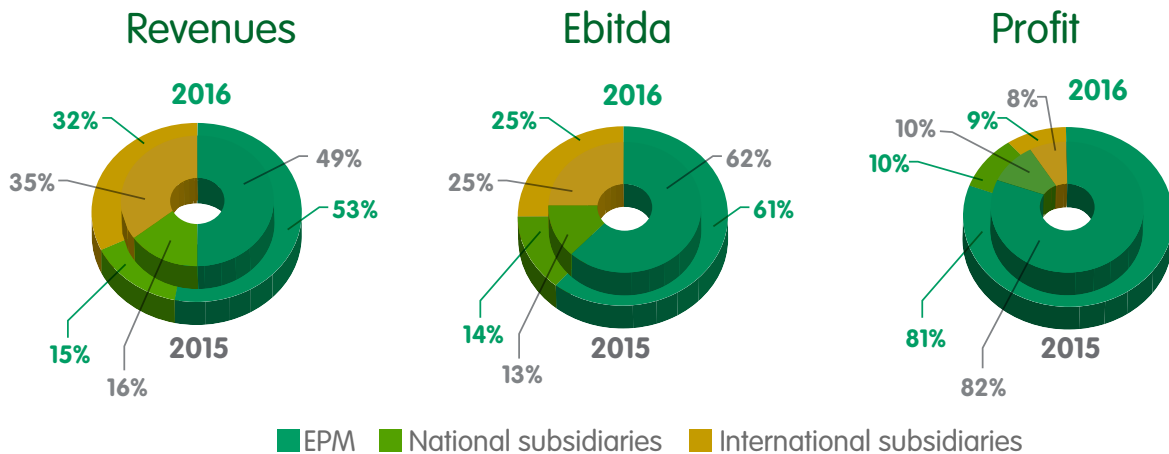
## Performance and evolution of investments, diversification

The EPM Group has implemented a diversification strategy that has enabled it to have a presence in Chile, Mexico, Guatemala, Salvador, Panama, Bermuda and Colombia through 48 companies between affiliates and subsidiaries in the energy, water and basic sanitation sectors, as well as companies whose purpose is to leverage activities related to the Group's business dynamics, such as MaxSeguros, Promobiliaria and the Fondo de Innovación.

During 2016, the companies of the Group have faced **economic and political environments of ups and downs**. In the case of Mexico, although a growth of 2.4% in GDP was reported as a result of the greater dynamism of private consumption, exports and services sector, US election results led to a high currency fluctuation, a situation that makes it one of the most depreciated currencies of the emerging countries. In the case of **Chile**, economic activity grew by an average of **1.42%, a rate lower than that of 2015 (2.32%)**, a result evidencing the slowdown of the economy, not only by the contraction of the mining sector but also by a low performance in all sectors. The economies of the **Central American countries** show growth at rates lower than the goals established by local governments (Guatemala, El Salvador), while the economy of Panama, which had set growth targets supported in the expansion of the Panama Canal, has been restricted by the slowdown in international trade.

In 2016, **EPM received, from its affiliates and subsidiaries, resources of COP 529 billion**, of which controlled companies delivered **dividends of COP 135 billion** and non-controlled companies (UNE and ISA) of **COP 229 billion**. EPM Inversiones S.A. made a capital reduction through a reimbursement of contributions of COP 165 billion, with the aim of returning resources to EPM, improving the financial structure and optimizing the tax burden.





During 2016, EPM **capitalized Aguas de Malambo** by COP 14 billion, of which COP 11.5 billion was actually paid, resources destined to finance the investment plan seeking to improve indicators of quality, continuity and coverage. In EPM Chile, a debt/capital structure was recomposed, with EPM capitalizing USD 30 million. EPM LATAM, an investment vehicle owned by EPM, capitalized, by USD 43,350, EV Alianza Energética S.A., a company incorporated on January 22 to provide energy efficiency services. This same vehicle capitalized EPM Mexico by USD 8.9 million.

In general, the waste collection and **national energy companies** show **results in accordance with the business plan** and expected returns. This trend continues for Central American companies (GESA, DECA, Delsur and ENSA.)

**The water and sanitation companies** in Colombia are in a **process of operational stabilization and investment execution**, which seeks to achieve operational and financial goals.

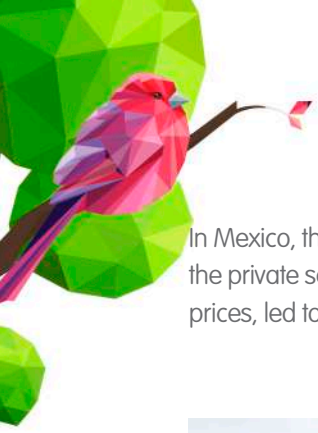
During 2016, **Adasa continued consolidating the operational, financial and organizational plan**. In 2016, the expansion of the North Desalination Plant, which increases production capacity by 200 l/s, became 100% operational. It generates greater availability of water and greater income for the coming years. At the end of the year, the company showed an **increase in EBITDA of 23.8%**, leveraged by the increase in consumption in the non-regulated market, which offers the company a great growth potential. Indicators, such as customer satisfaction, community perception and organizational climate, improved in relation to the previous year.

**Regarding Los Cururos Wind Farm**, energy prices showed a downward trend, marked by the **decrease in fuel prices** and the expansion of the electricity system with non-conventional renewable technologies at lower costs. In addition, there were technical restrictions (decoupling effect) and regulatory restrictions that have changed the compensation mechanisms. The lower income expectation had an impact on the financial statements, thus reflecting an expense of USD 64.2 million.

The investment made in Panama in the **Hidroecológica del Teribe S.A. (HET)** has been affected by the **lower generation, due to the decrease in the water availability in the basin and a lower marginal cost of energy**. In addition, there was a change in Panama's energy basket with greater participation of non-renewable technologies at low costs. The lower income expectation had an impact on the financial statements, thus reflecting an expense of USD 13.4 million.







In Mexico, the modification of public procurement mechanisms in the sanitation sector, as well as greater competition in the private sector and the impact on one of its main clients, particularly Petróleos Mexicanos (Pemex), due to the fall in oil prices, led to **lower expectations in revenues**, resulting in an expense in the financial statements of USD 24.2 million.



## Sale of EPM's shareholding in Isagén

In January 2016, **Colombia's Government sold**, to the Canadian firm Brookfield, its shareholding in Isagén, equivalent to 57.6%.

**EPM requested** the Honorable Council of Medellín the authorization to **sell its shareholding**. This authorization was granted and the sale process before the Financial Superintendency was recorded. Moreover, the stages required for the process were carried out: the first one addressed to the recipients of special conditions and the second one, to the general public, in which no shares were sold. After completing these stages, EPM was enabled to participate in the additional takeover bid launched by Brookfield.

Acting on behalf of EPM, the brokerage firm Ultraserfinco placed the acceptance order of Brookfield's takeover bid last July, and on September the Colombian Stock Exchange (BVC) awarded Brookfield's takeover bid on Isagén's shares, in which EPM participated with 358,332,000 shares.

Finally, in **September** the operation was completed and **EPM received COP 1.48 trillion from the sale of these shares**.








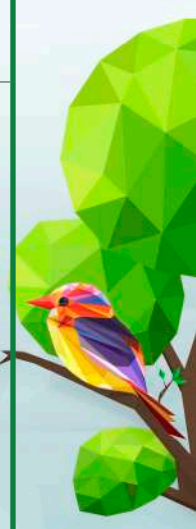


# Control Environment and Quality Management System

## Quality Management System

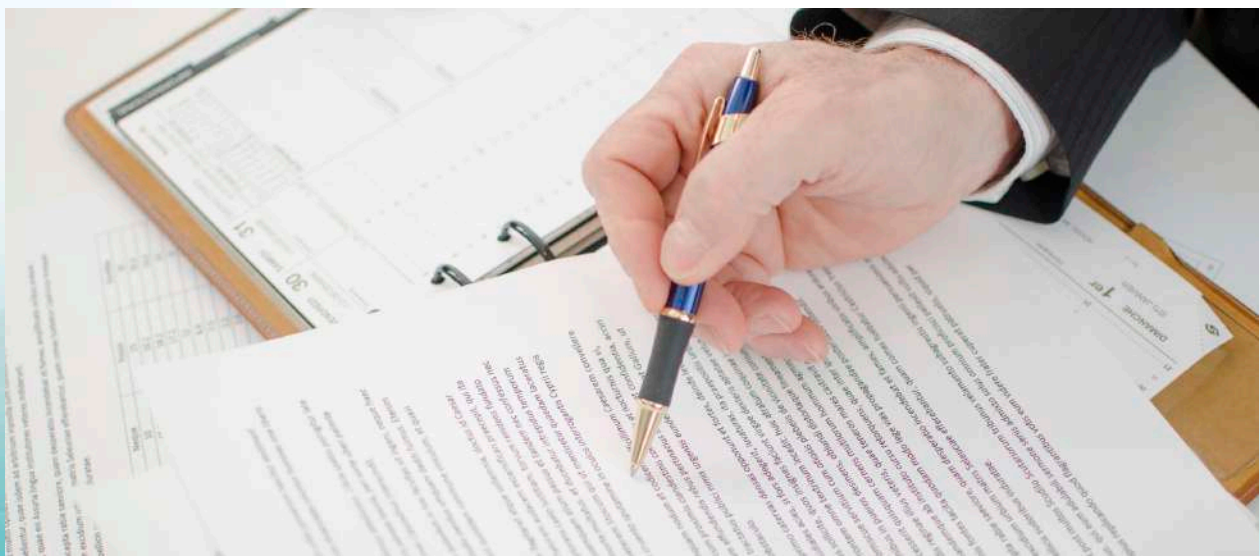
### Analysis of the Quality Management Policy

Components	Department in charge	Compliance  	Remarks
Is the integrated management policy adequate to the purpose for which the entity was created?	Corporate Development Management		The policy is appropriate to the corporate purpose of EPM, established in Article 3 of the Bylaws, Municipal Agreement No. 12 of 1998, and is in line with the strategic planning of the company.
Is the integrated management policy consistent with the development plan, the sectorial and administrative development plans, the Internal Control System and the established strategic plans?	Corporate Development Management		The policy is consistent with the municipal and national development plans, administrative development, Internal Control System and strategic plans. These elements are analyzed in the process of "Acknowledgment of the environment and organizational performance" of the Integrated Planning cycle.
Does the integrated management policy include a commitment to meet the requirements of its customers, to continuously improve the efficacy, efficiency and effectiveness of the Quality Management System and, within the limits of its function, to contribute to the achievement of the state's fundamental goals that were constitutionally defined?	Corporate Development Management		<p>The policy responds to the requirements of stakeholders and reference standards and organizational and legal requirements.</p> <p>With the Customers and Users group, there is a Uniform Conditions Agreement (abbreviated CCU in Spanish) establishing the requirements of products and services and the conditions under which EPM is willing to provide the service in conditions of reliability, continuity and quality.</p>





Components	Department in charge	Compliance ✗ ✓	Remarks
Does the integrated management policy provide a framework for establishing and reviewing quality objectives?	Corporate Development Management	✓	The policy is an element that is articulated with the strategic planning. The objectives of the Quality Management System correspond to the objectives defined in the Balanced Scorecard of EPM, which is consistent with what is established in "Act 872 of 2003, by which the Quality Management System is created."
Is the integrated management policy communicated to all public servants and/or individuals who exercise public functions within the entity and is understood by them?	Corporate Development Management, Human Development and Organizational Culture Manager	✓	In May 2016, a "Full Articulation, an Approach to Management Systems" day was held, with the participation of approximately 400 employees. Moreover, during the second semester, awareness-raising workshops were held: "A quality space to understand your role," for employees in charge of processes and management systems and other stakeholders involved. It can be found on EPM's website.
Is the integrated management policy reviewed in order to be constantly adapted?	Corporate Development Management	✓	The policy is reviewed in order to be adapted. It was issued 6 years ago and compliance with the established requirements is still in force.





## Internal Audit Outcome

Throughout the year, a program of internal audits was developed through a new contract signed with Training Corporation Ltda. whose purpose is to “provide professional services for the execution of internal audits to EPM’s management systems”.

The audit program is conducted with a combined audit approach: the Quality Management Systems, in accordance with the Colombian Quality Technical Standard for Public Management 1000 (NTCGP 1000), and the Management Systems certified (ISO 9001) and verified in accordance with the Colombian Quality Technical Standard ISO/IEC 17025 were audited simultaneously. The audit of the Occupational Health and Safety Management System in accordance to Decree 1072 of 2015 was carried out by the Occupational Risks Administrator, Colmena.

Indicators	Goal	Outcome
Audit program compliance	100%	100%
Assessment of audit service	4.8	4.7
Assessment of service provided by auditors	4.5	4.7

Unsatisfactory	$X < 2$
Weak	$2X < 3$
Good	$3 \leq X < 4$
Excellent	$4 \leq X \leq 5$
Assessment Rating Scale of Audits and Auditors	

The consolidated findings correspond to 33% strengths, 49% improvement opportunities and 18% non-compliances.





Strengths		Non-compliances		Improvement opportunities	
1	Learning plan that strengthens training in skills based on education, training, skills and experience.	1	Data analysis does not demonstrate sufficiency for decision making.	1	Review and disseminate process information.
2	There are strategic focuses for fulfilling the requirement in the context of the organization.	2	Lack of control of documents and records.	2	Adjust the characterization of processes.
3	The commitment of the audited work teams to continuously improve is highlighted.	3	The root cause analysis of improvement actions is not documented.	3	Socialize risk methodology.
4	Systems do a good job in identifying, analyzing and classifying risks.	4	Out-of-date character of the legal and regulatory framework according to the current version.	4	Evaluate the effectiveness of improvement actions.
5	Efficiency and effectiveness of systems due to research and development of materials, use of new technologies and controls in processes.	5	Failure to complete the checklist for hazardous works at height and involving energy.	5	Strengthen occupational health and safety competences in contractors.
6	Control over personal protection equipment and elements, and evident commitment to the maintenance of the conditions of the work environment.	6	Safety data sheets of the chemicals used are not available at the sites of use (workshop, warehouse).	6	Conduct research on occupational diseases.
7	Adequate storage of hazardous waste.	7	Efficient regular replacement of fire-fighting equipment is necessary. There is equipment that has expired.	7	Have emergency response measures, conduct medical emergency exercises and test the help line and the response of support institutions.
8	Contractual requirements regarding occupational safety and health are reviewed. There is compliance.	8	Lack of safety signs warning access to stairs, in order to reduce the risk of falling.	8	Improve the culture of reporting, recording and analyzing incidents in some facilities, so that they can be documented and adopted and in order to generate lessons learned.





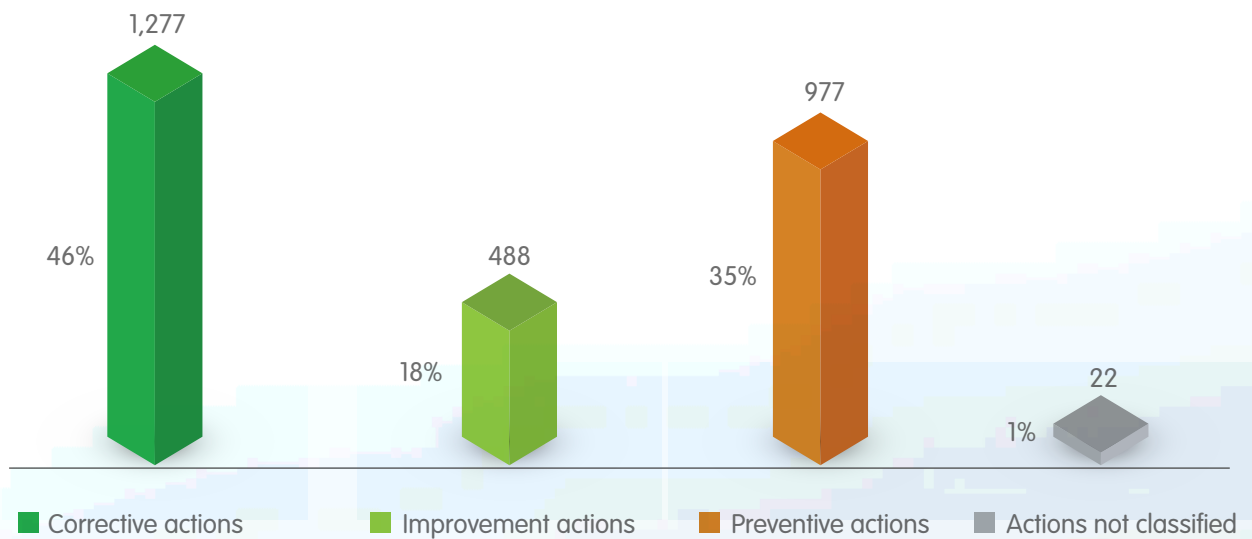
## Improvement programs

The last version of the Process Model was parameterized in Kairos information system, while migration of data related to risks and improvement programs registered in the previous version tool was initiated.

In total, 2,764 actions have been documented, of which 72% are effective, 9% are not effective and 19% are not classified.

It should be emphasized that the sum of preventive and improvement actions, equivalent to 53%, proves that there is proactivity on the part of those responsible for processes in relation to a culture of continuous improvement.

However, the rate of definition of corrective actions amounted to 46%, a result of the following: Internal Audit of Control, Comprehensive Risk Management, Internal and External Audit of Management System.






Regarding the status of the actions of the previous period's improvement programs, although, for the 2016 period, no Review by the Management actions were defined, from the units that make up the MECI Team, the action "Managing improvement programs in Kairos," among others, was continued, by strengthening the culture of continuous improvement, enhancing the figure of the Allied Organizational Development. To this end, the Corporate Development Management assigns accompanying and support tasks to improve the quality of the information entered into the tool, with the direct intervention of process managers and assigned experts.



## Conclusion of the State of the Quality Management System

The Quality Management System implemented in EPM, in accordance with the Quality Technical Standard for Public Management NTCGP 1000: 2009, is convenient, suitable, productive, efficient and effective.

Review	Yes/No	Conclusion
<p><b>Convenience</b></p> <p>Is there alignment or consistency of the Quality Management System with the organizational goals and policies?</p>		<p>The Quality Management System is in line and consistent with the organizational goals and policies defined by EPM. The current administration has emphasized the strategy of the EPM Group during its period through the "4C + 1G": Closeness, Coverage, Consolidation, Care for the environment and Growth, as the actions that will contribute to the BHAG redefined according to the financial, social and environmental results. The objectives of the system correspond to the objectives defined in the EPM's Balanced Scorecard.</p>
<p><b>Suitability</b></p> <p>Are the actions for the Quality Management System sufficient to meet the requirements?</p>		<p>Legal and regulatory requirements were met. Regarding customer and organizational requirements, in general terms, they were met, with exception of the following:</p> <ul style="list-style-type: none"> <li>• Customer requirements: the incident that took place at the Guatapé hydroelectric power plant caused it to be out of service for four months, due to a human error in the maintenance procedure. This generated losses and affected the reputation of the company; however, the electrical infrastructure supported the continuity of the service.</li> <li>• Requisitos de la organización: no se alcanzaron las metas en: <ul style="list-style-type: none"> <li>- "Compliance with milestones of infrastructure projects."</li> <li>- "Suppliers and contractors," in terms of transparency, compliance with contractual commitments and social and environmental performance.</li> <li>- "Social and political environment," due to concentrated difficulties in the relationship with the Municipality of Bello.</li> </ul> </li> </ul>
<p><b>Efficacy</b></p> <p>Are the planned activities carried out and the planned results achieved?</p>		<p>The Quality Management System is effective. In general terms, the result of the EBITDA indicator is favorable, although the following unforeseen situations occurred in 2016: the El Niño phenomenon that affected the generation of energy, raising the price of this operation; the devaluation of the Colombian peso, which had an impact on the financial structure of EPM, and the incident at the Guatapé hydroelectric power plant.</p>



Review	Yes/No	Conclusion
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**Efficiency**

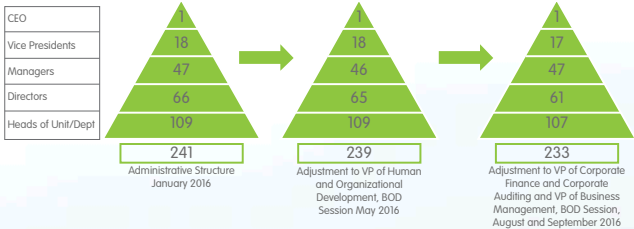
Is there a relation between the result achieved and the resources used?

Some of the planned activities and the resources used are reflected in:

✓ **Processes:** implementation of the BHAG tool to document processes, modeling of 53 processes to task level, implementation of the "Full Articulation, an approach to management system" day and workshops: "A quality space to understand your role."

✓ **Organization:** in light of the emphasis on the EPM Group's strategy given by the current administration of the company through the "4C + 1G" (Closeness, Coverage, Care for the environment, Consolidation and Growth), in the **Consolidation**, the following dimensions: Organization/Processes/Information/Technology/People of the **Business Architecture model** were reviewed, looking for all of them to be in line with the viability of the Group's strategy. As a result, adjustments were made to the administrative structures of the Vice Presidencies of Human and Organizational Development (optimization of three departments), Supply and Shared Services (creation of one department), Corporate Finance, Risk and Investment Management (six departments), Corporate Auditing (optimization of one department) and Business Management (creation of one department.)

**Summary of the adjustment to the administrative structure**




Likewise, 43 posts were approved in the different vice presidencies evaluated.

Approved posts	May 2016	August 2016	Sept.2016	Total
VP of Corporate Auditing		19		19
VP of Human & Organizational Development	3			3
VP of Corporate Finance, Risk & Investments Management		17		17
VP of Business Management			2	2
VP of Corporate Communications & Relationships			2	2
<b>Total</b>	<b>3</b>	<b>36</b>	<b>4</b>	<b>43</b>

- ✓ Implementation of the HCM tool for human capital management.
- ✓ Acquisition and implementation of the Ariba tool for the new Supply Chain strategy.

However, there were difficulties in the permitting and licensing procedures when developing some infrastructure projects (under-execution in the Aguas Claras wastewater treatment plant and over-execution in the Nueva Esperanza project), which generated complaints and delays in the execution of the works, as well as overruns.



Review	Yes/No	Conclusion
<p><b>Effectiveness</b></p> <p>Is there an impact of the management, both in achieving the planned results and in managing the resources used and available?</p>		<p>EPM was granted the CIER (Regional Energy Integration Commission) International Award in the Silver category for its customer satisfaction in the electrical energy service. It also ranked ninth in the national ranking, according to the MERCOSUR study, which analyses corporate reputation.</p> <p>However, different events that occurred during the year, such as the incident at the Guatapé hydroelectric power plant, the El Niño phenomenon and the Colombian peso devaluation, among others, caused some users to have a negative image of the company regarding quality in the management and to perceive EPM as distant from its users.</p>

## Control Environment

The control environment is strengthened in 2016 in accordance with the corporate purposes referenced in the Internal Control Management Policy. Different actions aimed at adapting and improving the internal elements were developed according to the corporate needs, the regulatory requirements and the related best practices.

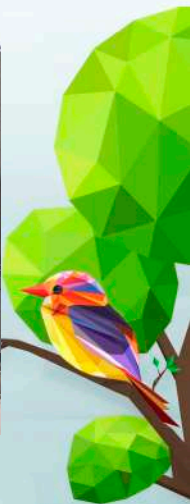
- EPM received a rating of 87.5 out of 100 in the 9th Business Transparency Measurement (Public Utilities chapter.) The company was placed at a moderate risk of corruption, a rating that shows the organization's progress in policies and mechanisms to prevent these risks, facilitate access to information and promote spaces for dialogue and participation with different stakeholders. The measurement variables were substantially modified and toughened by such organization, which makes the results achieved more meritorious.
- Activities of socialization and awareness associated with the Annual Anti-Corruption and Citizen Services Plan were continued, as well as monitoring activities regarding ethics, actions that contribute to strengthen, in the public servants, the culture of transparency in management.
- Since April 2016, EPM has a new mechanism to issue and manage the internal standards associated with processes known as the New Regulatory Model, formally registered through Decree by the General Management, and whose purpose is to standardize and make the current model of the organization flexible.
- The Annual Anti-Corruption and Citizen Services Plan was developed in order to ensure that all actions carried out by public servants are transparent and comply with good management practices.
- In the EPM Group we want to be a business reference, have the best practices and use international standards in our compliance management, leading its management and actively participating in collective actions that generate high impact on society. Therefore, we participate and adhere to the Collective Agreement of the





Electricity Sector on combating corruption and promoting free competition, promoted by the National Operation Council (abbreviated CNO in Spanish) and XM S.A. E.S.P., with the supervision of the Transparency Secretariat of the Presidency of the Republic of Colombia, the Transparencia por Colombia Corporation and UNODC. All our national operating energy subsidiaries are also part of this agreement and we have been complying with the requirements for the adherents which are reported to the supervisors. In compliance with the 2016 requirements, we report progress in:

- Assistance to working groups.
- Dissemination of the agreement to the various stakeholders through announcements in the website and intranet and presentations to various stakeholders (Clients and users, suppliers and contractors, EPM staff, community and EPM Management Committee).
- Progress in closing gaps regarding principles of International Transparency.
- Progress in developing the map of risks of corruption and disclosing it in EPM's website.
- Progress in closing gaps regarding competition.
- Measurement of the ethical climate in EPM.





## Awards and honors

During 2016 the company was awarded the following significant awards and honors:

**International credit rating of 'BBB+' and national credit rating of 'AAA' granted by Fitch Ratings:** for the third consecutive year, EPM maintains its 'BBB+' investment grade rating, given its credit profile, which is characterized by a strong generation of cash flow, moderate leverage and healthy hedging and liquidity relationships. Meanwhile, regarding EPM's payment capacity at national level, as well as its bond issuance program in Colombian pesos worth 4.5 trillion, Fitch Ratings affirmed the highest possible rating in Colombia: 'AAA'.

**Accolade by the Colombian General Accounting Office for contributing to the development of Colombia's National Public Accounting System:** EPM received a recognition by the Colombian General Accounting Office (abbreviated CGN in Spanish), for "its management, work, application and enforcement of the public accounting regulation issued by the Colombian General Accounting Office, as well as for its contributions to and strengthening of the country's public accounting culture."

**CIER International Award, Silver category, for customer satisfaction in the electrical energy service:** three companies of the EPM Group were granted the 2016 Regional Energy Integration Commission (CIER) awards. Each year, the CIER conducts a Regional Survey of Residential Customer Satisfaction among customers and users of the electrical energy service in Latin America from 63 electricity distributors in 13 Latin American countries. EPM ranked second among companies with more than 500,000 customers, with a rating of 85.2 out of 100, above 31 companies in this segment, and won the CIER Award in the Silver category. EDEQ received the CIER Award in the Gold category among companies with less than 500,000 customers, with a rating of 92.8 out of 100, and Delsur, an affiliate of the EPM Group in El Salvador, received this award in the Silver category, with a rating of 90.8 out of 100.

**Icontec recognized again the quality of EPM's water and sewerage services:** the audit, with zero detected non-compliances, allowed EPM to be certified until 2018.

**EPM was considered the most admired company in Colombia according to the 2016 Opinion Panel:** for the second consecutive year, EPM obtained the recognition of the country in the eighth version of the Opinion Panel that consulted 2,520 opinion leaders in Bogotá and 17 in other departments of Colombia.

**2016 Cocier-Asocodis Quality and Customer Satisfaction Awards to CENS** for "Greater evolution in the energy supply area."



# 2016 Management Report

Presented by EPM's CEO

epm·Group

 [www.sostenibilidadgrupoepm.com.co/english](http://www.sostenibilidadgrupoepm.com.co/english)



# Institutional Overview of the Report

epm·Group

 [www.sostenibilidadgrupoepm.com.co](http://www.sostenibilidadgrupoepm.com.co)







EPM has focused its efforts on the implementation of a Group Corporate Governance model to enable its strategy in a legal framework that allows for the continuous engagement in the ordinary management of companies; a corporate governance aligned with the decision schemes of the Matrix and a decision and ownership network that respects the rights of minority shareholders and promotes the achievement of Group synergies, while facilitating the reconciliation of the particular interests of each company with the interests of the Group, as well as addressing the differences between defined engagement models.

EPM's commitment to the implementation of Corporate Governance best practices in the whole Group has positioned it as a reference in this matter, not only in Colombia but also in Latin America. The Business Monitor of Corporate Reputation–MERCO 2015–recently confirmed EPM Group's top position in the energy, gas and water supply industries, with a total of 9,035 points out of 10,000. Thus, EPM remains in the top five among the 100 most responsible Colombian companies with the best Corporate Governance practices.



Through this report, which informs on the compliance and the main achievements made in 2016 in terms of Corporate Governance, EPM, once again, honors its commitment to transparency and disclosure of information to its stakeholders and investors.

## Conceptual Framework of EPM Group's Corporate Governance

EPM remains the second largest business group in the country by recording revenues of USD 5.8 trillion and assets of USD 16.2 trillion in 2016. Its growth and consolidation as a Group trigger important challenges in Corporate Governance at the level of the highest international standards for public companies. In this sense, the implementation of the Group's Corporate Governance model, aligned with the business purpose and "the 4C+1G" (Closeness, Coverage, Consolidation, Care for the environment and Growth), becomes an enabling mechanism that strengthens Corporate Governance by consolidating its performance as a business group and strengthening its relationship with stakeholders, keeping the right balance between ownership and management of the company.

During 2016, the framework of the Corporate Governance model was designed, in line with the Group's governing bodies. This made it possible to strengthen the common language, identify current practices and opportunities for improvement in governance, as well as facilitate the Group's long-term Corporate Governance planning. *(Annex 1. Governing bodies and framework for action of the Group's Corporate Governance)*



# Compliance and Progress in EPM's Corporate Governance

During 2016, EPM was able to consolidate Good Corporate Governance practices that will be detailed in this chapter and that largely respond to practices suggested by global leaders in this area.

## Ownership: Municipality of Medellin



**La Alpujarra Administrative Center.** Urban building complex where the official headquarters of the Medellín Mayor's Office, the Medellín Council and the Antioquia Governor's Office are located.

All the ownership rights of EPM are held by the Municipality of Medellín, represented by the Mayor of Medellín, who, in accordance to Act 142 of 1994 and the company's bylaws, appoints the CEO, chairs the Board of Directors and directly designates the members who are part of it.

The relationship with the Municipality of Medellín, in its role as owner of EPM, is regulated by the Law and the internal regulations; the latter is contained in the Relations Framework Agreement signed in 2007 by the Mayor of Medellín and EPM. In this Agreement, interventions by the Municipality of Medellín, in its role as owner of EPM, are regulated, and the expectations of the city regarding the company management are set.



Among other topics, this Agreement establishes that the ownership of EPM is exercised by the Mayor of Medellín through his participation in EPM's Board of Directors, governing body that also chairs.

Likewise, and in accordance with Municipal Agreement No. 69 of 1997 of the Medellín Council, EPM shall ordinarily transfer up to 30% of its profits to the Municipality every year. However, in exceptional cases, additional transfers beyond the defined amount can be ordered with prior approval by the Medellín Council.

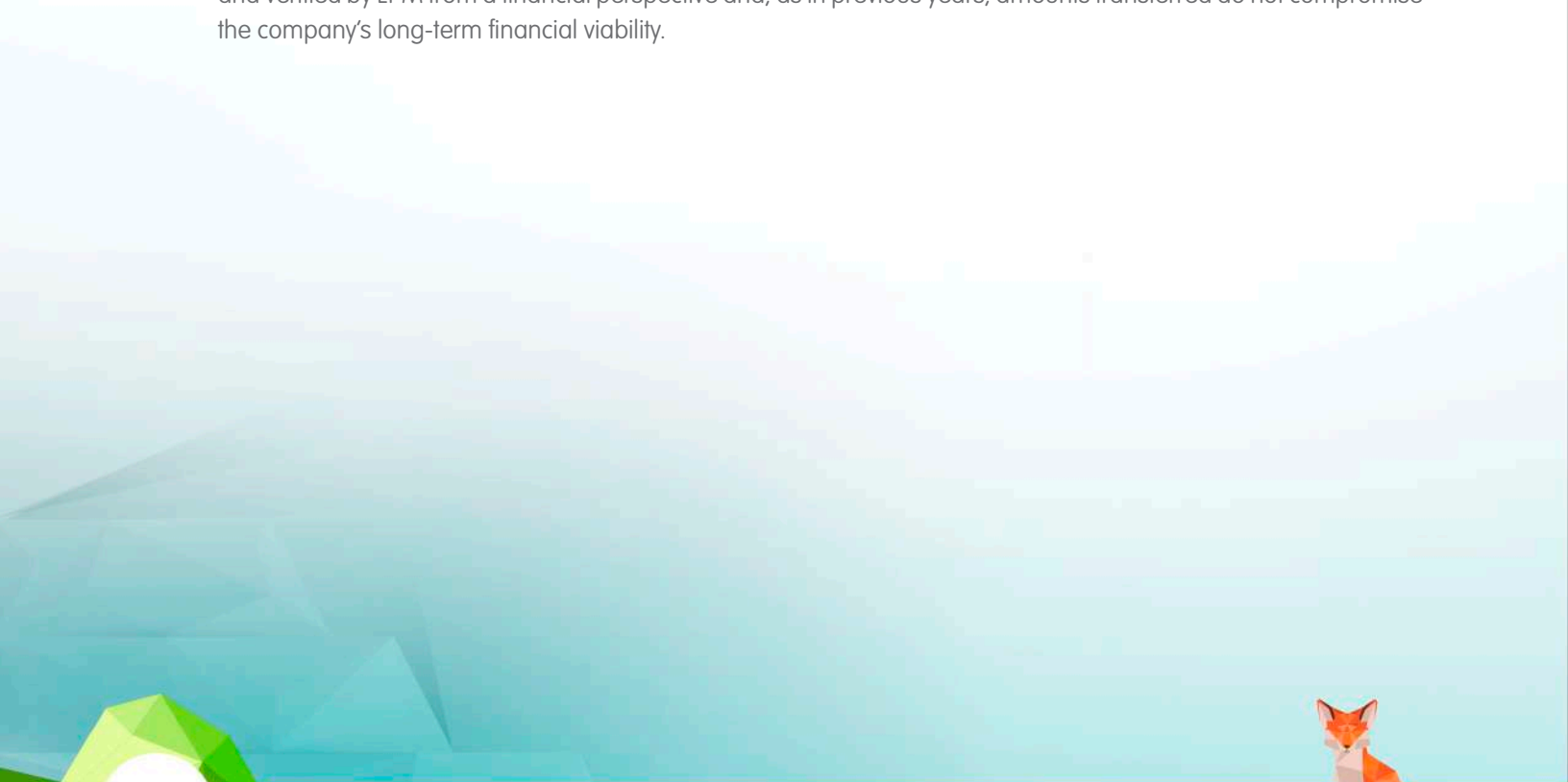
Additional transfers must be analyzed and approved by the Medellín Council, after consulting the financial needs of the Municipal Administration and the financial sustainability of EPM, considering that the latter shall be validated by the financial team of EPM before the City Council. In general terms, the Relations Framework Agreement is an agreement of wills that describes the principles and the obligations that govern the relationship between the Municipality of Medellín, as the owner, and EPM. *(Annex 2. Relations Framework Agreement Context.)*

During 2016, the ordinary surplus transferred amounted to COP445,375.100.781, corresponding to 30% of the 2015 profits. Additionally, extraordinary contributions totaling COP 371,145,917,318 were made.



Ordinary transfers were made based on the accounting calculations of the financial surpluses at the end of the previous fiscal year. In all cases, extraordinary transfers were approved beforehand by the Medellín Council, after assessing the need stated by the city's Mayor and the company's investment plans.

According to EPM's Bylaws and in compliance with the Relations Framework Agreement, transfers were analyzed and verified by EPM from a financial perspective and, as in previous years, amounts transferred do not compromise the company's long-term financial viability.



## Transfers to the Municipality of Medellín



Ordinary and extraordinary transfers to the Municipality of Medellín from 2012 to 2016 (figures expressed in COP million)

## Administration of EPM's Board of Directors

EPM is an official public utilities company, established as a Government industrial and commercial company, of the municipal order, subject to the rules of Law 142 of 1994 regulating the provision of residential public utilities in Colombia.

The Board of Directors is in charge of the direction of EPM and the CEO is responsible for the administration and representation of the entity.

### Structure of the Board of Directors

The structure of EPM's Board of Directors, is ruled by Law 142 of 1994 and, internally, by the Relations Framework Agreement and the EPM Corporate Governance Code. These documents establish that this deliberative body is made up by nine main members without substitutes as follows:





- The Mayor of the city of Medellín, who is the Chairman of the Board of Directors.
- Five people freely appointed by the Medellín Mayor, all of them acting independently in accordance with EPM internal regulations.
- Three people selected by the Medellín Mayor among the control spokespersons registered by the Development and Social Control Committees of residential public utilities (Article 27.6 of Law 142 of 1994).

The EPM Corporate Governance Code states that the following aspects are the criteria to be considered by the Mayor to appoint the members of the Board of Directors:

- Professional academic training in subjects related to the corporate purpose of EPM and to the functions proper of a member of the Board of Directors.
- Business or work experience in companies whose purpose is related to the public utilities industry.
- To be selected, control spokespersons are required to submit proof of the time of permanence in the Development and Social Control Committee that selected them, description of the relationship with it and evidence of the activities carried out in the development of their functions.

The members of the Board of Directors are subject to the system of disqualifications and incompatibilities established by Law.

In accordance with the Rules of Procedure of the Board of Directors, the main functions of the Chairman are:

- Freely appoint and remove members of the Board of Directors.
- Make sure that the Board of Directors efficiently sets and implements the strategic planning of the company.
- Coordinate and plan the work of the Board of Directors by means of an annual work plan.
- Ensure execution of agreements, compliance of responsibilities and active participation of the members of the Board.
- Lead the evaluation process of the Board and its Committees.
- Promote active coordination between the company and the subjects of interest for the city of Medellín, in compliance with the provisions of the Relations Framework Agreement, and ensure compliance of the rules of the Board of Directors.

The Secretary of the Board, who, according to the company's Bylaws, is, in turn, the Secretary-General of EPM, has the following functions:

- Call the meetings.
- Duly process the requests of the Board.
- Prepare the minutes of the Board of Directors and sign them jointly with the Chairman.
- Ensure preservation of the documents of the Board and legality of their actions.
- Define the procedure to effectively develop the sessions of the Board of Directors.



# EPM Board of Directors



**Federico Gutiérrez Zuluaga**  
**Position:** Chairman  
**Profile:** Mayor of Medellín  
**Start Date:** 01/01/2016  
**Status:** Non-independent



**Elena Rico Villegas**  
**Position:** Control Member  
**Profile:** Public Utilities Management  
**Start Date:** 26/01/2016  
**Status:** Independent



**Alberto Arroyave Lema**  
**Position:** Control Member  
**Profile:** Social Participation and Control  
**Start Date:** 25/02/2008  
**Status:** Independent



**Gabriel Ricardo Maya Maya**  
**Position:** Control Member  
**Profile:** Legal  
**Start Date:** 01/09/2006  
**Status:** Independent



**Claudia Jiménez Jaramillo**  
**Position:** Member  
**Profile:** Public Management  
**Start Date:** 26/01/2016  
**Status:** Non-independent



**Manuel Santiago Mejía Correa**  
**Position:** Member  
**Profile:** Business Management  
**Start Date:** 30/04/2012  
**Status:** Independent



**Javier Genaro Gutiérrez Pemberthy**  
**Position:** Member  
**Profile:** Business Management and Public Utilities  
**Start Date:** 11/03/2016  
**Status:** Independent



**Carlos Raúl Yepes Jiménez**  
**Position:** Member  
**Profile:** Finance and CSR  
**Start Date:** 08/07/2016  
**Status:** Independent



**Andrés Bernal Correa**  
**Position:** Control Member  
**Profile:** Finance  
**Start Date:** 06/02/2012  
**Status:** Independent

*The Board of Directors is composed of people with different profiles required to face the challenges of a multilatina and multi-services public company.*



- In 2016, the Mayor of Medellín, Federico Gutiérrez Zuluaga, became the Chairman of the Board of Directors and designated Claudia Jiménez Jaramillo, Javier Genaro Gutiérrez Pemberthy, Elena Rico Villegas and Carlos Raúl Yepes Jiménez as new members of the Board.
- The average number of years of permanence of the current members in the Board, as of December 31, 2016, was 3.7 years.
- Seven members (77% of the Board) are independent, which exceeds the 25% required in Article 44 of Law 964 of 2005 for issuers of securities, and the 55.6% defined in the internal regulations.
- Independent members of the Board receive this nature since the date they start their functions as members of the Board.
- None of the members of the Board holds an executive position in EPM or its affiliated companies.
- The deliberative quorum for the sessions of the Board of Directors is formed with the majority of its members. The decision-making quorum corresponds to the majority of those present at the respective session. Each member of the Board has a vote.

## Management of the Board of Directors

In 2016, EPM's Board of Directors focused its efforts on the analysis and decision-making on matters related to the company's sustainability. The following are some of its most remarkable actions:

- Redefinition of the BHAG and approval of the challenges and goals for 2016 - 2019.
- Analysis of the EPM Group's strategy and the evolution of the EPM's corporate purpose.
- Update of the EPM Group's risk map, review of the characterizations and assessment of the risks associated with strategic management.
- Approval of the Information Security and Cybersecurity policy.
- Follow-up and control to the development of the following megaprojects: Ituango Hydroelectric Project, Aguas Claras Waste Water Treatment Plant Park (in the municipality of Bello), Nueva Esperanza and Bello-Guayabal-Ancón.
- Constitution of the Project Monitoring Committee.
- Approval of the financial statements of EPM and the consolidated financial statements of the EPM Group, in accordance with the International Financial Reporting Standards (IFRS).
- Approval of the Infrastructure Investment Plan for 2017 - 2020.

Management of the information related to the Board is subject to the Information Management Policy approved by the Board of Directors on December 2, 2014, with the purpose of ensuring its integrity, reliability, availability, transparency and dissemination, in order to allow an adequate decision-making process that promotes corporate growth and sustainability. Additionally, it adheres to the currently applicable regulations and the best practices on corporate governance.

During 2016, the Board received comprehensive and sufficient information and analyses from the Management area; therefore, hiring external consultancy services was not necessary.

The Board held 15 sessions in 2016. The total average attendance was 93%, an average that exceeds the national standard.



Attendance of the Board of Directors	
Members	% Attendance
Alberto Arroyave Lema	100%
Andrés Bernal Correa	60%
Carlos Raúl Yepes Jiménez	86%
Claudia Jiménez Jaramillo	100%
Elena Rico Villegas	100%
Federico Gutiérrez Zuluaga	87%
Gabriel Ricardo Maya Maya	100%
Javier Genaro Gutiérrez Pemberthy	100%
Manuel Santiago Mejía Correa	100%

*The attendance average is calculated based on the 15 sessions held and the date on which each member started the exercise of their position.*

The Board of Directors defined in 2015 the guidelines for its conformation, including the profiles necessary to integrate it, with a multidisciplinary and independent character and with a global vision and a high sense of responsibility for the public service.

*(Annex 3. Matrix of Profiles of the Board of Directors.)*

### Management of the committees of the Board of Directors.

The Board of Directors Committees are bodies created to analyze in detail, prior to each session, the subjects that the Board will address, in order to ensure efficiency in the decision-making process. Such analysis is recorded in the minutes and recommendation reports of each Committee.

In line with the best Corporate Governance practices and the needs of the EPM Group, the Board of Directors created on May 24, 2016, the Project Monitoring Committee, whose main function is to follow up the projects prioritized by the Board.









*2016 Board of Directors of EPM (from left to right): Alberto Arroyave Lema, Claudia Jiménez Jaramillo, Elena Rico Villegas, Javier Genaro Gutiérrez Pemberthy, Andrés Bernal Correa, Orlando Uribe Villa (Secretary of Treasury of Medellín and permanent guest of the Board), Gabriel Ricardo Maya Maya, Federico Gutiérrez Zuluaga (Mayor of Medellín and Chairman of the Board), Manuel Santiago Mejía and Carlos Raúl Yepes Jiménez.*



## Structure, function and attendance of the Board committees:



### Composition:

-  Claudia Jiménez Jaramillo, Elena Rico Villegas, Javier Genaro Gutiérrez Pemberthy
-  Claudia Jiménez Jaramillo, Carlos Raúl Yepes Jiménez, Gabriel Ricardo Maya Maya
-  Alberto Arroyave Lema, Andrés Bernal Correa, Javier Genaro Gutiérrez Pemberthy
-  Elena Rico Villegas, Manuel Santiago Mejía Correa, Gabriel Ricardo Maya Maya



Attendance of the Board Committees			
Committee	Members	No. Sessions 2016	Average Attendance
Strategy and Investment	Elena Rico Villegas	14	100%
	Javier Genaro Gutiérrez Pemberthy		100%
	Manuel Santiago Mejía Correa		93%
Management	Claudia Jiménez Jaramillo	12	100%
	Carlos Raúl Yepes Jiménez		80%
	Gabriel Ricardo Maya Maya		92%
Audit	Andrés Bernal Correa	13	92%
	Javier Genaro Gutiérrez Pemberthy		100%
	Alberto Arroyave Lema		100%
Project Monitoring	Claudia Jiménez Jaramillo	7	86%
	Elena Rico Villegas		100%
			100%

*The attendance average is calculated based on the number of sessions held and the date on which each member started the exercise of their position.*

## Remuneration of the Board of Directors

Remuneration amounts for the members of the EPM's Board of Directors are set by the Mayor of Medellín through Decree 1165 of August 12, 2009. During 2016, the fees paid for attending each session of both the Board and the Committee was equivalent to three monthly minimum wages. The monthly minimum wage in 2016 was COP 689,454.



The members of the Board of Directors do not receive any kind of variable remuneration.

<b>Honorarios de la Junta Directiva 2016</b>			
<b>Members</b>	<b>Board (COP)</b>	<b>Committee (COP)</b>	<b>Total (COP)</b>
Alberto Arroyave Lema	31,025,430	26,888,706	57,914,136
Andrés Bernal Correa	18,615,258	24,820,344	43,435,602
Carlos Raúl Yepes Jiménez	12,410,172	8,273,448	20,683,620
Claudia Jiménez Jaramillo	31,025,430	37,230,516	68,255,946
Elena Rico Villegas	31,025,430	37,230,516	68,255,946
Federico Gutiérrez Zuluaga	0	0	0
Gabriel Ricardo Maya Maya	31,025,430	37,230,516	68,255,946
Javier Genaro Gutiérrez Pemberthy	26,888,706	47,572,326	74,461,032
Manuel Santiago Mejía Correa	31,025,430	28,957,068	59,982,498
<b>Total</b>	<b>213,041,286</b>	<b>248,203,440</b>	<b>461,244,726</b>

## Assessment of the Board of Directors

The assessment of the Board of Directors is a comprehensive and periodic exercise of the Board of Directors and the Senior Management of EPM that allows identifying the quality and efficiency of the deliberative body's performance and its improvement opportunities.

Based on the assessments of every term, a strengthening plan is designed aimed at improving the performance of the Board and its Committees, as well as its relationship with the Senior Management. Additionally, the Board of Directors Induction Plan was developed during 2016.

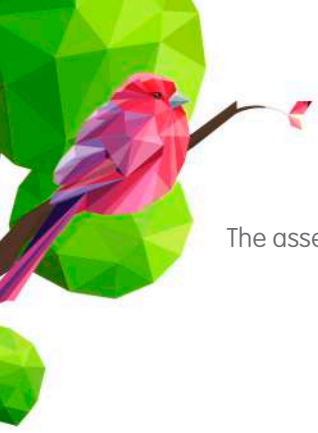
*(Annex 4. Context on the induction program of the Board of Directors.)*

Activities carried out as part of the induction and strengthening plan of the Board during 2016 focused mainly on:

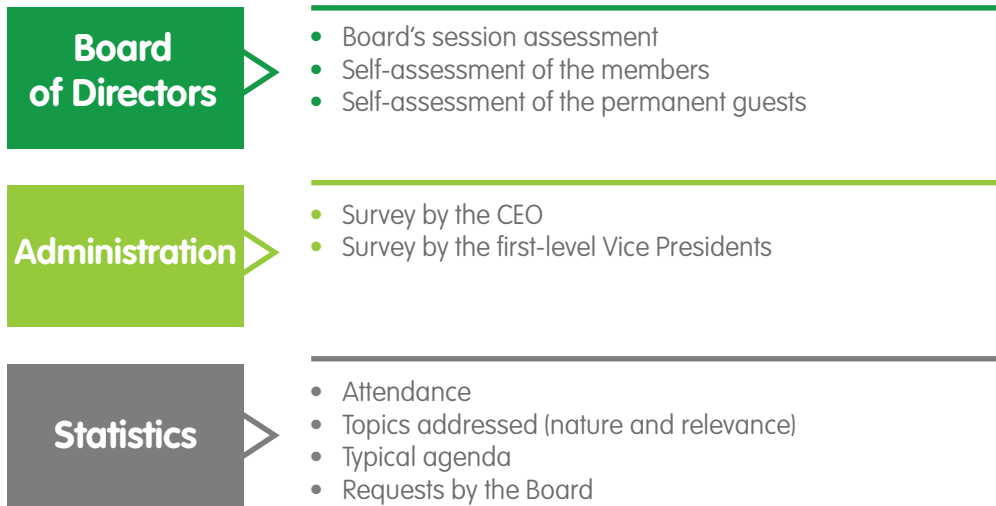
- Strengthening the context of the new Board members regarding the work of EPM, the business cycles and the main investments of the Group; as well as generating spaces of conversation between the Board and the Administration, in order to align the expectations in the main topics of management of the company.
- Reducing the gaps found in the 2015 assessment exercise.

In addition, some members of the Board participated in different events that include the 18th Andesco Congress, the First Forum on Corporate Governance: "Corporate Governance as a Tool for Business Sustainability," organized by the Chamber of Commerce of Medellín; as well as the conferences: "EPM's Communications Strategy" and "Risks, Opportunities and Strategies of the Group for the Post-Conflict Scenario."





The assessment of the Board of Directors of EPM for 2016 used the following sources of information:



The analysis focused on six areas:

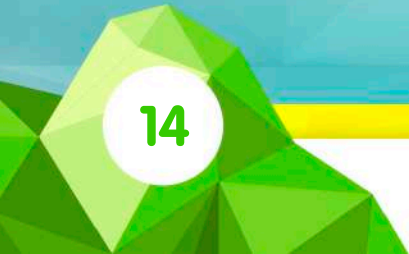
### Assessed Areas and Results

Assessed Areas and Results					
Areas					
Individual performance of the members of the Board	Performance and efficiency of the deliberative body	Level of discussion and depth of the addressed topics	Role of both the Chairman and the Secretary of the Board	Performance of the Board's Committees	Performance of the Senior Management regarding the Board of Directors
Results					
4.57	4.4	4.3	4.6	4.7	4.5

The results show a high level of commitment and responsibility of the Board to the organization, as well as interest in strengthening the detailed and permanent monitoring of the strategic projects, which is why the Project Monitoring Committee was created.

**Main Strengths:**

- High level of commitment of the Board members to the company's matters.
- High level of independence of the Board with respect to the Administration.
- High regulatory compliance with the statutory and regulatory functions of the Board of Directors.



- High standards of Corporate Governance.
- Considerable level of attendance (93%) of the members to the Board sessions.
- High level of value creation of the Board's committees regarding the deep deliberation of the most critical topics of the company.
- High appreciation of the work of both the Chairman and the Secretary of the Board by the other members.

Finally, as part of the 2016 assessment exercise, the Board's Management Committee, with the purpose of improving efficiency of the deliberative body, will define the Board of Directors' strengthening plan for 2017.

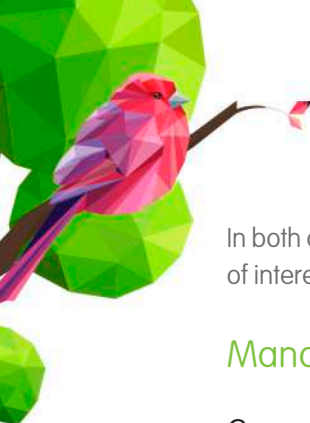
## Conflicts of interest

In the rules of procedure of the Board of Directors and its Committees, EPM defines the procedure that the members of the Board and its Committees should follow in case of identifying in the agenda a particular topic that could generate a conflict of interest. Such procedure consists in temporarily withdrawing from the Board or Committee while the topic is addressed. Additionally, the rules of procedure indicate that the doubt about the existence of a conflict of interest does not exempt the member from refraining from participating in the corresponding decision. Moreover, when the conflict is permanent and impedes the member from performing their functions with independence, they shall resign.

The Board of Directors issued the ***"Manual for dealing with conflicts of interest and managing the Group's decisions of interest"*** by means of Decree No. 390 of November 24, 2015, which constitutes the annex No. 8 of the Corporate Governance Code. The Manual contains the procedure that should be followed when, in the development of the relations between the EPM Group's parent company and the subordinate companies, there is a situation of disagreement with the Group's interest. This procedure is in line with the Governance Agreement signed by the companies of the EPM Group, the shareholders' agreements, and the governance model defined for each subordinate company. Furthermore, it points out the actions that must be taken in every case by the Board of Directors of the subordinate company, by the Management Committee of the parent company, and by the Board of Directors of the latter and its corresponding committees.

The following conflicts of interest occurred in 2016:

- At the request of Mr. Andrés Bernal Correa, the Board of Directors accepted the existence of a conflict of interest regarding the possibility of a complaint to the insurance company for the damage occurred at the Guatapé hydroelectric power station.
- The Board also accepted the existence of a conflict of interest exposed by Mr. Gabriel Ricardo Maya Maya, who owns a plot located in the lands required for the development of the Cuencas La Iguaná - La García project.



In both cases, the Board followed the procedure described in the internal standards for the management of conflicts of interest.

## Management of the EPM's Administration

### Composition



**Administration of EPM (from left to right):** Maritza Alzate Buitrago, Secretary General; Ana María González Gómez, Vice President of Corporate Communications and Relationships (I); Jorge Londoño De la Cuesta, CEO; Alejandra Vanegas Valencia, Vice President of Shared Services and Supplies (I); Jorge Andrés Tabares Ángel, Executive Vice President of Corporate Finance, Risk Management and Investment; Ricardo José Arango Restrepo, Vice President of Human and Organizational Development; Wilson Chinchilla Herrera, Executive Vice President of Projects and Engineering; Gabriel Jaime Betancourt Mesa, Executive Vice President of Strategy and Growth; Jonh Alberto Maya Salazar, Executive Vice President of Business Management; Hernán Darío Vergara Castro, Corporate Auditor.

EPM's Administration is composed of nine vice presidents who report directly to the CEO. They perform functions that affect the Group and, in general, they are responsible for directing, planning and verifying the fulfillment of the objectives, plans and goals of EPM and the companies of the Group.

During 2016, EPM's Administration experienced the following changes:

1. Appointment of Jorge Londoño De la Cuesta as CEO by the Mayor of Medellín.
2. Appointment of John Alberto Maya Salazar and Ricardo José Arango Restrepo as Executive Vice President of Business Management and Vice President of Human and Organizational Development, respectively



The high levels of experience and technical knowledge made it easier for the Senior Management to have an efficient performance and achieve the objectives set for 2016.

## Evaluation of the CEO

The Board of Directors of EPM performs a systemic process that shows the achievements and challenges of the CEO's performance in terms of results and methods for obtaining them (the what and the how).



## Remuneration of the EPM's Administration

Remuneration of EPM's executives is based on a fixed payment that is not related to their performance. In general, compensation of EPM's employees is defined in the previously established conventional agreements.

In 2016, the salary increase for executives both public servants and official employees, was 8.12% (CPI: 6.77% plus 1.35 points). These increases do not depend on their performance.



Salaries paid in 2016 are detailed below:

Remuneration of the EPM's Administration			
Position	Monthly base salary	Payments earned as salary in 2016	Seniority
Corporate Auditing	\$ 23,420,604.97	\$ 370,801,325.20	13
CEO	\$ 31,326,829.79	\$ 438,412,023.96	1
Secretary General	\$ 23,420,604.97	\$ 375,572,351.95	5
VP of Water and Sanitation	\$ 23,420,604.97	\$ 371,540,196.33	23
VP Commercial	\$ 23,420,604.97	\$ 263,559,166.58	17
VP of Corporate Communications and Relationships *	\$ 21,395,386.41	\$ 325,537,416.78	14
VP of Growth	\$ 21,395,386.41	\$ 351,442,247.04	26
VP of Human and Organizational Development	\$ 23,420,604.97	\$ 325,747,348.51	8
Executive VP of Strategy and Growth	\$ 28,064,253.85	\$ 438,537,040.85	32
Executive VP of Corporate Finance, Risk Management and Investment	\$ 28,064,253.85	\$ 464,949,176.76	2
Executive VP of Business Management	\$ 28,064,253.85	\$ 278,431,207.26	32
Executive VP of Projects and Engineering	\$ 28,064,253.85	\$ 434,434,318.17	21
VP of Corporate Strategy	\$ 21,395,386.41	\$ 352,828,838.17	21
VP of Gas	\$ 21,395,386.41	\$ 363,646,261.76	27
VP of Power Generation	\$ 23,420,604.97	\$ 389,298,501.66	19
VP of Power Generation Projects	\$ 21,395,386.41	\$ 378,271,471.35	32
VP of Shared Services and Supplies *	\$ 23,420,604.97	\$ 236,812,083.55	3
VP of Power Transmission and Distribution	\$ 23,420,604.97	\$ 404,622,550.37	32

*The average seniority at the executive level in EPM is 18.22 years.*

*\* Positions through interim arrangement*

## Management Support Committees

EPM's Governance Committees were established as an integration mechanism for deciding, deliberating, building and directing the unity of purpose. They are classified by levels. CEO's competence committees are those at the strategic level: Directorate Committee, Planning Committee and Contracting Committee.

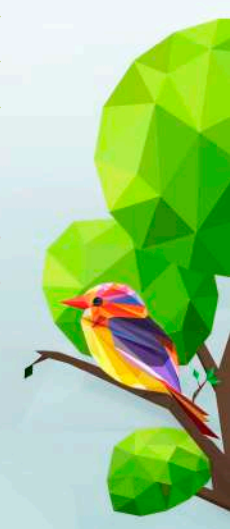
Through Decree 2135 of 2016, governance committees were updated. However, strategic committees were not modified.

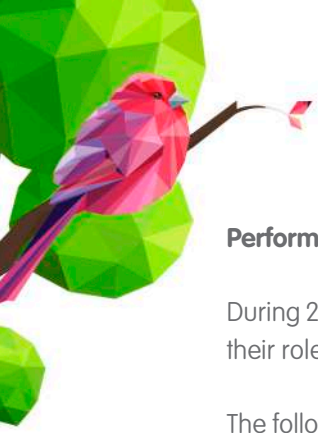


Committees are described below:

	Dirección	Planning	Contracting
<b>Mission</b>	To ensure the unity of purpose of the EPM Group and a decision-making process aimed at fulfilling the strategy.	To design, adjust and monitor the EPM Group's strategy, and provide the necessary mechanisms for its compliance, through the coordination of all the support departments.	To analyze and make suggestions on procurement matters related to the process of acquiring goods and services.
<b>Topics</b>	<ul style="list-style-type: none"> <li>✓ EPM Group's policies</li> <li>✓ Investment in acquisitions or new businesses</li> <li>✓ Prioritization of projects</li> <li>✓ Corporate Governance</li> <li>✓ Business projects monitoring</li> <li>✓ Innovation minutes</li> <li>✓ Business management</li> <li>✓ Financial management</li> <li>✓ Critical topics of the business operation</li> <li>✓ Critical topics of the financial operation</li> <li>✓ Delegations</li> </ul>	<ul style="list-style-type: none"> <li>✓ EPM Group's corporate strategy</li> <li>✓ EPM Group's integrated planning</li> <li>✓ Budget</li> <li>✓ Balanced Scorecard</li> <li>✓ Approval and monitoring of the SLA</li> <li>✓ Inter-group transactions</li> <li>✓ Monitoring of programs, portfolio and business development projects</li> <li>✓ Monitoring of strategic risks and comprehensive risk management</li> <li>✓ Internal Audit and external insurance providers</li> <li>✓ Internal control policies</li> <li>✓ Stakeholders engagement</li> <li>✓ Definition of the Board's agenda</li> <li>✓ Organizational structure</li> <li>✓ Management of enablers (Management systems, human resources and IT)</li> </ul>	

**Conformación de los comités estratégicos:**





## Performance of the Committees

During 2016, strategic committees held their corresponding sessions in line with their regulations, seeking to reaffirm their role as a decision-making environment based on a reasoned consensus among their members.

The following are the main statistics related to the performance of the Directorate and Planning

	Directorate Committee	Planning Committee
# Sessions	40	41
Average attendance	95%	96%
Average topics related to the Committee	84%	87%
Average approving topics	84%	87%

During 2016, the Contracting Committee held 51 meetings aimed at analyzing contractual matters related to the procurement of goods and services of the CEO's competence.

## Evaluation of the Committees

Strategic committees are periodically evaluated for the purpose of monitoring their performance and identifying improvement opportunities that would contribute to strategic management. To this end, the organization conducts a survey on the perception of the members of the committees and consolidates the data extracted from the minutes of each meeting.

Monitoring and evaluation of the strategic committees during 2016 suggested to unify, in a single committee, the participation of the executives at the first level of report to the CEO, in such a way as to ensure integrality of decisions. This update will be implemented from January 2017.



# Compliance and Progress on Corporate Governance in the EPM Group's Companies

EPM Group's shareholding structure is shown in detail on the Annex 5 of this report: EPM's shareholding structure in affiliated and subsidiary companies.

## Boards of Directors of the Group's Companies in Colombia

Composition of the boards of directors of the national affiliates is in line with the engagement model established in the Group. In this way, the amount of internal members is dominant, as shown in the following tables, which also contain attendance percentages in 2016, evidencing a high commitment by the main members with average attendances above 75%.

Boards of Directors of Colombian Energy Affiliates					
Nature	Names	EDEQ	CHEC	ESSA	CENS
Sessions held during the term		13	12	12	11
Internal	Juan Carlos Duque Ossa	88%	75%	67%	88%
	Juan Rafael López Foronda	100%	88%		
	Carmen Helena Marín Ospina	88%	75%		
	Mauricio Castaño Vargas	88%			
	Alberto Mejía Reyes		88%		
	Inés Helena Vélez Pérez			92%	100%
	John Jairo Celis Restrepo			67%	
	Jaime Alberto Villa Valencia				63%
External	Gilberto Saffón Arango		100%		
Partners	Ricardo Gómez Giraldo		88%		
	José Octavio Cardona León		50%		
	Didier Alberto Tavera Amado			25%	
	Mauricio Mejía Abello			67%	
	William Villamizar Laguado				25%

Convenciones	
	Representation as main member in green
	Representation as substitute member in gray





	EDEQ	CHEC	ESSA	CENS
Average Attendance of main members	94%	88%	63%	63%
Average Attendance of substitute members	88%	71%	67%	76%

Boards of Directors of Colombian Water and Sanitation Affiliates						
Nature	Names	Aguas de Oriente	Aguas Regionales	Aguas de Malambo	Aguas Nacionales	Emvarias
Sessions held during the term		8	13	12	11	11
Internal	Jorge Londoño De La Cuesta					100%
	John Alberto Maya Salazar					100%
	Santiago Ochoa Posada	86%	77%	67%		100%
	Wilson Chinchilla Herrera				73%	
	Santiago Díaz Gutiérrez	71%	85%	67%		
	Jorge William Ramírez Tirado		85%	75%		
	Marta Lucía Londoño Toro	71%	38%		45%	
	Juan Carlos González Ramírez	21%	8%	67%		
	Edgardo Gerardo Martínez Echeverri	14%	15%			
	Carlos Israel Orduz Aguilar		23%	25%		
	Juan Carlos Castro Padilla				82%	100%
	Adriana María Londoño Carvajal				64%	
External	Luis Fernando Arango Arango		85%			
	Juan Camilo Restrepo Gómez					100%
Partners	Juan Camilo Botero Rendón	86%				
	Carlos Mario Salazar Bermúdez	86%				
	Luz Edilma Aguirre Londoño	29%				
	Jaime Arturo López	57%				
	James Gallego		8%			
	Jairo Enrique Ortíz Palacios		0%			
	Efraín Bello Camargo			33%		
	Dairo Patermina			42%		

Legend	
	Representation as main member in green
	Representation as substitute member in gray



	Aguas de Oriente	Aguas Regionales	Aguas de Malambo	Aguas Nacionales	Emvarias
<b>Average Attendance of main members</b>	<b>80%</b>	<b>56%</b>	<b>60%</b>	<b>77%</b>	<b>100%</b>
Average Attendance of substitute members	30%	21%	44%	55%	100%

## Boards of Directors of the companies of the Group in Latin America

At the international affiliates of the EPM Group, there is a greater number of external members who contribute strategic and independent vision to the boards of directors and who, in addition, know the market and the territories deeply, which generates value for all stakeholders. The tables below show the composition of the international boards and the percentages of attendance to the sessions, with a general average over 85%.

Boards of directors of international energy affiliates						
Role	Names	Delsur	Egsa- Comesa- Trec	ENSA	HET (Bonyic)	EPM Chile S.A.
Sessions held during the year		11	8	6	9	7
Internal	Inés Helena Vélez Pérez	50%	75%	100%		
	Diego Humberto Montoya Mesa	100%				
	José Enrique Salazar Velásquez	64%	100%			
	Adriana Maria Londoño Carvajal					
	Carlos Mario Jaramillo Duque					
	Juan Rafael López Foronda					
	Juan Carlos Duque					
	John Alberto Maya Salazar			50%		100%
	Carlos Alberto Solano Bonnett				100%	100%
	Luis Javier Vélez Duque				100%	
	Esteban Barrientos Moreno				50%	
	Luz Marina Escobar Arango				63%	
	Alberto Mejía Reyes				50%	
	Carlos Mario Tobón					100%
	Santiago Villegas Yepes					
External	Ramiro Valencia Cossio		100%			
	Raúl Edmundo Archila S		80%			
	Luís Guillermo Suárez			100%		
	Luis Enrique Córdova	82%				
Partners	José Roberto Quijano			50%		
	José Agustín Moscoso			83%		

Conventions	
	Representation as main member
	Representation as substitute member



	Delsur	Eegsa - Comegsa - Trelec	ENSA	HET Bonyic	EPM Chile S.A.
Average attendance of main members	66%	92%	77%	83%	100%
Average attendance of substitute members	82%			57%	

Boards of directors of international water and sanitation affiliates				
Role	Names	Ticsa	Aguas de Antofagasta	
Sessions held during the year		13	12	
Internal	Jorge Londoño De La Cuesta		92%	
	John Alberto Maya Salazar	85%	67%	
	Wilson Chinchilla Herrera	85%		
	Santiago Ochoa Posada	92%		
	Eduardo Esteban Cadavid Restrepo		100%	
External	Gilberto Escobero	92%		
	Luis Guillermo Suárez		92%	
	Álvaro García Hurtado		100%	
Partners	José Alfredo Primelles Willianson	100%		

Conventions	
	Representation as main member
	Representation as substitute member

	Ticsa	Aguas de Antofagasta
Average attendance of main members	91%	90%

## Remuneration of the boards of directors of the companies of the Group

At the EPM Group, the levels of remuneration were defined from studies that consider the main trends of the market in terms of compensation of boards. Additionally, aspects such as geography, size of the company and degree of intervention of EPM were taken into account. It is also important to highlight that, at the EPM Group, the attendance not only to the sessions of the board are registered, but also to the committees in the companies that have these spaces. The following tables show in detail the remunerations of the national and international companies of the Group during 2016.



Remuneration of the boards of directors of the Colombian affiliates		
Affiliate	Remuneration Board of Directors Session	COP
EDEQ	2 SMLMV	\$ 1,378,908
CHEC	2 SMLMV	\$ 1,378,908
ESSA	2 SMLMV (sesión no presencial)	\$ 1,378,908
	1 SMLMV (sesión no presencial)	\$ 689.454
CENS	2 SMLMV	\$ 1,378,908
Aguas de Oriente	1 SMLMV	\$ 689.454
Aguas Regionales	1.5 SMLMV	\$ 1,034,181
Aguas de Malambo	1 SMLMV	\$ 689.454
Aguas Nacionales	1.5 SMLMV	\$ 1,034,181
Emvarias	1.5 SMLMV	\$ 1,034,181

Remuneration of the boards of directors of the international affiliates	
Affiliate	Remuneration Board of Directors Session
Delsur	1,600 USD
Eegsa - Comegsa - Trelec	2,000 USD
ENSA	2,000 USD
HET Bonyic	1,000 USD
EPM Chile S.A.	2,000 USD
Ticsa	1,600 USD
Adasa	55 UF*

\* 1UF = 26,436 Chilean Pesos





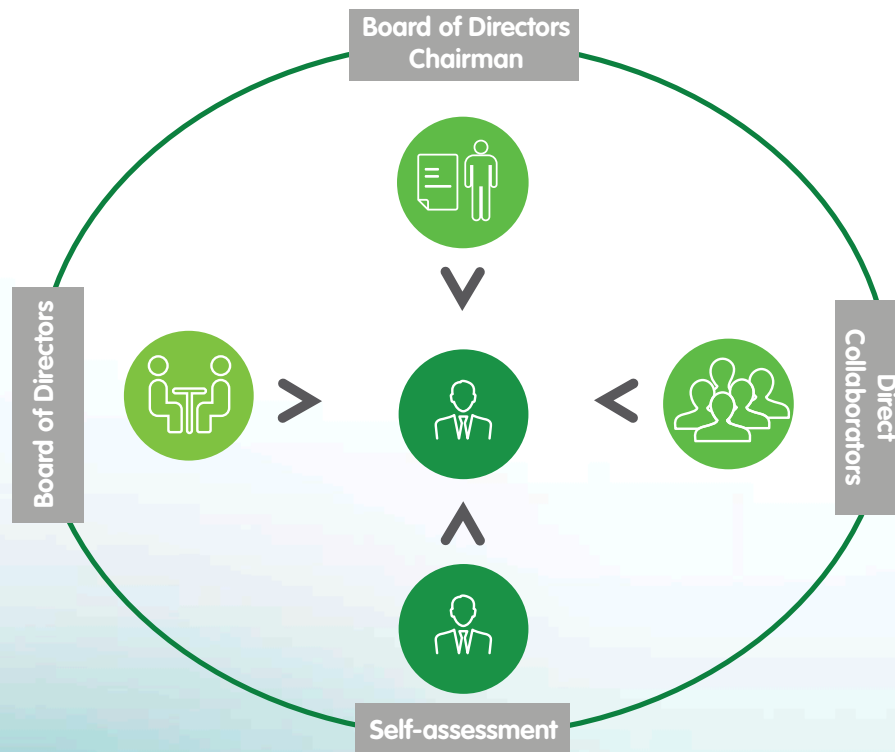
### Assessment of EPM Group Managers

For EPM Group, it is important, not only to measure the quantitative results of the managers' performance (the what), but also the method to obtain such results (the how). That is the reason why, during the annual evaluation of all the managers in the companies that make up the Group, how the results of the Balanced Scorecard were obtained is evaluated as well as the coherence of the management style of each manager with the behaviors and actions that EPM Group has determined for its leaders. All of this results in the indicator called Management Style, within the Balanced Scorecard.

For 2016, the Management Style indicator was measured based on a multi-rater tool which enabled the assessment of the descriptors associated to the 9 organizational actions defined for EPM Group. The actions are behaviors that show the presence of cultural features of EPM Group, described to enable its strategic planning.

#### Multi-rater tool

To assess the descriptors associated to the 9 organizational actions defined for EPM Group.



## Results

The assessment of the Management Style indicator is made during the first meeting of the Board of Directors of that year. Using a methodology based on discussion, each Board of Directors concludes if the manager:

- Does not comply.
- Complies with the actions.
- Shows superior actions that allow him or her to be a role-model leader in the Group.

This evaluation is part of the CEO's goal chart, CEO Leadership indicator and, in the cases the company has variable pay, it makes a difference to the annual bonus.

## Group's executives meeting



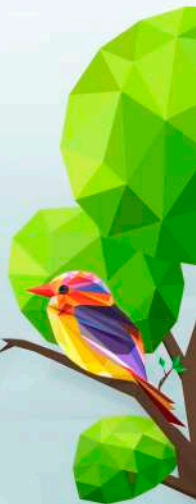
*EPM Group's executives team  
5th and 6th Group's executives meeting 2016*

Since 2014, EPM Group implemented the EPMGroup's Executives Meetings. They are biannual spaces for management alignment in which EPM's Senior Executives and the managers of each one of the national and international affiliate companies get together in order to create a strategic agenda framed by two cross-cutting objectives:

1. To create a shared vision of the Group.
2. To empower the companies' leaders as Group leaders.

During the two meetings of 2016, the EPM Group's leaders strengthened their understanding of and alignment with three main management points defined for this four-year term: closeness, growth and consolidation.

During the fifth meeting on July, the executive team had the opportunity to live an experience from the children's point of view. The messages focused on the importance of simplicity and flexibility, as well as on the ability to keep relationships of trust with our stakeholders.





As for the sixth meeting held on December, the conversation focused on building the actions to make progress in the consolidation aspect. Being leaders willing to serve, so that relationships and interactions improve and objectives proposed as a Group are achieved.

## Governance mechanisms of EPM Group- Governance Agreement

Since 2013, the EPM Group companies signed a governance agreement to establish the terms of engagement among them. This agreement favors the engagement to strengthen the best practices in the Group and capture synergies among the companies, applying corporate governance international recommendations and adhering to market prices.

The contractual instruments (agreements) that formalize this engagement are presented below, as well as the main figures of the agreements signed of the governance agreement among the companies that make up the EPM Group:

- **Interaction agreements**  
Optimization of **processes**, adoption of integrated **procedures**, best practices and, in general, new ways of doing things with a **business group logic**.
- **Transaction agreements**  
**Provision of goods and services** among the companies of the Group to create synergies. There is a **cost** for the contractor and a **payment** of the contracting party, adjusted to market prices.
- **Intervention agreements**  
**Implementation of guidelines** of the core that apply to **strategic activities** to comply with the unity of purpose of the Group, and the global **business case is positive**. **Exceptional model**.

### Main figures

During the 2014-2016 period, the EPM Group companies signed 352 agreements regarding the governance agreement, with a greater amount of transaction agreements (88%).

Among the main services provided among the Group companies, those related to processes stand out: Commercial cycle, information technology, finance and administrative management services.



In 2016, there was an increase of 355% in the transaction value, boosted by the adoption of best practices in the industry of water with projects for waste water treatment in the department of Antioquia.



As shown in the following chart, the amount of transaction agreements decreases by 35%, which shows the optimization in the process of signing the agreements, due to the integration of more services in fewer documents. This proves that the EPM Group processes have been in process of adjustment and standardization.

Interaction agreements associated with the Group processes evolve in the long term, hence the increase in the number of signed agreements is not constant, since the general processes were agreed at the beginning of this engagement and, currently, the focus is placed on standardizing specific procedures.

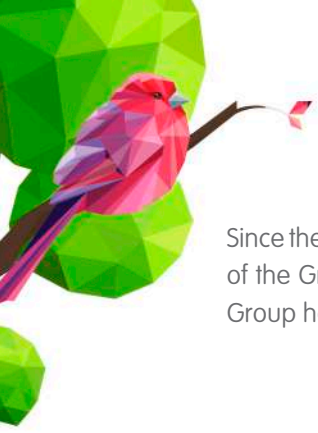
Finally, intervention minutes referring to random situations behave as expected since they were enabled as an engagement option among the Group companies.

#### Amount of agreements of the governance agreement per year



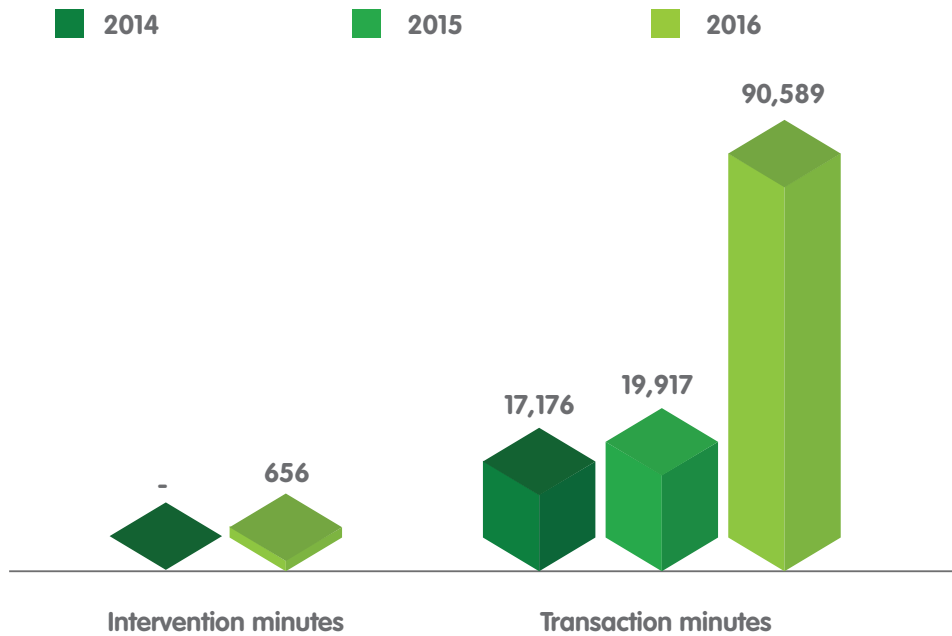
Number of agreements of the governance agreement signed between 2014 and 2016





Since the governance agreement was entered into and through transaction agreements, the Colombian companies of the Group have provided services to EPM for the optimization of competitive advantages. Thanks to that, EPM Group has strengthened its strategic capabilities for the benefit of the territories where it operates.

### Value of agreements of the governance agreement per year Figures in millions of Colombian pesos



*Total value of agreements 2014 & 2016*

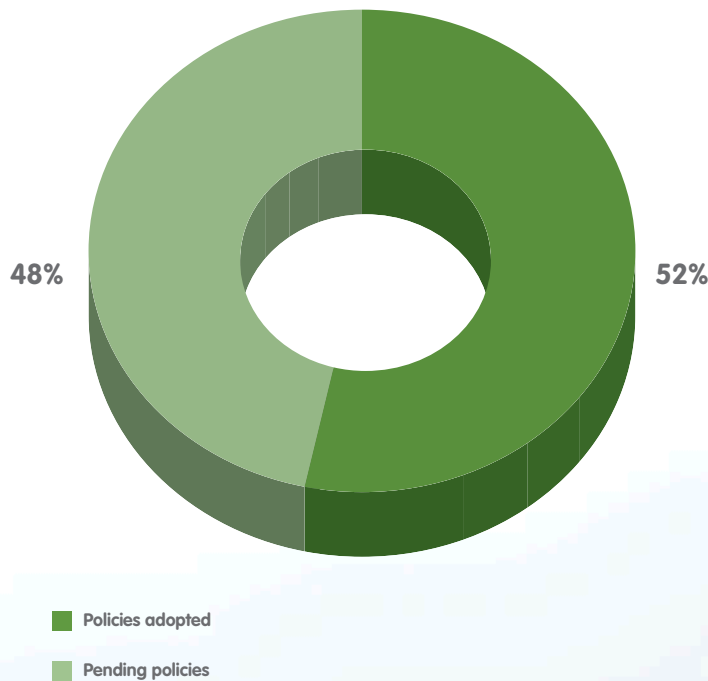
The different relationships among the Group companies, formalized through the agreements of the governance agreement, contribute to strengthening the unity of purpose and direction, thus establishing conditions to better use the advantages and to transfer knowledge or expertise. This is done by adopting international corporate governance practices.



## EPM Group Policies

Policies are documented statements that direct management in specific aspects, which help meet the strategy and achieve goals, functions and duties. Colombian companies of the Group have made progress in the adoption of 20 policies defined by the EPM Group:

Consolidated percentage of progress in the adoption of policies per national affiliates to December 31st, 2016



Policies pending approval and implementation are part of a plan in accordance with the nature and features of each affiliate company. 100% of the Colombian affiliates of the Group adopted the policies of internal control and engagement with suppliers and contractors.

## Operations with engaged parties

During 2016, operations with engaged parties inside the EPM Group were reviewed. It was identified that, in this regard, the Group implements good practices defined in the governance agreement among the constituent companies, presents the transactions in the notes to financial statements in accordance with the international standards and, every six months, submits a report to the Board of Directors of EPM. In addition, progress was made in the design of a policy of these operations in alignment with the recommendations of the Financial Superintendency of Colombia.



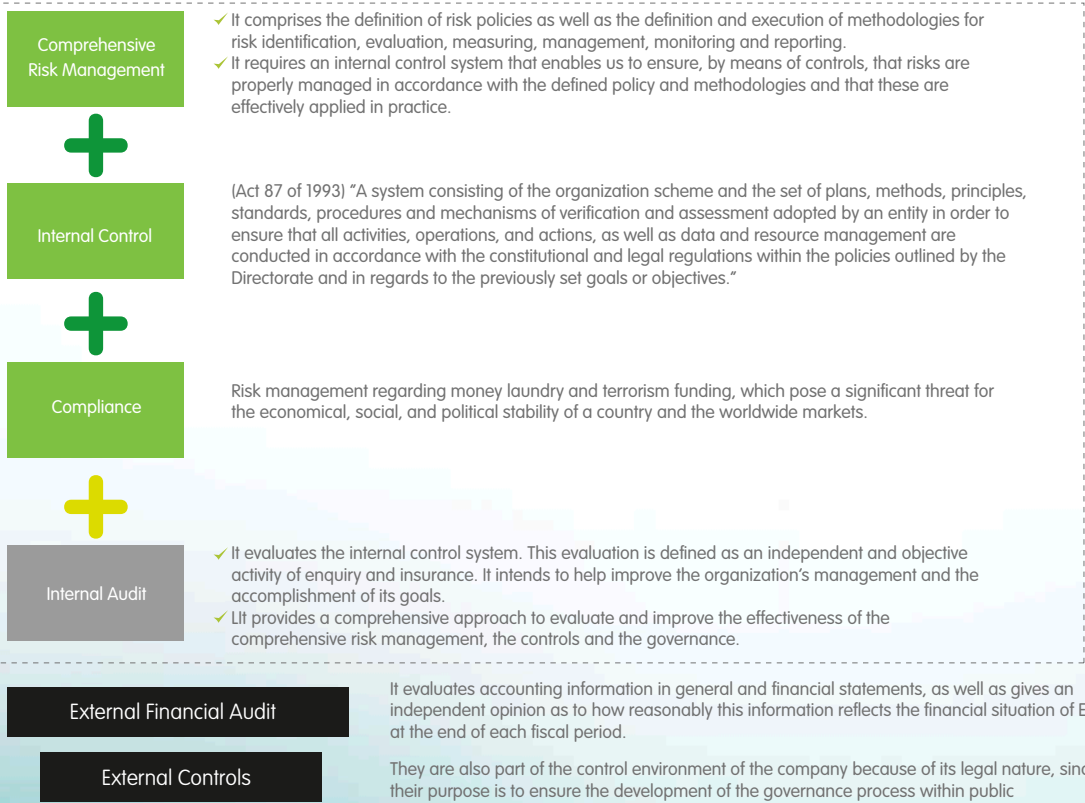
# Accountability

## Definitions of EPM Group control environment

Its legal nature and its 100%-public capital, the economic sector in which it operates and its condition as an issuer of securities are reasons why EPM is a company broadly controlled by external entities and internal control bodies regulated by the law, as well as those that have been voluntarily adopted and have been implemented in the companies of the Group.

Control environment is a comprehensive concept grouping every issue related to risk management, internal control system, compliance and both internal and external verification. It allows the company to have policies, processes, procedures, activities and information that ensure that both purpose and direction stay aligned and that they comply with the internal and external legal framework that regulates us; all of this intending to achieve the objectives and the BHAG of the Group. It also allows cohesion between the companies that are part of it.

### Control Environment



*Details of some concepts associated with the control overview.*



## Comprehensive Risk Management

Defined by the process and policy of Comprehensive Risk Management, applied in every company of the EPM Group, the organization achieved a maturity level concerning this management.

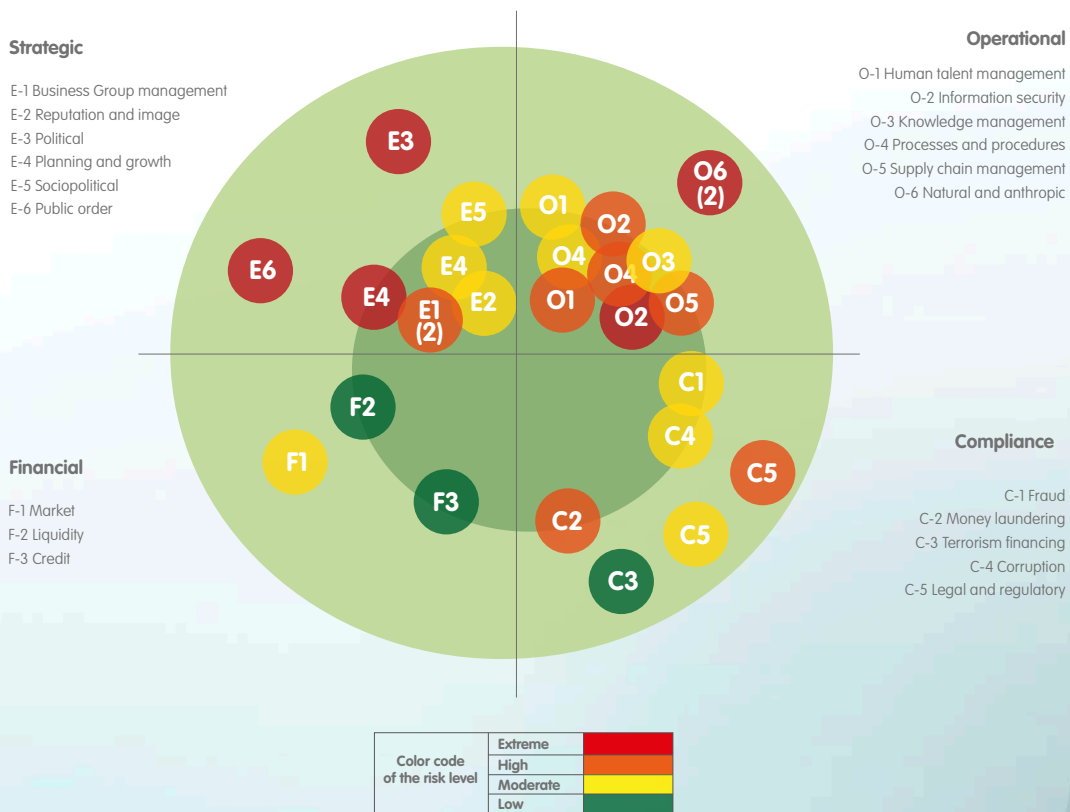
Achievements:

- ✓ Encourage decision-making based on risks.
- ✓ Empower more the different levels.
- ✓ Increase the levels of culture and awareness regarding risk management in the different organizations.

In 2016, the EPM Group risk map was updated through meetings held with the leaders of each risk to review the characterizations and assess the risks associated with the strategic planning. This action was validated by the CEO, the Planning Committee and the Audit Committee.

Six risks were also prioritized to be monitored and supported by the EPM's Board of Directors.

### Risk Classification – Risk levels at EPM Group







## Actions to mitigate risks

Each risk identified in the EPM Group risk matrix has someone in charge which is the Vice President of the Group, responsible for defining the improvement actions to mitigate the risk and engage the relevant stakeholders in the risk management. By the end of 2016, improvement actions to deal with the risks of the Group were proposed. Each action was documented in detail with a clear expected result, start and end dates, leader in charge and person responsible for implementation.

In the risk management plan, different actions have been identified, among others:

- ✓ Implement the Infrastructure Project Management model.
- ✓ Implement the Asset Management System in the Infrastructure Project Management.
- ✓ Evaluate the offer/demand/infrastructure of acquisition 2016-2050.
- ✓ Promote the partnership with the CuencaVerde Corporation.
- ✓ Manage the structure of the local and regional development plans and the LUPs (Land Use Plans).
- ✓ Establish mechanisms to strengthen the relationships with the Medellín Council.
- ✓ Manage safety comprehensively.
- ✓ Encourage the engagement with law enforcement.

## Occurrences in 2016

During 2016, some risks that affected the policies taken by EPM and through which the risks of the company are transferred to the insurance market became a reality:

1. **Property damage policy:** some events that affected the infrastructure occurred and materialized in equipment breakdown, mainly transformers. Likewise, a fire occurred in Guatapé's cabling system which caused its total loss and left the plant out of order during 4 months.
2. **Civil responsibility policy:** several lawsuits and out-of-court complaints were filed against the company for damages caused to third parties when developing its corporate purpose.
3. **Policy for directors and managers:** some research was conducted by the control bodies having involved the recognition of defense expenditure.
4. **Compliance policy:** breaches of contract by contractor companies occurred and were reported to insurers according to the required contractual guarantees, and the corresponding compensations were paid.

In financial terms, EPM received a compensation of COP 418,999,837,713 and USD 16,776,341 on account of consequential damages and loss of profits due to the accident in the Guatapé plant.

EPM received compensations of around COP 3,300,000,000 on account of other damage to other assets and compliance and management complaints.



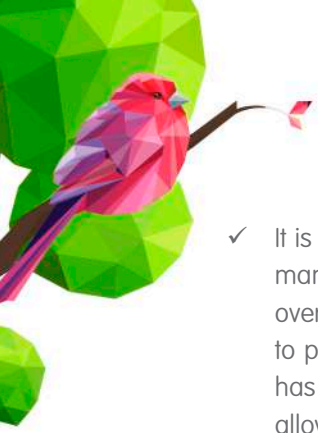
## Achievements of the 2016 comprehensive risk management

The risk map of the EPM Group is the main input for updating the maps of the management levels defined in the comprehensive risk management model, such as:

- **Risk Map of Business Units:** Generation, Transmission and Distribution, Gas, Water Supply, Waste Water Management and Solid Waste Management.
- **Risk Map of National Companies:** CENS, ESSA, CHEC, EDEQ, Aguas de Malambo, Aguas de Oriente, Aguas Regionales, Aguas Nacionales and Emvarias.
- **Risk Map of International Companies:** Los Cururos Wind Farm, Adasa, HET, Ticsa and Delsur. The first version of the risk map of ENSA, EPM Group's affiliated company located in Panama, was developed.

Also, the following results were achieved:

- ✓ Risk maps of the documented and prioritized processes were updated in the Group companies.
- ✓ Risk analyses were conducted in 74 projects.
- ✓ Risk analyses were conducted in 87 contracts over 5,000 current legal monthly minimum wages in EPM.
- ✓ 54 specialty risk analyses were conducted.
- ✓ Cross-section risk analyses concerning staff shortage, company unity, outsourcing and occupational health and safety were conducted.
- ✓ A procedure to manage exchange risk was prepared by the contracting area, and it was applied in tenders published during 2016.
- ✓ Documentation of the process was made equivalent to the new process model – ESSA, CENS and Emvarias.
- ✓ The Comprehensive Risk Management methodology was updated, the methodology of correlations was documented and the risk library was surveyed.
- ✓ The business continuity plan was implemented analyzing the impact of the transmission and distribution (EPM – EDEQ), water supply and waste water business units; the protocol of assistance to events and crisis (Padec) was updated; and executives received training.
- ✓ The program of insurances and brokerages for all the national affiliated companies was strengthened, keeping the technical and service conditions optimized, with savings of COP 709.9 million and USD 0.87 million.
- ✓ The Multilatino policy of CERs was structured, including affiliates from Chile, Panama and Mexico; progress was made in the consolidation of the program of Multilatino insurances for the operation's most relevant policies.
- ✓ A special procedure to acquire goods and services, buy insurances and develop the contracting process this year was structured; the contracting processes became time-efficient and the procedure and support documents of the contracting process were adjusted to the special features of the insurance contracting process.
- ✓ Maxseguros was granted, by AM Best, a higher credit quality, raising it to "A-", which shows reliability and assurance in its actions.



- ✓ It is important to highlight that Maxseguros, as a specific-purpose means and a risk management tool, has managed to obtain significant benefits reducing insurance costs and generating value for the EPM Group over the last three years. In the same way, by participating in one of the reinsurance layers of the damage to property and loss of profit policy, in which it assumes a risk percentage in such placement, Maxseguros has managed to prove the total reliability of the EPM Group regarding its comprehensive risk management, allowing us to move closer to the international reinsurers.
- ✓ Maxseguros managed to become another reinsurer, which allows it to receive first-hand information.

### **Corporate Audit Management**

The corporate audit activity aims to improve and protect the organization value, providing assurance, advice and analysis based on risks.

Pursuant to the purpose during 2016, the risk-based audit plan was executed, and it was approved by the Board of Directors, covering thus the processes with the highest risk level in accordance with the defined prioritization criteria.

227 assurance and advice audit activities in EPM related to business and support processes were executed. As a result of these audit activities, improvement opportunities were identified. These improvement opportunities are managed by the corresponding responsible people and departments by means of the formulation of improvement plans. 98 improvement plans were formulated during 2016 in EPM as a result of the audit activities carried out.



*XXVII Meeting of EPM Group's Internal Auditors.*

The following activities were performed within the framework of the Corporate Audit Project, whose objective is to standardize the Group's internal audit activities:



- ✓ Implementation of evaluation and management tools that are transversal to EPM Group's processes.
- ✓ Updating of the internal audit strategic alignment with the Group goals.
- ✓ Scope of the audit team to strengthen technical capacities subjects regarding the business.

Also, the audit team of EPM allocated 15% of the operating time to support the Audit Plan of the Group's affiliated companies. Training events were carried out to strengthen the skills of the Group's auditors, such as the twenty-sixth and twenty-seventh Meeting of EPM Group's Auditors and the sixth Congress of Effective Audit in the Energy Sector.

For 2017-2020, the main challenges are framed within six initiatives::

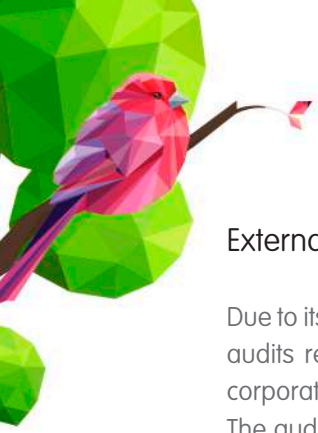
- ✓ Consolidating the internal audit activity for the whole Group.
- ✓ Generating trust relationships.
- ✓ Implementing R+D for the development of the activity.
- ✓ Developing a high-performance team.
- ✓ Promoting the implementation of the improvement programs.
- ✓ Being self-regulation references.

## Compliance Plan

The activities that formed the Compliance Plan 2016 are listed below:

- ✓ Extending the scope of the Ethics Hotline: Transparent Contact in all the national affiliated companies.
- ✓ Updating the guidelines and business rules related to the prevention of risks for fraud and corruption.
- ✓ Implementing the best practices according to the ranks achieved in the Dow Jones Sustainability Index.
- ✓ Participating in the National Government initiatives related to the incorporation of Colombia in the OECD as to become a "company active in the anti-corruption compliance (abbreviated EACA in Spanish).
- ✓ Being recognized in the real sector as one of the companies with the best practices in the areas of prevention of fraud and corruption.
- ✓ Giving reach to the strategic direction to operationally engage with the national affiliated companies, taking due diligence, as a group, of the various stakeholders.
- ✓ Being recognized in the real sector as one of the companies with the best practices in the areas of prevention of ML / TF.





## External Audit Plan

Due to its legal nature as an industrial and commercial state company, EPM is not obliged to have external financial audits represented by a fiscal reviewer or external auditor. EPM hired an external financial auditor as a good corporate governance practice, and in order to fulfill the commitments the company has with multiple banks. The audit scope includes the opinion on the financial statements, an annual evaluation of the company's Internal Control System (which is relevant for the preparation and reasonable submission of the financial statements), an audit to the information reported to the CREG (Spanish abbreviation for Energy and Gas Regulation Commission) by the network operators and related to the expenses of administration, operation and maintenance (abbreviated AOM in Spanish), and a specific audit to certify EPM's fulfillment of the commitments established in the Legal Stability Contract, as well as the verification of the corporate environmental management index (abbreviated IGAE in Spanish) and the financial audit for the La Alpujarra District Cooling project.

Deloitte & Touche was selected as the financial external auditor by EPM for 2016. This company was also proposed as the fiscal reviewer and external auditor for the Group's affiliated companies.

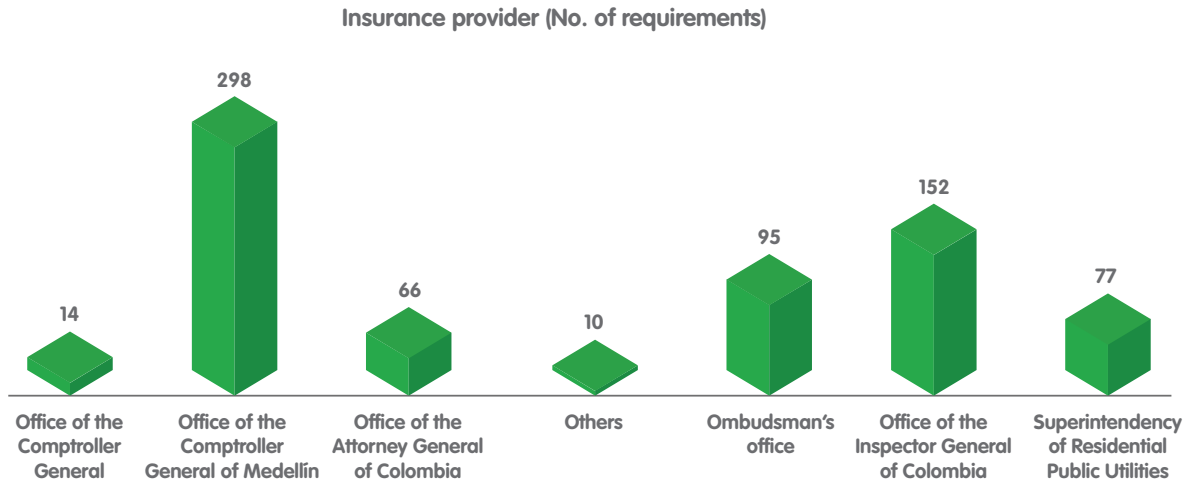
Deloitte & Touche is a leading private firm that provides professional services worldwide, and it has been cataloged within the four major audit firms in the world. The services it provides worldwide revolve around consultancy, taxes, legal advice, financial advice and auditing.

External auditor: Deloitte ft Touche		
Contract No.	Purpose	Payments in 2016
CT-2013-000094-R3	EPM requests the contractor to provide external audit services required by Empresas Públicas de Medellín E.S.P.	COP 1,693,600,000 (VAT included)



## Assurance suppliers

During 2016, EPM addressed 716 requirements made by the diverse external assurance suppliers in charge of fiscal, disciplinary and legal monitoring, in order to comply with its accountability responsibility towards said suppliers.

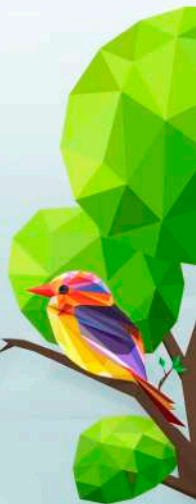


## Compliance Management

### Mechanisms to prevent fraud, corruption and bribery

Given the initiatives and self-regulatory instruments applied by EPM Group, especially those that aim at keeping the operation in an environment of security, transparency and confidence, EPM provides all the stakeholders with overall parameters of performance, in order to minimize the materialization of situations associated with risks related to fraud, corruption, bribery, money laundering and terrorist financing, among others.

These best practices are a way of facilitating the fulfillment of the business purpose, strategy and objectives, both statutory and legal, and as the foundation of a culture based on ethical values and principles. Such practices are: Code of Ethics, Manual of Business Behavior, Corporate Governance Manual, Code of Conduct for Suppliers and Contractors and Zero Tolerance Policy to fraud, corruption and bribery, as well as the report channel Ethics Hotline: "Transparent Contact".





## EPM Management:

- ✓ **Ethics Hotline:** "Transparent Contact": it was adopted by the international affiliated companies Eegsa (Guatemala) and DelSur (El Salvador), covering thus all the companies of the EPM Group through the Internet.
- ✓ • **Development and implementation of the mobile application Ethics Hotline:** "Transparent Contact" in both iOS and Android.
- ✓ • **Transparency statement:** acceptance as a voluntary initiative by 89% of the collaborators of EPM and those with a possible conflict of interests stated it so. The purpose of these statements was to strengthen the confidence between the company-employee and the business-citizenship relationships and to ensure transparency in the work of the EPM Group.
- ✓ • **Policy of zero tolerance to fraud, corruption and bribery:** adopted by all the national operating affiliated companies, including Emvarias. This policy provides measures aimed at minimizing the materialization of risks situations related to these scourges.
- ✓ • **Measurement of the ethical climate:** the first internal measurement was conducted by surveying 2,515 collaborators of EPM. The purpose of this measurement is to know whether the fraud, corruption and bribery prevention tools proposed in EPM are in line with the practices, actions and perceptions inside our organization, have a "baseline" of measurement of the ethical climate and develop an improvement plan from the obtained results.
- ✓ • **Identification of risk scenarios from EPM's employees:** this preventive control has been developed in EPM for three years. For 2016, other variables which allowed extending and strengthening their analyses were added. The scenarios identified were discussed in most of the EPM's vice presidencies and in several dependencies in particular. This control generates warnings regarding the possible materialization of some scenario associated with fraud, corruption or bribery.
- ✓ • **Collective Agreement of the electricity sector:** participation in the agreement on combating corruption and promoting free competition. It was promoted by the National Operation Council (abbreviated CNO in Spanish) and XM S.A. E.S.P., with the inspection of the Secretariat of Transparency of the Presidency of the Republic of Colombia, Transparencia por Colombia and the UNODC. All the Colombian energy affiliated companies of the EPM Group are also part of this agreement, and requirements for members have been met, with reports to inspectors.



Pursuant to the requirements of 2016, progress was made in:

- ✓ The publication of the agreement using presentations to different stakeholders (clients and users, suppliers and contractors, EPM Group people and community), press releases on the company's website, the intranet and other media, as well as presentations to Management Committees and the Board of Directors.
- ✓ The closure of gaps with the international transparency principles, in accordance with the corporate transparency measurement conducted by Transparencia por Colombia.
- ✓ The construction of the EPM's corruption risk map and its publication on the website.
- ✓ The construction of the competition risk map of the sector.
- ✓ The support to all the working groups.
- ✓ The measurement of the ethical climate in EPM.

### **Mechanisms to prevent money laundering and terrorist financing (ML / TF)**

- ✓ Standardization of the ML / TF risk management criteria in the Colombian operational affiliated companies.
- ✓ Development of an online course on ML / TF risk management for the employees of the international affiliated companies of El Salvador, Guatemala and Mexico.
- ✓ **Committee of Compliance Officers from the real sector of Antioquia:** participation and leadership in this committee as a collective initiative, in which EPM holds the presidency.
- ✓ **National money laundering prevention day:** EPM was the host and leader of the activities associated with the celebration of this day, with the attendance of around 400 people, including guests, speakers, authorities and experts on the subject.

### **Mechanisms for the protection of personal data (PPD)**

- ✓ **Accountability guidelines:** pursuant to the provisions of Act 1581 of 2012 and its regulatory decrees, the organization started to implement the activities described in these guidelines to demonstrate its diligence and commitment to the management of the EPM stakeholders' personal information.
- ✓ **Model contract of international data transmission:** to meet the provisions of the regulation when processed personal data are submitted to third-party countries, a model contract, which should be attached to the main contracts, was designed. Moreover, contractual clauses were defined to regulate the obligations of the parties when personal data are processed.
- ✓ In compliance of Decree 886 of 2014, activities were conducted for the national database registration (abbreviated RNBD in Spanish). Workshops were carried out to get an inventory of the organization's personal databases.





- ✓ **Risk map of protection of personal data:** the map was prepared as a collective construction in workshops carried out with those responsible for each database inventoried in the organization.
- ✓ **Habeas data procedure:** it was formalized for all the interaction channels responsible for data, as required by the guidelines.
- ✓ Assistance and advice were provided to all the national affiliated companies to implement the accountability guidelines, the inventory of databases and the compliance with the baseline in this regard.

## Annual Management Report for Stakeholders

### Public Accountability

EPM assumes the process of public accountability as a commitment to transparency and openness of information with its stakeholders and the society in general. In this sense, the accountability of the Group's management, corresponding to 2015, took place on April 29 of 2016. During this event, the Group announced the progress of the main projects and the consolidation of EPM as a business group, the evolution of strategic decisions and the social, environmental and financial achievements.

The key subjects addressed during the accountability event include:

- ✓ Public utilities and sustainable human development.
- ✓ Commitment to sustainability.
- ✓ Management indicators.
- ✓ Progress in infrastructure projects.
- ✓ Financial results.
- ✓ Main challenges 2016-2019

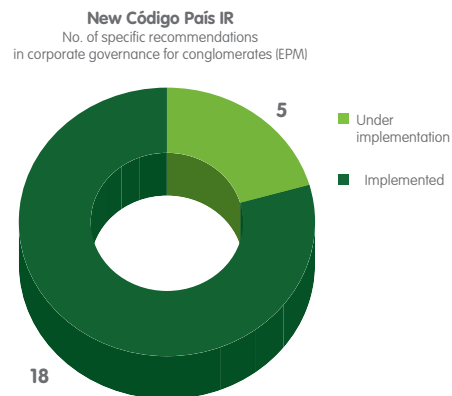
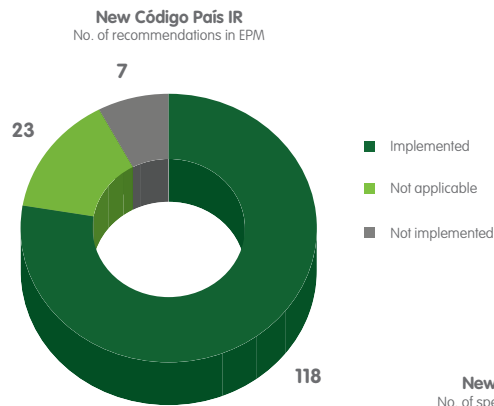
## Main Corporate Governance Metrics

### "Código País" Survey

In accordance with the regulation of the Financial Superintendency of Colombia, each year, EPM responds the Código País survey. In January, 2016, the Implementation Report (IR) of the new Código País was presented, which reports the corporate governance practices applied during January 1st and December 31st of 2015. The report shows 118 recommendations adopted, 23 not applicable and 7 not adopted. Each response is duly defended.

The new Código País has 23 recommendations associated with specific corporate governance practices for conglomerates, of which 18 have been adopted by EPM and 5 are part of an implementation plan that is expected to be achieved in 2017 with the definition of a policy of operations with engaged parties and the procedure to update the map with engaged parties.



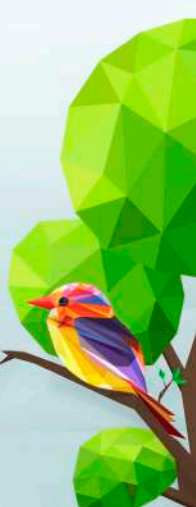
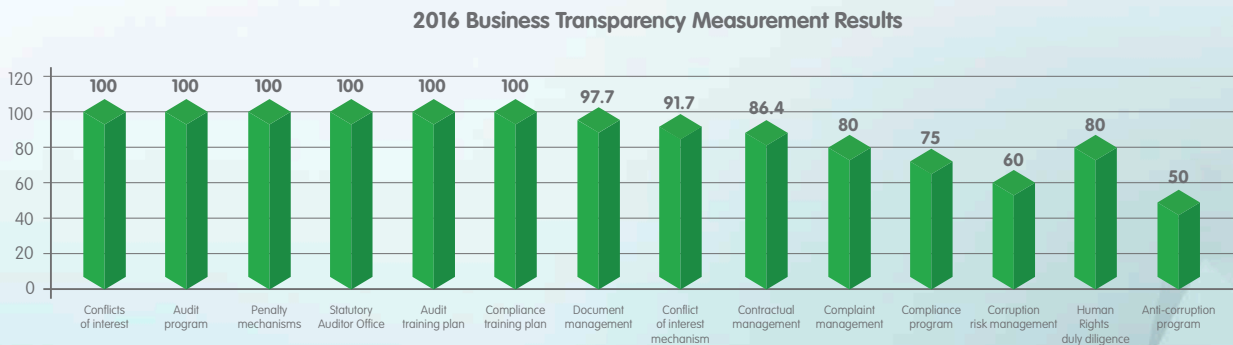


### “Transparencia por Colombia” (Transparency for Colombia)

In the 2016 Transparencia por Colombia survey, EPM reported on the practices that the whole Group has implemented in terms of transparency concerning the components of clear rules, dialog, openness and control.

With an overall average rate of 87.5 points, EPM places itself as a company with a moderate risk level of corruption in the components of clear rules and dialog and a low risk level in the components of openness and control.

The following are the detailed scores per subcomponents:





## Dow Jones

In 2016, the Dow Jones Sustainability Index (DJSI) questionnaire had no changes in terms of corporate governance. During this period, EPM focused on actions addressed to implement improvements suggested in the 2015 survey, which, in general, are summarized below:

- ✓ Make explicit in the declaration of independence of the Board of Directors' members the number of years in which they had not been hired by EPM.

In the form "Statements to hold the position of member of the Board of Directors of EPM", a field referring to the aforementioned improvement was included.

Additionally, the Corporate Governance Report includes the time during which the independent members of the Board of Directors have had such independency.

- ✓ Design a matrix to represent synthetically the distribution of responsibilities among the current Board of Directors' members and make such information public. Moreover, conduct a gap analysis which can be used to improve responsibilities or select new Board of Directors' members.

The matrix and the gap analysis were designed. They are included in the Corporate Governance Report.

- ✓ Increase the number of Board of Directors' members with experience in the sector of public services.

The Board of Directors of EPM was constituted by Decree No. 0137 of January 21 of 2016 of the Medellín Mayor's Office. Elena Rico Villegas, spokeswoman of the Committee of Social Development and Control of Residential Public Utilities and with work experience in the sector of residential public utilities, was among the members appointed.

In addition, Mr. Javier Genaro Gutiérrez Pemberthy was named as a member of the Board of Directors of EPM by Decree No. 0438 of March 9 of 2016 of the Medellín Mayor's Office. He has experience in the sector of residential public utilities.

The two aforementioned appointments increase by 2 the number of Board of Directors' members with experience in the sector of public utilities.



## Credit Risk Rating

EPM continues its practice of keeping constant communication with the risk rating firms, the investors and the financial market in general, corroborating the commitment of delivering sufficient and timely information under the transparency and equality criteria established in the Corporate Governance Code.

During 2016, the company's local and international risk ratings were stable. This shows that the company keeps the credit risk agencies' and the local and international markets' reliability, in spite of the simultaneous confluence of critical events such as i) the El Niño phenomenon between 2015 and 2016, ii) the behavior of the COP vs. the USD between the last three months of 2014 and the whole 2015 and iii) the incident that took place in the Guatapé power plant which prevented it from operating during almost four months in 2016. EPM managed to keep its international ratings in investment level: "Baa3" since 2009 with a positive perspective since August 11, 2014, with Moody's; and "AAA" as the local rating and, since 2014, "BBB+" as the international rating with Fitch Ratings.

The ratings granted definitely supported the feasibility of the 2016 financing strategy which included credits for USD611.4 million with the international financial sector, intended for the financing of the general investment plan and the Ituango Hydroelectric Project.







# EPM Grupo Corporate Governance Plan




## Monitoring to the 2016 plan

Each year, the EPM's Board of Directors approves the "Annual Plan of Corporate Governance," voluntary practice implemented since 2006 to keep the constant evolution in this regard. Activities to be carried out by the different EPM's dependencies are included in this Plan; they aim at improving the relationship among the company's and the Group's governance bodies, allowing the achievement of the unity of purpose and direction in a transparent manner and the accountability to the stakeholders.

The Annual Corporate Governance Plan is evaluated every six months with the purpose of knowing the development of the proposed activities and suggesting improvement actions that enable their compliance.

These are the main achievements and progress of the 2016 plan:

### Conventions

-  Compliance above 90%.
-  Compliance between 75% and 90%.
-  Compliance below 75%.

N	Activity	
1	Strengthening of the institutional management of ownership of the EPM Group.	77%
2	Strengthening of EPM Group's governing bodies.	79%
3	Strengthening of mechanisms for evaluating the Group's governing bodies.	100%
4	Implementation of governance tools for operational involvement.	63%
5	Strengthening of corporate audit of the EPM Group.	70%
6	Institutionalizing ethical management in the EPM Group.	93%
7	Strengthening of risk management in the EPM Group.	50%

The main milestones obtained during the year were:

#### EPM

- Orientation to the new CEO of EPM and members of the municipal cabinet.
- Evaluation and strengthening plan of the EPM's Board of Directors for 2016.
- Planning of the Board of Directors for 2017 (timetable and typical agenda).

#### Group

- Engagement with partners plan carried out in 2016.
- Evaluation of all the managers of the Group's operational companies in 2016.
- Planning of meetings and assemblies of the companies of the Group for 2017.



- Proposal of modification of the bylaws of the companies of the Group.
- Progress in the definition of the Group's Code of Ethics.
- Proposal of modification of the guidelines for the formalization and management of agreements of the governance agreement.

## 2017 - 2019 Corporate Governance Plan

During 2016, a long-term Corporate Governance vision was consolidated for the EPM Group, while the 2017-2019 Corporate Governance Plan was designed.

The components of the Plan are listed below:





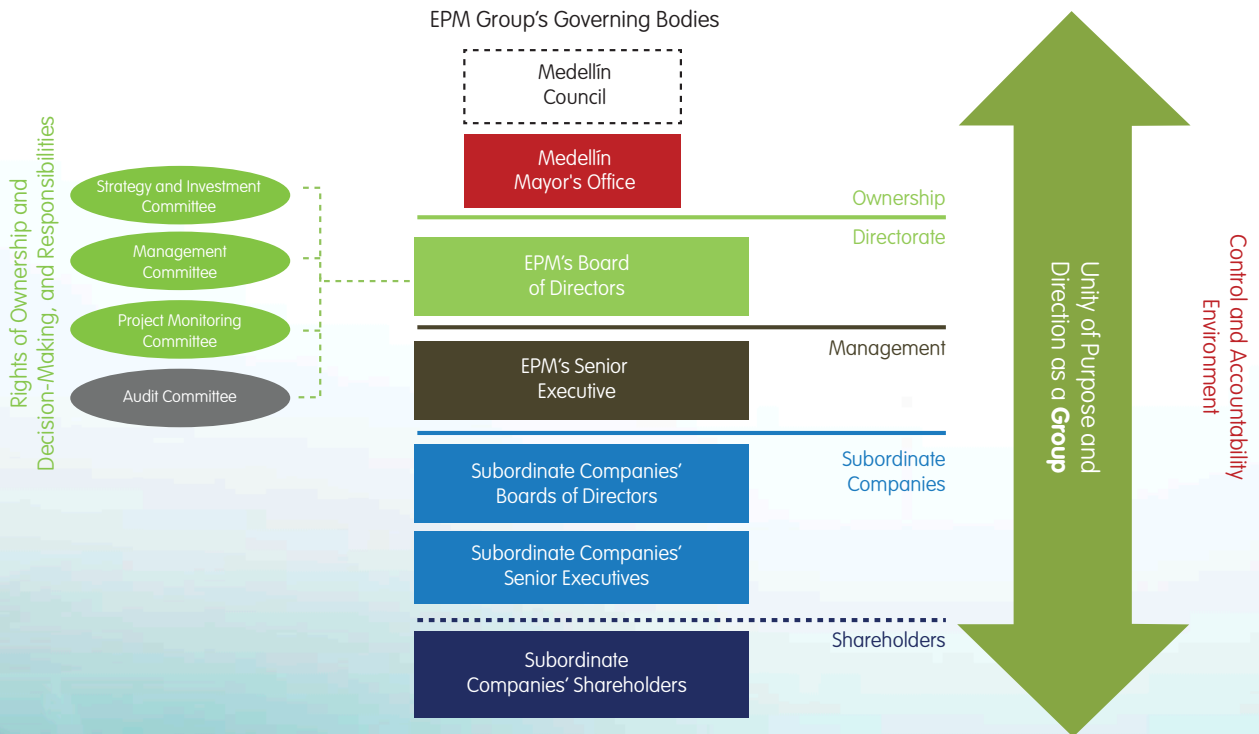
# Annexes to the Corporate Governance Report

Annex 1:	Schematic representation of the different levels of governance and context of the Framework for Action of the Group's Corporate Governance Model.
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## Governing Bodies and Framework for action of the Group's Governance Model

The interaction among the different levels of governance in the EPM Group should ensure an appropriate exercise of the rights of ownership and decision-making, and the responsibilities of each level, always within an atmosphere of control and accountability, in such a way that the governance model optimizes the creation of value for the whole business group.

The governance structure of the EPM Group is aimed at preserving the balance between the interests and the information of all its governing bodies, in order to ensure a good relationship between them, as well as the attainment of the corporate goals, i.e. the Unity of Purpose and Direction.



Thus, the Corporate Governance works in two ways: on the one hand, it sets the rules for all the governing bodies to interact with the others, identifying the rights of decision-making and the responsibilities of each regarding the others; and on the other hand, it is responsible for implementing control mechanisms that make possible to verify the compliance with those rules. Therefore, a review of strategic elements was carried out in order to build a framework for action aligned with the governance practices of the EPM Group.

The framework for action graphically represents the management practices around the Group's governing bodies and responds to questions such as: *What do we do? What activities and mechanisms do we have or will have implemented? Who is involved in the governance model? What are the key interactions to strengthen the governance model?*

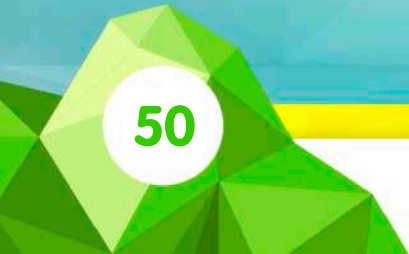
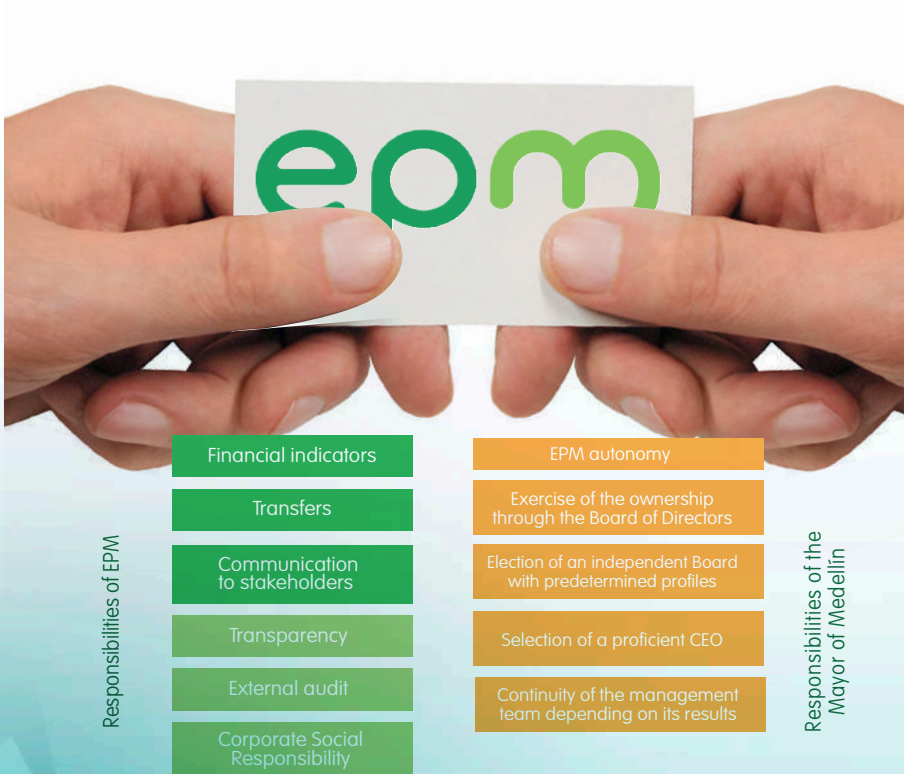


### Context on the Relations Framework Agreement

The Relations Framework Agreement signed by EPM and the Municipality of Medellín in 2007 reflects the common goal of these two entities of creating conditions of business management in EPM that enable sustainability and creation of value for its stakeholders, but, especially, that make the company viable as a growing and sustainable source of revenue for the city of Medellín.

Performance responsibilities of the Municipality of Medellín, as owner of EPM, are also recorded in this Agreement, in such a way that the interest of the Municipality agrees with the imperative of growth, profitability and efficiency that should encourage EPM actions, regardless of its strategy.

Consequently, the principles of the owner-company relationship are determined in the Agreement. They go beyond the legal conditions that both entities must meet, and give room to self-regulations that limit the exercise of ownership and business management, creating a system of counterbalances where responsibilities and self-limitations for each part are established. They are graphically represented below:





To summarize, below is a list of the main responsibilities of the Municipality of Medellín, represented by the Mayor of the city in its role as representative of the company's ownership:

- ✓ Ensure respect for the administrative and financial autonomy of EPM.
- ✓ Carry out a formal interlocution with EPM, exercising the rights of ownership over the company only through participation in its Board of Directors.
- ✓ Appoint Board's members and a CEO with the best personal and professional qualities, who meet eligibility requirements for these designations.
- ✓ Promote the continuity of the EPM's management team, according to the results of its work.
- ✓ Do not take part in the ordinary management of the company, i.e. recruitment processes, procurement of goods and services, and other tasks not included in the functions of the EPM's Board of Directors.

For its part, the Municipality of Medellín demands the commitment of EPM to comply with the following premises in the management of this company as a public heritage of the city:

- ✓ Perform an efficient and productive administration of its assets.
- ✓ Agree upon the plan of transfers to its owner, ordinarily contributing 30% of the profits generated in each period to the Municipality of Medellín.
- ✓ Use the legally established channels for the company-owner communication.
- ✓ Align its investment plans with the Municipal Development Plan.
- ✓ Always act with transparency, impartiality and objectivity.
- ✓ Contract a recognized external audit that certifies its good financial practices.



Annex 3: Matrix of Profiles of the Board of Directors

## Board of Directors' Profiles

The following matrix identifies the areas of knowledge and experience of each member of the Board:

Matrix of Profiles of the members of the Board of Directors									
Education and experience / Board's Member	Federico Gutiérrez Zuluaga	Andrés Bernal Correa	Claudia Bernal Correa	Javier Genaro Gutiérrez	Manuel Santiago Mejía Correa	Alberto Arroyave Lema	Elena Rico Villegas	Gabriel Ricardo Maya Maya	Carlos Raúl Yepes Jiménez
Business management with an emphasis on international business		✓	✓	✓	✓		✓		✓
Financial management		✓	✓	✓	✓		✓		✓
Management of residential public utilities or other EPM's corporate sectors, including urban development	✓		✓	✓		✓	✓	✓	
Ethics, sustainability and corporate social responsibility	✓	✓		✓	✓				✓
Public management or legal management	✓		✓	✓	✓	✓	✓	✓	✓

The "profile" concept is understood as the area of knowledge in which someone has training and experience.



## Context on the Induction Program of the Board of Directors

Main statistics of the induction program:

**9**  
Sessions  
scheduled

**9**  
Sessions  
held

- ✓ There were 4 private sessions with some members of the Board of Directors.
- ✓ All the vice presidencies presented their functions and main projects.

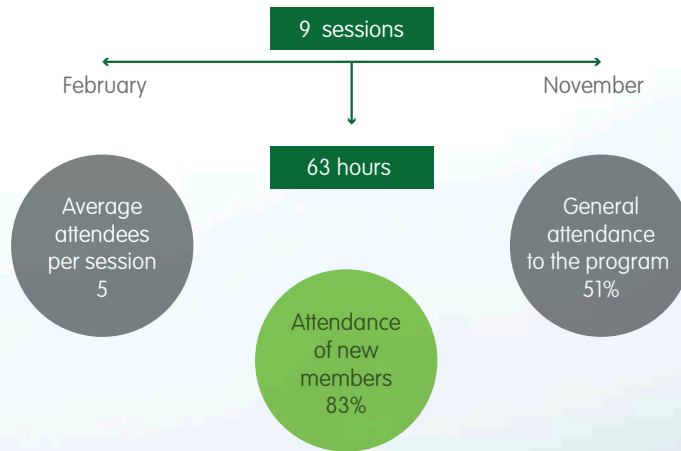
**45**  
Hours of induction  
scheduled

**63**  
Hours of induction  
performed

**65%**  
Of the time on  
business matters

**10**  
Months of induction

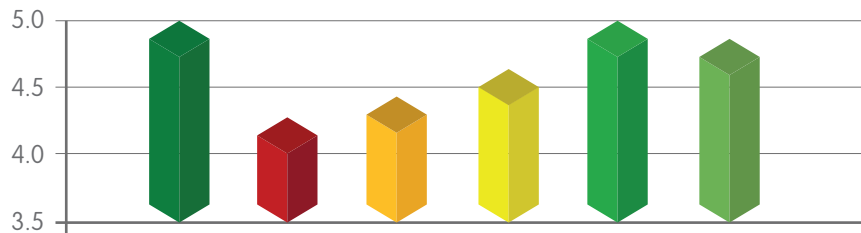
### Attendance





Assessment of the induction program:

**Average 4.6**

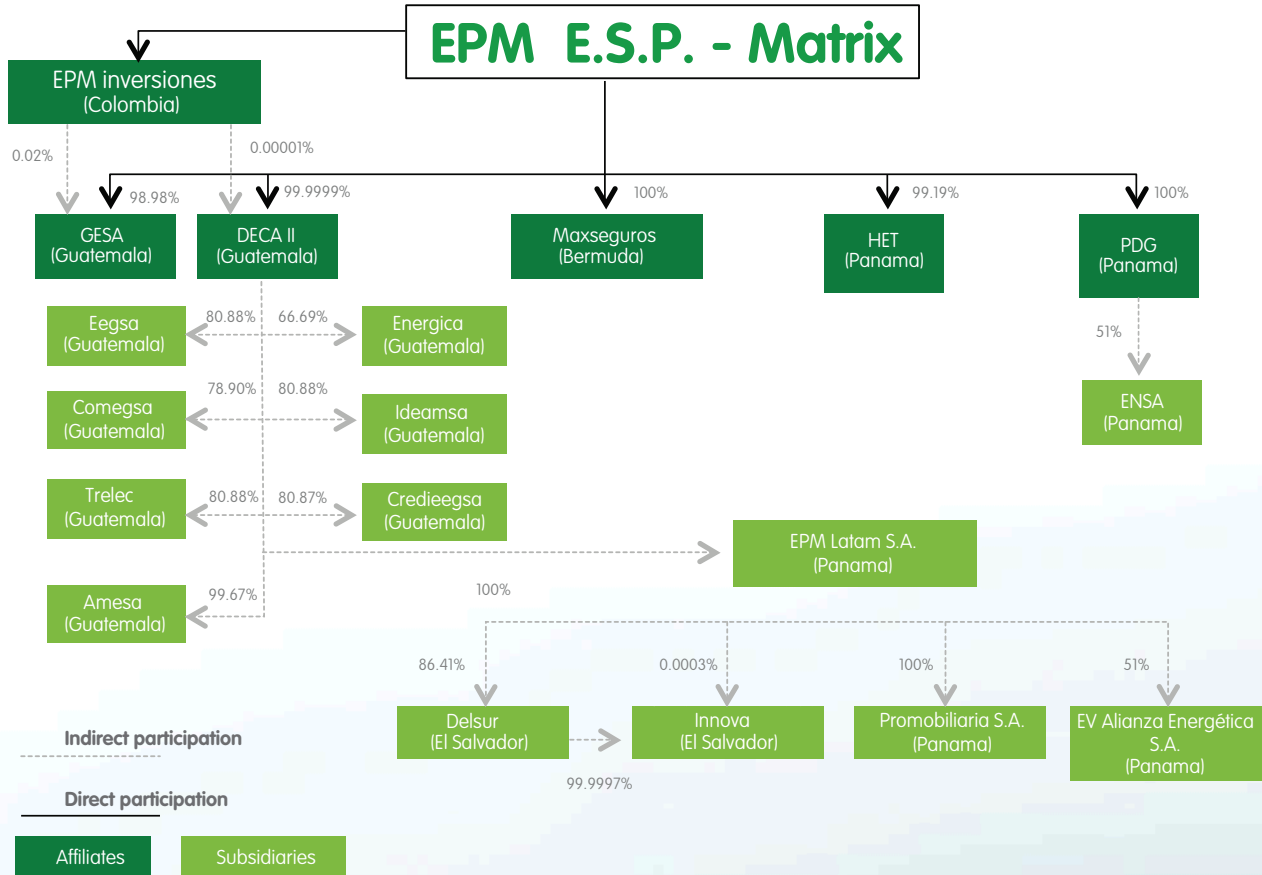


- Contents of the program.
- Length of the program (number and time of sessions.)
- Clarity and depth of the topics covered.
- Information and logistics before the sessions.
- Logistics during the sessions (food, transport, locations.)
- Satisfaction with the attention to tasks derived from the sessions.



## EPM's Shareholding Structure in Affiliated and Subsidiary Companies

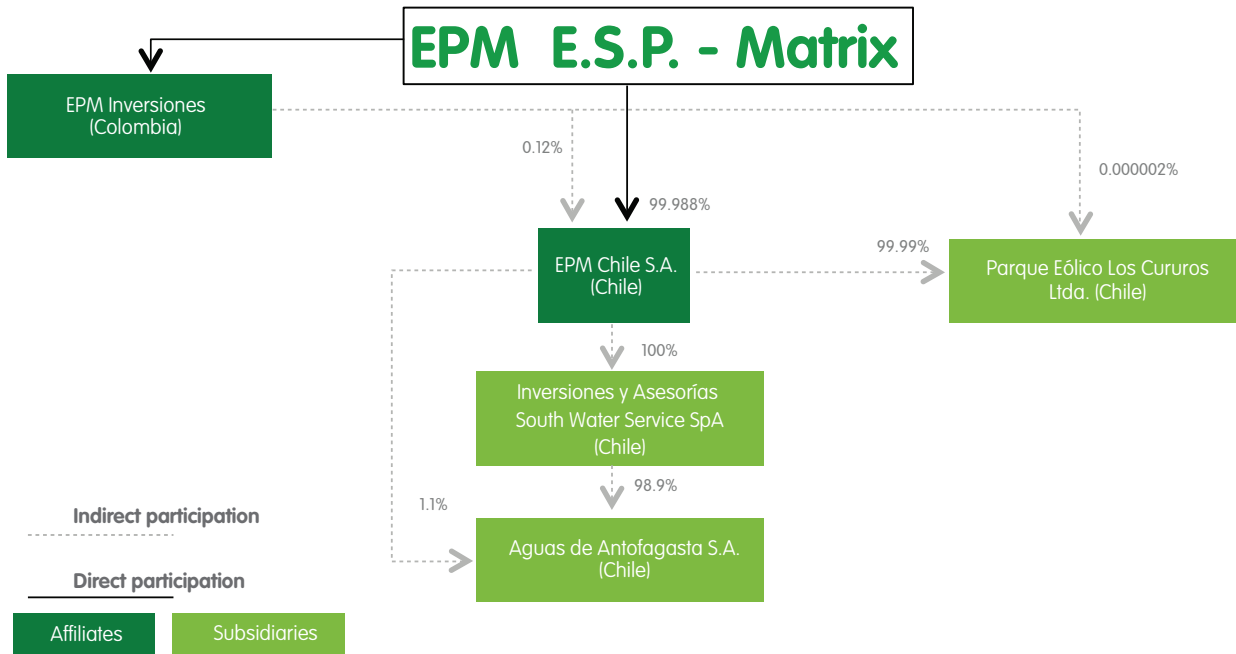
### Affiliated and Subsidiary Companies in Central America and the Caribbean



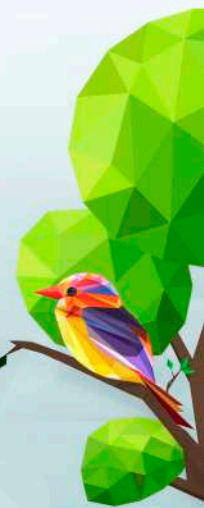
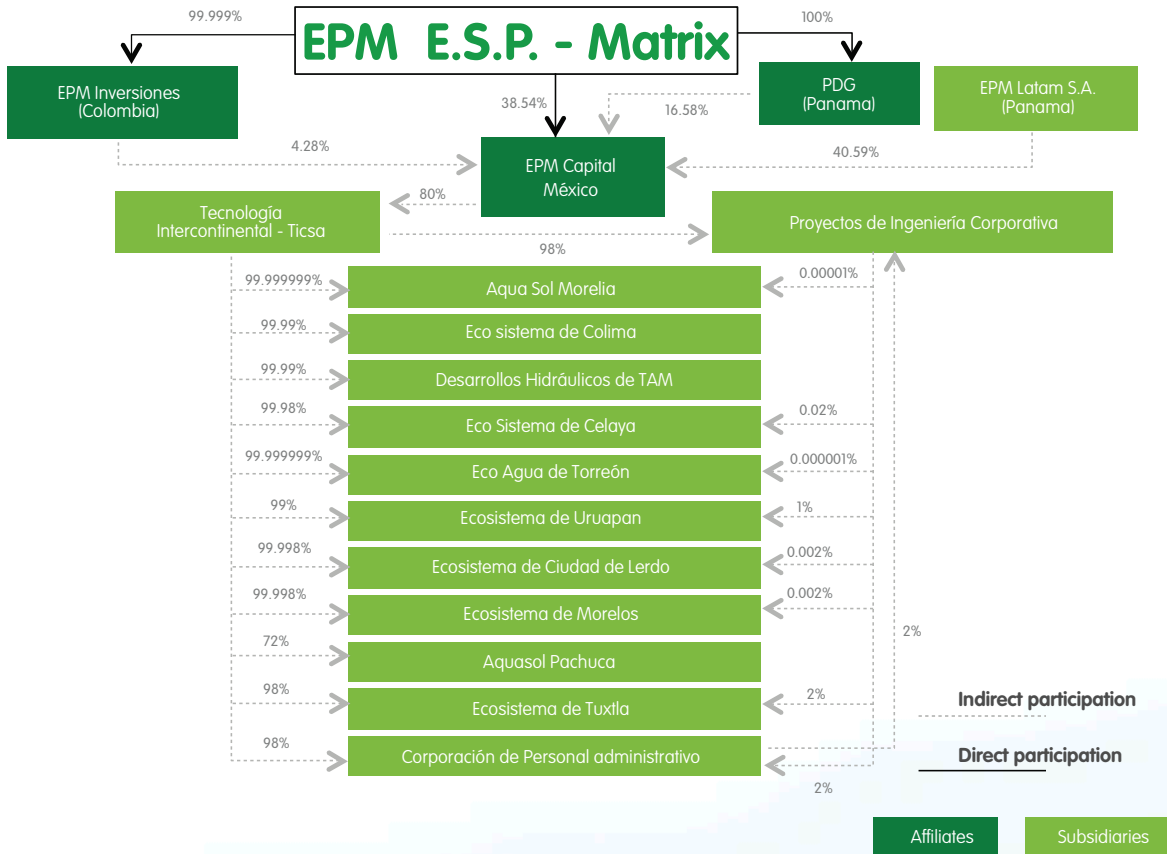




## Affiliated and Subsidiary Companies in Chile



### Affiliated and Subsidiary Companies in Mexico



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# General Information

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# Report Profile

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# Report profile

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This report provides information from January 1 to December 31, 2016 **GRI G4-28**

The previous report was submitted in April 2016 during the Public Accountability event **GRI G4-29**

EPM reports every year the information on its sustainability management **GRI G4-30**

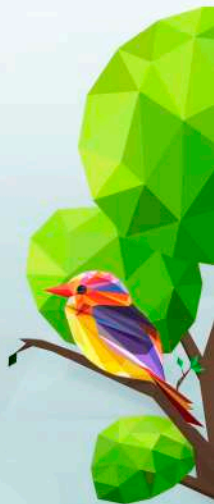
This report is in accordance with the 'Comprehensive' compliance criteria and is the eleventh EPM Sustainability Report prepared following the GRI methodology.

See GRI Table **GRI G4-32**

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This Sustainability Report corresponds to EPM and contains information on the EPM Group. The EPM's and EPM Group's financial statements are included in the financial management. The social and environmental management contains information on the following EPM Group's companies **GRI G4-17:**





Country	Company	Business
Colombia	Empresas Públicas de Medellín E.S.P. - EPM	Water Sanitation Power Generation Power Transmission and Distribution Gas
	Aguas Regionales EPM S.A. E.S.P.	Water
	Empresa de Aguas del Oriente Antioqueño S.A. E.S.P.	
	Aguas de Malambo S.A. E.S.P.	
	Empresas Varias de Medellín S.A. E.S.P. - Emvarias	Sanitation
	Central Hidroeléctrica de Caldas S.A. E.S.P. - CHEC	Power Generation
	Electricadora de Santander S.A. E.S.P. - ESSA	Power Transmission and Distribution
	Empresa de Energía del Quindío S.A. E.S.P. - EDEQ	Power Transmission and Distribution
Centrales Eléctricas del Norte de Santander S.A E.S.P. - CENS		
El Salvador	Distribuidora de Electricidad del Sur S.A. de C.V. - Delsur	
Guatemala	Empresa Eléctrica de Guatemala S.A. - Eegsa	
Chile	Aguas Antofagasta S.A. - Adasa	Water
	EPM Chile S.A.	Power Generation
Panamá	Hidroecológica del Teribe S.A. - HET	Power Transmission and Distribution
	Elektra Noreste S.A. - ENSA	Power Transmission and Distribution
Mexico	Tecnología Intercontinental S.A.P.I. de C.V.-Ticsa	Sanitation

This report is aligned with the Sustainable Development Goals (SDG), the Global Compact principles (PG), the ISO 26000 standard, the voluntary assessment in the Dow Jones Sustainability Index for the Multi-utilities and Water industry, as well as with the framework of the International Integrated Reporting Council – IIRC.



The Sustainability Report submitted includes the social and environmental management, the corporate governance, the EPM's and EPM Group's financial management and the management report.

This information is reported annually to the stakeholders, the society in general and other specific audiences through face-to-face and virtual methods.



The contents of the report were reviewed and approved by directors of the company, and externally assured by Deloitte & Touche, the firm that performs the external audit of EPM and the tax audit of the EPM Group's companies.

**GRI G4-33** For more information, **see External Assurance.**

The preparation of the Report is coordinated by the Sustainable Development Management, which is part of the Executive Vice Presidency of Strategy and Growth of EPM.

**Contact Information: RI G4-31**

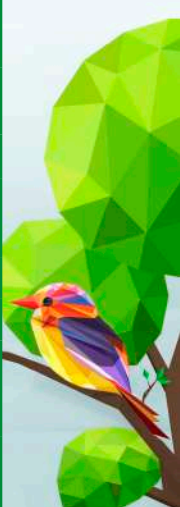
sostenibilidad.EPM@EPM.com.co

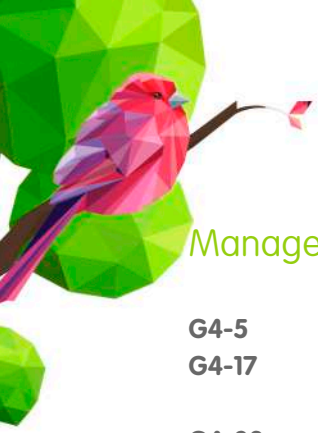
Phone number: (+57- 4) 3802630.

EPM's headquarters address: Carrera 58 # 42 – 125. Medellín, Antioquia, Colombia.

**GRI G4-5**

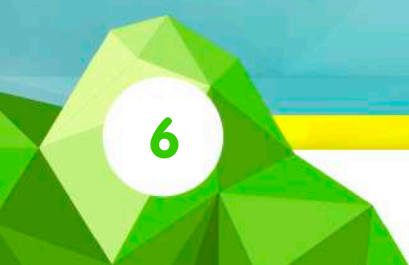
Evolution of the EPM Sustainability Report														
Items	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016			
<b>Scope</b>	EPM							EPM and affiliates in Colombia	EPM and EPM Group					
<b>Contents</b>	Sustainability Report (social and environmental)					<ul style="list-style-type: none"> <li>Financial management</li> <li>Social and environmental management</li> </ul>	<ul style="list-style-type: none"> <li>Management of the CEO</li> <li>Management of the Board of Directors</li> <li>Corporate governance</li> <li>Financial management</li> <li>Social and environmental management</li> <li>Management in Medellín</li> </ul>	<ul style="list-style-type: none"> <li>Management of the CEO</li> <li>Corporate governance</li> <li>Financial management</li> <li>Social and environmental management</li> <li>Cross-cutting reports:</li> <li>Review by the Management</li> <li>Management self-assessment</li> </ul>						
<b>GRI Methodology</b>	3.0 C	3.0 B	3.0 B+	3.1 B+	3.1 A+	Comprehensive G4								
<b>Assurance</b>	Internal assurance			lcontec	Deloitte									
<b>Global Compact CoP</b>					Basic		Advanced							
<b>Systematization</b>							Idsos	Idsos	Idsos Standard formats					
								Sharepoint	Website					
<b>Publication</b>	Printed (FSC Standard)	Printed in recycled paper				Multimedia	Web							
<b>Alignment with external initiatives</b>	Global Compact MDG							Global Compact MDG	DJSI	ISO 26000	Global Compact SDG	DJSI	ISO 26000	Integrated Report





## Management indicators

- G4-5** Report the location of the organization's headquarters.
- G4-17** List all entities included in the consolidated financial statements and report whether any of these entities is not included in the sustainability report.
- G4-28** Reporting period for information provided.
- G4-29** Date of most recent previous report.
- G4-30** Reporting cycle (such as annual, biennial).
- G4-31** Contact point for questions regarding the report or its contents.
- G4-32** Report the 'in accordance' option with the GRI Guidelines the organization has chosen (Core - Comprehensive). Report the GRI Content Index.
- G4-33** Report the organization's policy or approach with regard to seeking external assurance for the report.



# Material aspects and coverage

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## Material aspects and coverage

Closing gaps in economic development, social progress and environmental sustainability creates the conditions for the sustainability of the system in which businesses are embedded.

The first report on the Sustainable Development Goals, submitted in 2016 by the Secretary-General of the United Nations, Ban Ki-moon, highlights critical challenges for the achievement of these SDGs. One of the main concerns is that 13% of the world population still lives in extreme poverty, and 2.4 billion live without adequate sanitation facilities.



Materiality establishes the management topics for the responsible coexistence of the companies within the society, because it addresses the matters that are decisive for the sustainability of both of them. For the companies, it constitutes a desirable path for leadership that responds to clear expectations of their stakeholders.

For the EPM Group, materiality was carried out in accordance with the **GRI-G4** methodological recommendations, in the context of the stakeholders' engagement model that EPM put into practice since 2010<sup>1</sup>, in line with the principles of the AA1000 standard for thoroughness, relevance and response capacity.

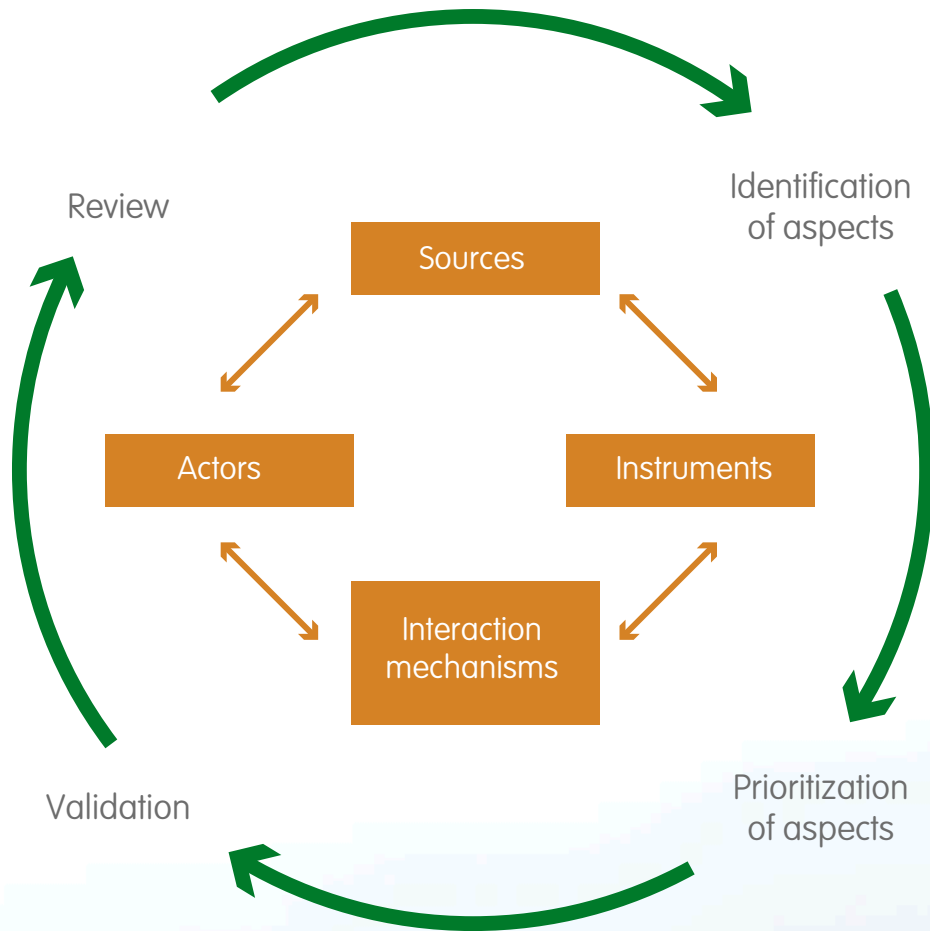
<sup>1</sup>The model is methodologically based on *The Practitioner's Handbook on Stakeholder Engagement*. Accountability Institute, UNEP and Stakeholders Research Associates.

Based on the twelve material aspects defined for the EPM Group and according to its prioritization for each of the affiliated companies, in 2016 the company implemented in its plans actions related to each material aspect and linked to the Sustainable Development Goals.

### GRI G4-18



## Procedure for Identifying the Materiality of the EPM Group

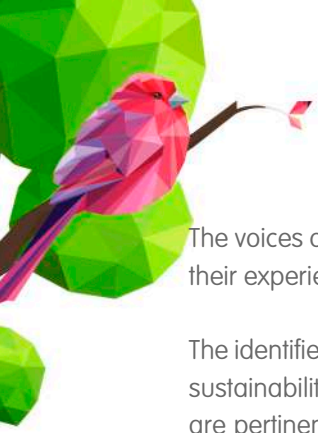


In 2016, the materiality exercise reinforced its articulation to the plans by strengthening the challenges to manage the material aspects.

### Identification of aspects

In the materiality procedure, the aspects are a large list of notable matters related to sustainability. Material topics are obtained from the prioritization of the matters in this list.

In order to create the list of aspects, the company resorted to the voices of the stakeholders by means of direct dialogs in some cases, and through studies on expectations, needs, satisfaction or reputation, in other cases. Transactional interaction mechanisms, such as the ones for complaints and claims, were also used. The degree of the stakeholders' direct participation is heterogeneous because it corresponds to the engagement dynamic of each one of the Group's affiliated companies that participated in the exercise, which are in different stages of evolution.



The voices of the stakeholders blended with the knowledge of the EPM Group's people on their territories, and with their experiences in the day-to-day interaction by means of the diverse processes of the companies.

The identified aspects were contrasted with strategic planning elements of the EPM Group, and with relevant global sustainability matters, in order to incorporate them if they were not identified in prior steps, provided that they are pertinent to the EPM Group's environment and strategy. The following sources were considered: the thematic areas and the Sustainable Development Goals of the Post-2015 Global Development Agenda, the UNDP 2010–2014 Human Development Reports, the WBCSD lines of work, the International Social Responsibility Standard ISO26000, the Dow Jones Sustainability Index, sustainability reports of outstanding companies of the industry, events such as the 7th World Urban Forum, and the GRI document that contains sustainability topics by sector.

The resulting list of aspects and their corresponding actors was subjected to subsequent processes of refining, revision, discussion and analysis, as well as to a shortlisting, based on potential economic, environmental and social impacts for the EPM Group and the society, at the discretion of people who have vast knowledge on the affiliated companies and the corporate core. This was how the thoroughness principle of the engagement model was applied and the list of aspects to prioritize was obtained.

## Prioritization of aspects

Prioritization of the list of aspects was carried out jointly with specialists from the organization using the prioritization criteria for material aspects, an instrument designed by the company for estimating the degree of social, economic and environmental value potentially generated or destroyed by each aspect for the EPM Group and its stakeholders. This is how the principle of relevance was applied.

The instrument favors the convergence of criteria. With the purpose of minimizing the possibility that aspects with a high importance in one of the three assessed categories present a low total rating despite having deep repercussions for sustainability, an empirical contrast of the results is carried out by people who have the capacity to visualize the impact of the priority sustainability topics on the EPM Group, its stakeholders and the society in general.

For analyzing aspects and topics, qualitative techniques were used and translated into numerical expressions to make it easier to understand, compare and visualize certain features or trends, without forgetting that reality exceeds the limitations of the instruments trying to model it.



### Prioritization Criteria for Material Aspects

<b>Importance of the aspects for the EPM Group:</b> impact or value of the aspect for the EPM Group.	<b>Importance of the aspects for the stakeholders:</b> impact and value of the aspect for the EPM Group's stakeholders.	<b>Management potential of the aspect:</b> possibilities or opportunities that the aspect offers for its development.
It takes into account the strategic planning; the social, economic and environmental aspects underlying the EPM Group's policies; the capabilities of the companies; and the diverse time horizons.	It includes the expectations and needs of the stakeholders; the extent, scale and urgency of the economic, social or environmental impact; the closeness of the impacted party; and the diverse time horizons.	It considers the status of the aspect in the context, its development in the organization, and the mobilization of the stakeholders around it.

The management potential analysis accounts for the application of the “response capacity” principle from the engagement model (the other two principles are “thoroughness” and “relevance”).

### Validation

The Sustainable Development Management refines the final result with expert criterion and based on the contributions from the Management Committee (one of the Board of Directors' support committees.) EPM's Executive Vice Presidency of Strategy and Growth is the department responsible for ensuring that the twelve material aspects identified are reflected on the content of the Sustainability Report. The material aspects are the axes upon which the departments, depending on their functions, manage the engagement with each stakeholder, both during businesses and other transversal processes.

The materiality results are communicated to the Strategic Corporate Planning and the Business Planning Departments, in order to ensure articulation with the strategic planning, and feed the context analysis, the comprehensive risk management and the 2016–2019 Business Plan.

### Review

The scope and the refining of materiality will keep evolving to reflect the expansion of the field of action towards the EPM Group, which is on its way to stabilize a recent corporate transformation with its impact on the functions, the responsible actors and the organizational structure.

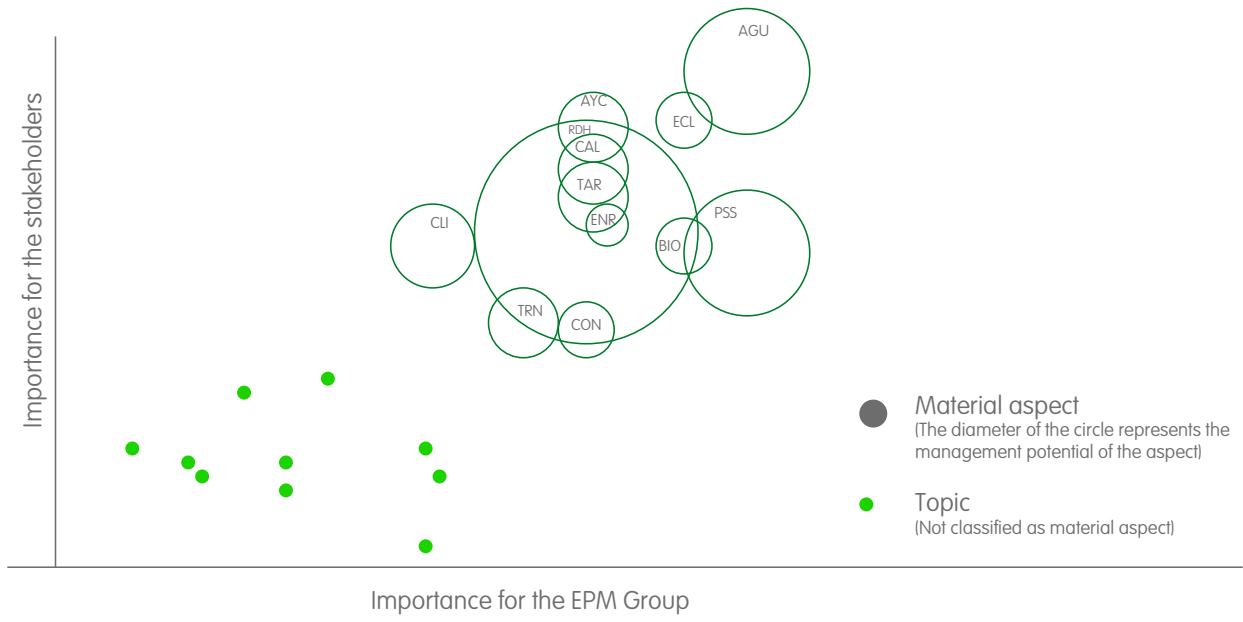
The position of the aspects on the graph depends on their importance for both the EPM Group and the stakeholders, according on the prioritization criteria for the material aspects.

**GRI G4-19**





## Material aspects





Material Aspects	The aspect is material because it has an impact on...
 <b>AGU</b> Water conservation	The survival and the supplies for productive processes.
 <b>AYC</b> Access to and purchasability of public utilities	The universalization of the utilities.
 <b>BIO</b> Biodiversity	The functional basis for the ecosystem services necessary for developing any human activity.
 <b>CAL</b> Quality and safety of products and services	Competitiveness and quality of life.
 <b>CLI</b> Quality of the occupational climate	The construction of coherence, trust and productivity.
 <b>CON</b> Responsible contracting for local development	Sustainability and competitiveness through the development of capabilities applied to the local business fabric.
 <b>ECL</b> Climate strategy	Water shortage; floods and droughts; results of the productive activities.
 <b>ENR</b> Diversification of renewable energies	The access to sustainable energy sources, and the risks of dependence on the water resource.
 <b>PSS</b> Population unserved	A lack of basic public utilities in a very vulnerable population; risks of accidents and of soils; and conflicts of coexistence.
 <b>RDH</b> Respect for and promotion of Human Rights	The feasibility of the activities and the dignity of people.
 <b>TAR</b> Rates and prices	Financial sustainability, competitiveness, and ability to pay.
 <b>TRN</b> Transparency and access to information for groups of interest	The anti-corruption management, additional costs and greater access to opportunities.

With the Risk Engineering Management, the risks associated with each one of the twelve material aspects were identified, as well as with three aspects that, despite not being classified as material aspects, are very relevant: Outsourcing, Social Control and Decent Work, which will be examined on a yearly basis to detect their evolution and management opportunities. This information can be expanded in the **Identification of the stakeholders chapter**.

The Sustainable Development Goals outline the thematic route for the world development agenda, which crystallizes the company-society relation, with which the materiality of the EPM Group is articulated, as it can be observed in the **Sustainable Development Goals - SDG chapter**.



## Scope of the Sustainability Report

The internal boundaries or materiality of the aspects in relation to the diverse departments of the organization was analyzed for the Group and, in a global way, for all its companies, according to the degree of the impact of each material aspect on the strategic planning elements of the Group and its businesses. The result is represented with the intensity of the color of the block containing the list of material aspects in the chart: Analysis of the external and internal elements on which the material aspects have had an impact.

A lower color intensity of the block that represents the impact of the topics should not be interpreted as an indication of low importance, because all twelve aspects are the ones with the highest prioritization for the EPM Group. The intensity indicates less evidence regarding the impact on the elements of the strategy, which could increase if, for example, operating elements are assessed.

The external scope, that is, the materiality of the aspect outside the organization, is expressed by means of the association among the stakeholders and the aspects.

### GRI G4-20 - GRI G4-21

## Analysis of the external and internal elements on which the material aspects have had an impact



In the first Group's materiality exercise in 2014, the internal scope study concluded that the aspects have different weight according to the particularities of each company and its context. In 2015, the priority of each aspect was refined in each one of the affiliated companies. To this end, inquiries were conducted with the national affiliates, allowing to establish the Group's material aspects that, in case of not being managed in the corresponding affiliated company, would significantly affect the stakeholders and the strategic planning of the EPM Group.

With the international affiliated companies, a first exercise was carried out to establish the material aspects that should be included in the Group's Sustainability Report. The result is recorded in the table High-priority Aspects in Affiliated Companies.

**GRI G4-20 - GRI G4-21**

**High-priority aspects in affiliated companies**

Topic	Water conservation	Access and purchasability	Biodiversity	Quality and safety of products and services	Quality of the occupational climate	Responsible contracting for local development	Climate strategy	Diversification of renewable energies	Unserved population	Respect for and promotion of Human Rights	Rates and prices	Transparency and information for stakeholders
	Affiliated company											
CHEC	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
EDEQ	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
ESSA	✓	✓		✓	✓	✓			✓	✓	✓	✓
CENS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Emvarias	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
Aguas de Oriente	✓	✓		✓	✓		✓			✓	✓	✓
Aguas de Occidente	✓	✓		✓	✓					✓	✓	✓
Aguas Nacionales	✓		✓		✓	✓	✓			✓		✓
Aguas de Urabá	✓	✓		✓	✓	✓					✓	✓
Aguas de Malambo	✓	✓		✓	✓						✓	✓
EPO	✓	✓		✓	✓	✓					✓	✓
EPM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Eegsa *		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓



Topic	Affiliated company											
	Water conservation	Access and purchasability	Biodiversity	Quality and safety of products and services	Quality of the occupational climate	Responsible contracting for local development	Climate strategy	Diversification of renewable energies	Unserved population	Respect for and promotion of Human Rights	Rates and prices	Transparency and information for stakeholders
ENSA *		✓		✓		✓		✓		✓	✓	✓
Delsur *					✓	✓				✓	✓	✓
Aguas Antofagasta*	✓	✓	✓	✓			✓			✓	✓	✓
Ticsa *	✓			✓								✓
EPM Chile *								✓			✓	✓

\* In these companies, topics were identified for reporting purposes.

## Supplementary information within the Sustainability Report

The 2015 sustainability report includes sustainability aspects (not classified as material topics) as supplementary information. The report on these aspects is preserved because it constitutes information of interest, and because it responds to diverse commitments related to initiatives or measurements in which the EPM Group has willingly participated, and for which public information is necessary. The Sustainability Report is the most suitable means to provide it.

The scope and coverage in 2015 were expanded, gradually incorporating more companies of the Group.

### GRI G4-23

## Reformulation and correction of data with respect to previous reports

The following are the adjustments made to the data reported in previous years. These changes were the result of improvements to the calculation methodologies or modifications to the information systems:

### GRI G4-22



For calculating the occupational climate indicator introduced in **Organizational Climate**, there are different measurement instruments and periodicities for the EPM Group's companies. Therefore, it is not possible to perform a consolidated analysis of the results. The results of the EPM occupational climate in 2014 and 2015 were recalculated according to the 2016 benchmark.

In **Social Contracting**, with respect to 2015, a difference is observed in the way of presenting the data and the analysis of the information. In 2016, values in social contracting are included by the affiliated companies CENS and Emvarias. The values presented correspond to the value signed in the contracts.





# Report parameters

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# Adjustment to Progress Communication (PCO)

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EPM manages its engagement and commitment to its stakeholders according to the guidelines offered by “The Practitioner’s Handbook on Stakeholder Engagement,” of UNEP, Accountability and Stakeholders Research Associates.

The company incorporates the 10 principles of the United Nations Global Compact in a management of commitments to its stakeholders, which is immersed in its strategic and operative goals in the following way:

- **Human Rights** management is associated with the stakeholders: suppliers and contractors, community, customers and users and EPM Group People. Details are reported in **Respect for and promotion of Human Rights**.
- **Labor right** management is associated with the EPM Group People stakeholders; details are reported in **Quality of the Organizational Climate** and **Working Environment**.
- **Environmental management** details are reported in **Biodiversity, Water Conservation, Diversification of Renewable Energies, Climate Strategy** and **Sustainable Production and Consumption**.
- The management approach and the subjects concerning **anti-corruption** are reported in **Transparency and Disclosure of Information for the Stakeholders** and in **Transparency Practices**.

The alignment of the EPM’s social and environmental management issues with the Global Compact are in: **Global Compact – GC**.

EPM is willing to continue adhering to the Global Compact and participating in the activities of the Global Compact Network of Colombia and the Antioquia Node.

## Management 2016

This report meets the requirements of the “Progress Communication” to respond to the EPM’s commitment to the Global Compact of informing on the disclosure and application of the principles in its strategy and operations.

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# Global Reporting Initiative Index - GRI G4

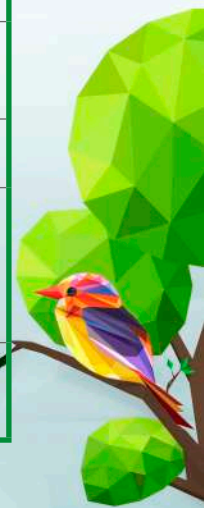


Basic general contents		
GRI - G4 Aspects and Indicators	Location on the report or response	The inspection report of these contents can be consulted in: External Inspection
<b>Strategy and analysis</b>		
<b>G4-1</b> Statement from the most senior decision-maker of the organization about the relevance of sustainability to the organization.	Letter from the CEO	✓
<b>G4-2</b> Description of key impacts, risks and opportunities.	Corporate strategic planning	✓
	Competitive strategic planning	
	Challenges	
	Macro-trends	
	Comprehensive risk management	

Organizational profile		
<b>G4-3</b> Report the name of the organization.	About us	✓
<b>G4-4</b> Report the primary brands, products and services.		✓
<b>G4-5</b> Report the location of the organization's headquarters.	Report profile	✓
<b>G4-6</b> Report the number of countries where the organization operates, and names of countries where either the organization has significant operations or that are relevant to the sustainability topics covered in the report.	About us	✓
<b>G4-7</b> Nature of ownership and legal form.	Definitions of EPM Group control environment	✓
<b>G4-8</b> Markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).	About us	✓



GRI - G4 Aspects and Indicators	Location on the report or response	The inspection report of these contents can be consulted in: External Inspection
<b>G4-9</b> Report the scale of the organization, including: <ul style="list-style-type: none"> <li>• Total number of employees</li> <li>• Total number of operations</li> <li>• Net sales or revenues</li> <li>• Quantity of products or services provided</li> </ul>	About us Stakeholders: EPM Group People	✓
<b>G4-10</b> Report the following labor information: <ul style="list-style-type: none"> <li>• Report the total number of employees by employment contract and gender.</li> <li>• Report the total number of employees by region and gender.</li> </ul>	List of employees Implementation and impact of the supply chain	✓
<b>G4-11</b> Report the percentage of employees covered by collective agreements.	Labor unions	✓
<b>G4-12</b> Describe the organization's supply chain.	<ul style="list-style-type: none"> <li>• Our supply chain</li> <li>• Responsible contracting for local development</li> <li>• Impact on the contracting process</li> <li>• Social contracting</li> <li>• Local, regional, national and foreign contracting</li> <li>• Implementation and impact of the supply chain</li> <li>• Strengthening and development of suppliers</li> <li>• Engagement with suppliers and contractors</li> </ul>	✓
<b>G4-13</b> Significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain.	Consolidation Growth How we are organized	✓
<b>G4-14</b> Description of how the precautionary approach or principle is addressed by the organization.	Precautionary principle	✓
<b>G4-15</b> Externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	Water conservation EPM foundation Commitments to external sustainability initiatives Joint responsibility for the environment	✓
<b>G4-16</b> Memberships of associations (such as industry associations) and national or international advocacy organizations the organization endorses.	Stakeholders: colleagues	✓





GRI - G4 Aspects and Indicators	Location on the report or response	The inspection report of these contents can be consulted in: External Inspection
<b>G4-EU1</b> Installed capacity breakdown by source of primary energy and by regulation system.	About us	✓
<b>G4-EU2</b> Energy net production breakdown by source of primary energy and by regulation system.		✓
<b>G4-EU3</b> Number of residential, industrial, institutional and commercial customers.	Stakeholders: customers and users Service coverage and expansion	✓
<b>G4-EU4</b> Length of the (subterranean and aerial) lines of Transmission and Distribution.	About us Service coverage and expansion	✓
<b>G4-EU5</b> Assignment of CO <sub>2</sub> emissions allowed, itemized according to the carbon trading framework of bond issuance.	Not reported. EPM does not operate in carbon trade markets.	x

Material aspects and coverage		
<b>G4-17</b> List all entities included in the consolidated financial statements and report whether any of these entities is not included in the sustainability report.	Report profile	✓
<b>G4-18</b> Explain the process for defining the report content and the aspects to be reported.	Material aspects and coverage	✓
<b>G4-18</b> List all the material aspects identified in the process for defining the report content.		✓
<b>G4-20</b> For each material aspect, report the aspect boundary within the organization. Otherwise, indicate what aspect is not material for any entities within the organization.		✓
<b>G4-21</b> For each material aspect, report the aspect boundary outside the organization.		✓
<b>G4-22</b> Explanation of the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	Material aspects and coverage: reformulation and correction of data with respect to previous reports.	✓
<b>G4-23</b> Significant changes from previous reporting periods in the scope, aspect boundaries or assessment methods applied.	Material aspects and coverage	✓

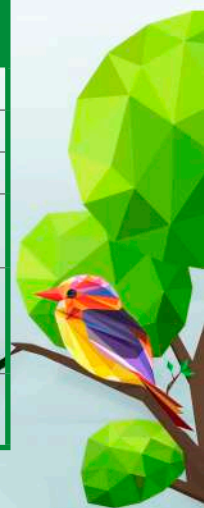




GRI - G4 Aspects and indicators	Location on the report or response	The inspection report of these contents can be consulted in: External Inspection
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Stakeholder engagement		
<b>G4-24</b> List the stakeholder groups engaged by the organization.	Identification of stakeholders	✓
<b>G4-25</b> Report the basis for identification and selection of stakeholders with whom to engage.		✓
<b>G4-26</b> Organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group. Indicate whether any of the engagement was undertaken as part of the report preparation process.	Stakeholder engagement Information for stakeholders	✓
<b>G4-27</b> Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholders and the topics identified as relevant.	Our stakeholders: <ul style="list-style-type: none"> <li>• Customers and users</li> <li>• Community</li> <li>• Suppliers and contractors</li> <li>• EPM Group People</li> <li>• Owner</li> <li>• Partners</li> <li>• Investors</li> <li>• Colleagues</li> <li>• The State</li> </ul>	✓

Report Profile		
<b>G4-28</b> Reporting period for information provided.	Report Profile	✓
<b>G4-29</b> Date of most recent previous report.		✓
<b>G4-30</b> Reporting cycle (such as annual, biennial).		✓
<b>G4-31</b> Contact point for questions regarding the report or its contents.		✓
<b>G4-32</b> Report the 'in accordance' option with the GRI Guidelines the organization has chosen (Core - Comprehensive). Report the GRI Content Index.		✓
<b>G4-33</b> Report the organization's policy or approach with regard to seeking external assurance for the report.		✓





GRI - G4 Aspects and indicators	Location on the report or response	The inspection report of these contents can be consulted in: External Inspection
<b>Governance</b>		
<b>G4-34</b> Governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts.	Conceptual Framework of EPM's Corporate Governance	✓
<b>G4-35</b> Report the process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees.	Authority delegation is made by the committees:  Management of EPM's Administration: Committees that support Management.  Administration of EPM's Board of Directors: Management of committees that support the Board of Directors	✓
<b>G4-36</b> Report whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether post holders report directly to the highest governance body.	The primary function of the Sustainable Development Management, appointed to the Executive Vice Presidency of Strategy and Growth, is <i>"to lead the planning in terms of economic, human, social and environmental sustainability, and assure its development in and alignment with the EPM Group business plan, so that value generation is viable for the EPM Group and its stakeholders"</i> .	✓
<b>G4-37</b> Report processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics. If consultation is delegated, describe to whom and any feedback processes to the highest governance body.	<b>Stakeholders' Engagement:</b> Dialogs with stakeholders.  EPM's Sustainable Development Management coordinates the engagement model with stakeholders and reports its management to the highest governance body committees.  The Vice Presidency of Corporate Communications and Relationships and the leaders of each stakeholder group are responsible for materializing engagement and participation.	✓



GRI - G4 Aspects and indicators	Location on the report or response	The inspection report of these contents can be consulted in: External Inspection
<p><b>G4-38</b> Report the composition of the highest governance body and its committees.</p> <ul style="list-style-type: none"> <li>• Executive or non-executive</li> <li>• Independence</li> <li>• Tenure on the governance body</li> <li>• Gender</li> <li>• Membership of under-represented social groups</li> <li>• Competences relating to economic, environmental and social impacts</li> </ul>	<p>Administration of EPM's Board of Directors: Structure of the Board of Directors</p> <p>Boards of Directors of the Companies of the Group in Latin America</p> <p>Boards of Directors of the Companies of the Group in Colombia</p>	<p>✓</p>
<p><b>G4-39</b> Report whether the Chair of the highest governance body is also an executive officer (and, if so, his or her function within the organization's management and the reasons for this arrangement).</p>	<p>Administration of EPM's Board of Directors: Structure of the Board of Directors</p> <p>The Chairman of the Board of Directors does not hold an executive position in the organization.</p>	<p>✓</p>
<p><b>G4-40</b> Report the nomination and selection processes for the highest governance body and its committees, including:</p> <ul style="list-style-type: none"> <li>• Whether and how diversity is considered.</li> <li>• Whether and how independence is considered.</li> <li>• Whether and how expertise and experience relating to economic, environmental and social topics are considered.</li> <li>• Whether and how shareholders are involved.</li> </ul>	<p>Administration of EPM's Board of Directors: Structure of the Board of Directors</p>	<p>✓</p>
<p><b>G4-41</b> Processes for the highest governance body to ensure conflicts of interest are avoided and managed.</p>	<p>Administration of EPM's Board of Directors: Conflicts of interest</p>	<p>✓</p>
<p><b>G4-42</b> Report the highest governance body's and senior executives' roles in the development, approval, and updating of the purpose, value or mission statements, strategies, policies, and goals related to economic, environmental and social impacts.</p>	<p>The Management of the Board of Directors Support Committees are responsible for approving and updating the purpose, value or mission statements, strategies, policies, and goals:</p> <p><b>Management of EPM's Administration:</b></p> <ul style="list-style-type: none"> <li>• Committees that support Management.</li> </ul> <p><b>Administration of EPM's Board of Directors:</b></p> <ul style="list-style-type: none"> <li>• Management of the committees of the Board of Directors.</li> </ul>	<p>✓</p>

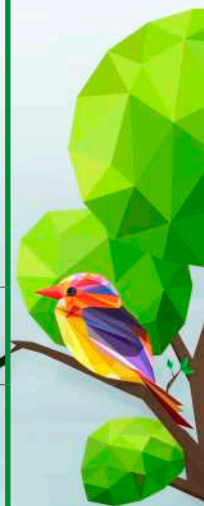




GRI - G4 Aspects and indicators	Location on the report or response	The inspection report of these contents can be consulted in: External Inspection
<p><b>G4-43</b> Report the measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics.</p>	<p>Administration of EPM's Board of Directors: Management of the Board of Directors.</p> <p>Management of the committees of the Board of Directors.</p>	<p>✓</p>
<p><b>G4-44</b> Processes for evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics. Report whether such evaluation is independent or not, and its frequency.</p>	<p>Administration of EPM's Board of Directors: Assessment of the Board of Directors.</p>	<p>✓</p>
<p><b>G4-45</b> Report the highest governance body's role in the identification and management of economic, environmental and social impacts, risks, and opportunities.</p>	<p>The committees supporting the Management and the Board of Directors are responsible for identifying and managing the impacts, risks and opportunities.</p> <p>Management of EPM's Administration: Committees that support Management.</p> <p>Administration of EPM's Board of Directors: Management of the committees of the Board of Directors.</p> <p>Comprehensive Risk Management</p>	<p>✓</p>
<p><b>G4-46</b> Report the highest governance body's role in reviewing the effectiveness of the risk management processes for economic, environmental and social topics.</p>	<p>The Management of Comprehensive Risk Management, appointed to the Executive Vice Presidency of Corporate Finance and Investment Management, is responsible for reviewing the effectiveness of the risk management processes.</p> <p>Comprehensive Risk Management</p>	<p>✓</p>
<p><b>G4-47</b> Report the frequency of the highest governance body's review of economic, environmental and social impacts, risks, and opportunities.</p>	<p>Administration of EPM's Board of Directors: Management of the Board of Directors.</p> <p>Management of the committees of the Board of Directors.</p>	<p>✓</p>



GRI - G4 Aspects and indicators	Location on the report or response	The inspection report of these contents can be consulted in: External Inspection
<b>G4-48</b> Report the highest committee or position that formally reviews and approves the sustainability report and ensures that all material aspects are covered.	Material aspects and coverage, specifically in the validation stage..	✓
<b>G4-49</b> Report the process for communicating critical concerns to the highest governance body.	<p>Topics addressed by the Board of Directors, depending on their nature, are previously reviewed by the support committees.</p> <p>Administration of EPM's Board of Directors: Management of committees that support the Board of Directors</p>	✓
<b>G4-50</b> Report the nature and total number of critical concerns that were communicated to the highest governance body and the mechanisms used to address and resolve them.	<p>Aspects analyzed by the EPM's Board of Directors during 2016 include mainly financial and strategic aspects such as the redefinition of the BHAG, the definition of challenges and goals for 2016 – 2019 and the analysis of EPM's purpose.</p> <p>59% of the aspects addressed were for approval and 41% informative aspects. 23% covered the entire Group and 77% covered EPM Parent Company.</p> <p>Administration of EPM's Board of Directors</p>	✓
<b>G4-51</b> Report the remuneration policies for the highest governance body and senior executives: <ul style="list-style-type: none"> <li>• Fixed or variable performance-based pay</li> <li>• Fixed or variable equity-based pay</li> <li>• Fixed or variable bonus-based pay</li> <li>• Termination payment</li> <li>• Report how performance criteria in the remuneration policy relate to the highest governance body's and senior executives' economic, environmental and social objectives.</li> </ul>	<p>Administration of EPM's Board of Directors: Remuneration of the Board of Directors</p> <p>Management of EPM's Administration: Remuneration of EPM's Administration.</p>	✓
<b>G4-52</b> Report the process for determining remuneration. Report whether remuneration consultants are involved in determining remuneration.	Management of EPM's Administration: Remuneration of EPM's Administration.	✓
<b>G4-53</b> Report how stakeholders' views are sought and taken into account regarding remuneration, including the results of votes on remuneration policies and proposals, if applicable.		✓





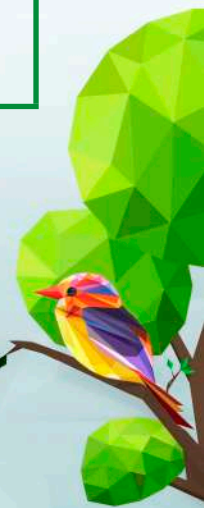


GRI - G4 Aspects and indicators	Location on the report or response	The inspection report of these contents can be consulted in: External Inspection
<b>G4-54</b> Report the ratio of the annual total compensation for the organization's highest-paid individual to the median annual total compensation for all employees.	The ratio of the annual compensation for the CEO and the median compensation for all employees is 9.91.	✓
<b>G4-55</b> Report the ratio of percentage increase in annual total compensation for the organization's highest-paid individual to the median percentage increase in annual total compensation for all employees.	Management of EPM's Administration: Remuneration of EPM's Administration.	✓

Ethics and integrity		
<b>G4-56</b> Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.	Corporate strategic planning Transparency practices	✓
<b>G4-57</b> Report the internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity, such as helplines or advice lines.	Institutional management in Human Rights Human Rights management in projects under construction Human Rights in the supply chain Transparency practices	✓
<b>G4-58</b> Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines.	Transparency practices Control environment Institutional management in Human Rights Human Rights management in projects under construction Human Rights in the supply chain Engagement with suppliers and contractors	✓



Basic specific contents							
Material Aspect (Management Approach)	GRI - G4 Aspect	GRI - G4 Indicator or EPM indicator		Location on the Report or Response	Omissions		The inspection report of these contents can be consulted in: External Inspection
Access to and purchasability of public utilities	Indirect economic impacts	G4-EC8	Significant indirect impacts, including the extent of impacts.	Service coverage and expansion			
				Rural electrification			✓
				Energy for the return			✓
				Account financing and default			
				Gas without borders			
				Habitable homes			
				Pay according to your needs			✓
				Public power stacks and community meters			
				Unserviced population			✓
				Prepaid services			✓
	Access	G4-EU26	Percentage of unserved population in areas with distribution license.	Service coverage and expansion			
Biodiversity	Biodiversity	G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	Preservation and restoration			✓





Material Aspect (Management Approach)	GRI - G4 Aspect	GRI - G4 Indicator or EPM indicator		Location on the Report or Response	Omissions		The inspection report of these contents can be consulted in: External Inspection
Biodiversity	Biodiversity	G4-EN12	Description of the most significant impacts on biodiversity in protected areas and areas of high biodiversity value outside protected areas, derived from activities, products and services in protected areas and areas of high biodiversity value outside protected areas. Electricity sector: Report the nature of significant direct and indirect impacts on biodiversity with reference to: i) maintenance of transmission linear corridors, ii) fragmentation and isolation, iii) impacts of thermal discharges.	Impact management and compensation			
		G4-EN13	Habitats protected or restored.	Preservation and restoration			✓
		G4-EN14	Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	Conservation of threatened species			✓
		G4-EU13	Comparison of biodiversity between compensated habitats and areas affected.	Impact management and compensation			✓
	Not applicable	EPM-01	Conservation areas.	Conservation of threatened species			
Quality of the organizational climate	Not applicable	EPM-02	Results of the organizational climate assessment.	Organizational climate			✓



Material Aspect (Management Approach)	GRI - G4 Aspect	GRI - G4 Indicator or EPM indicator		Location on the Report or Response	Omissions		The inspection report of these contents can be consulted in: External Inspection
Quality and safety of products and services	Customer health and safety	G4-PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes.	Reliability in the provision of the service			✓
		G4-EU25	Number of injuries and deaths involving the organization's assets, including legal sentences, settlements and pending legal cases of diseases.				✓
	Product and service labeling	G4-PR5	Results of surveys measuring customer satisfaction.	Customer satisfaction			✓
	Marketing communications	G4-PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes.	Education for and communication with customers, users and the community			✓
	Customer privacy	G4-PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	Customer service			✓
	Compliance product responsibility	G4-PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	Reliability in the provision of the service			✓



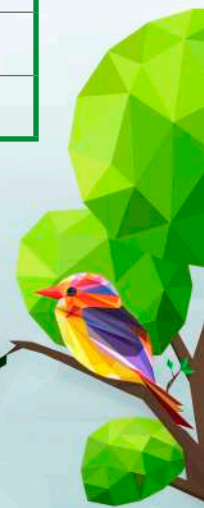


Material Aspect (Management Approach)	GRI - G4 Aspect	GRI - G4 Indicator or EPM indicator		Location on the Report or Response	Omissions		The inspection report of these contents can be consulted in: External Inspection
Quality and safety of products and services	Access	G4-EU28	Average frequency of blackouts.	Service quality and continuity			✓
		G4-EU29	Average duration of blackouts.				✓
		G4-EU30	Average availability of generation plants, by energy source and regulatory system.	About us			
	Not applicable	EPM-03	Loss rate.	Loss management			✓
		EPM-04	Customer service channels.	Customer service			
		EPM-05	Grievance indicator.	Customer satisfaction			
Responsible contracting for local development	Procurement practices	G4-EC9	Proportion of spending on local suppliers at significant locations of operation.	Local, regional, national and foreign contracting			✓
	Not applicable	EPM-06	Number and value of social contracting contracts.	Social contracting			✓
		EPM-07	Number, value and type of contracts at EPM Group.	Impact on the contracting process			✓
		EPM-08	External employment generated in EPM Group's contracts.				✓
		EPM-09	Suppliers' satisfaction.	Engagement with suppliers and contractors			✓





Material Aspect (Management Approach)	GRI - G4 Aspect	GRI - G4 Indicator or EPM indicator		Location on the Report or Response	Omissions		The inspection report of these contents can be consulted in: External Inspection
Water conservation	Water	G4-EN8	Total water catchment by source. Electricity sector: Report the use of water in processes in general, refrigeration and consumption in thermal and nuclear energy plants, including the use of water in the management of ashes and carbon cleaning.	Water consumption			✓
		G4-EN10	Percentage and total volume of water recycled and reused.				✓
	Not applicable	EPM-01	Conservation areas.	Water conservation			
		EPM-10	Water protection.				✓
Diversification of renewable energies	Not applicable	EPM-11	Initiatives of diversification of renewable energies.	Biomass			✓
				Wind energy			✓
				Geothermal energy			✓
				Solar photovoltaic energy			✓





Material Aspect (Management Approach)	GRI - G4 Aspect	GRI - G4 Indicator or EPM indicator		Location on the Report or Response	Omissions		The inspection report of these contents can be consulted in: External Inspection					
Climate strategy	Economic performance	G4-EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	Management of the Climate Strategy								
				Adaptation to Natural Variability and Climate Change								
	Emissions	G4-EN15	Direct greenhouse gas emissions (Scope 1). Electricity sector: Report CO <sub>2</sub> e per MWh, itemized by regulatory system for: <ul style="list-style-type: none"> <li>• Net generation of all the generation capacity.</li> <li>• Net generation of all the fossil fuel generation.</li> <li>• Estimated net delivery for all end users. This includes emissions of the organization's own generation.</li> </ul>	Climate Change Mitigation				✓				
								G4-EN16	Indirect greenhouse gas emissions (Scope 2). Electricity sector: Report CO <sub>2</sub> e per MWh, itemized by regulatory system for the estimated net delivered to end users, including acquired energy emissions.	✓		
										G4-EN17	Other indirect greenhouse gas emissions (Scope 3).	✓
												G4-EN18
								G4-EN19	Reduction of greenhouse gas emissions.	Management of the Climate Strategy	✓	
								G4-EN20	Emissions of ozone-depleting substances in weight.	Climate Change Mitigation		



Material Aspect (Management Approach)	GRI - G4 Aspect	GRI - G4 Indicator or EPM indicator		Location on the Report or Response	Omissions		The inspection report of these contents can be consulted in: External Inspection
Climate strategy	Emissions	G4-EN21	NOx, SOx, and other significant air emissions by type and weight. Electricity sector: Report emissions by MWh for: i) net emission of all the generation capacity and ii) net generation of all the combustion plants.	Climate change mitigation			✓
	Transport	G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce.				
Unserviced population	Not applicable	EPM-12	Solutions for unserved homes.	Unserviced population			✓
Respect for and promotion of Human Rights	Investment	G4-HR1	Total number and percentage of significant investment agreements and contracts that include Human Rights clauses or that underwent Human Rights screening.	Human Rights in the supply chain	No data	Investment agreements do not include Human Rights clauses.	
		G4-HR2	Total hours of employee training on Human Rights policies or procedures concerning aspects of Human Rights that are relevant to operations, including the percentage of employees trained.	Institutional management in Human Rights			
	Non discrimination	G4-HR3	Total number of incidents of discrimination and corrective actions taken.				

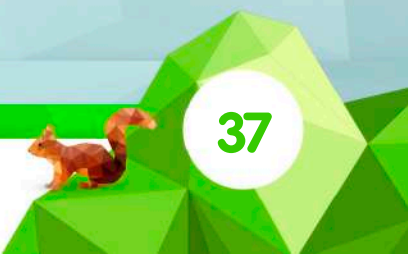




Material Aspect (Management Approach)	GRI - G4 Aspect	GRI - G4 Indicator or EPM indicator		Location on the Report or Response	Omissions		The inspection report of these contents can be consulted in: External Inspection
Respect for and promotion of Human Rights	Freedom of association and collective bargaining	G4-HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights.	Institutional management in Human Rights			
	Child labor	G4-HR5	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.	Human Rigchain Risk associated to forced labor is minimized through the incorporation of clauses in the contracting tenders			
	Forced or compulsory labor	G4-HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.				
	Security practices	G4-HR7	Percentage of security personnel trained in the organization's Human Rights policies or procedures that are relevant to operations.	Security and Human Rights			✓



Material Aspect (Management Approach)	GRI - G4 Aspect	GRI - G4 Indicator or EPM indicator		Location on the Report or Response	Omissions		The inspection report of these contents can be consulted in: External Inspection
Respect for and promotion of Human Rights	Indigenous rights	G4-HR8	Total number of incidents of violations involving rights of indigenous peoples and actions taken.	Institutional Management in Human Rights			✓
	Assessment	G4-HR9	Total number and percentage of operations that have been subject to Human Rights reviews or impact assessments.	Human Rights Management in Projects under Construction			
	Supplier Human Rights assessment	G4-HR10	Percentage of new suppliers that were screened using Human Rights criteria.	Institutional Management in Human Rights			
		G4-HR11	Significant actual and potential negative Human Rights impacts in the supply chain and actions taken.	Human Rights in the Supply Chain			
	Human Rights grievance mechanisms	G4-HR12	Number of grievances about Human Rights impacts filed, addressed, and resolved through formal grievance mechanisms.	Security and Human Rights			✓
	Grievance mechanisms for impacts on society	G4-SO11	Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms.	Human Rights Management in Projects under Construction			✓
	Local communities	G4-EU22	Number of physically or economically displaced people and the compensation granted, detailed by type of project.	Security and Human Rights	Confidential information	The compensation offered to the displaced population is not reported.	✓







Material Aspect (Management Approach)	GRI - G4 Aspect	GRI - G4 Indicator or EPM indicator		Location on the Report or Response	Omissions	The inspection report of these contents can be consulted in: External Inspection
Rates and prices	Not applicable	EPM-13	Fees by type of service.	Water supply and sewerage rates		✓
				Sanitation rates		✓
				Electricity rates		✓
				Gas rates		✓
Transparency and disclosure of information for the stakeholders	Anti-corruption	G4-SO4	Communication and training on anti-corruption policies and procedures	Transparency practices		✓
	Not applicable	EPM-14	Transparencia por Colombia Indicator.			✓
			EPM-15	External communication strategy and mechanisms.	Information for stakeholders	

Complementary Aspects					
Complementary Aspect	GRI-G4 Aspect	GRI-G4 Indicator or EPM Indicator		Location on the Report or Response	The inspection report of these contents can be consulted in: External Inspection
Corporate citizenship	Indirect economic impacts	G4-EC7	Development and impact of infrastructure investments and services supported.	EPM Foundation	
		G4-EC8	Significant indirect impacts, including the extent of these impacts.	Christmas lighting	
				Events and Sponsorships	
				EPM Foundation	
			City projects		
Development and innovation	Energy	G4-EN6	Reduction of energy consumption.	Energy efficiency	



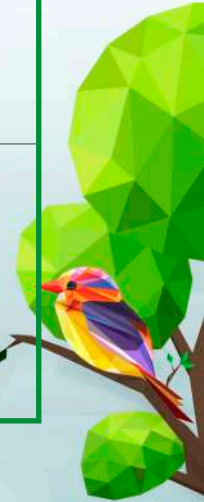
Complementary Aspect	GRI-G4 Aspect	GRI-G4 Indicator or EPM Indicator		Location on the Report or Response	The inspection report of these contents can be consulted in: External Inspection
Work environment	Organizational profile	G4-10	Total number of employees. Electricity sector: include contractors.	List of employees Implementation and impact of the supply chain	
		G4-11	Percentage of employees covered by collective bargaining agreements. Include contractors covered by collective bargaining agreements.	Labor unions	
	Employment	G4-EU14	Programs and processes to guarantee the availability of qualified workforce.	Personnel selection	
		G4-EU15	Percentage of employees eligible to retire in the next 5 and 10 years, broken down by category and region.	Retirees and pensioners	
		G4-EU16	Policies and requirements concerning health and safety of employees, contractors and subcontractors.	Occupational health and safety	
		G4-EU17	Work days of contractors' and subcontractors' employees who work in construction, operation and maintenance activities.		
		G4-EU18	Percentage of contractors and subcontractors that have been trained in subjects such as health and safety.		
		G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender and region. Electricity sector: for employees who quit during the reporting year, report the average duration of employment, broken down by gender and age group.	List of employees	
	G4-LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation.	Employee welfare and benefits		



Complementary Aspect	GRI-G4 Aspect	GRI-G4 Indicator or EPM Indicator		Location on the Report or Response	The inspection report of these contents can be consulted in: External Inspection
Work environment	Occupational health and safety	G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender. Electricity sector: report health and safety performance of contractors and subcontractors who work at the organization's offices or on behalf of the organization but outside of it.	Occupational health and safety	
		G4-LA7	Workers with high incidence or high risk of diseases related to their occupation.		
		G4-LA8	Health and safety topics covered in formal agreements with trade unions.		
	Training and education	G4-LA9	Average hours of training per year per employee by gender, and by employee category.	Training and development	
		G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.		
		G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category.		Work performance
	Diversity and equal opportunity	G4-LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	List of employees	
	Not applicable	EPM-16	Percentage of employees surveyed in quality of life and psychosocial risk.	Quality of life	



Complementary Aspect	GRI-G4 Aspect	GRI-G4 Indicator or EPM Indicator		Location on the Report or Response	The inspection report of these contents can be consulted in: External Inspection
Social and environmental management in projects	Indirect economic impacts	G4-EC7	Development and impact of infrastructure investments and services supported.	Ituango Hydroelectric Project	
		G4-EC8	Significant indirect impacts, including the extent of impacts.	Aguas Claras – EPM’s Waste Water Treatment Plant Park	
	Local communities	G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	Aldeas Program Bello – Guayabal – Ancón Project Nueva Esperanza Project Intermediate Projects	
		G4-SO2	Operations with significant actual and potential negative impacts on local communities.	Impacts are measured in all projects and they are analyzed to determine the negative ones.	
	Products and services	G4-EN27	Extent of impact mitigation of environmental impacts of products and services.	Ituango Hydroelectric Project Aguas Claras – EPM’s Waste Water Treatment Plant Park Aldeas Program Bello – Guayabal – Ancón Project Nueva Esperanza Project Intermediate Projects	
	General	G4-EN31	Total environmental protection expenditures and investments by type.	<b>Social and environmental management in projects</b> This indicator includes environmental operation costs and expenses	





Complementary Aspect	GRI-G4 Aspect	GRI-G4 Indicator or EPM Indicator		Location on the Report or Response	The inspection report of these contents can be consulted in: External Inspection
Sustainable production and consumption	Materials	G4-EN1	Materials used by weight or volume. Electricity sector: report the inventory in use of low- and high-level solid and liquid PCBs in the equipment.	Other consumptions and efficient practices	
		G4-EN2	Percentage of materials used that are recycled input materials.		
	Energy	G4-EN3	Energy consumption within the organization.	Energy consumption, energy intensity and improvements	✓
		G4-EN4	Energy consumption outside the organization.		✓
		G4-EN5	Energy intensity.		
		G4-EN6	Reduction of energy consumption.		
		G4-EN7	Reduction in energy requirements of products and services.		
	Effluents and waste	G4-EN23	Total weight of waste by type and disposal method. Electricity sector: include PCB waste as part of the total weight of hazardous and non-hazardous waste, as well as nuclear waste.	Integrated solid waste management	✓
		G4-EN25	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel convention.		





# External inspection

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In accordance with the independence standards required by the Code of Ethics of the International Federation of Accountants (**IFAC**), the independent verification report issued by Deloitte confirms their independence from the EPM Group. Additionally, it also mentions that all employees complete annual updates to the ethics policy, in which they specifically declare no conflict of interest with EPM, its subsidiaries or its stakeholders.

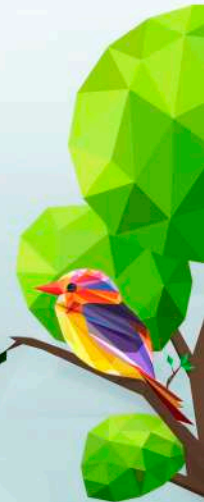
The inspection was conducted according to **ISAE 3000** - International Standard on Assurance Engagements Other than Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board (**IAASB**) of the International Federation of Accounts (**IFAC**).

As set out in the **GRI G4-33** indicator, the verification report presents, for each of the material aspects, the aspects and indicators of the GRI G4 methodology, or the internal indicators, that were subject to inspection.

The conclusion of the independent verification states that there is no evidence of issues that would indicate that the Sustainability Report contains significant errors or that it has not been prepared in accordance with the version 4.0 of the Sustainability Reporting Guidelines of the Global Reporting Initiative (**GRI**), in its extensive compliance.

This Sustainability Report was externally inspected by Deloitte & Touche, the company that performs EPM's external audit and does the statutory audit for the companies of the EPM Group.

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## Independent Review Report

Independent Review of Annual Management Report of the EPM Group (2016).

### Scope of our work

We conducted our review of the adaptation of the contents of Annual Management Report of the EPM Group 2016 to the Guide for the preparation of Sustainability Reports of the Global Reporting Initiative (GRI) version 4.0 (G4).

### Standards and verification processes

We conducted our work in accordance with *ISAE 3000 - International Standard on Assurance Engagements Other than Audits or Reviews of Historical Financial Information issued by the International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC)*.

Our review work consisted in formulating questions to the various areas of the EPM Group who participated in the development of the Annual Management Report and the application of certain analytical procedures and review testing sample described below:

- Interviews with staff members of The EPM Group to know the principles, systems and management approaches used to develop the report and calculate the indicators.
- Analysis of how the process of definition of the content, structure and indicators was defined, based on the materiality exercise according to the GRI G4 methodology.
- Evaluation of the process to collect and validate the data presented in the report.
- Meetings with national and international subsidiaries to check the information included in the report of the EPM Group.
- Checking, by testing based on sample selection and review of evidence of quantitative and qualitative information corresponding to the GRI and The EPM Group internal indicators included in the Annual Management Report and proper compilation from the data supplied by the sources of information of The EPM Group.

### Confirmation that the Annual Management Report is prepared in accordance with GRI methodology G4

#### General aspects

We confirm that the report meets the requirements of Comprehensive option of the general aspects of the GRI G4 version.

#### Responsibilities of the Management of The EPM Group and Deloitte.

The preparation of Annual Management Report of the EPM Group 2016 and its contents are the responsibility of the organization which is also responsible for defining, adapting and maintaining management systems and internal control, which information is obtained.

Our responsibility is to issue an independent report based on our review procedures applied.

This report has been prepared exclusively in the interests of the organization in accordance with the terms of our proposed services. We do not assume any liability to third parties other than the company Direction.

We have performed our work in accordance with the Independence regulations required by the ethic code of the International Federation of Accountants (IFAC).

The Scope of a limited Review is substantially less than an audit. Therefore we don't provide an audit opinion about the sustainability report.

DELOITTE & TOUCHE LTDA.  
Jorge Enrique Múnera D.  
Socio

Bogotá, April 2017

Audit.Tax.Consulting.Financial.Advisory



#### Specific aspects

We reviewed the management approach and we confirm that all GRI and internal indicators of the material issues identified by the company were reported (see Anex 1).

#### **Conclusions**

As a result of our review, there was nothing that make us believe that the Annual Management Report contains significant errors or has not been prepared in accordance with the Guide for the preparation of Sustainability Reports of Global Reporting Initiative (G4) in its Comprehensive version.

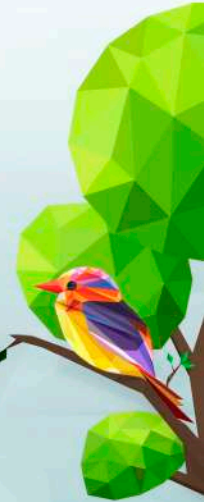
#### **Recommendations**

In addition, we have presented to The Group EPM our recommendations in order to consolidate the processes, programs and systems related to sustainability management. The most relevant recommendation refers to:

- Expand the periodic monitoring of progress in the management of material issues to national and international subsidiaries, in order to continue incorporating material issues into the management and reporting process.
- Continue to strengthen the unification of criteria among EPM Group subsidiaries to report indicators associated with material issues.
- It is recommended to standardize the formation of indicators and the calculation methods so that all the subsidiaries are aligned with the EPM Group 's methodology.

#### **ANEX 1**

<b>Material Issues</b>	<b>GRI or Internal Indicators</b>
Access and purchasing power of public utilities services	EC8
Biodiversity	EN11, EN13, EN14, EU13
Quality of work environment	EPM-02
Quality and safety of products and services	PR2, PR5, PR7, PR8, PR9, EU25, EU28, EU29, EPM-03
Responsible procurement to local development	EC9, EPM-06, EPM-07, EPM-08, EPM-09
Water care	EN8, EN10, EN22, EPM-10
Diversification of renewable energies	EPM-11
Climate strategy	EC2, EN15, EN16, EN17, EN19, EN21
Unserved population	EPM-12
Respect and Promotion of Human Rights	HR2, HR3, HR7, HR8, HR12, SO11, EU22
Fees and prices	EPM-13
Transparency and information openness to stakeholders	SO4, EPM-14 EPM-15





## ANEX 2

In addition, we verify the following GRI indicators associated with the complementary issue Sustainable Production and Consumption:

Complementary issue	GRI Indicators
Sustainable production and consumption	EN3, EN4, EN23

## ANEX 3 Declaration of Independence

Deloitte is one of the largest companies of professional services in audit, tax, consulting and financial and sustainability advisory to public and private clients in multiple industries. With a globally connected network of member firms in more than 185 countries, Deloitte brings world-class capabilities and high quality service to its customers. Approximately 250,000 professionals are committed to becoming the standard of excellence.

We confirm our independence from the EPM Group. All our employees perform annual updates to the Ethics Policy which promptly declare that we have no conflicts of interest with the EPM Group, its subsidiaries and its stakeholders.

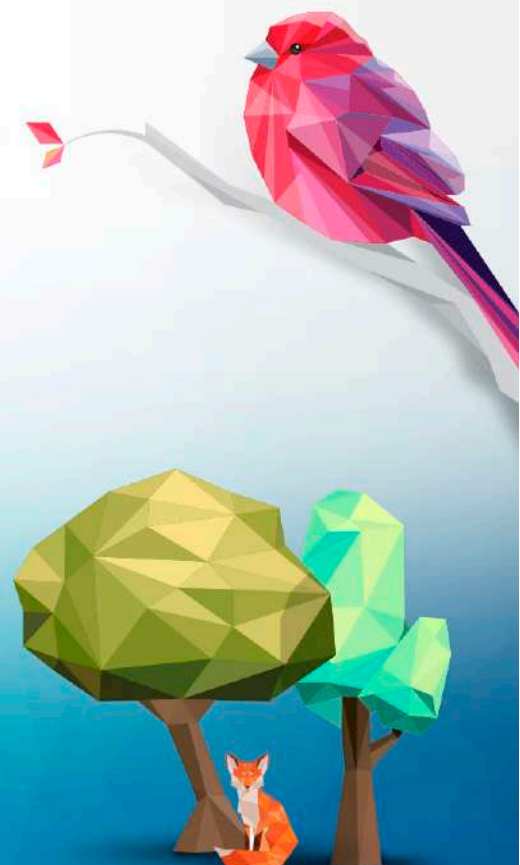




# Correspondence with initiatives of sustainability

epm<sup>®</sup> Group

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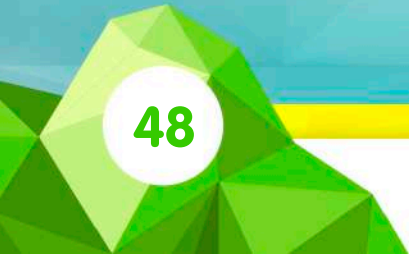




# GRI G4 – Dow Jones Sustainability Index, Multi-Utilities and Water Sector

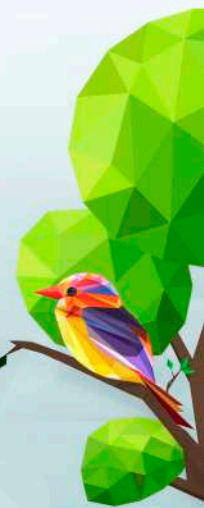


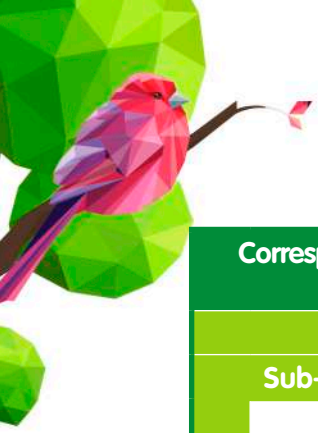
Correspondence between GRI - G4 and Dow Jones Sustainability Index, Multi-Utilities and Water Sector			
GRI - G4	DJSI 2015		
Sub-Category / Aspect	Dimension	Criterion	
General	1 - Economic	1.2 - Risk and crisis management	
		1.10 - Balanced scorecard / measurement systems	
		1.5 - Customer engagement management	
		1.6 - Supply chain management	
	2 - Environmental	1.8 - Market opportunities	
		2.2 - Environmental policy / environmental management systems	
		2.5 - Climate strategy	
		2.6 - Electricity generation	
	3 - Social	2.7 - Transmission and distribution	
		3.2 - Labor practices and Human Rights indicators	
	Report profile	2 - Environmental	2.1 - Environmental report
		3 - Social	3.1 - Social report
	Identification of material aspects and boundaries	2 - Environmental	2.1 - Environmental report
		3 - Social	3.1 - Social report
Stakeholder engagement	2 - Environmental	2.1 - Environmental report	
	3 - Social	3.1 - Social report	
Governance	1 - Economic	3.8 - Stakeholder engagement	
		1.1 - Corporate governance	
1.2 - Risk and crisis management			
1.3 - Codes of conduct / compliance / corruption and bribery			
Ethics and integrity	1 - Economic	1.4 - Antitrust policy	



## Correspondence between GRI - G4 and Dow Jones Sustainability Index, Multi-Utilities and Water Sector

GRI - G4		DJSI 2015		
Sub-Category	Aspect	Dimension	Criterion	
Economic	Economic performance	1 - Economic	1.2 - Risk and crisis management	
			1.7 - Tax strategy	
	Indirect economic impacts	2 - Environmental	2.5 - Climate strategy	
		3 - Social	2.1 - Environmental report	
	Procurement practices		3.1 - Social report	
	Availability and reliability	1 - Economic		1.6 - Supply chain management
				1.2 - Risk and crisis management
				1.8 - Market opportunities
	System efficiency	2 - Environmental		1.9 - Price risk management
				2.6 - Electricity generation
Demand management	1 - Economic		2.7 - Transmission and distribution	
			2.6 - Electricity generation	
Research and development		2.7 - Transmission and distribution		
			1.5 - Customer engagement management	
			1.8 - Market opportunities	
			1.11 - Water operations	





**Correspondence between GRI - G4 and Dow Jones Sustainability Index, Multi-Utilities and Water Sector**

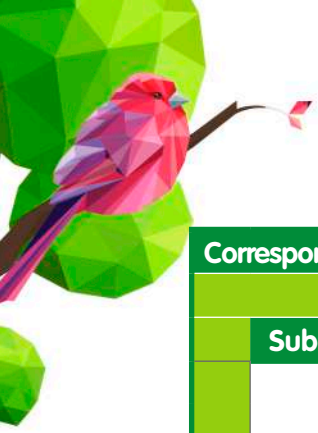
GRI - G4		DJSI 2015		
Sub-Category	Aspect	Dimension	Criterion	
Environment	Water	2 - Environmental	2.3 - Operational eco-efficiency	
			2.8 - Risks related to water	
	Biodiversity		2.4 - Biodiversity	
	Emissions		2.3 - Operational eco-efficiency	
			2.5 - Climate strategy	
	Energy		1 - Economic	1.11 - Water operations
			2 - Environmental	2.3 - Operational eco-efficiency
	2.5 - Climate strategy			
	Products and services			2.2 - Environmental management system / policy
	Effluents and waste			2.3 - Operational eco-efficiency
2.2 - Environmental management system / policy				
2.3 - Operational eco-efficiency				
Transport	2.8 - Risks related to water			
	2.2 - Environmental management system / policy			
Supplier environmental assessment	1 - Economic	1.2 - Risk and crisis management		
	2 - Environmental	1.6 - Supply chain management		
		2.8 - Risks related to water		



**Correspondence between GRI - G4 and Dow Jones Sustainability Index, Multi-Utilities and Water Sector**

GRI - G4		DJSI 2015		
Sub-Category	Aspect	Dimension	Criterion	
Social Performance	Diversity and equal opportunity	1 - Economic	1.1 - Corporate governance	
		3 - Social	3.2 - Labor practices and Human Rights indicators	
	Employment	1 - Economic	1.6 - Supply chain management	
		3 - Social	3.4 - Attraction and retention of talent	
			3.6 - Occupational health and safety	
	Training and education	3 - Social	3.3 - Human capital development	
			3.4 - Attraction and retention of talent	
			3.6 - Occupational health and safety	
	Labor practices and decent work	Equal remuneration for women and men	3 - Social	3.2 - Labor practices and Human Rights indicators
				3.4 - Attraction and retention of talent
	Labor practices and decent work	Health and safety	3 - Social	3.6 - Occupational health and safety
		Supplier assessment for labor practices		1 - Economic
	Labor practices and decent work	Labor practices grievance mechanisms	3 - Social	3.2 - Labor practices and Human Rights indicators
		Indigenous rights Assessment		
Human Rights	Supplier Human Rights assessment	1 - Economic	1.6 - Supply chain management	
		3 - Social	3.2 - Labor practices and Human Rights indicators	
	Investment	1 - Economic	1.6 - Supply chain management	
		3 - Social	3.2 - Labor practices and Human Rights indicators	
	Freedom of association and collective bargaining	3 - Social	3.2 - Labor practices and Human Rights indicators	
				Human Rights grievance mechanisms
	Human Rights grievance mechanisms	1 - Economic	3.2 - Labor practices and Human Rights indicators	1.6 - Supply chain management
Non-discrimination				3 - Social
Security practices				





**Correspondence between GRI - G4 and Dow Jones Sustainability Index, Multi-Utilities and Water Sector**

GRI - G4		DJSI 2015	
Sub-Category	Aspect	Dimension	Criterion
Human Rights	Forced or compulsory labor	1 - Economic	1.6 - Supply chain management
		3 - Social	3.2 - Labor practices and Human Rights indicators
	Child labor	1 - Economic	1.6 - Supply chain management
		3 - Social	3.2 - Labor practices and Human Rights indicators
Society	Anti-corruption	1 - Economic	1.2 - Risk and crisis management
			1.3 - Codes of conduct / compliance / corruption and bribery
			1.6 - Supply chain management
	Local communities	2 - Environmental	2.2 - Environmental policy / environmental management systems
			2.4 - Biodiversity
			2.8 - Risks related to water
			3.5 - Corporate citizenship and philanthropy
	Public policy	3 - Social	3.7 - Access to water
			1.3 - Codes of conduct / compliance / corruption and bribery
			1.4 - Antitrust policy
1.6 - Supply chain management			
Anti-competitive behavior	1 - Economic		
Compliance - society	1 - Economic		
Supplier assessment for impacts on society	1 - Economic		
Planning and emergency / disaster response	1 - Economic	1.2 - Risk and crisis management	
	2 - Environmental	2.8 - Risks related to water	
Product responsibility	Product and service labeling	1 - Economic	1.5 - Customer engagement management
	Customer privacy		
	Access	2 - Environmental	1.8 - Market opportunities
		2 - Environmental	2.6 - Electricity generation
	Provision of information	1 - Economic	1.5 - Customer engagement management

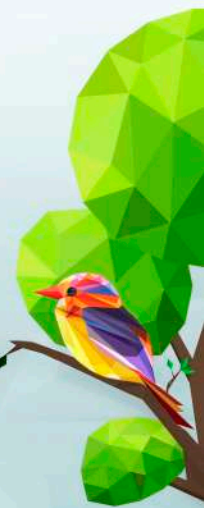
Social Performance

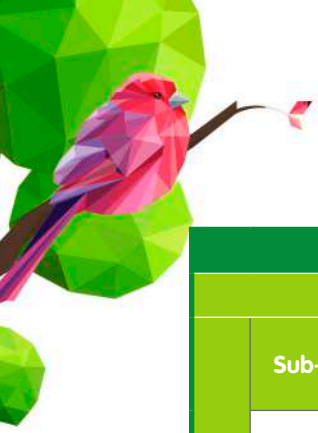




# GRI G4 - ISO 26000

Alignment between GRI - G4 and ISO 26000			
GRI - G4		ISO 26000	
General	Sub-Category / Aspect	Key principles and core subjects of ISO 26000	ISO 26000 aspects
	Strategy and analysis	Organizational governance	Organizational governance
	Organizational profile	Human Rights	Fundamental principles and rights at work
		Labor practices	Employment and employment relationships
			Conditions of work and social protection
			Social dialogue
	Identification of material aspects and boundaries	Organizational governance	Organizational governance
	Stakeholder engagement		
	Report profile		
	Corporate governance	Organizational governance	Organizational governance
Ethics and integrity			





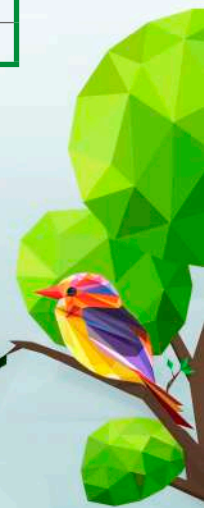
**Alignment between GRI - G4 and ISO 26000**

GRI - G4		ISO 26000	
Sub-Category	Aspect	Key principles and core subjects of ISO 26000	ISO 26000 aspects
Economic	Economic performance	Environment	Climate change mitigation and adaptation
		Community involvement and development	Community involvement and development
			Wealth and income creation
	Social investment		
	Market presence	Human Rights	Discrimination and vulnerable groups
		Labor practices	Conditions of work and social protection
		Community involvement and development	Employment creation and skills development
	Wealth and income creation		
	Indirect economic impacts	Human Rights	Economic, social and cultural rights
		Fair operating practices	Promoting social responsibility in the sphere of influence
			Respect for property rights
		Consumer issues	Access to essential services
		Community involvement and development	Community involvement and development
			Education and culture
	Employment creation and skills development		
Technology development and access			
Procurement practices	Fair operating practices	Promoting social responsibility in the sphere of influence	
		Employment creation and skills development	
	Community involvement and development	Wealth and income creation	
Economic	Availability and reliability		
	Demand-side management		
	Plant decommissioning		
	System efficiency		
	Research and development		



## Alignment between GRI - G4 and ISO 26000

GRI - G4		ISO 26000	
Sub-Category	Aspect	Key principles and core subjects of ISO 26000	ISO 26000 aspects
Environment	Materials	Environment	Sustainable resource use
	Energy	Fair operating practices	Promoting social responsibility in the sphere of influence
	Water	Environment	Sustainable resource use
	Biodiversity		Protection of the environment, biodiversity and restoration of natural habitats
	Emissions		Prevention of pollution
	Effluents and waste		Climate change mitigation and adaptation
			Prevention of pollution
			Sustainable resource use
	Products and services		Protection of the environment, biodiversity and restoration of natural habitats
			Prevention of pollution
Sustainable resource use			
	Fair operating practices	Promoting social responsibility in the sphere of influence	
	Consumer issues	Sustainable consumption	





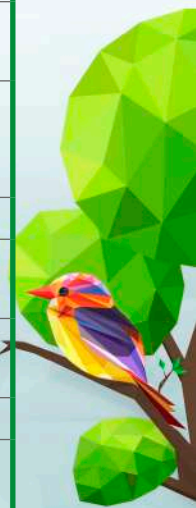
**Alignment between GRI - G4 and ISO 26000**

GRI - G4		ISO 26000	
Sub-Category	Aspect	Key principles and core subjects of ISO 26000	ISO 26000 aspects
Environment	Environmental	Environment	Prevention of pollution
			Sustainable resource use
			Climate change mitigation and adaptation
			Protection of the environment, biodiversity and restoration of natural habitats
			Sustainable resource use
			Promoting social responsibility in the sphere of influence
	Environmental	Environment	Prevention of pollution
			Sustainable resource use
			Climate change mitigation and adaptation
			Protection of the environment, biodiversity and restoration of natural habitats
			Prevention of pollution
			Sustainable resource use
Environmental	Environment	Climate change mitigation and adaptation	
		Protection of the environment, biodiversity and restoration of natural habitats	
		Prevention of pollution	
		Sustainable resource use	
		Climate change mitigation and adaptation	
		Protection of the environment, biodiversity and restoration of natural habitats	
Environmental	Environment	Promoting social responsibility in the sphere of influence	
		Prevention of pollution	
		Sustainable resource use	
		Protection of the environment, biodiversity and restoration of natural habitats	
		Prevention of pollution	
		Sustainable resource use	



## Alignment between GRI - G4 and ISO 26000

GRI - G4		ISO 26000	
Sub-Category	Aspect	Key principles and core subjects of ISO 26000	ISO 26000 aspects
Social performance	Employment	Labor practices	Employment and employment relationships
			Conditions of work and social protection
			Occupational health and safety
		Community involvement and development	Technology development and access
	Labor/Management Relations	Human Rights	Fundamental principles and rights at work
		Labor practices	Employment and employment relationships
			Conditions of work and social protection
	Health and safety	Community involvement and development	Social dialogue
			Occupational health and safety
			Community involvement and development
	Training and education	Labor practices	Human development and training in the workplace
		Community involvement and development	Employment creation and skills development
	Diversity and equal opportunity	Human Rights	Discrimination and vulnerable groups
		Labor practices	Fundamental principles and rights at work
Equal remuneration for women and men	Human Rights	Employment and employment relationships	
		Conditions of work and social protection	
	Labor practices	Discrimination and vulnerable groups	
		Fundamental principles and rights at work	







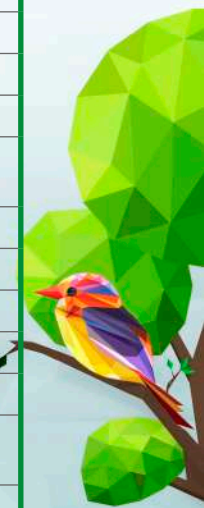
### Alignment between GRI - G4 and ISO 26000

GRI - G4		ISO 26000	
Sub-Category	Aspect	Key principles and core subjects of ISO 26000	ISO 26000 aspects
Social performance	Labor practices and decent work	Human Rights	Fundamental principles and rights at work
		Fair operating practices	Promoting social responsibility in the sphere of influence
		Labor practices	Employment and employment relationships
			Conditions of work and social protection
			Social dialogue
			Occupational health and safety
	Labor practices grievance mechanisms	Human Rights	Fundamental principles and rights at work
		Fair operating practices	Promoting social responsibility in the sphere of influence
		Labor practices	Employment and employment relationships
			Conditions of work and social protection
			Social dialogue
			Occupational health and safety
Human Rights	Investment	Human Rights	Due diligence
		Avoidance of complicity	
	Fair operating practices	Promoting social responsibility in the sphere of influence	
	Non-discrimination	Human Rights	Resolving grievances
			Discrimination and vulnerable groups
			Fundamental principles and rights at work
	Freedom of association and collective bargaining	Labor practices	Employment and employment relationships
		Human Rights	Due diligence
			Human Rights risk situations
			Avoidance of complicity
Civil and political rights			
Labor practices	Employment and employment relationships		
Social dialogue			



## Alignment between GRI - G4 and ISO 26000

GRI - G4		ISO 26000		
Sub-Category	Aspect	Key principles and core subjects of ISO 26000	ISO 26000 aspects	
Social performance	Human Rights	Child labor	Human Rights	Due diligence
				Human Rights risk situations
				Avoidance of complicity
				Discrimination and vulnerable groups
				Fundamental principles and rights at work
		Fair operating practices	Promoting social responsibility in the sphere of influence	
		Forced or compulsory labor	Human Rights	Due diligence
				Human Rights risk situations
			Avoidance of complicity	
			Discrimination and vulnerable groups	
	Security practices	Fair operating practices	Fundamental principles and rights at work	
		Human Rights	Promoting social responsibility in the sphere of influence	
		Labor practices	Employment and employment relationships	
	Indigenous rights	Human Rights	Resolving grievances	
			Discrimination and vulnerable groups	
	Assessment	Fair operating practices	Civil and political rights	
		Respect for property rights		
Supplier Human Rights assessment	Human Rights	Due diligence		
		Human Rights risk situations		
		Avoidance of complicity		
	Fair operating practices	Due diligence		
	Labor practices	Avoidance of complicity		
	Fair operating practices	Promoting social responsibility in the sphere of influence		
	Labor practices	Employment and employment relationships		





## Alignment between GRI - G4 and ISO 26000

GRI - G4		ISO 26000			
Sub-Category	Aspect	Key principles and core subjects of ISO 26000	ISO 26000 aspects		
Social performance	Human Rights	Human Rights grievance mechanisms	Human Rights	Resolving grievances	
				Economic, social and cultural rights	
	Local communities		Environment	Environment	Prevention of pollution
					Protection of the environment, biodiversity and restoration of natural habitats
			Community involvement and development	Community involvement and development	Community involvement and development
					Education and culture
					Employment creation and skills development
					Technology development and access
					Wealth and income creation
					Health
		Social investment			
	Anti-corruption		Fair operating practices	Anti-corruption	
	Public policy		Community involvement and development	Responsible political involvement	
	Society	Anti-competitive behavior	Fair operating practices	Community involvement and development	Fair competition
					Respect for property rights
Compliance - Society		Fair operating practices		Anti-corruption	
				Respect for property rights	
Supplier assessment for impacts on society		Community involvement and development	Community involvement and development	Wealth and income creation	
				Promoting social responsibility in the sphere of influence	
Supplier assessment for impacts on society		Community involvement and development	Community involvement and development	Community involvement and development	
				Education and culture	
				Employment creation and skills development	
				Technology development and access	
				Wealth and income creation	
				Health	
	Social investment				



## Alignment between GRI - G4 and ISO 26000

GRI - G4		ISO 26000		
Sub-Category	Aspect	Key principles and core subjects of ISO 26000	ISO 26000 aspects	
Society	Grievance mechanisms for impacts on society	Fair operating practices	Promoting social responsibility in the sphere of influence	
		Community involvement and development	Health	
	Disaster/ emergency planning and response			
Product responsibility	Customer health and safety	Human Rights	Economic, social and cultural rights	
		Fair operating practices	Promoting social responsibility in the sphere of influence	
		Labor practices	Occupational health and safety	
	Product and service labeling	Consumer issues		Protecting consumers' health and safety
				Sustainable consumption
				Fair marketing
				Protecting consumers' health and safety
				Sustainable consumption
				Consumer service, support, and complaint and dispute resolution
				Access to essential services
				Education and awareness
				Fair marketing
	Marketing communications		Consumer service, support, and complaint and dispute resolution	
		Education and awareness		
Customer privacy		Consumer data protection and privacy		
Compliance - Product responsibility		Consumer service, support, and complaint and dispute resolution		
Access		Access to essential services		
Provision of information				

Social performance



# Sustainable Development Goals - SDGs



On January 1, 2016, the world began to officially implement the 2030 Sustainable Development Agenda, which seeks not only to eradicate extreme poverty, but also to integrate and balance the three dimensions of sustainable development –economic, social and environmental– into a global and integral vision<sup>1</sup>.

This agenda is framed within the “Architects of a Better World”, a concept that merges corporate sustainability with effective contribution to sustainable development, thus creating value for businesses and society.

In line with this global framework, EPM’s social and environmental planning is aligned with the Corporate Strategic Planning, based on its business purpose and the social and environmental dimensions of the BHAG, through universalization and care for the environment based on the commitments of Water Protection and Neutral Carbon operation for 2025.

Deepening the connection between SDGs and the Business Plan initiatives made it possible to strengthen the 2017 plans with actions to manage the material aspects that aim at the global goals relevant to the EPM Group.



<sup>1</sup>United Nations, Sustainable Development Goals Report, 2016. Available at:[https://unstats.un.org/sdgs/report/2016/The%20Sustainable%20Development%20Goals%20Report%202016\\_Spanish.pdf](https://unstats.un.org/sdgs/report/2016/The%20Sustainable%20Development%20Goals%20Report%202016_Spanish.pdf), accessed on March 6, 2017.



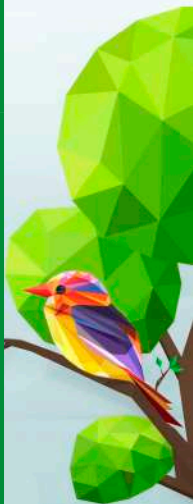


## Major milestones regarding SDGs in the global context and for the EPM Group



epm Group

2015	2016
<p><b>Launching of the SDGs</b>, September 15. UN General Assembly.</p> <p><b>SDGs Compass Implementation Guideline.</b> GRI, Global Compact, WBCSD.</p> <p><b>Third International Conference on Financing for Development.</b> Addis Abeba, UN General Assembly.</p>	<p><b>First UN SDGs' report.</b> It sets benchmarks for the actions of the sustainable development agenda for the next 15 years.</p>
<p>It adopts SDGs as a reference agenda for global development.</p> <p>It connects SDGs with material aspects. Local action aligned with global development goals.</p>	<p><b>It identifies priority goals of SDGs for the EPM Group.</b> Included in the SDGs highlighted in the image.</p> <p><b>It associates SDGs</b> with initiatives and the Balanced Scorecard of the Group's Business Plan.</p> <p><b>It strengthens the 2017-2020 Business Plan.</b> It applies SDGs as driving forces of the material aspects' challenges.</p>



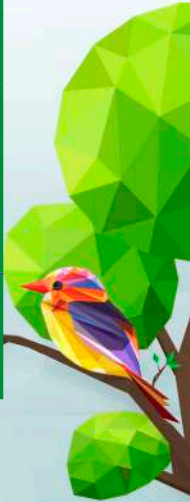


## Alignment Between Material Aspects and Sustainable Development Goals

Material aspect	 <b>SUSTAINABLE DEVELOPMENT GOALS</b>
 <p>Access to and purchasability of public utilities</p>	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="width: 25%; text-align: center;">  <p>1 NO POVERTY</p> </div> <div style="width: 25%; text-align: center;">  <p>3 GOOD HEALTH AND WELL-BEING</p> </div> <div style="width: 25%; text-align: center;">  <p>6 CLEAN WATER AND SANITATION</p> </div> <div style="width: 25%; text-align: center;">  <p>7 AFFORDABLE AND CLEAN ENERGY</p> </div> <div style="width: 25%; text-align: center;">  <p>11 SUSTAINABLE CITIES AND COMMUNITIES</p> </div> </div>
 <p>Biodiversity</p>	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="width: 25%; text-align: center;">  <p>6 CLEAN WATER AND SANITATION</p> </div> <div style="width: 25%; text-align: center;">  <p>13 CLIMATE ACTION</p> </div> <div style="width: 25%; text-align: center;">  <p>14 LIFE BELOW WATER</p> </div> <div style="width: 25%; text-align: center;">  <p>15 LIFE ON LAND</p> </div> </div>
 <p>Quality of the occupational climate</p>	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="width: 25%; text-align: center;">  <p>8 DECENT WORK AND ECONOMIC GROWTH</p> </div> </div>
 <p>Quality and safety of products and services</p>	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="width: 25%; text-align: center;">  <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p> </div> <div style="width: 25%; text-align: center;">  <p>11 SUSTAINABLE CITIES AND COMMUNITIES</p> </div> </div>
 <p>Responsible contracting for local development</p>	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="width: 25%; text-align: center;">  <p>8 DECENT WORK AND ECONOMIC GROWTH</p> </div> <div style="width: 25%; text-align: center;">  <p>10 REDUCED INEQUALITIES</p> </div> </div>
 <p>Water conservation</p>	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="width: 25%; text-align: center;">  <p>6 CLEAN WATER AND SANITATION</p> </div> <div style="width: 25%; text-align: center;">  <p>13 CLIMATE ACTION</p> </div> <div style="width: 25%; text-align: center;">  <p>14 LIFE BELOW WATER</p> </div> <div style="width: 25%; text-align: center;">  <p>15 LIFE ON LAND</p> </div> </div>



 <p>Respect for and promotion of Human Rights</p>	   
 <p>Diversification of renewable energies</p>	  
 <p>Climate strategy</p>	 
 <p>Unserved population</p>	    
 <p>Rates and prices</p>	 
 <p>Transparency and disclosure of information for the stakeholders</p>	
<p align="center"><b>17 Alliances to achieve the goals</b></p> 	



# Objetivos estratégicos – CMI

## Alignment between material aspects and strategic objectives - BSC

Material aspects	Value creation	Customers and markets		Operations			Learning and development					
	Increasing value for stakeholders	Growing in markets and businesses	Strengthening relationships with external stakeholders	Optimizing management of assets	Providing a comprehensive service to customers with solutions adjusted to their needs	Optimizing processes	Strengthening project management	Developing the organizational capabilities required for the strategy	Optimizing and consolidating information systems for decision-making in the EPM Group	Strengthening the comprehensive development of the Group's human talent and target culture	Strengthening governance models	Strengthening management with internal stakeholders
Access to and purchasability of public utilities	✓	✓	✓		✓							
Biodiversity	✓					✓						
Quality of the occupational climate	✓		✓							✓		✓
Quality and safety of products and services	✓		✓		✓	✓	✓					
Responsible contracting for local development	✓		✓			✓	✓					
Water conservation	✓					✓						
Diversification of renewable energies	✓	✓			✓	✓						
Climate strategy	✓					✓						
Unserved population	✓		✓		✓							
Respect for and promotion of Human Rights	✓		✓			✓	✓					
Rates and prices	✓	✓	✓	✓	✓							
Transparency and disclosure of information for the stakeholders	✓	✓	✓							✓		✓



# Global Compact – GC

## Alignment between material aspects and the Global Compact's Principles

### Global Compact's Principles - GC

Material aspects	Human Rights		Labor standards				Environment			Anti-corruption
	01 - Human Rights protection	02 - Non-complicity in Human Rights abuses	03 - Freedom of association and collective bargaining	04 - Elimination of forced and compulsory labor	05 - Abolition of child labor	06 - Non-discrimination	07 - Prevention of environmental problems	08 - Promotion of environmental responsibility	09 - Promotion of environmentally friendly technologies	10 - Working against corruption, extortion and bribery
Access to and purchasability of public utilities	✓									
Biodiversity							✓	✓	✓	
Quality of the occupational climate	✓	✓	✓	✓	✓	✓				✓
Quality and safety of products and services	✓							✓		
Responsible contracting for local development		✓		✓	✓		✓	✓	✓	✓
Water conservation							✓	✓		
Diversification of renewable energies							✓	✓	✓	
Climate strategy							✓	✓	✓	
Unserved population	✓									
Respect for and promotion of Human Rights	✓	✓	✓	✓	✓	✓				
Rates and prices	✓									
Transparency and disclosure of information for the stakeholders										✓





## Alignment between complementary aspects and the Global Compact's Principles

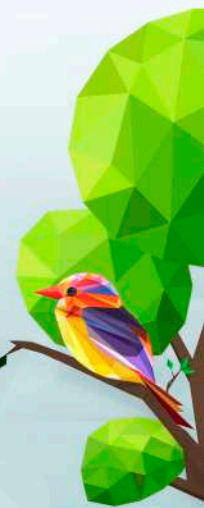
### Global Compact's Principles - GC

Complementary Aspects	Human Rights		Labor standards				Environment			Anti-corruption
	01 - Human Rights protection	02 - Non-complicity in Human Rights abuses	03 - Freedom of association and collective bargaining	04 - Elimination of forced and compulsory labor	05 - Abolition of child labor	06 - Non-discrimination	07 - Prevention of environmental problems	08 - Promotion of environmental responsibility	09 - Promotion of environmentally friendly technologies	10 - Working against corruption, extortion and bribery
Corporate citizenship	✓	✓			✓		✓	✓	✓	
Development and innovation							✓	✓	✓	
Working environment	✓	✓	✓	✓	✓	✓				✓
Social and environmental management in projects	✓	✓			✓		✓	✓	✓	
Sustainable production and consumption							✓	✓	✓	



# Integrated Report - IIRC

Integrated Report - IIRC	
Alignment between the Integrated Report (IIRC) and the 2016 Sustainability Report	
Integrated Report Content - IIRC	Location in the Sustainability Report
Organizational overview and its external environment	Who we are
	Our organization
	List of employees
	Labor unions
	Control environment
	Growth
	Stakeholders
	Our supply chain
	Report profile
Corporate Governance	Corporate Governance Report
Business model	Who we are
	Our history
	Corporate strategic planning
	Competitive strategic planning
	Macro-trends
Risks and opportunities	Challenges
	Corporate strategic planning
	Competitive strategic planning
	Comprehensive risk management
Strategy and resource allocation	Management report





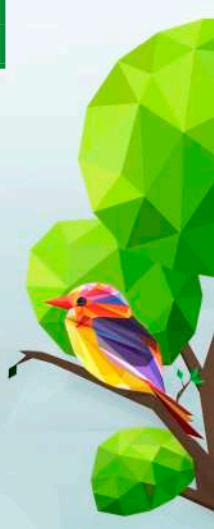
## Integrated Report - IIRC

### Alignment between the Integrated Report (IIRC) and the 2016 Sustainability Report

Integrated Report Content - IIRC	Location in the Sustainability Report
Performance	Access to and purchasability of public utilities
	Biodiversity
	Quality of the occupational climate
	Quality and safety of products and services
	Responsible contracting for local development
	Water conservation
	Respect for and promotion of Human Rights
	Diversification of renewable energies
	Climate strategy
	Unserved population
	Rates and prices
	Transparency and disclosure of information for the stakeholders
	Corporate citizenship
	Development and innovation
	Working environment
	Social and environmental management in projects
	Sustainable production and consumption
Financial management	
Outlook	Challenges
	Corporate strategic planning
	Competitive strategic planning
	Macro-trends
Basis of preparation and presentation	Material aspects and coverage



Integrated Report's Principles - IIRC	Location in the Sustainability Report
Strategic focus and future orientation	Our challenges
Connectivity of information	Alignment between the capitals of the Integrated Report - IIRC and the material aspects
Stakeholders relationships	Commitments and involvement
	Our stakeholders
Materiality	Report profile
	Material aspects and coverage
Conciseness	The process of preparing this report is led by the EPM's Sustainable Development Management. This management unit sets the guidelines to identify information that will be included.
	Identifying material aspects and complementary aspects ensures that the report targets the more relevant aspects of the management.
	The web report enables navigating and creating links between the different topics presented, reducing the possibility of duplication of information.
Reliability and completeness	The process of preparing the report takes into account the voices of people who are part of the Groups' businesses, companies, and units. This increases reliability and traceability of the information reported. See also: <a href="#">External verification</a>
Consistency and comparability	Alignment with sustainability initiatives
	Material aspects and coverage





# Review by management and self-assessment

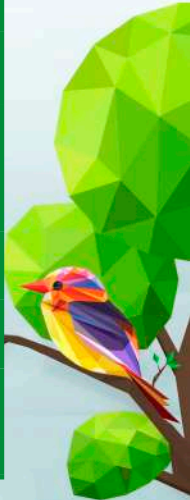
Review by management and self-assessment				
PDCA Cycle	Information for the institutional self-assessment	Information to be reviewed by management, according to NTCGP 1000	Company's language	Correlation with the 2016 Sustainability Report
Plan	Control and management self-assessment.	System planning	Strategic planning	Corporate strategic planning Competitive strategic planning
			Changes in business plans and corporate services	Transparency practices
				Macro-trends
				Consolidation
				Growth
			Changes in regulations	Corporate governance
				Every person in charge of a project is responsible for the required regulatory update. This is confirmed in the audits and verifications included in the process.  Rates and prices Water supply and sewerage Sanitation Electricity Gas
			Changes in processes	Corporate transformation
				Summary of the policies approved by the EPM Group Procedure for the formalization of the relations among the Group's companies
			Changes in the organizational structure	Our organization
Changes in information technologies	Transparency practices			
Business projects	Social and environmental management in projects			
	Climate strategy			
	Development and innovation			
			Infrastructure projects	





Review by management and self-assessment

PDCA Cycle	Information for the institutional self-assessment	Information to be reviewed by management, according to NTCGP 1000	Company's language	Correlation with the 2016 Sustainability Report
Do	Not Applicable	Customer feedback	Customer satisfaction survey results	Customer satisfaction
			Complaints and claims (products, services)	Incidents and grievances
				Customer service
				Customer satisfaction
			Communication with stakeholders	Transparency and disclosure of information for the stakeholders
				Education for and communication with customers, users and the community
		Commitments and involvement		
		Our stakeholders		
		Satisfaction with product/service	Monitoring of non-conforming products	Quality and safety of products and services
		Not Applicable	Results of the stakeholders relationship plans (customers and users, suppliers and contractors, EPM People)	Quality and continuity of service
				Reliability in the provision of the service
				Education for and communication with customers, users and the community
Relationship with suppliers and contractors				
Supplier strengthening and development				
Commitments and involvement				
Our stakeholders				





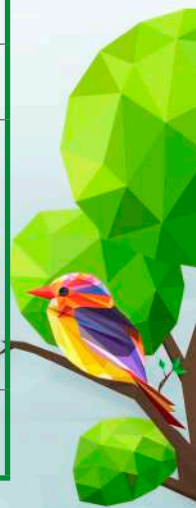
Review by management and self-assessment

<p>PDCA Cycle</p>	<p>Information for the institutional self-assessment</p>	<p>Information to be reviewed by management, according to NTCGP 1000</p>	<p>Company's language</p>	<p>Correlation with the 2016 Sustainability Report</p>
<p><b>Check</b></p>	<p><b>Control and management self-assessment:</b> Self-assessment includes the required monitoring of the operations of the company through measuring the results generated in each process, procedure, project, plan, or program, considering risk management.</p> <p>It seeks to determine the effectiveness of internal controls. This focus on its evolution includes risks associated with processes and is internationally known as Risk and Control Self-Assessment (RCSA). This implies that the processes of self-assessment can include risk and control analysis, which are vital elements for the effective development of processes.</p> <p>The Institute of Internal Auditors (IIA) states that control self-assessment is a process that examines and evaluates the effectiveness of internal control. The main goal is to provide reasonable assurance that the objectives of the organization will be met.</p>	<p>Not Applicable</p>	<p>Risk management</p>	<p>Comprehensive risk management</p>



Review by management and self-assessment

PDCA Cycle	Information for the institutional self-assessment	Information to be reviewed by management, according to NTCGP 1000	Company's language	Correlation with the 2016 Sustainability Report
Check	Design and implementation of verification mechanisms to determine the efficiency and effectiveness of controls, the achievement of results for each process, and the good performance of the staff involved in the execution of operations.	Audit outcome	Results of internal audits to EPM QMS, according to NTCGP 1000, and to certified and accredited QMS	Quality management system
	It allows people responsible for a process, program, or project and their staff to measure the effectiveness of their controls and the management results in real time, verifying their ability to meet their goals and results, and to take corrective actions when necessary for the fulfillment of the objectives set by the company.	Objectives and quality policy outcome	Results of independent audits to QMS NTCGP 1000 (audits based on international regulations)	EPM Group's internal audit plan *
	<p><b>Control and management self-assessment:</b></p> <p>Self-assessment includes the required monitoring of the operations of the company through measuring the results generated in each process, procedure, project, plan, or program, considering the management indicators.</p> <p>The verification and evaluation mechanisms allow the company to assess itself by providing the information required to determine whether it works effectively or whether there are deviations in its operation that affect the purpose for which it was created.</p>	Process performance	Follow-up of the strategic planning through the strategic objectives - BSC.	External audit plan
	Not Applicable	Compliance with the quality policy	Process indicators	Corporate strategic planning
				Competitive strategic planning
				Operational performance
			Financial performance	
			Quality and continuity of service	
			Reliability in the provision of the service	
			Customer satisfaction	
			Customer service	
			Quality management system	
			Review of the comprehensive management policy	





Review by Management and Self-Assessment

PDCA Cycle	Information for the institutional self-assessment	Information to be reviewed by management, according to NTCGP 1000	Company's language	Correlation with the 2016 Sustainability Report
Act	<p><b>Control and management self-assessment:</b> Self-assessment includes the required monitoring of the operations of the company through measuring the results generated in each process, procedure, project, plan, or program, considering the management indicators.</p> <p>The verification and evaluation mechanisms allow the company to assess itself by providing the information required to determine whether it works effectively or whether there are deviations in its operation that affect the purpose for which it was created.</p>	Not Applicable	Follow-up of individual performance - Human resources management	Work performance
	<p><b>Control and management self-assessment:</b> Self-assessment includes the required monitoring of the operations of the company through measuring the results generated in each process, procedure, project, plan, or program, considering the management plans. It seeks to determine the effectiveness of internal controls in order to implement the necessary improvement actions.</p>	Status of the corrective and preventive actions/ Follow-up actions based on previous reviews by Management	Improvement plans	Quality management system

\* The Internal Audit or independent assessment of the Internal Control System reported, at the end of the period, satisfactory indicators associated with its management, including those that exceeded the defined goals:

- Perception of the Audit Committee and EPM executives on the internal audit exercise and its contribution to the organization's control environment.
- Strengthening of the culture of governance, risk and control.
- Perception on the quality of internal audits.
- Compliance with the annual audit plan.
- Execution of audits within the planned time.



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# Stakeholders

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# Commitments and participation

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# Identification of Stakeholders

In order to identify the stakeholders at the EPM Group, three criteria from the **GRI G4-25** are considered:

- **Legitimacy** of the stakeholders is evaluated in the context of the desirable, own, or suitable actions within the system of standards, values, beliefs, and definitions of the society. In operational terms, the legitimacy level is estimated based on the existence of rules, contracts, and agreements, regarding issues that link it to the organization.
- **Power** is evaluated in terms of coercive power (force or weapons); utilitarian power (direct or indirect economic power; indirect refers, for instance, to the power of information and knowledge), and symbolic power (relations, political support, social and cultural recognition).
- **Urgency** or dependency is evaluated in terms of the criticality of the urgency (extent of the dependency or the response demand it has over the organization), and the required time to respond to the urgency.

For EPM, stakeholders identified based on these **GRI G4-24** criteria are as follows:

- Customers and users
- Colleagues
- The community
- Owner
- The State
- EPM Group People
- Investors
- Suppliers and contractors
- Partners

Stakeholders are categories within which actors connected to specific priority issues are identified. They are called sub-stakeholders. There are also other categories of actors that are a component of the complex social fabric in which the company operates, with which there must be an interaction.

Relationships with these stakeholders are managed based on material aspects, whose risks are identified and many of their causes are being managed based on the Group's risks, especially based on the following risks of sustainability: 12: Generation of socio-political conflicts when entering target markets or project intervention areas, and 16: Actions that generate loss in economic, social, and environmental value for the EPM Group, its stakeholders, and the territories where it operates, which can be seen in greater detail in Comprehensive risk management.

The consequences of these risks are classified based on the following criteria:

- Permanence in time and business competitiveness: It is associated with quality, efficiency, growth, expansion, business viability, reputation, transparency, and trust variables.
- Value creation for stakeholders: In terms of satisfaction, trust, equity, engagement, and improvement in quality of life.
- Environmental, social, and economic balance, and territorial security: It takes into account productive potential, sustainable consumption of resources, respect for Human Rights, basic needs associated with public utilities, security, impact management, and construction of social fabric.



## Overview of Risks Associated with Material Aspects and Stakeholders

Material aspects	Related Stakeholders	Issues associated with the risks
Access to and purchasability of public utilities	Customers and users, the State.	Goals of development and quality of life.
Biodiversity	The community, the State, colleagues.	Migratory processes generating pressures for providing public utilities in strategic ecosystems; proper territory management.
Quality of the organizational climate	EPM Group People, customers and users, the community, suppliers and contractors.	Aligning behaviors with stated values.
Quality and safety of products and services	Customers and users, suppliers and contractors.	Quality of life and human development.
Responsible contracting for local development	Suppliers and contractors, the community, colleagues.	Local capacity building and promotion of territorial sustainability by promoting the business fabric.
Water conservation	The community, the State, colleagues.	Resource depletion or excess, pollution, watershed sub-optimization, lack of awareness, and low management capacity of the actors.
Diversification of renewable energies	The State, colleagues.	Lack of diversification, substitutes, impaired growth.
Climate strategy	The community, the State, colleagues.	Greenhouse gas emissions; impact in service provision, processes, and projects; impact on operating income caused by climate effects.
Unserved population	Customers and users, the community, the State.	Goals of development and quality of life.
Respect for and promotion of human rights	The Community, suppliers and contractors, the State, colleagues and partners.	Direct violation or violation by third parties, use of force, harassment at work, extortion.
Rates and prices	Customers and users, the State.	Increase in rates.
Transparency and disclosure of information	All	Sufficiency, opportunity, participation, and availability.

For the EPM Group, stakeholders are social groups with a high level of legitimacy, power, and urgency, that have a certain homogeneity and stability in their interests with regard to the EPM Group.



# Stakeholder engagement

The materiality exercise, which includes the stakeholders' view, is described in [Material aspects and boundaries](#).

During 2016, the challenges for the management of the twelve material aspects were identified, taking into account their priority in the national water and energy affiliates, and it is explicitly stated, besides the financial dimension, what we want to achieve in the social and environmental dimensions of the BHAG. [EPM Group's BHAG](#)

In 2016, actions were implemented to strengthen the relationships with stakeholders:

## Dialogues with EPM's stakeholders **GRI G4-26**

On April 29, 2016, with on-site attendance and television broadcast, EPM's CEO presented a public balance of the EPM Group's sustainability management at the event "Sustainability: Dialogue and Public Accountability." Viewers interacted with questions via telephone and social networks. At the end of the event, a press conference was held so that local and national media (newspapers, press, radio and TV) had a record of the event.

Stakeholders' direct participation was still considered at the event, with discussion tables for customers and users, the community, the State, and suppliers and contractors, through control agencies. In these spaces, a dialogue was held on "Sustainable Development Goals - SDGs" **GRI G4-26**.

The results of this activity were used as feedback to align the materiality exercise with the SDGs, as well as to identify synergies of the EPM Group and its stakeholders in order to meet the challenges in these two sustainability issues. The public accountability information presented by the CEO is available at: <http://www.epm.com.co/site/Home/SostenibilidadEPM/InformedeSostenibilidad.aspx>

In addition to this, the national energy affiliates CENS, CHEC, EDEQ and ESSA used various means for reporting on their management to stakeholders in their respective territories, both through mass dissemination of their sustainability reports via internet, radio, television, and press and through specific events with stakeholders' representatives.

Besides these forums, the EPM Group's 2014 Sustainability Report annual assessment was carried out with representatives of the stakeholders located in Antioquia. It provided indicators for this report as well as for the CSR management in general.

In developing the Material Aspects, other stakeholder participation forums are mentioned throughout the 2016 Sustainability Report since they are more tactical and specific in nature in regards to projects and operations.

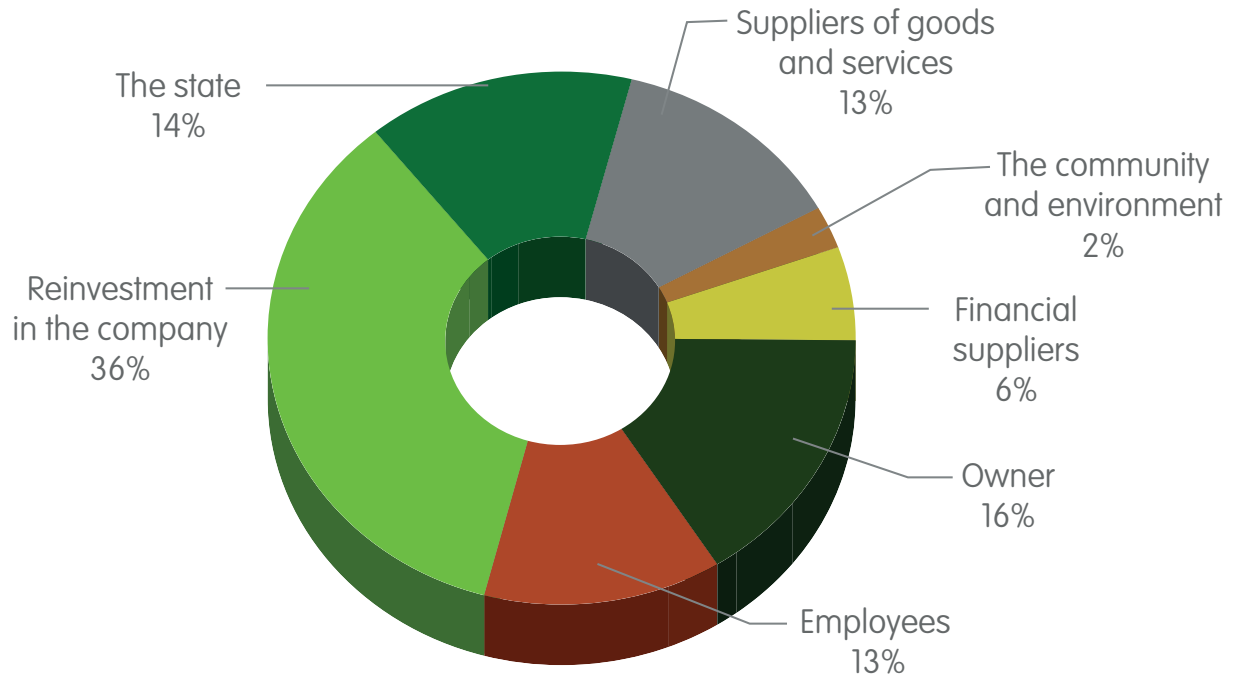
A quantitative expression of the impact on stakeholders is showed in the graph of value generated and distributed, based on the Fourth Financial Statement methodology by the Uruguayan Luis Perera Aldama and on the table of financial resources allocated to voluntary initiatives.





## Financial statement by stakeholder – EPM Group 2016

Value generated and distributed COP 7.13 trillion

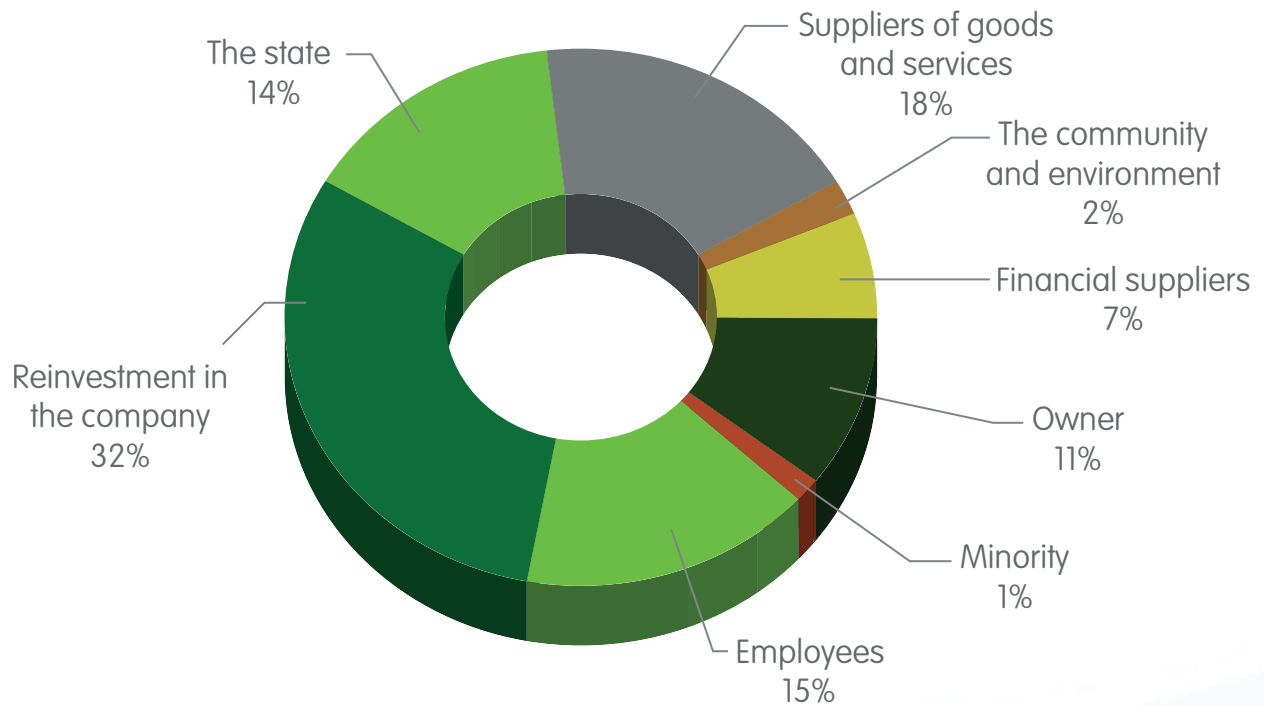


Source: Vice Presidency of Corporate Finance



## Financial statement by stakeholder – EPM 2016

Value generated and distributed COP 7.13 trillion



Source: Vice Presidency of Corporate Finance

In 2016, the challenges of the material aspects are stated in the EPM Group's BHAG



# Commitments to External Sustainability Initiatives



## External sustainability initiatives signed or Adopted by EPM



**AA1000 Stakeholder Engagement Standard**  
*Stakeholders' engagement.*



**Agreement for Sustainability - Andesco**  
*Sustainable development, public policies, water, energy, environment, solid waste, information and communication technologies, Human Rights, sustainable integration into the territory.*



**Architects of a Better World**  
*Corporate sustainability, priorities of the post-2015 global development agenda, long-term business goals, action and collaboration platforms, social and market-related drivers and incentives, transparency, and public accountability.*





**Latin American Wind Energy Association - LAWEA**  
Wind energy.



**Business for Peace Global Compact**  
Role of the companies on peace issues in the territories where they have direct influence.

## Caring for Climate

**Caring for Climate**  
Climate change.



**World Business Council for Sustainable Development WBCSD**  
Corporate social responsibility, sustainability.



**Mining & Energy Committee**  
Human Rights: Public and private security.



**Rio Declaration**  
Sustainable development.



**Dow Jones Sustainability Index**  
Economic, social, and environmental performance index.



**Global Reporting Initiative GRI**  
Global sustainability report.

## Guías Colombia

**Guías Colombia**  
Human Rights and international humanitarian law.



**International Hydropower Association**  
Sustainable hydropower.



**ETHOS Indicators**  
Values, transparency, and corporate governance; internal audience, environment, suppliers, consumers, community, government, society.



**ISO 14001 – Environmental Management**  
Pollution, environmental management.





**ISO 26000 – International Standard on Social Responsibility**  
 Governance, Human Rights, labor practices, environment, fair operating practices, consumer issues, community active involvement and development.



**Sustainable Development Goals**  
 Dignity, people, planet, justice, prosperity, association.



**Equator Principles**  
 Environmental and social management.



**Global Compact's Principles**  
 Labor rights, Human Rights, environment, anti-corruption.

## Protocolo de Kioto

**Kyoto Protocol**  
 Emission reduction, promotion of clean development mechanism projects.



The CEO Water Mandate

**The CEO Water Mandate Global Compact**  
 Compromiso del sector privado en la gesti3n del agua.



**Transparencia por Colombia (Transparency for Colombia)**  
 Transparency indicator in public utility companies.





# Precautionary principle

According to the precautionary principle<sup>1</sup>, the lack of full scientific certainty shall not be used as an excuse for postponing the adoption of effective and early measures to prevent environmental and human health degradation.

In the EPM Group, a cautious approach to protect the environment and the human health is incorporated from its strategic planning. The purpose is based on the precepts of sustainable human development, suggesting a business performance that harmonizes financial, social, and environmental results. The strategy considers corporate social responsibility as the compass for growth and profitability and optimization of operations **GRI G4-14.**

The EPM Group has undertaken actions based on national environmental and risk-management policies, associated with loss of biodiversity, climate variability, and risks for people.

These actions have contributed to scientific strengthening, to achieve synergies with different actors for environmental protection, and to support decision-making; all aimed at the protection of environmental services, such as CO<sub>2</sub> fixation, emission reduction and offset, protection and use of water resources, and protection of landscape and biodiversity, through individual strategies and alliances with other actors, such as the initiatives of the CuencaVerde Corporation and the BANCO2 program. Available at: [Water conservation](#)

During 2016, the EPM Group's BHAG explicitly states, in addition to the financial dimension, that, in 2025, the Group will be protecting 137 thousand new hectares of watersheds, besides its own, with a Neutral Carbon operation.



<sup>1</sup> Rio Declaration, UN Conference on Environment and Development, 1992.





## Joint responsibility for the environment

The EPM Group is committed to the sustainability of the territories where it operates and establishes synergies through agreements, inter-administrative contracts, working groups and other strategic alliances that seek to develop actions for the protection and improvement of the environment.

### Management in 2016

**BanCO2 Project:** voluntary initiative to contribute to the improvement of environmental conditions and quality of life of communities, through the payment for environmental services. This agreement will benefit 165 families from 19 municipalities where the EPM Group operates.

**Potbellied Ceibas Project:** ESSA signed an agreement with the Chicamocha National Park (Panachi) for the execution of the project as a contribution to climate change mitigation. It consists in planting, maintaining and preserving 470 endangered ceibas.



In 2016, Eegsa became a partner of the Guatemalan Cleaner Production Center and established alliances to strengthen environmental management. This company got involved in pilot research projects that seek to reduce emissions produced by the use of fossil fuels in vehicles, with results that make up the project "Collection of used oil to produce biodiesel, reducing groundwater contamination and cleaning the air of the city", developed along with Solar Foundation and the municipality of Guatemala. In addition, donation agreements have been signed, which establishes cooperative links to strengthen the reforestation projects promoted by the municipalities of San Lucas, San Raymundo and Antigua Guatemala. The alliances established in 2015 with the Ministry of Environment and Natural Resources (MARN) continued in 2016, with the purpose of contributing to the update of the national inventory of persistent organic pollutants (POPs), where the company participates as part of the PCB sector group.



## Joint environmental initiatives

Company	Other actors involved	Engagement mechanism	Goal	Results in 2016
EPM	Municipality of Medellín	Committee	Urban Forestry Committee: participation in the Environmental Management System of Medellín (Sigam), through inter-institutional committees: Urban Forestry Committee.	Attendance at 25 sessions of the Forestry Committee. Participation consists in advising the infrastructure projects of the Municipality of Medellín on urban forestry, focusing on the interaction with the distribution networks of public utilities.
	Cornare	Agreement: BanCO2	Joining forces and working as allies in the execution of the BanCO2 project for Community Environmental Services in the area of influence of Cornare and EPM in Eastern Antioquia.	Payment of COP 399,600,000 to 56 families assigned to the agreement; with monitoring and auditing.
	Cornare	Agreement: BanCO2	Exchanging information and implementing programs and projects for the strengthening of environmental management, preservation and proper use of natural resources and environmental sanitation. Goal: development of projects of interest to the parties, in jurisdiction of the 26 municipalities of the area of influence of Cornare.	Payment of COP 34,193,170 for compensation for forest use during the maintenance of power transmission and distribution lines and networks from 2012 to 2015. With these resources, four families of the BanCO2 project will be assisted for a period of five years.
	Inter-institutional cooperation agreement	Working groups	Participation in environmental committees integrated by the Municipal Council, Corantioquia (Hevexicos), institutions of higher education and EPM, in order to address environmental interest topics that include risk prevention in electrical infrastructure, environmental compensations and water care.	Participation in six environmental committees.
	Corantioquia, municipalities of Santa Fe de Antioquia and San Jerónimo	Working groups	Promoting the regional development with vision of territory, with the purpose of maintaining sustainability of the environment.	Described in the Management appendix.





### Joint environmental initiatives

Company	Other actors involved	Engagement mechanism	Goal	Results in 2016
CENS	Regional Autonomous Corporation of the North-Eastern Border - Corponor	Agreement	Joining technical and financial resources between Corponor and CENS in order to implement, through the BanCO2 platform, the scheme of payment for environmental services, aimed at communities related to strategic areas for conservation in the department of Norte de Santander, Colombia.	<p><b>Result 1: Forest Conservation.</b> The development of the agreement made it possible to sign agreements of payment for conservation. Thus, each family received COP 400,000 per month for the two hectares delimited in the field for its conservation. With the resources of CENS-EPM, equivalent to 120 million pesos for the validity of one year of the mentioned agreement, the payment for environmental services was made to 25 families. Initially, it was planned to preserve a total of 50 ha; however, the actions of these families went beyond the plans and, voluntarily, they committed to conserve the forest of their properties, which allowed the conservation of a total of 736 ha, with an average of 14.7 ha per property.</p> <p><b>Result 2: Benefits for Other Ecosystem Services.</b> It allowed the population of the region to benefit from ecosystem services such as the protection and maintenance of the hydrological conditions of an extensive network of bodies of water, including the Espartillo, Uyamal, Cedrón, Honda and La Potrera sub-basins, as well as the Cucutilla, Peralonso and Salazar rivers. It is worth mentioning that these water sources supply rural settlements. The conservation of the 736 ha contributes to the preservation of the species of flora and fauna that inhabit this place, and complement the protection of the Sisavita and Santurbán-Salazar de las Palmas regional natural parks, which, in this way, become biological corridors that provide connectivity to the movement of species, and improve spaces for the conservation of important plant and animal species such as the little rufous mouse opossum (<i>Marmosa lepida</i>), a marsupial that is only found in the Amazonia and in the high Andean forests of the department of Norte de Santander.</p>



## Joint environmental initiatives

Company	Other actors involved	Engagement mechanism	Goal	Results in 2016
CENS	Regional Autonomous Corporation of the North-Eastern Border - Corponor	Agreement	Joining technical and financial resources between Corponor and CENS in order to implement, through the BanCO2 platform, the scheme of payment for environmental services, aimed at communities related to strategic areas for conservation in the department of Norte de Santander, Colombia.	<p><b>Result 3: Improvement of the Socioeconomic Conditions of Families.</b>                      The total number of families covered by the agreement was 25 (14 from the municipality of Cucutilla and 11 from Salazar de las Palmas). A strategy for supporting "Life Plans" was jointly implemented by CENS and Corponor, in order to raise awareness and train these families. In this way, the companies support and advice ideas and projects developed by the families and aimed at improving their quality of life and the good management of the resources received. When verifying the implementation of the BanCO2 strategy, a substantial improvement in their living conditions was evidenced: improvement of their homes (3 families - 12%) and strengthening of their production systems (23 families - 92%). One family (4%) invested in a business venture outside the rural sector, related to a company that produces and markets water in bags in the municipal urban area of Salazar de las Palmas.</p> <p><b>Result 4: Trust and Strengthening of the Inter-Institutional Work.</b>                      In the preliminary stage of dissemination of the agreement, the skepticism and distrust of the communities was evident, especially towards the entities representing the State. This situation changed thanks to the support, the fulfillment of payments, and the permanent dialogue to clarify situations that normally arise during the development of any project. The first 25 families linked to the BanCO2 project contributed to the improvement of trust and credibility in public entities in the region, while acknowledging the support of CENS-EPM. For this reason, other families in the region have been interested in taking part.                      The execution of the agreement for the implementation of BanCO2 demonstrated the power of alliances to contribute to the local development through the social and economic benefit of the less favored families, while obtaining positive environmental impacts. In addition to these good results, the development of the project's activities should be highlighted again: besides CENS-EPM and Corponor, institutions such as SENA, the municipalities of Cucutilla and Salazar de las Palmas, and the German cooperation agency GIZ participated in training, support and consulting activities.</p>







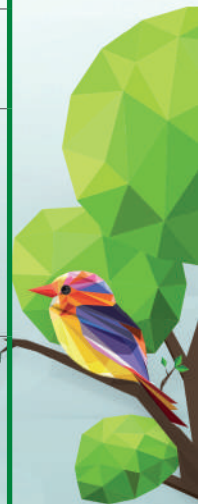
### Joint environmental initiatives

Company	Other actors involved	Engagement mechanism	Goal	Results in 2016
CENS	NGO (Civic Innovation)	Inter-institutional committee	Joining efforts for the provision of financial and technical resources for implementing the "We all are one" initiative.	Protection of the Pamplonita river basin: supply of 1,000 trees and materials for planting them on the river bank, in the sector of Avenida del Río.
	National Police of Colombia-Corponor, Fósforos Foundation-Quintas con Quinta Foundation	Inter-institutional committee	Encouraging the planting of vegetable species in suitable spaces, through an educational and practical process with young people from the Civic Youth program, in order to contribute to the environmental impact mitigation.	Reforestation with 1,200 species on the Pamplonita river bank.  Awareness and empowerment of 232 young people belonging to the Civic Youth program by the National Police of Colombia.  Strengthening of relationships: National Police of Colombia-Corponor, Fósforos Foundation-Quintas con Quinta Foundation.
	Municipal Mayor's Office	Working groups	Updating the Comprehensive Solid Waste Management Plan of the municipality of Cúcuta.	Participation in working groups for the updating of the Municipal Solid Waste Management Plan.  Provision of information for the quantification of the pruning waste generated from the maintenance activities of the company.
	Corponor	Working groups	Submitting to the actors of the Pamplonita, Zulia and Algodonal rivers basins the information on the following subjects: organization and participation of the actors in the execution of the Plan for Use and Management of River Basins (Pomca), projects for the use and sustainable management of soil resources, projects for the use and conservation of forests, projects for the improvement of water quantity and quality, and programs for the management of conservation areas, through the development of the <b>"Technical and practical workshop on planning and management experiences of river basins in Colombia."</b>	Knowledge of: importance of the land use plan with an environmental and productive approach, within the framework of the global agenda to save the planet; successful experiences in the organization and participation of the actors of the basin for the integral management of natural resources; environmental zoning as a key element in the organization of the territory of the river basin; and successful programs for the management and sustainable use of natural resources in the river basin.



## Joint environmental initiatives

Company	Other actors involved	Engagement mechanism	Goal	Results in 2016
ESSA	Regional Autonomous Corporation of Santander (CAS). Community	Agreement	Joining forces and working as allies in the execution of the BanCO2 project, payment for community environmental services in the area of influence of the CAS and ESSA in the department of Santander.	In 2016, 335 hectares were preserved. They are protected by 36 families benefited from the agreement.
	Chicamocha National Park Corporation (Panachi)	Communications (television programs), joint verification visits.	Planting of 1,030 potbellied ceibas, endangered trees native to the Chicamocha Canyon; reforestation equivalent to the carbon footprint generated by the visit to the Chicamocha National Park of 100 officials attending the IV Environmental Meeting of the EPM Group – ESSA, for the execution of the environmental project for the conservation of the potbellied ceiba in the rural area of the municipality of Aratoca, Santander.	Increase of 51% in the number of potbellied ceibas that are maintained and preserved in the area of influence of Panachi.
CHEC	Corpocaldas, Carder	Agreement	Joining forces and working as allies in the execution of the BanCO2 project for community environmental services in the area of influence of Corpocaldas, Carder.	Engagement of 26 families to the BanCO2 program, with monthly contributions for the care of the forests located within their properties in the municipalities of Manizales, Neira, Villamaría, Manzanares and Marulanda.  17 families from the municipality of El Santuario were selected to be part of the BanCO2 program.
	Corpocaldas and Aguas de Manizales	Agreement	Joining technical, financial and administrative efforts to consolidate the initiative "Agreements for the Chinchiná River Basin," as a platform for management, support and encouragement of territorial development.	Hydrological monitoring strategy, strengthening of the participation and dialogue processes among institutional and community actors. Design of the offset mechanism for environmental services. Tracking and monitoring system for the action plan of the Pactos project.
	FEC	Agreement	Controlling the conservation lands of CHEC, as part of the environmental management plan of the company.	Management and administration of the lands allocated for conservation.
	Corporation for the Development of Caldas (CDC)	Agreement	Performing the business and community strengthening, thus generating the implementation of sustainable business processes with an environmental and social approach, in rural settlements and areas surrounding the Río Claro river basin and the San Julián stream.	The inspection of the area of rural settlements and towns surrounding the San Julián stream was started, in order to strengthen the social and environmental support in these territories.
	Municipality of Chinchiná and Ascondesarrollo	Agreement	Implementing actions for the recovery of the ecosystem in areas critical for the conservation of natural and water resources in the upper basin of the Campolegre river and the lower basin of the Chinchiná river, including the acquisition of strategic lands.	Important advances in the definition of relevant elements to consider in the diagnosis.





## Joint environmental initiatives

Company	Other actors involved	Engagement mechanism	Goal	Results in 2016
CHEC	Tucunare Club	Agreement	Operation and integral management of the pier of Cameguadua.	During the time of operation, the pier of Cameguadua was consolidated as a reference point in the municipality of Chinchiná and the region in general. The amount of visitors exceeded the expectations.
	Corporation for the Development of Caldas (CDC)	Agreement	Joining efforts to design, implement and execute training and participation strategies for the rural communities that are part of the socio-environmental support to the Generation business.	School of rural environmental leaders, agro-ecological fair, socio-environmental seminar, environmental initiatives, exchange tours, citizen surveys, community meetings, youth strengthening and strengthening of Asomultisanfrancisco, among others.
	Municipality of Villamaría and Ascondesarrollo	Agreement	Developing technical, financial and administrative actions for the recovery and restoration of intervened areas in ecosystems of strategic interest for the conservation of natural and water resources in the basins of the Chinchiná and Claro rivers.	Important advances in the definition of relevant elements to consider in the diagnosis.
	Neira's Mayor's Office and Dicar Foundation	Agreement	Joining inter-institutional efforts to carry out technical, financial and administrative actions in basic sanitation, housing improvement, recovery and restoration of intervened areas, forest conservation, and environmental education in the rural settlements of San Pablo, Chupaderos, Manga Bonita and Quebrada Negra in the municipality of Neira, Caldas.	Initial inspection of the area of influence, in order to identify priorities and define the resources necessary to fulfill the activities planned.
EDEQ	Regional Autonomous Corporation of Quindío (CRQ) and Corporation for the Sustainable Management of Forests (Masbosques)	Agreement	Joining technical, administrative and financial efforts to implement and promote the BanCO2 project in the municipalities that are part of the jurisdiction of the Regional Autonomous Corporation of Quindío (CRQ).	Support to 11 families located in the municipalities of Génova, Finlandia and Circasia, whose productive activities are mainly agriculture and cattle raising.
	Colombian Coffee Growers Federation-Committee of Coffee Growers of Quindío, Municipality of Pijao-Quindío, Municipality of Salento-Quindío, Parents Association of the Luis Granada Mejía Educational Institution of the municipality of Pijao	Agreement	Joining efforts to develop the water purification project in the Boquía and La Nubia schools of the municipality of Salento, as well as in the Luis Granada Mejía educational community of the municipality of Pijao.	Water purification in three rural schools located in the municipalities of Salento and Pijao. EDEQ conducted training sessions on how to save water and energy.



## Joint environmental initiatives

Company	Other actors involved	Engagement mechanism	Goal	Results in 2016
EDEQ	<ol style="list-style-type: none"> <li>1. Regional Autonomous Corporation of Quindío (CRQ), National Police of Colombia, Salento's Mayor's Office</li> <li>2. Regional Autonomous Corporation of Quindío (CRQ), Rojas Pinilla Normal School and Community</li> <li>3. National Police of Colombia</li> <li>4. Community</li> <li>5. Regional Autonomous Corporation of Quindío (CRQ)</li> </ol>	Alliance	Preserving the water resource of the department of Quindío and compensating the carbon footprint generated by EDEQ.	<ol style="list-style-type: none"> <li>1. With the support of the CRQ and the School of Police Officers, 2,000 trees were planted in the El Mudo wetland located in Salento, Quindío, with the purpose of preserving the department's water resource (Quindío river) and compensating for the carbon footprint generated by EDEQ.</li> <li>2. Along with the CRQ, the educational day for risk management was supported with the planting of 100 trees in the Rojas Pinilla Normal School. Other 20 fruit and ornamental trees were planted during the session for risk prevention in the Villa Ximena housing complex.</li> <li>3. Reforestation in the La Pradera stream, in Calarcá, with the support of the Calarcá Institute, the Environmental Police and the Inspector's Office: 72 trees. Planting of 510 trees along with the Police Command.</li> <li>4. Planting of 350 native trees in the Río Lejos rural settlement, Pijao.</li> <li>5. Delivery of 80 trees to CRQ for forest compensation, and support to educational session in Salento, Quindío.</li> </ol>
ENSA	Center for Science and Art Foundation (Explora)	Agreement	Financial contribution to the Center for Science and Art Foundation, for a period of six years, starting in 2015. This institution has an exhibition that teaches children measures for saving and safely using energy.	Renewal of the Agreement in 2015 for a period of six years.
	Ancón Foundation	Agreement	The commitment of ENSA is to plant and maintain, for a period of five years, one hectare within its concession area.	Reforestation of one hectare in the area of Colón.
	US Trade and Development Agency (USTDA)	Agreement	Studying the technical and regulatory feasibility of the technology solution in Panama, by means of a pilot plan to reduce the demand of energy by 1 MW, which will be operating for six months. The reduction of customer demand translates into economic and environmental savings for the participating companies that will be customers of ENSA.	ENSA officially received the Interactive Energy Platform (IEP) that optimizes the network utilization and improves the energy demand at the highest peaks of big customers.





## Joint environmental initiatives

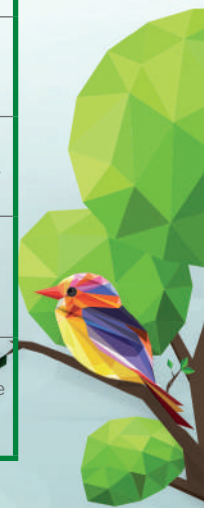
Company	Other actors involved	Engagement mechanism	Goal	Results in 2016
ENSA	Pro Niños de Darién Foundation	Agreement	With the Pro Niños de Darién Foundation, there is a cooperation agreement through which ENSA's employees participate in social support sessions and activities.	Donation as a corporate sponsor and participation in various activities.
	Junior Achievement	Agreement	With the Junior Achievement organization, there is a cooperation agreement through which ENSA's employees participate in training sessions in schools from different locations within the concession area.	More than 10 courses completed in schools within the concession area.
	Ecofarms Foundation	Agreement	Its goal is the reforestation of 3.5 hectares of native forests, as part of the Mamoni river conservation and restoration project, which is part of the strategies that ENSA will promote for mitigation of and adaptation to climate change.	Signing of the agreement.
Delsur	Holcim, Walmart, Termoencogibles, UPA Radio and Tin Marín Museum	Workshop on safe and efficient use of energy; food, road, digital and environmental safety.	Teaching children about safety in different areas.	Children empowered in safety issues, capable of having interviews in the different media on the importance of contributing to the environment and knowing about the safe use of food, electricity, roads and the internet.
	Ministry of Environment and Natural Resources	Donation of third-category cement utility poles	Reusing obsolete utility poles and building observation towers and viewpoints in protected natural areas.	56 utility poles were donated and distributed in five protected natural areas for the construction of viewpoints, bridges, platforms and the reinforcement of guardrails.
	La Gran Vía shopping mall, El Diario de Hoy newspaper, Davivienda, Fundemas, Sustainability Lecture, Matías Delgado University, El Mundo newspaper, Women of the Concepción del Volcán Parish, Canal 33 and Delsur staff	Workshop for recycling meter covers, in order to turn them into terrariums with cactuses and succulents.	Promoting the recycling of meter covers and encouraging the care for the environment and the reforestation.	The development of workshops made it possible to disseminate RSE projects and promote the recycling culture and the care for the environment. More than 400 people attended the workshop, and a large number of viewers learned about the program through Canal 33 and the reports published by local newspapers.
	José Matías Delgado University, students of Craft Product Design	Alliance with the education sector for students to make sculptures and furniture with pieces previously used in the power distribution network and that were donated for being reused	Making other uses of hardware, insulators and diverse elements permanently removed from the network. Promoting the recycling culture and encouraging creativity among the company's staff.	Exhibition of more than 25 pieces, among furniture (tables, ottomans, lamps, benches) and sculptures manufactured with crosspieces, straps, pads, screws, boxes, wires, porcelain and epoxy insulators, clamps and braces.
	Usaid, Lula Mena	Alliance to promote the use of parts and coils, as well as the commercialization of resulting products.	Promoting the recycling of meters and supporting women entrepreneurs in areas with high unemployment rates.	Development of the Weaving Hopes project, with the inclusion of new types of weaves for the production of fashion products (costume jewelry, tablecloths and home decorations, purses, and fabrics for clothing applications).
Santa Tecla's Mayor's Office, Social Action Office	Donation of wooden spools to the Municipality of Santa Tecla for their recycling.	Recycling, promoting environmental protection and encouraging entrepreneurship among a group of women led by the Social Action Office of the municipality.	Donation of 52 wooden spools that were later transformed into furniture (tables) for rent. The funds will be the seed money for the production of other pieces of furniture (seats).	





## Joint environmental initiatives

Company	Other actors involved	Engagement mechanism	Goal	Results in 2016
Delsur	Delsur Administration	Recycling of wooden spools and iron crosspieces previously used in the power distribution network.	Fostering internal creativity and making other uses of the material that will no longer be used in the power distribution network.	Recycling of wooden spools used in the elaboration of decorative flowerpots, and of crosspieces used in the fabrication of pergolas and sieves.
	Fundemás and partner companies	Working Group	Sharing experiences on environmental management with different companies of the country.	Participation in the monthly "Corporate eco-efficiency" committee, coordinated by Fundemás. This space is an opportunity to identify good practices and give advice on environmental matters (energy, water, waste, climate change).
Eegsa	2016 Corporate Agreement for the Maintenance of Reforestation in the United Nations National Park	Agreement	Establishing an alliance that allows the development of actions to preserve protected areas and biodiversity in Guatemala. The United Nations National Park was reforested with 2,000 species.	Payment for maintenance of the plantation during five years. Along with the Defensores de la Naturaleza foundation, the agreement undertakes to maintain 2.37 hectares for five years, including the submission of technical reports every six months or when requested.
	Municipalities of San Lucas, San Raymundo and Antigua Guatemala	Agreement	Eegsa promotes the social development and growth, as well as the protection and conservation of the environment, which is why it has expressed its interest in establishing cooperation links to drive reforestation projects promoted by the municipalities of San Lucas, San Raymundo and Antigua Guatemala.	The goal of the agreement is to establish the bases for cooperation between the municipalities and Eegsa, in order to join efforts for the development of work actions. The company undertakes to donate species, and the municipality to plant the trees in appropriate areas, covering the costs of this activity and performing maintenance to ensure their growth. The area covered by the three municipalities is approximately 5.63 hectares.
	Solar Foundation	Agreement	Developing Corporate Social Responsibility plans, through which Eegsa supports the use of clean energies in Guatemala.	Voluntary donation of the requirements to the Solar Foundation for the development of the project in 2015. Additionally, monitoring of the project during 2016.
	Guatemalan Cleaner Production Center	Agreement	Strengthening corporate environmental management through technical measurements of defined parameters.	Payment of the membership fee; supervision of the measurements of noise, lighting and air quality; submission of adequate information for diagnoses; and monitoring and planning of the training programs.
	ONUDI-MARN	Letter signed by the Management confirming participation in the project.	Participating in the updating of the national inventory of PCBs and in the respective management program.	Participation in the working groups of the Ministry of Environment and Natural Resources.
	CentraRSE-Global Compact	Agreement	Diagnosing the environmental performance of the company, through the evaluation conducted by CentraRSE.	Participation in activities, meetings and training sessions of environmental nature. The measurement was performed with the "Indicarse" tool, delivered at the end of 2016.
	Galileo University-Institute of Energy Resources (IRE)	Agreement	Carrying out a diagnosis of the emissions measurement of a representative part of the vehicle fleet. The agreement is executed through a donation.	The combustion efficiency was measured in 50 vehicles of the fleet.
	Kimberly Clark Guatemala-Diso	Contract	Generating an environmental and economic profit for Eegsa, through the recycling of solid waste in administrative facilities.	Exchange of the cleaning product for the Benefits Unit, signing of the contract, implementation of the administrative waste program in three offices of the company, and planning of awareness talks.





Joint environmental initiatives				
Company	Other actors involved	Engagement mechanism	Goal	Results in 2016
Adasa	Conaf and Board of Residents of Tocopilla	Working Group	Contributing botanical species in neighborhood spaces.	40 tree species planted.
	Conaf and Regional Hospital of Antofagasta	Working Group	Contributing botanical species in common areas of the hospital.	20 tree species planted.
	Conaf and Hospital of Tocopilla	Working Group	Contributing botanical species in common areas of the hospital.	20 tree species planted.
	Municipality of Antofagasta, Libertad Board of Residents	Working Group	Building of a square with recycled furniture in a space designated as green area.	Presentation to the community of the Water Square.
	Chilean Navy, Ministry of Environment, Coca-Cola, Minera Escondida, Municipality of Antofagasta, local schools	Working Group	Cleaning the Paraíso beach, in Antofagasta.	Participation of 300 people in the cleaning of the Paraíso beach.
	Conaf, Municipality of Antofagasta, Community	Working Group	Cleaning the area of La Portada monument.	Participation of 100 people in the cleaning tasks.

Challenges		
Short, medium and long term goals	Year in which it was achieved	Achievement indicator
ESSA - Economically rewarding, through the PSA, 30 ranger families in the area of influence of the company in 2016.	2016	Families that receive the benefit / Families that will receive the benefit
ESSA - Exceeding the goal of conservation of 95 hectares of forest by 2017, as a mechanism to compensate for carbon dioxide emissions generated by the company.	2017	Hectares preserved / Hectares that will be preserved
ESSA - By 2018, compensating for 42,782 tons of carbon dioxide, through the conservation of forests in its area of influence.	2018	Tons compensated / Tons that will be compensated
ESSA - Preserving the potbellied ceibas planted and maintained in its area of influence, with the purpose of compensating for the CO <sub>2</sub> emissions generated by the celebration of the IV Environmental Meeting of the EPM Group.	2017	Ceibas preserved and planted / Ceibas that will be preserved and planted



Challenges		
Short, medium and long term goals	Year in which it was achieved	Achievement indicator
Eegsa - Continuing in 2016 with the Environmental and Business Sustainability program for the measurement of the carbon footprint, proposed by Agexport and Green Development, for the four administrative offices where the measurement was not carried out in 2015. Additionally, carrying on with the annual measurements of the carbon footprint in order to identify emission sources and the corresponding opportunities for improvement.	2016-2020	Determination of the tons of equivalent CO <sub>2</sub> generated in the different offices of the company.
Eegsa - Reporting the results of the emissions produced by the vehicle fleet of the company.	2016	Amount of emissions generated by the use of the Eegsa vehicle fleet.
Eegsa - Carrying out reforestation activities for the benefit of the departments in its area of influence.	2016-2020	Number of species planted, lands reforested and measurement of the carbon footprint according to the plantation growth.
Eegsa - Taking part in the restoration of the reserve that protects the springs of the Alux hill, in alliance with Conap.	2016-2020	Development of at least one project for the protection and conservation of the reserve that protects the springs of the Alux hill.
Eegsa - Supporting the MARN in the development of the project "Environmental management and disposal of equipment contaminated with Polychlorinated Biphenyls or PCBs and DDT pesticide wastes, and technical capacity building in Guatemala."	2016-2019	Update of the PCB inventory of the Eegsa corporation.
Eegsa - Reporting the results of the consumption and demand of the company's electric vehicles.	2016	Amount of energy and power consumed by the electric vehicles of Eegsa.
Eegsa - Carrying on with the biodiesel project and reporting its results.	2016	Amount of emissions by vehicles using biodiesel.
Eegsa - Submitting the results of the pilot plan for the Eegsa's vehicles using ethanol.	2016	Amount of emissions by vehicles using ethanol.
ENSA - Promoting the "e-bill." By 2017, implementing the electronic bill with at least 15% of customers.	2017	Number of customers with electronic bill / Total number of customers
ENSA - By 2019, reforesting 100% of the trees felled to date, in a 1 to 1 proportion.	2019	Number of trees felled / Number of trees reforested.
ENSA - Encouraging the reasonable use of energy, through the installation of prepayment meters.	2016	Number of users of the prepaid services.

**Source:** Vice Presidency of Power Transmission and Distribution

Goals and indicators for the energy service of the EPM Group in joint responsibility for the environment.

# Our stakeholders

epm<sup>®</sup> Group

 [www.sostenibilidadgrupoepm.com.co/english](http://www.sostenibilidadgrupoepm.com.co/english)



# Customers and users

## Composition

People, businesses and other organizations with which a relationship is built from the provision of public utilities.

Installations - EPM Group			
	2014	2015	2016
<b>Energy</b>	5,771,946	5,966,851	6,166,154
<b>Gas</b>	927,609	997,446	1,065,705
<b>Water</b>	1,340,410	1,378,365	1,429,195
<b>Sewerage</b>	1,290,716	1,321,090	1,379,292
<b>Sanitation</b>	817,521	841,651	865,555

Installations - EPM			
	2014	2015	2016
<b>Energy</b>	2,147,578	2,221,477	2,291,716
<b>Gas</b>	927,609	997,446	1,065,705
<b>Water</b>	1,076,215	1,105,003	1,145,313
<b>Sewerage</b>	1,050,590	1,072,886	1,120,945

## Engagement goal

Facilitating access to and use of public utilities by promoting joint actions with different legitimate actors, in order to influence the sustainable human development in the territories where the EPM Group is present or is planning to be present.

## Leader of the engagement plan

Directorate of Relationship Marketing, Commercial Vice Presidency.

## Management indicators

**G4-27:** Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholders and the topics identified as relevant.







# Colleagues

## Composition

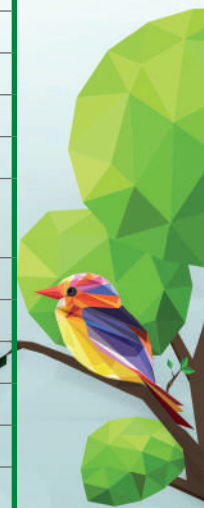
Companies engaged in the provision of public utilities, as well as professional associations and entities where experiences and subjects of common interest, in terms of development and sustainability, and relevant to the sector are discussed, shared and exchanged.

<b>National Unions and Associations</b>	Andesco - National Association of Utilities and Complementary and Inherent Activities Companies
	ACEF - Colombian Association of Finance Executives
	ACI - Agency for Cooperation and Investment of Medellín and the Metropolitan Area
	Aciem - Colombian Association of Engineers
	Acolgen - Colombian Association of Electricity Generators
	AFE - Association of Corporate Foundations
	ANDI - National Business Association of Colombia
	Ascort - Colombian Association of Labor Relations
	Asocodis - Colombian Association of Electricity Distributors
	ASTC - Association of Science - Technology Centers
	MAC - Marketing Advisory Committee
	CAPT - Transmission Planning Advisory Committee
	Cátedra del Agua Magazine
	Cecodes - Colombian Business Council for Sustainable Development
	CETA - Center for Tax Studies of Antioquia
	Cidea - Inter-Institutional Committee for Environmental Education of Antioquia
	Cideam Medellín - Inter-Institutional Committee for Environmental Education of Medellín
	Cidet - Center for Research and Technological Development of the Electricity Sector
	Ciien - Center for Energy Research and Innovation
	Medellín Energy Cluster
	CME - Energy Mining Committee
	CNO - National Operation Council
	CNO Gas - National Operation Council of the Natural Gas
	Cocier - Colombian Member Committee of the Regional Energy Integration Commission
	Cocme - Colombian Member Committee of the World Energy Council
	Smart Grids Colombia
	National Commission for the Occupational Health of the Electricity Sector (Ministry of Labor)
	Committee of Issuing Companies of the Colombian Stock Exchange
	Committee of Employees and Compliance Officers of the Real Sector
	Inter-institutional Committee of Libraries
	EBAM International Committee, Latin American Meeting on Libraries, Archives and Museums
	Reading Plan Sectoral Committee



## National Unions and Associations

Inter-institutional Thematic Committee on Climate Change of the Municipality of Medellín
UIGC - University - Industry - Government Committee
Colombian Council for Security
Corvilar - Corporation for the Promotion of Popular Housing
Eaca - Companies Active in Compliance with Anti-Corruption Measures
GRI - Global Reporting Initiative
Guides Colombia
ICDT - Colombian Institute of Tax Law
ICOM - International Council of Museums
Icontec - Colombian Institute of Technical Standards and Certification
Ictis - Colombian Institute for Subterranean Infrastructure Technologies and Techniques
IFLA - International Federation of Library Associations and Institutions
Colombian Institute of Internal Auditors
Invisbu - Institute for Social Housing and Urban Reform of Bucaramanga
Medellín's Downtown Cultural Committee
Permanent Bureau for the Coordination of Indigenous Peoples and Organizations with the National Government
Committee on Children and Youth of the District 10
Committee on Critical Infrastructure, Operational Risk and National Cyber Defense in the Ministry of National Defense
Committee of the Electricity Sector (SENA)
National Committee for Adaptation to Climate Change
MMM - Medellín's Museums Committee
Naturgás - Colombian Association of Natural Gas
ONAC - Colombian Accreditation Organism
Network for Transparency and Citizen Participation
Service Leaders Network
Global Compact Network Colombia
National Network of Metrology
RedPop - Latin American and Caribbean Network for the Popularization of Science and Technology
Risk and Insurance Management Society
RMA - Antioquia Museums' Network
RobecoSAM (DJSI)
RUTA N
Santander Competitive
Servinfo
SIEL - Colombian Electricity Information System





<b>International associations</b>	Lawea - Latin American Wind Energy Association
	Aloas - Latin American Association of Water and Sanitation Operators
	IHA - International Hydropower Association
	IWA - International Water Association
	World Economic Forum
<b>Commercial associations</b>	Camacol - Colombian Chamber of Construction
	Colombian American Chamber of Commerce
	Fenalco - National Federation of Merchants

### Engagement goal

Formulating and developing a coordinated strategy of sustainability for the economic, social and environmental contexts, through which a responsible behavior by the industry is promoted as part of a collaborative relationship with competitors and colleagues.

### Leader of the engagement plan

External Relations Management, Vice Presidency of Corporate Communications and Relationships

### Management indicators

**G4-27:** Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholders and the topics identified as relevant.



# Community

## Composition

Population located in areas where the EPM Group's companies are present through their projects and operations.

## Engagement goal

Defining multidirectional commitments among the community, the State authorities and other legitimate actors in the territories where the EPM Group's companies are present, in order to co-manage permanent activities relevant to the society and the environment, which might be translated into equity and a better quality of life for people, all within the framework of the Groups' policies and plans.

## Leader of the engagement plan

Customer and Community Education Unit

Co-leaders: External Relationships Management, Environmental and Social Management of Projects and Engineering, Directorate of Energy Generation Planning.

## Management indicators

Value generated and distributed - EPM	
2015	2016
COP 169.37 billion (3%)	COP 125.02 billion (3%)

The value distributed is taken from the Financial Statement by interest group, prepared following the methodology of the Fourth Statement by Luis Perera Aldama.

## Management indicators

**G4-27:** Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholders and the topics identified as relevant.



## Owner

### Composition

It refers to the owner of EPM, that is, the Municipality of Medellín (Municipal Mayor's Office and Medellín Council) and its Board of Directors.

### Engagement goal

Strengthening, in the Corporate Governance Model, the commitment of the Municipal Administration to excellence in the management of EPM and to its autonomy in a stable and continuous way, conditioned to the effective implementation of EPM's Corporate Responsibility Model and on an ethical and non-paternalistic basis, aiming at an environmental, social and economic sustainability.

### Leader of the engagement plan

General Secretariat, Corporate Governance Unit

### Management indicators

Value generated and distributed - EPM	
2015	2016
COP 991.13 billion (17%)	COP 816.52 billion (16%)

The value distributed is taken from the Financial Statement by interest group, prepared following the methodology of the Fourth Statement by Luis Perera Aldama.

### Management indicators

**G4-27:** Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholders and the topics identified as relevant.





# The State

## Composition

National, departmental and municipal entities that are part of the government executive, legislative and judicial branches, as well as state agencies from other countries and supranational organizations.

## Engagement goal

To promote inter-institutional coordination with the State for the regional development, regarding economic, social and environmental sustainability of the EPM Group, acting transparently and closely, without giving rise to actions that supplant the responsibility of state institutions.

## Leader of the engagement plan

External Relations Management, Vice Presidency of Communication and Corporate Relations

## Management indicators

Value generated and distributed -EPM	
2015	2016
COP 435.71 billion (7%)	COP 702.84 billion (14%)

The value distributed was taken from the financial statement by stakeholder, which is based on the Uruguayan Luis Perera Aldama's Fourth Financial Statement methodology.

## Management indicators

**G4-27:** Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholders and the topics identified as relevant.





# EPM Group People

## Composition

EPM Group's employees, beneficiaries, retirees, pensioners, trainees from the National Training Service (SENA, in Spanish) and EPM Group's interns.

### EPM Group

	2014	2015	2016
<b>Executive staff</b>	584	590	580
<b>Professional staff</b>	3,598	3,944	4,252
<b>Non-professional staff</b>	6,552	6,792	6,876
<b>Total employees</b>	<b>10,734</b>	<b>11,326</b>	<b>11,708</b>
<b>Beneficiaries</b>	10,647	10,818	11,116
<b>Retirees</b> (no data regarding pensioners through pension funds and social insurance)	3,888	3,815	3,393
<b>Trainees and interns</b>	708	592	487
<b>Total EPM Group People</b>	<b>25,977</b>	<b>26,551</b>	<b>26,704</b>

### EPM

	2014	2015	2016
<b>Executive staff</b>	227	231	213
<b>Professional staff</b>	2,051	2,296	2,486
<b>Non-professional staff</b>	3,349	3,464	3,582
<b>Total employees</b>	<b>5,627</b>	<b>5,991</b>	<b>6,281</b>
<b>Beneficiaries</b>	10,647	10,818	11,116
<b>Retirees</b> (no data regarding pensioners through pension funds and social insurance)	2,355	2,313	2,243
<b>Trainees and interns</b>	313	306	363
<b>Total EPM people</b>	<b>18,942</b>	<b>19,428</b>	<b>20,003</b>



## Engagement goal

To strengthen the relationship between EPM Group People and the organization in order to promote confidence and enhance the sustainable human development of stakeholders, and thus, to achieve compliance with business objectives.

## Leader of the engagement plan

Directorate of Human Resource Development

## Management indicators

Value generated and distributed -EPM	
2015	2016
COP 580 billion (10%)	COP 628.75 billion (13%)

The value distributed was taken from the financial statement by stakeholder, which is based on the Uruguayan Luis Perera Aldama's Fourth Financial Statement methodology.

## Management indicators

**G4-27:** Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholders and the topics identified as relevant.





# Investors

## Composition

This stakeholder group comprises agents who are determinant for the provision of long-term financial resources to the EPM Group. They act directly or indirectly in the capital market and they do not share ownership in EPM or its subsidiaries. Among the investors are local and international bond holders, long-term funding resource suppliers, facilitators, and governmental entities.

## Engagement goal

To consolidate trustworthiness with the investors and other local and international security market agents, in order of ensuring the corporate purpose.

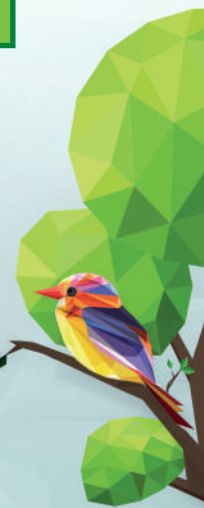
## Leader of the engagement plan

Executive Vice Presidency of Corporate Finance.



## Main achievements of the engagement plan

Goals for 2016	Achievements in 2016	Compliance
Hosting the tenth Meeting of EPM Group Investors.	The annual event was held on May 5 in Bogotá, where representatives of the securities market in Colombia attended. Information about the management, performance and achievements of the business group during the previous year and the expectations and challenges for the the current year was given during the event.	Total
Performing trimestral videoconferences to report the financial outcomes and the relevant issues of the trimester.	Four scheduled trimestral videoconferences were held to inform national and international investors.	Total
Participating in annual market events for international capitals, such as "non-deal roadshow", organized by commercial banks.	The company participated in 3 international events in the US during the second and third trimesters. During these events, it was possible to introduce and update information about the main topics of the business group which are of interest to investors.	Total
Keeping both versions of the investor's website updated, focusing on "Relevant information - Financial Superintendency" and the sections of general news. Publishing the most relevant news on the current financial status of EPM in English.	Both versions of the website were updated throughout the year.	Total







## Challenges

Short, medium and long term goals	Year of completion	Achievement indicator
Hosting the 11th annual event for EPM Group investors.	2017	Carrying out of an annual event for EPM Group investors during the second trimester of the year.
Performing trimestral videoconferences to report the financial outcomes.	2017	Carrying out of four trimestral videoconferences for the national and international investors.
Participating in annual market events for international capitals, such as "non-deal roadshow", organized by commercial banks.	2017	Participation in three or up to five events for emerging markets organized by international banking, where the company is given the possibility to set a series of one-to-one meetings with international investors.
Keeping both versions of the investor's website updated and improving navigation to facilitate access to content.	2017	Regular update of the website and improvement of navigation to access to content, in both English and Spanish versions.

## Management indicators

**G4-27:** Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholders and the topics identified as relevant.



# Suppliers and Contractors

## Composition

This stakeholder group comprises natural and legal persons, at a national and international level, that are able to provide goods and services to the companies of the EPM Group.

## Engagement goal

To set engagement schemes aligned with the strategic direction of the EPM Group, to turn contracting into a tool for both the strategic objectives and the sustainable and competitive development of the territories, by enhancing the local production network and strengthening and developing suppliers and indirect worker conditions that favor sustainable human development.

## Leader of the engagement plan

Vice Presidency of Shared Services and Supplies

## Management indicators

Value generated and distributed - EPM	
2015	2016
COP 2.29 trillion (45%)	COP 930.64 billion (19%)

The value distributed was taken from the financial statement by stakeholder, which is based on the Uruguayan Luis Perera Aldama's Fourth Financial Statement methodology.

The value includes suppliers of goods and services and financial service providers.

## Management indicators

**G4-27:** Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholders and the topics identified as relevant.





# Partners



## Composition

This stakeholder group comprises EPM Group's partners in its local and international companies. Natural and legal persons who have the right of ownership in the subsidiaries that are part of the EPM Group.

## Engagement goal

To maintain the trust based on strict compliance of rights and commitments.

## Leader of the engagement plan

Vice Presidency Secretary-General, Corporate Governance Unit

## Management indicators

**G4-27:** Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholders and the topics identified as relevant.



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# Material aspects

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# Access to purchasability of public utilities

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## Access to and purchasability of public utilities

Availability of public services through conventional and alternative solutions that promote human and territorial development.

**Purchasability** refers to the options and solutions available for users and customers to have the possibility to permanently enjoy residential public utilities, meeting their tastes, preferences and needs, and taking into account their ability and willingness to pay. Purchasability solutions are as follows: Pay According to Your Needs program, prepaid services, financing of bills, and Somos: the loyalty and rewarding program by the EPM Group.

**Access** implies service availability, in compliance with regulations and standards and through infrastructure solutions, such as Rural Electrification, Energy for the Return, Gas without Borders, Habitable Homes, Public Standpipes and Community Meters; programs that also aim at providing the service to populations living in areas with technical or legal restrictions. This is further explained in Unserved population.

EPM Group states in its BHAG: “...ensuring access to its services to 100% of the population in the territories where it operates.” This reflects the commitment to universalize the service, with a view from the citizen that leads us to the great challenge of developing solutions in an innovative way.

The EPM Foundation runs a program called Water for Education, Education for Water, which aims at facilitating access to this service by installing water purification solutions in rural educational institutions in Antioquia. For further information, please refer to [EPM Foundation](#).

### Stakeholders' vision

Issues such as the low purchasing power of the market, the risk of an increase in the number of disconnected users and the large number of vulnerable people, challenge the organization to develop programs to improve access to and purchasability of its services.

### Importance

Universalization, understood as purchasability and access solutions, is a focus of the CSR policy. It is also included in the social dimension of the BHAG approved by the Board of Directors of EPM, is present at the core of the business and is the essential contribution of the EPM Group to the construction of sustainable and competitive territories. It is translated into high social value for the Group's companies and their stakeholders, and has important implications in the generation of sustainable and competitive territories.

## Main achievements

2016 Goal	Company	2016 Achievement	Compliance
Connecting, through the Habitable Homes program, 331 homes to the water supply service and 516 homes to the sewerage service.	EPM	As of December 2016, 568 homes were connected to the water supply service and 901 homes, to the sewerage service.	Total
Evaluating the implementation of the Pay According to Your Needs program in the national affiliated companies.	Aguas del Oriente Antioqueño	The results of the feasibility study were positive and showed that it was possible to implement the payment scheme in Aguas del Oriente.	Total
Providing the service of drinking water to the community of Tafetanes, in the municipalities of San Jerónimo and Sopetrán.	Aguas Regionales	There have been some technical and environmental difficulties. 80 users are waiting to be connected, but only one of them has the permit to dump wastewaters. The environmental corporation is trying to process individual requests; however, the economic impact remains a problem for users.	Partial
Providing solid waste collection and transport services in rural settlements of the small towns of San Sebastián de Palmitas and San Cristóbal.	Emvarias	The service has been technically evaluated with the provider. Some garbage compactor vehicles have already started to operate in 10 rural settlements of the different small towns: San Cristóbal: Boquerón, San José, La Ilusión, El Yolombó and Naranjal; San Antonio de Prado: Montañita and Astillero; Palmitas: La Frísala, La Suiza and La Aldea. As of December 31, 2016, the collection coverage indicator (tonnes collected) was 99.1%.	Total
Implementing a pilot aerial water piping in Urabá, in order to provide the service in areas difficult to access.	Aguas Regionales	Throughout the year, corresponding contracting and design processes were carried out. In December 2016, the project was presented to the leaders of the neighborhoods of La Playa, Pescador 1 and 2, and El Progreso, as well as to the river battalion of the Navy.	Total
94.77% water supply coverage.	EPM Group	Coverage as of December 2016: 94.73%.	Partial



2016 Goal	Company	2016 Achievement	Compliance
Linking 10,000 customers and users to the prepaid water service.	EPM	8,924 customers were connected to the prepaid water service (21% more than the previous year), reaching a total of 16,000 customers.	Partial
91.38% wastewater service coverage.	EPM Group	Coverage as of December 2016: 91.21%.	Partial
Building infrastructure in rural areas without electricity coverage, in order to enable the connection of 1,400 homes.	EPM	The year ends with a total of 2,184 facilities connected. It means 9,348 people served and a compliance of 156%.	Total
Connecting 27,500 customers and users to the electricity service, through the Habitable Homes program.	EPM	In relation to the previous year, there is an increase of 11.5%, equivalent to 2,552 installations, as a result of the work that EPM has been carrying out in response to the service demand. A total of 24,783 facilities were connected, which means a compliance of 90%.	Partial
Reaching a 92.98% rural coverage in Santander.	ESSA	Regarding ESSA's total coverage indicator, the rural coverage component had an outstanding increase of 2.8% in relation to December 2015, going from 91.84% to 94.43%. In the case of urban coverage, it fell to 99.5%, the same figure presented at the beginning of 2014. It is mainly due to the increase in the census of irregular users in the urban perimeter of different municipalities, reported by the Good Energy Team in November 2016. The increase in the amount of customers is primarily due to the residential sector. 87% of the new customers are part of this sector. The greatest variation occurred in strata 1 and 4, with an average increase of 5% regarding the previous year.	Total
Reaching a 98.10% rural coverage in Quindío.	EDEQ	99%. The compliance with the performance in expansion and replacement of networks is above the goal in the categories of replacement of networks and rural electrification. The company replaced 60.2 km of networks, of the 56 km planned, and expanded 6.6 km.	Total





2016 Goal	Company	2016 Achievement	Compliance
Linking 1,200 customers and users to the prepaid energy service.	CENS	Fulfillment of the goal was 41%, with 488 customers linked, of which 76% belong to the "non-payment risk" sub-segment.	Partial
Linking 10,526 customers and users to connection projects and new services.	CHEC	The achievement was partial with a 76% compliance with the proposed goal. However, the goals of connection in the Habitable Homes and Rural Electrification programs were fulfilled with a total of 1,733 customers - users between the two programs, which contributed to the fulfillment of the achievement. The number of new customers - users in particular projects and free housing projects was below expectations, mainly due to delays in the procedures to obtain the Retie certification and to the lack of requests for this type of projects.	Partial
Connecting 1,546 customers and users through the Habitable Homes program.	CHEC	The goal for the Habitable Homes program was achieved in terms of linking of customers and investment, with a total of 1,696 installations for a 109% compliance.	Total
Giving continuity to the rural electrification program to provide electricity to 75 homes.	CHEC	A total of 47 homes were connected, which means a compliance of 63%. The rural electrification program continued with the construction of distribution networks.	Partial
Connecting 2,000 homes through the rural electrification program.	Eegsa	A total of 2,505 new services were installed in the departments of Guatemala, Escuintla and Sacatepequez: 1,731 in human settlements and 774 in rural communities, impacting more than 93 communities. Rural electrification investment costs amounted to Q 1,133,197.91. Additionally, in the area of Palencia, two projects were developed with total contribution by the municipality for their construction (Q 228,757.39 and Q 458,486.69), in the communities of Las Cofradías and Agua Caliente, respectively.	Partial





2016 Goal	Company	2016 Achievement	Compliance
Building 12 rural electrification projects.	Delsur	Eleven rural electrification projects were built, that is, 92% of the goal. Seven of them were developed through a joint investment modality, along with the municipal governments; other four, in coordination with the FISDL (Social Investment Fund for Local Development) through compensation funds. A preferential connection charge, as well as the option of financing the construction of internal electrical installations are benefits available for a total of 455 impacted users. Over the last two years, Delsur has developed 27 rural electrification projects with a sense of social responsibility.	Partial
96.74% coverage.	EPM	Urban: 100% Rural: 95.31% Total: 99% There was a decrease in the coverage indicator, mainly explained by the notable increase in the number of homes without electricity. As of December 2015, the amount of homes without electricity was 7,814; as of December 2016, it amounted to 21,104, that is an increase of 13,290 homes, equivalent to 170%. A methodological improvement was also implemented by including 9,945 defaulting rural homes (with more than seven overdue bills.) In previous years, defaulting homes were assumed to be located within the urban area. The methodological adjustment cushioned the coverage fall, since they are considered as facilities with service because they have the necessary electrical infrastructure.	Total
Linking 12,000 customers and users to the prepaid electricity service.	EPM	In 2016, 25,400 customers were connected to the prepaid electricity service, 27% more than the previous year, reaching a total of 220,000 customers.	Total
Linking 3,500 customers and users to the prepaid electricity service.	ESSA	3,770 homes were connected (15,080 people) with an investment of COP 2.53 billion.	Total





2016 Goal	Company	2016 Achievement	Compliance
Linking 21,000 customers and users to the Pay According to Your Needs program.	EPM	41,954 customers linked to the offer, achieving a 200% compliance with the goal set for the year, as well as increase of 80% in relation to 2015. Since the beginning of the program, 66,000 customers have been linked, 60% of them are part of the vulnerable segment and 40%, of the non-payment risk segment.	Total
Linking 26,000 customers and users to the Somos credit and 261,000, to the Loyalty and Rewarding Program Somos with sales of the credit for 70 billion.	EPM	In 2016, 228,882 customers were connected, which represents a 48% increase regarding the previous year.  From the beginning of the program until December, it reached a total of 701,000 linked customers. It granted loans for COP 74.58 billion for homes and COP 222 million for MSEs.	Total



## Challenges

Challenge	Year in which it was achieved	Scope and coverage		
		Geography	Business	Company
Connecting, through the Habitable Homes program, 440 homes to the water supply and sewerage services.	2017	Colombia - Antioquia	Water	Empresas Públicas de Medellín – EPM
95.69% water supply coverage.	2017	Colombia	Water	All the companies
92.45% wastewater service coverage.	2017	Colombia	Water	All the companies
Connecting 7,838 customers and users to the prepaid water service.	2017	Colombia - Antioquia	Water	Empresas Públicas de Medellín - EPM
Installing 30 public charging stations for electric vehicles.	2017	Colombia - Antioquia	Electrical energy	Empresas Públicas de Medellín - EPM
Connecting 24,100 facilities through the Habitable Homes Program.	2017	Colombia - Antioquia	Electrical energy	Empresas Públicas de Medellín - EPM
Building infrastructure in rural areas without electricity coverage, in order to enable the connection of 1,866 homes (rural electrification.)	2017	Colombia - Antioquia	Electrical energy	Empresas Públicas de Medellín - EPM
Linking 78,492 new customers to the energy service.	2017	Colombia - Antioquia	Electrical energy	Empresas Públicas de Medellín - EPM
19,500 customers linked to the prepaid energy service during 2017 in EPM.	2017	Colombia - Antioquia	Electrical energy	Empresas Públicas de Medellín - EPM
3,000 customers linked to the prepaid energy service during 2017 in ESSA.	2017	Colombia - Antioquia	Electrical energy	ESSA
Linking 30,000 new customers to the Pay According to Your Needs program in EPM.	2017	Colombia - Antioquia	Electrical energy	Empresas Públicas de Medellín - EPM
Linking 11,507 new customers to the energy service.	2017	Colombia	Electrical energy	CHEC
Linking 4,327 new customers to the energy service.	2017	Colombia	Electrical energy	EDEQ
Linking 14,000 new customers to the energy service.	2017	Colombia	Electrical energy	CENS
Linking 14,964 new customers to the energy service.	2017	Colombia	Electrical energy	ESSA





## Management indicators

- G4-EC8** Significant indirect impacts, including the extent of these impacts.
- G4-EU26** Percentage of unserved population in areas with distribution license.

## Sustainable development goals



# Service coverage and expansion

The construction of infrastructure required to expand the service coverage area corresponds to the strategic goal of “growing in customers and markets” and it is aligned with the statement of supporting and leveraging development and competitiveness in the territories where the EPM Group operates.

## Management in 2016

In 2016 the EPM Group carried out actions that led to an increase in the number of customers connected to all services. It worked jointly with the Municipality of Medellín in the implementation of the “United for Water” program that seeks to enable customers to access water supply and sanitation services and to benefit 40,200 homes by 2019. In the sanitation service, the affiliate company, Emvarias, included new solid waste collection and transport routes. EPM became the second gas distribution company in Colombia having a national participation of 13% represented by 1,065,705 homes connected to the service.



The EPM Group ended the year with 1,429,195 homes connected to the water supply service; 1,379,292, to the sewerage service; 865,555, to the sanitation service; 6,166,154, to the electrical energy service and 1,065,705, to the gas service, and with an infrastructure built per service, as follows: for the water supply service, 491 km of primary distribution networks and 4,302 km of secondary distribution networks; for the electrical energy service, 3,664 km of primary distribution networks and 1,943 km of secondary distribution networks, and for the gas service, 7,378 km of polyethylene pipe networks.

Regarding the water supply service, EPM reached a total of 1,145,313 customers, 263 km of primary distribution networks and 3,513 km of secondary distribution networks; for the sewerage service, it reached 1,120,945,384 km of primary distribution networks and 4,179 km of secondary distribution networks. Moreover, as a result of the efforts made through the “United for Water” program, 4,804 homes benefited from the water supply service and 4,611, from the sewerage service, data included in the total of each service. In addition, the San Nicolás water purification plant began operating and it benefits the areas in the upper part of Las Palmas, El Retiro and Llanogrande in the municipality of Rionegro.

The electrical energy service reached 2,291,716 customers, and 1,320 km of primary distribution networks and 478 km of secondary distribution networks were constructed.

2016 was a very positive year for the EPM’s Gas business within the long-term development axes: consolidation of the widespread use of natural gas in the residential sector, realization of value-added industrial solutions, progress in sustainable mobility and optimization of operational and commercial processes, which promotes competitive and sustainable markets. It reached 1,065,705 customers, and 226 km of polyethylene pipe networks were built during the year.







Total Installations per Service in 2016 - EPM					
Category / Sub-Category	Water Supply	Sewerage	Electrical Energy	Gas	
Residential	Stratum 1	86,244	79,544	466,531	102,332
	Stratum 2	343,968	331,728	782,449	394,084
	Stratum 3	380,543	376,220	554,338	340,973
	Stratum 4	126,718	126,557	156,539	105,342
	Stratum 5	82,937	82,777	92,398	69,787
	Stratum 6	37,064	37,017	39,484	33,772
	<b>Residential Total</b>	<b>1,057,474</b>	<b>1,033,843</b>	<b>2,091,739</b>	<b>1,046,290</b>
Non-residential	Commercial	77,460	76,941	167,170	17,121
	Industrial	8,339	8,159	20,330	1,986
	Official	2,040	2,002	12,477	308
	<b>Non-residential Total</b>	<b>87,839</b>	<b>87,102</b>	<b>199,977</b>	<b>19,415</b>
<b>Total</b>	<b>1,145,313</b>	<b>1,120,945</b>	<b>2,291,716</b>	<b>1,065,705</b>	

Source: Commercial Vice Presidency

Total Installations in 2016 - EPM Group						
Category / Sub-Category	Water Supply	Sanitation	Sewerage	Electrical Energy	Gas	
Residential	Stratum 1	132,408	96,955	110,729	893,967	102,332
	Stratum 2	381,989	269,446	363,892	1,482,546	394,084
	Stratum 3	395,078	237,211	389,351	915,866	340,973
	Stratum 4	130,940	91,259	130,114	302,468	105,342
	Stratum 5	84,402	64,631	83,600	125,423	69,787
	Stratum 6	37,248	35,714	37,131	61,115	33,772
	Residential Adasa	165,950	0	165,607	0	0
	<b>Residential Total</b>	<b>1,328,015</b>	<b>795,216</b>	<b>1,280,424</b>	<b>5,560,845</b>	<b>1,046,290</b>
Non-residential	Commercial	83,694	61,857	82,220	521,307	17,121
	Industrial	9,172	6,880	8,670	37,576	1,986
	Official	2,572	1,602	2,411	45,509	308
	Other	N/A	0	N/A	917	N/A
	Non-residential Adasa	5,742	0	5,567	0	0
	<b>Non-residential Total</b>	<b>101,180</b>	<b>70,339</b>	<b>98,868</b>	<b>605,309</b>	<b>19,415</b>
<b>Total</b>	<b>1,429,195</b>	<b>865,555</b>	<b>1,379,292</b>	<b>6,166,154</b>	<b>1,065,705</b>	

Source: Commercial Vice Presidency



Water Supply and Sanitation Service Coverage - EPM Group						
	Water Supply			Sanitation		
	2014	2015	2016	2014	2015	2016
<b>EPM</b>	> 99.5% *	> 99.5%*	95.09%	> 99.5%*	> 99.5%*	93%
<b>Aguas del Oriente</b>	96.66%	99.80%	100%	100%	100%	100%
<b>Aguas Regionales</b>						
Western Region	95.88%	99.10%	100%	81.40%	88%	89.61%
Urabá Region	86.40%	88.74%	89%	72.07%	70.13%	68.04%
<b>Aguas de Malambo</b>	97.49%	99.60%	90.19%	85.28%	87.71%	74.13%
<b>Envarias</b>	0	0	0	98.90%	99%	99%
<b>Adasa</b>	100%	100%	100%	99.80%	99.80%	99.80%

Source: Vice Presidency of Water Supply and Sanitation

**EPM:** until 2015, coverage was calculated based on the availability of networks. For 2016, an estimate of the number of homes versus the business' active customers is calculated. Since different calculation methodologies were used, the data are not comparable.

**Aguas de Malambo:** decreased coverage in both services due to an adjustment in the number of homes in the municipality, from 21,790 in 2015 to 23,919 in 2016. This update was made based on the census by the SISBÉN (System of identification and classification of potential beneficiaries for social programs.)

**Aguas Regionales – Urabá Region:** decreased coverage in the sewerage service due to an adjustment made, from December 2015 to January 2016, in the number of homes (increase of approximately 4,000).

Energy* Service Coverage - EPM Group			
Company	2014	2015	2016
EPM	99.03%	99.60%	99%
CHEC	99.81%	99.82%	99.83%
ESSA	97.01%	97.76%	98.16%
CENS	97.05%	97.61%	97.84%
EDEQ	98.94%	99%	99%
Delsur	87%	87%	87%
Eegsa	99.29%	99.37%	99.25%
ENSA	91.70%	93.10%	94.74%

Source: Vice Presidency of Power Transmission and Distribution

\* % of coverage compared to total population in the served territory.

EPM coverage is calculated under the statistical projection methodology of homes, in which the projected homes of each studied year, based on the census conducted by DANE in 2005, and the number of EPM's residential installations in each studied year are considered. Until 2015, coverage was calculated based on active installations. For 2016, it was calculated including inactive installations (more than 7 overdue bills.)

The variation in coverage for the affiliate company, Eegsa, in Guatemala is explained by the increase in rural customers caused by a change in the distribution structure of routes (capital city, towns and rural areas) for new service contracts negotiated in 2016, from 493,640 in 2015 to 617,231 in 2016, representing an increase of 25%.



Gas Service Coverage - EPM			
	2014	2015	2016
Total service coverage (%) compared to total population in the served territory.	65.10%	70.59%	77.20%

Source: Vice Presidency of Gas

Water Supply and Sewerage Network Expansion - EPM Group						
	Water Supply			Sewerage		
	2014	2015	2016	2014	2015	2016
<b>EPM</b>						
Total primary distribution networks (km)	263	261	263	357	360	384
Total secondary distribution networks (km)	3,406	3,462	3,513	4,115	4,166	4,179
<b>Aguas del Oriente</b>						
Total primary distribution networks (km)	2	2	2	16	16	16
Total secondary distribution networks (km)	27	29	29	4	4	4
<b>Aguas Regionales</b>						
<b>Western Region</b>						
Total primary distribution networks (km)	28	36	36	11	11	11
Total secondary distribution networks (km)	154	158	158	44	52	52
<b>Urabá Region</b>						
Total primary distribution networks (km)	37	37	37	67	67	67
Total secondary distribution networks (km)	433	427	436	318	319	321
<b>Aguas de Malambo</b>						
Total primary distribution networks (km)	10	10	10	32	32	32
Total secondary distribution networks (km)	166	166	166	84	84	84
<b>Adasa</b>						
Total primary distribution networks (km)	143	143	143	160	161	161
Total secondary distribution networks (km)	1,116	1,140	1,148	895	903	921
<b>Total networks of water service companies</b>						
<b>Total primary distribution networks (km)</b>	<b>483</b>	<b>489</b>	<b>491</b>	<b>642</b>	<b>647</b>	<b>671</b>
<b>Total secondary distribution networks (km)</b>	<b>5,302</b>	<b>5,382</b>	<b>4,302</b>	<b>5,460</b>	<b>5,528</b>	<b>5,561</b>

Source: Vice Presidency of Water Supply and Sanitation

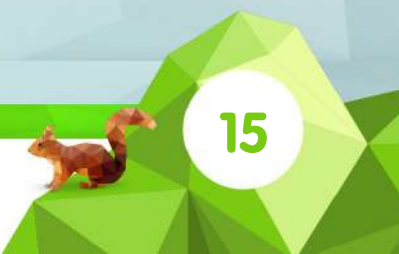


Energy Network Expansion - EPM Group			
	2014	2015	2016
<b>EPM</b>			
Total primary distribution networks (km)	2,790	1,188	1,320
Total secondary distribution networks (km)	507	335	478
<b>CHEC</b>			
Total primary distribution networks (km)	27	30	27
Total secondary distribution networks (km)	25	38	45
<b>ESSA</b>			
Total primary distribution networks (km)	644	456	1,616
Total secondary distribution networks (km)	1,330	865	963
<b>CENS</b>			
Total primary distribution networks (km)	11	12	47
Total secondary distribution networks (km)	22	24	22
<b>EDEQ</b>			
Total primary distribution networks (km)	6	6	27
Total secondary distribution networks (km)	26	11	41
<b>Delsur</b>			
Total primary distribution networks (km)	79	91	38
Total secondary distribution networks (km)	-19	7	-48
<b>Eegsa</b>			
Total primary distribution networks (km)	129	135	115
Total secondary distribution networks (km)	213	180	162
<b>ENSA</b>			
Total primary distribution networks (km)	295	476	474
Total secondary distribution networks (km)	206	300	280
<b>Total networks of energy service companies</b>			
<b>Total primary distribution networks (km)</b>	<b>3,980</b>	<b>2,395</b>	<b>3,664</b>
<b>Total secondary distribution networks (km)</b>	<b>2,310</b>	<b>1,759</b>	<b>1,943</b>

Source: Vice Presidency of Power Transmission and Distribution

Gas Service Expansion -EPM			
	2014	2015	2016
Steel line (km)	87	87	89
Polyethylene pipe networks built in the year (km)	724	775	226
Total polyethylene pipe networks (km)	6,342	7,152	7,378

Source: Vice Presidency of Gas





## Management indicators

**G4-EC8**

Significant indirect impacts, including the extent of these impacts.

**G4-EU26**

Percentage of unserved population in areas with distribution license.





# Rural Electrification

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The Rural Electrification program is developed within every EPM group's national company in order to expand the electrical energy service coverage to rural areas. It operates under this name or under the following names: Antioquia Illuminated; CHEC Illuminates the Countryside; Let's Illuminate Santander. Investments are made with own resources and the participation of public and private institutions.

At EPM, this program includes expanding the energy general-purpose network whose cost is assumed by the company, while the construction of connection pipes and internal installations is assumed by customers, with financing plans offered by EPM at rates lower than those in the financial market, through the Dignifying Homes Program.

## Management in 2016

In 2016 the EPM Group connected a total of 11,517 homes, with an investment of COP 42.14 billion, of which COP 8, 485 billion are financed for the beneficiary families. EPM connected 2,184 homes, with an investment of COP 17.165 billion, benefiting 9,348 people.

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For the coming 4 years, EPM plans to connect 14,444 electrical installations, with a projected budget of COP 140.735 billion. Reactivation of the number of connections per year is expected.

The Rural Electrification program is largely developed thanks to the contributions of entities or municipalities. For this reason, the connections made by the subsidiaries ESSA, Delsur and Eegsa are highlighted.





## EPM Group's Rural Electrification

	2014	2015	2016
<b>EPM</b>			
Number of facilities connected	15,053	5,778	2,184
Number of people served	64,427	23,112	9,348
Million COP invested in infrastructure	65,817	34,033	17,165
Million COP financed	9,637	4,193	1,365
<b>CHEC</b>			
Number of facilities connected	1,021	166	47
Number of people served	5,120	830	244
Million COP invested in infrastructure	4,292	791	205
Million COP financed	242	84	57
<b>ESSA</b>			
Number of facilities connected	4,434	4,392	6,803
Number of people served	17,736	17,568	27,212
Million COP invested in infrastructure	26,363	26,396	22,280
Million COP financed	3,759	3,737	4,550
<b>CENS</b>			
Number of facilities connected	2,103	3,655	825
Number of people served	8,284	14,620	3,300
Million COP invested in infrastructure	4,400	3,508	837
Million COP financed	N.A.	16,650	2,513
<b>EDEQ</b>			
Number of facilities connected	4	19	11
Number of people served	20	45	53
Million COP invested in infrastructure	96	314	185
Million COP financed	N.A.	0	0
<b>Delsur</b>			
Number of facilities connected	630	261	739
Number of people served	3,800	2,175	3,827
Million COP invested in infrastructure	334	315	421
Million COP financed	0	0	0
<b>Eegsa</b>			
Number of facilities connected	2,338	517	774
Number of people served	11,690	2,585	3,870
Million COP invested in infrastructure	N.A.	107	1
Million COP financed	N.A.	N.A.	N.A.



<b>ENSA</b>			
Number of facilities connected	N.A.	134	120
Number of people served	N.A.	536	480
Million COP invested in infrastructure	N.A.	2,529	1,045
Million COP financed	N.A.	N.A.	N.A.
<b>Total customers of electric energy service companies</b>			
<b>Number of facilities connected</b>	<b>25,583</b>	<b>14,922</b>	<b>11,517</b>
<b>Number of people served</b>	<b>111,077</b>	<b>61,471</b>	<b>48,334</b>
<b>Million COP invested in infrastructure</b>	<b>101,302</b>	<b>67,993</b>	<b>42,140</b>
<b>COP million financed</b>	<b>13,638</b>	<b>24,664</b>	<b>8,485</b>

Source: Vice Presidency of Power Transmission and Distribution

## Management indicators

**G4-EC8** Significant indirect impacts, including the extent of these impacts.





# Energy for the Return

With Energy for the Return program, EPM facilitates conditions for access to the electric power service for the population displaced by the armed conflict. It promotes the return to the lands by means of total debt forgiveness on consumption by unauthorized third-parties during the displacement. In case there was consumption by the family before being displaced, financing is offered for a term of up to 120 months (10 years), no down payment or interests. When necessary, the existing electric network is rebuilt, replaced or improved, and new networks are built in order to provide the users who settled in the region with the service.

## Management in 2016

Since its creation, the Energy for the Return program has benefited 3,626 families, that is, 14,500 people approximately have access to the energy service again. COP 3.6 billion were invested in the last five years.



In 2016, EPM connected 113 facilities in the municipalities of Cocorná, San Carlos and San Francisco. The Program had an impact on 452 people with an investment of COP 734 million.

Energy for the Return EPM			
	2014	2015	2016
Number of facilities connected	92	158	113
Number of people served	460	675	452
Investment (million COP)	481	1,027	734

Source: Vice Presidency of Power Transmission and Distribution.

## Management indicators

**G4-EC8** Significant indirect impacts, including the extent of these impacts.



# Account financing and default

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The accounts receivable financing service aims at regularizing defaulting customers by means of financing payable items at low interest rates in the long term.

Customers delay the payment of the bills and, due to regulations and system fairness, their services are disconnected until they regularize their situation. Once the customer has paid or has made a payment agreement, the service is reconnected within 24 business hours. Default is more likely to appear in low-income populations (socio-economic strata 1, 2 and 3) with safety problems, due to structural issues of the country.

## Management in 2016

In 2016, one of the highlights is the in-depth homologation of accounts receivable and portfolio management processes. This offers customers and users with financial trouble, alternatives to return to a normal situation and enjoy residential public utilities again.

The comprehensive contract of the Commercial Management was initiated at a group level with the aim of optimizing processes with a nationwide impact (in Colombia) on operational billing activities. Additionally, the collection management was contracted. It allows us to comprehensively manage users with different alternatives and from the first day of defaulting. Both contracts enable management tools that facilitate defaulting control in the Group companies. Finally, the use of the collection software implemented in every company of the Group, allows traceability of management processes, which contributes to the quality of the process information and its use in decision making.

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The comprehensive management of defaulting users, as well as the payment alternatives offered that fit their needs, led to a defaulting reduction in the Group. Similarly, field managements, as visits previous to a suspension and inspections during a suspension period, had a positive impact on customer retention and helped reducing defaulting services. At the international subsidiaries, as ENSA, more collection offices were made available to customers.







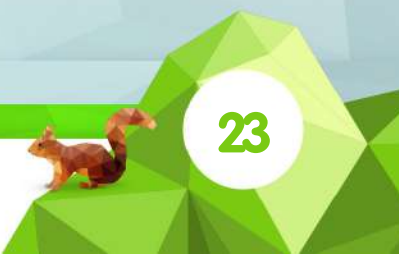
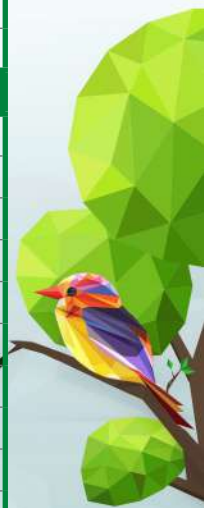
### Default - Subsidiary water companies EPM Group

Company / Indicator	2014	2015	2016
<b>Aguas de Occidente</b>			
Stratum 1	54	60	81
Stratum 2	128	125	148
Stratum 3	49	37	57
Stratum 4	55	56	64
Stratum 5	14	10	12
Stratum 6	4	5	7
<b>Residential total</b>	<b>304</b>	<b>293</b>	<b>369</b>
Non-residential	92	128	156
<b>Total</b>	<b>396</b>	<b>421</b>	<b>525</b>
<b>Total residential and non-residential services</b>	<b>14,764</b>	<b>15,730</b>	<b>16,824</b>
Default %	2.68%	2.68%	3.12%
<b>Aguas del Oriente</b>			
Stratum 1	0	7	0
Stratum 2	2	3	10
Stratum 3	7	18	27
Stratum 4	0	1	7
Stratum 5	6	4	6
Stratum 6	0	0	0
<b>Total Residential</b>	<b>15</b>	<b>33</b>	<b>50</b>
Non-residential	7	9	30
<b>Total</b>	<b>22</b>	<b>42</b>	<b>80</b>
<b>Total residential and non-residential services</b>	<b>4,063</b>	<b>4,485</b>	<b>4,679</b>
Default %	0.54%	0.94%	1.71%
<b>Aguas de Urabá</b>			
Stratum 1	3,060	2,801	2,770
Stratum 2	1,913	1,668	1,552
Stratum 3	577	538	516
Stratum 4	67	68	56
Stratum 5	0	0	0
Stratum 6	0	0	0
<b>Total Residential</b>	<b>5,617</b>	<b>5,075</b>	<b>4,894</b>
Non-residential	626	581	611
<b>Total</b>	<b>6,243</b>	<b>5,656</b>	<b>5,505</b>
<b>Total residential and non-residential services</b>	<b>60,633</b>	<b>64,232</b>	<b>68,508</b>
Default %	10.30%	8.81%	8.04%



Default - Subsidiary water companies EPM Group			
Company / Indicator	2014	2015	2016
<b>Aguas de Malambo</b>			
Stratum 1	232	1,144	1,366
Stratum 2	218	891	931
Stratum 3	35	83	88
Stratum 4	0	0	0
Stratum 5	0	0	0
Stratum 6	0	0	0
<b>Total Residential</b>	<b>485</b>	<b>2,118</b>	<b>2,385</b>
Non-residential	32	36	43
<b>Total</b>	<b>517</b>	<b>2,154</b>	<b>2,428</b>
<b>Total residential and non-residential services</b>	<b>21,343</b>	<b>21,823</b>	<b>22,179</b>
Default %	2%	9.9%	10.9%
<b>EPM</b>			
Stratum 1	6,908	6,062	4,830
Stratum 2	11,876	9,401	6,912
Stratum 3	6,108	4,911	4,447
Stratum 4	977	845	823
Stratum 5	513	421	396
Stratum 6	251	213	140
<b>Total Residential</b>	<b>26,633</b>	<b>21,853</b>	<b>17,548</b>
Non-residential	3,425	3,453	2,873
<b>Total</b>	<b>30,058</b>	<b>25,306</b>	<b>20,421</b>
<b>Total residential and non-residential services</b>	<b>1,076,215</b>	<b>1,105,003</b>	<b>1,145,311</b>
Default %	2.79%	2.29%	1.78%
<b>Total water companies</b>			
	<b>2014</b>	<b>2015</b>	<b>2016</b>
Stratum 1	10,254	10,074	9,047
Stratum 2	14,137	12,088	9,553
Stratum 3	6,776	5,587	5,135
Stratum 4	1,099	970	950
Stratum 5	533	435	414
Stratum 6	255	218	147
<b>Total Residential</b>	<b>33,054</b>	<b>29,372</b>	<b>25,246</b>
Non-residential	4,182	4,207	3,713
<b>Total</b>	<b>37,236</b>	<b>33,579</b>	<b>28,959</b>
<b>Total residential and non-residential services</b>	<b>1,177,018</b>	<b>1,211,273</b>	<b>1,257,501</b>

The number of total services includes installations with active services, as well as those with suspended or disconnected services





### Summary of the default percentage - Water affiliated companies of EPM Group

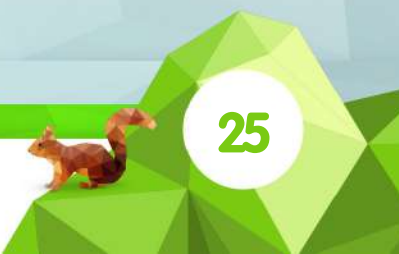
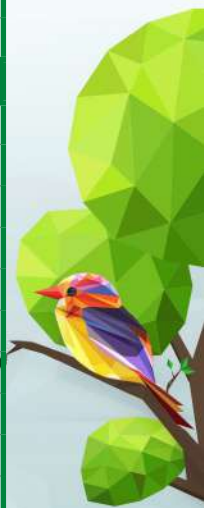
Company	2014	2015	2016
Aguas de Occidente	2.68%	2.68%	3.12%
Aguas del Oriente	0.54%	0.94%	1.71%
Aguas de Urabá	10.30%	8.81%	8.04%
Aguas de Malambo	2.42%	9.87%	10.95%
Emvarias	N.D.	N.D.	N.D.
Ticsa	0%	0%	0%
EPM	2.79%	2.29%	1.78%

### Default in electric energy - EPM Group

Company / Indicator	2014	2015	2016
<b>CHEC</b>			
Stratum 1	1,094	1,301	1,370
Stratum 2	1,276	1,368	1,321
Stratum 3	609	715	601
Stratum 4	123	134	113
Stratum 5	39	46	39
Stratum 6	34	38	40
<b>Total Residential</b>	<b>3,175</b>	<b>3,602</b>	<b>3,484</b>
Non-residential	598	777	739
<b>Total</b>	<b>3,773</b>	<b>4,379</b>	<b>4,223</b>
<b>Total residential and non-residential services</b>	<b>446,631</b>	<b>457,992</b>	<b>465,997</b>
Default %	0.84%	0.96%	0.91%
<b>ESSA</b>			
Stratum 1	5,605	6,415	8,344
Stratum 2	3,587	3,722	4,123
Stratum 3	964	1,215	1,469
Stratum 4	289	351	484
Stratum 5	27	34	53
Stratum 6	23	31	34
<b>Total Residential</b>	<b>10,495</b>	<b>11,768</b>	<b>14,507</b>
Non-residential	1,965	2,140	2,321
<b>Total</b>	<b>12,460</b>	<b>13,908</b>	<b>16,828</b>
<b>Total residential and non-residential services</b>	<b>702,604</b>	<b>729,059</b>	<b>750,854</b>
Default %	4.73%	1.91%	2.24%



Default in electric energy - EPM Group			
Company / Indicator	2014	2015	2016
<b>CENS</b>			
Stratum 1	5,306	6,099	6,372
Stratum 2	6,869	7,108	7,009
Stratum 3	1,566	1,587	1,694
Stratum 4	300	289	297
Stratum 5	34	34	37
Stratum 6	3	6	7
<b>Total Residential</b>	<b>14,078</b>	<b>15,123</b>	<b>15,416</b>
Non-residential	1,880	1,780	1,942
<b>Total</b>	<b>15,958</b>	<b>16,903</b>	<b>17,358</b>
<b>Total residential and non-residential services</b>	<b>437,246</b>	<b>453,948</b>	<b>474,670</b>
Default %	3.65%	3.72%	3.66%
<b>EDEQ</b>			
Stratum 1	700	776	655
Stratum 2	553	535	390
Stratum 3	301	318	226
Stratum 4	73	100	54
Stratum 5	55	59	31
Stratum 6	13	12	11
<b>Total Residential</b>	<b>1,695</b>	<b>1,800</b>	<b>1,367</b>
Non-residential	928	951	803
<b>Total</b>	<b>2,623</b>	<b>2,751</b>	<b>2,170</b>
<b>Total residential and non-residential services</b>	<b>169,522</b>	<b>173,371</b>	<b>179,656</b>
Default %	1.5%	1.6%	1.2%
<b>EPM</b>			
Stratum 1	28,323	30,058	28,885
Stratum 2	14,893	14,062	13,021
Stratum 3	6,917	6,229	6,168
Stratum 4	1,368	1,219	1,241
Stratum 5	637	530	493
Stratum 6	355	245	193
<b>Total Residential</b>	<b>52,493</b>	<b>52,343</b>	<b>50,001</b>
Non-residential	7,853	7,883	7,566
<b>Total</b>	<b>60,346</b>	<b>60,226</b>	<b>57,567</b>
<b>Total residential and non-residential services</b>	<b>2,146,409</b>	<b>2,220,055</b>	<b>2,290,255</b>
Default %	2.8%	2.7%	2.5%





Default in electric energy - EPM Group			
Company / Indicator	2014	2015	2016
<b>Delsur</b>			
<b>Total Residential</b>	<b>2,833</b>	<b>3,431</b>	<b>3,110</b>
Non-residential	884	1,160	1,012
<b>Total</b>	<b>3,717</b>	<b>4,591</b>	<b>4,122</b>
Default %	1.03%	1.24%	1.09%
<b>Eegsa</b>			
<b>Total Residential</b>	<b>4,350</b>	<b>4,423</b>	<b>5,138</b>
Non-residential	1,023	986	960
<b>Total</b>	<b>5,373</b>	<b>5,409</b>	<b>6,098</b>
Default %	0.49%	0.47%	0.51%
<b>ENSA</b>			
<b>Total Residential</b>	<b>115,904</b>	<b>103,130</b>	<b>71,514</b>
Non-residential	8,013	5,892	5,603
<b>Total</b>	<b>123,917</b>	<b>109,022</b>	<b>77,117</b>
Default %	31%	26%	18%
<b>Total energy companies</b>			
	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Total Residential</b>	<b>205,023</b>	<b>195,620</b>	<b>164,537</b>
Non-residential	23,144	21,569	20,946
<b>Total</b>	<b>228,167</b>	<b>217,189</b>	<b>185,483</b>

Summary of the default percentage Affiliated energy companies of EPM Group			
Company	2014	2015	2016
CHEC	0.84%	0.96%	0.91%
ESSA	4.73%	1.91%	2.24%
CENS	3.65%	3.72%	3.66%
EDEQ	2%	1.59%	1.21%
Delsur	1.03%	1.24%	1.09%
Eegsa	0.49%	0.47%	0.51%
ENSA	31%	26%	18%
EPM	2.81%	2.71%	2.51%

## Management indicators

**G4-EC8**

Significant indirect impacts, including the extent of these impacts.





# Gas without borders

EPM program Gas without borders takes the natural gas service network to the municipalities in Antioquia located outside Medellín's metropolitan area, through the transportation of compressed natural gas. From pressure reducing stations, the gas is distributed through the networks to homes, commercial establishments and consumption places.

## Management in 2016

In 2016, all Program's efforts aimed at increasing service coverage and equity of access. A total of 124 populations were supplied with gas in Antioquia, 112 of which have an EPM grid outside the Metropolitan Area.



The Gas without Borders program is supported by a 2,651-km polyethylene pipeline, 117 km of which were built in 2016. It represents an investment over COP 41 billion. Beneficiaries: 69,020.

Gas without Borders			
	2014	2015	2016
Facilities connected	42,676	26,095	17,255
Beneficiaries	182,653	111,687	69,020
Investment (million COP)	46,283	35,671	41,006

Source: Vice Presidency of Gas

## Management indicators

**G4-EC8** Significant indirect impacts, including the extent of these impacts.





## Dignifying homes

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The Dignifying Homes Program is a social commitment by the EPM Group to fund the basic infrastructure of the water, energy and gas services for the most vulnerable homes, aiming at improving their quality of life. In EPM, it started in the 60s and is one of the programs with the higher coverage rates in the capital of Antioquia. Currently, it is developed for all services: water, sewage, energy and gas. Dignifying Homes is also executed in the companies CHEC, ESSA and EDEQ.

### Management in 2016

In 2016, the EPM Group invested COP 83.34 billion in the Dignifying Homes Program to facilitate the connection of users to the services of water, energy and gas in the areas covered. In total, 517,719 people benefited from these actions.



In 2016, Water and Sanitation invested a total of COP 16.19 billion in Dignifying Homes and other works required by customers and users, in order to facilitate their access to water and sewage public utilities in the covered areas. In total, 117,365 people benefited, with a total of 26,081 facilities connected.

EPM connected 24,783 energy services through the Program, with an investment of COP 21,935. In the Urabá region, the service was enabled in areas of the municipalities of Apartadó, Arboletes, Carepa, Chigorodó, Mutatá and Necoclí, among others. In the Northeast of Antioquia, the Program focused on social housing programs in the municipalities of Puerto Berrío and Cisneros.

In 2016, the goal was exceeded with more than 69,245 new customers, 56,063 of which, from strata 1, 2 and 3, have access to the service thanks to the Dignifying Homes program.



<b>Dignifying Homes Water services EPM</b>			
	<b>2014</b>	<b>2015</b>	<b>2016</b>
Total facilities connected	17,130	19,786	26,082
Number of people served	77,086	89,037	117,365
Investment (million COP)	14,052	18,054	16,197
Actual savings from customers (million COP) vs. Financial system	1,113	568	635

Source: Vice-Presidency of water and sanitation

The increase in the number of facilities, related to previous years, is due to the fact that for 2014, in order to set the goal and report the connected facilities, individual customers connected by EPM contractors, either by means of public or social contracting, were included. In both cases, the works are paid through the Dignifying Homes funding program.

Settlement rates applied in 2012 and 2013, as well as the entities that served as basis of comparison, were unified so that they cover the most representative entities.

<b>Dignifying Homes - Energy - EPM Group</b>			
<b>EPM</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Total facilities connected</b>	<b>20,136</b>	<b>22,231</b>	<b>24,783</b>
Number of people served	80,544	88,924	99,132
Investment (million COP)	15,987	16,801	21,935
<b>CHEC</b>			
<b>Total facilities connected</b>	<b>1,878</b>	<b>1,762</b>	<b>1,696</b>
Number of people served	7,512	7,048	6,784
Investment (million COP)	625	629	694
<b>ESSA</b>			
<b>Total facilities connected</b>	<b>6,181</b>	<b>3,745</b>	<b>4,348</b>
Number of people served	63,334	29,960	52,956
Investment (million COP)	1,175	712	2,504
<b>CENS</b>			
<b>Total facilities connected</b>	<b>N.D.</b>	<b>6,675</b>	<b>137</b>
Number of people served	N.D.	26,700	548
Investment (million COP)	N.D.	1,084	45
<b>EDEQ</b>			
<b>Total facilities connected</b>	<b>1,218</b>	<b>886</b>	<b>947</b>
Number of people served	4,872	3,544	3,788
Investment (million COP)	275	162	174
<b>Total companies electric energy</b>			
<b>Total facilities connected</b>	<b>29,413</b>	<b>35,299</b>	<b>31,911</b>
<b>Number of people served</b>	<b>156,262</b>	<b>156,176</b>	<b>163,208</b>
<b>Investment (million COP)</b>	<b>18,062</b>	<b>19,388</b>	<b>25,352</b>

Source: Vice-Presidency of power transmission and distribution





### Dignifying Homes Gas EPM

	2014	2015	2016
Number of facilities connected in the metropolitan area	40,140	34,549	39,187
Number of facilities connected in the regional area	42,332	25,365	16,876
<b>Number of facilities connected</b>	<b>82,472</b>	<b>59,914</b>	<b>56,063</b>
Number of people served	352,980	256,432	237,146
Investment (million COP)	97,974	118,989	41,796
Actual savings from customers (million COP) vs. Financial system	10,403	7,904	9,999

Source: Vice Presidency of Gas

## Management indicators

**G4-EC8** Significant indirect impacts, including the extent of these impacts.



# Pay according to your needs

The Pay According to your Needs program is a collection option that allows customers with a Sisbén score of 33 points to pay their EPM bills through installments (up to five per every billing period), depending on their income. It is a system that improves users' quality of life because it gives them more flexible options for paying their bills and allows them to stay legally connected to the public utilities, avoiding cutoffs and reconnection costs. The program brings benefits to EPM, as it helps ensuring revenue, reducing portfolio and minimizing operating costs of disconnection and reconnection.

## Management in 2016

In 2016, 41,954 new customers entered the Program, resulting in an execution of 200% of the goal set. The outcomes were outstanding thanks to the expansion of the target market in 2015 and to the high acceptance of the Program among the customers, who find in the Pay According to your Needs program an alternative to their difficulties and a flexible option to pay their bill when they are not able to do so.



Pay according to your needs EPM			
Item / Indicator	2014	2015	2016
Number of customers served	4,585	23,099	41,954

Source: Commercial Vice-Presidency

## Management indicators

**G4-EC8** Significant indirect impacts, including the extent of these impacts.







## Public power stacks and community meters

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Community water meters and public power stacks are non-conventional ways of providing services to sectors in which, due to restrictions to install networks, it is not possible to have individual meters. Collective meters are installed to extend the service to homes, so users have to pay the average consumption of the stratum to which they belong.

### Management in 2016

In 2016, the EPM Group installed 464 meters linked to public power stacks and community water meters, benefiting 15,504 people. The investment reached COP 3.53 billion.



In 2016, Water and Sanitation invested COP 2.33 billion in the installation of 18 community meters located in 16 settlements of Medellín. 8,832 people, inhabitants of 2,208 homes, were benefited. Additionally, 10 community meters were installed in the Urabá region, supplying 3,360 people in 1,120 homes, with a total investment of COP 19 million.

In Energy, COP 1.17 billion were allocated to install 420 public stacks in areas covered by EPM and 16, in areas covered by ESSA, in Santander. A strategy that promotes connection through a prepayment system led to a reduction by 2% and 40%, compared to the previous year. The risk for users is reduced and the quality of the service is improved. The sectors intervened, from public stacks to prepaid electricity, in the Metropolitan Area of Medellín, are: Popular, Olaya Herrera, Llanaditas, El Socorro, La Avanzada (Santa Elena), Versalles No. 2 and La Libertad. In the regional market of Antioquia, in the municipalities of Apartadó, Puerto Berrío, Turbo and Caucasia.

In ESSA, the customization of the service was developed during 2016 in the sector Las Montañas, in the municipality of Puerto Parra.



Community Water Meters			
	2014	2015	2016
<b>EPM</b>			
Number of connected meters.	6	5	18
Number of people served	960	1,200	8,832
Investment (million COP)	80	70	2,335
Number of homes connected	240	300	2,208
<b>Aguas Regionales Urabá</b>			
Number of connected meters.	N.D.	N.D.	10
Number of people served	N.D.	N.D.	3,360
Investment (million COP)	N.D.	N.D.	19
Number of homes connected	N.D.	N.D.	1,120
<b>Total of water companies</b>			
<b>Number of connected meters.</b>	<b>6</b>	<b>5</b>	<b>28</b>
<b>Number of people served</b>	<b>960</b>	<b>1,200</b>	<b>12,192</b>
<b>Investment (million COP)</b>	<b>80</b>	<b>70</b>	<b>2,354</b>
<b>Number of homes connected</b>	<b>240</b>	<b>300</b>	<b>3,328</b>

Source: Vice-Presidency of Water and Sanitation

Public stacks - Energy subsidiaries			
	2014	2015	2016
<b>EPM</b>			
Number of connected meters.	426	429	420
Number of people served	1,704	1,716	1,680
Investment (million COP)	3,429	2,161	1,175
Number of homes connected	13,983	14,061	13,860
<b>ESSA</b>			
Number of connected meters.	20	27	16
Number of people served	12,255	10,011	1,632
Investment (million COP)	N.D.	N.D.	N.D.
Number of homes connected	4,085	3,337	4,896
<b>Total of energy companies</b>			
<b>Number of connected meters.</b>	<b>446</b>	<b>456</b>	<b>436</b>
<b>Number of people served</b>	<b>13,959</b>	<b>11,727</b>	<b>3,312</b>
<b>Investment (million COP)</b>	<b>3,429</b>	<b>2,161</b>	<b>1,175</b>
<b>Number of homes connected</b>	<b>18,068</b>	<b>17,398</b>	<b>18,756</b>

Source: Vice-Presidency of power transmission and distribution

## Management indicators

G4-EC8

Significant indirect impacts, including the extent of these impacts.



# Unserved population

Unserved populations are those settled down in places with technical or legal limitations for providing the service, such as those located in high-risk areas or outside the perimeters of the land use plans. The solutions often exceed the exclusive scope of the companies providing the service; therefore, the involvement of multiple actors becomes necessary.

## Stakeholders view

Given its purpose and capabilities, the EPM Group is expected to exert leadership by calling other actors with skills and capabilities to propose solutions in order to provide the service.

## Importance

Because of the high social value for the Group's companies and stakeholders and because they have a major impact on building sustainable and competitive territories, unserved populations acquire the status of independent material aspect.

Given its purpose and capabilities, the EPM Group is an actor called to convene other actors to find solutions aimed at the unserved population. Moreover, this is a defining aspect of poverty, connected directly to the businesses, which consequently affects the Group in terms of ethics, reputation and non-technical losses. It also makes the situations of the environment worse such as conflicts between neighbors or increased geological risk in the case of the water supply service.



## Main achievements

2016 Goals	2016 Achievements	Compliance
To connect 600 homes to the electrical energy service.	1,323 homes connected.	Total
To connect 2,500 homes to the gas service.	4,617 homes connected.	Total
To connect 5,350 homes to the water supply and sanitation services.	4,804 homes connected.	Partial
To connect 5,350 homes to the sewerage service.	4,611 homes connected.	Partial

## 2016 Management

The purpose of the EPM Group for 2025 is to make the public utilities we provide 100% available in the places where we operate. EPM seeks to universalize access to these services through infrastructure and other conventional solutions. In 2016, the company contributed to improving the quality of life of 15,355 homes that did not have access to public utilities, which represents a compliance of 111% over the annual goal.



In 2016 EPM managed to connect 1,323 facilities to the electrical energy service; 4,617, to the gas service; 4,804, to the water supply service and 4,611 to the sewerage service, for a total of 15,355 new connections.

We highlight the efforts to connect facilities to the water supply and sewerage services thanks to the joint work with the Municipality of Medellín, Isvimed (Social Institute for Housing and Habitat of Medellín) and EDU (Enterprise of Urban Development), among other entities. These connections were implemented under three schemes: supply to the community through public standpipes, improvement of neighborhoods through infrastructure projects in areas of coverage and surveying of buildings through the formalization of public utilities, within the framework of the “United for Water” program by the Municipality of Medellín.





Existing homes that did not have access to residential public utilities - EPM		
	2015	2016
Water Supply	1,348	4,804
Sewerage	1,348	4,611
Electrical Energy	6,272	1,323
Gas	2,969	4,617
<b>Total</b>	<b>11,937</b>	<b>15,355</b>

**Source:** Vice Presidencies of Water and Sanitation, Power Transmission and Distribution and Gas.

Connections to the electrical energy service reported in 2015 correspond to those executed in Antioquia. The 2016 connections correspond to those carried out in Medellín.

## Challenges

Challenge	Completion year	Scope and coverage			Achievement indicator
		Territory	Business	Company	
6,690 water supply connections in existing homes that do not have access to this service.	2017	Colombia - Antioquia	Water supply	Empresas Públicas de Medellín E.S.P. - EPM	Number of connections made / Number of connections budgeted.
6,690 sewerage connections in existing homes that do not have access to this service.	2017	Colombia - Antioquia	Sanitation	Empresas Públicas de Medellín E.S.P. - EPM	Number of connections made / Number of connections budgeted.
2,000 electrical energy connections in existing homes that do not have access to this service.	2017	Colombia - Antioquia	Electrical energy	Empresas Públicas de Medellín E.S.P. - EPM	Number of connections made / Number of connections budgeted.
2,100 gas connections in existing homes that do not have access to this service.	2017	Colombia - Antioquia	Gas	Empresas Públicas de Medellín E.S.P. - EPM	Number of connections made / Number of connections budgeted.





# Management indicators

**EPM-12** Solutions for unserved homes.





## Prepaid services

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The pre-payment option is a method for purchasing public utilities that seeks to avoid disconnecting users due to payment difficulties. It is mainly aimed at families in socio-economic strata 1, 2 and 3.

This method enables users to control consumption according to their income and to use public utilities more efficiently and consciously. The Prepaid Service option includes delivery of a pre-payment meter in commodatum, installation at no cost and social support, among other conditions that allow customers to continue accessing the service.

### Management in 2016

The EPM Group connected 38,581 homes under the prepaid service method. In Prepaid Water, the company connected 8,923 homes, with an investment of COP 9.896 billion, and benefited 40,153 people with this solution. In Prepaid Electricity, 25,400 homes were connected, with an investment of COP 16.614 billion, benefiting 127,000 people. The affiliate company, ESSA, managed to connect 3,770 homes to the Prepaid Electricity service, having an impact on 15,080 people thanks to an investment of COP 2.528 billion. The affiliate company, CENS, started offering the Prepaid Electricity service in the second half of the year and 488 customers joined the service.



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The commercial offer of Prepaid Water started on June 2015 and since then, 16,217 customers and users have joined the service. This offer has a positive impact on the recovery of customers with high delinquency, and in 2016, there was a reduction of cuts in the water supply service by over 4,000 users.

EPM continues to manage the expansion of channels for top-ups for the three companies in the Group that have the pre-payment option (EPM, ESSA and CENS), with the aim of increasing the coverage of top-up points for customers. A credit in advance initiative was developed. It seeks to reduce the “dark times of the Prepaid Electricity service” (time that elapses from the time the customers’ meter runs out of credit until they purchase a new pin or top-up card) by providing the customer, as a “loan”, with a pin or top-up card of COP 2,000 to use some kilowatts of electrical energy before making the next purchase in which this value must be paid. For 2017, it is also expected to standardize this initiative in the affiliate companies, ESSA and CENS.



Prepaid Water - EPM			
Item / Indicator	2014	2015	2016
Number of facilities connected	N.D.	7,351	8,923
Number of people served	N.D.	33,080	40,153
COP million invested	164	6,707	9,896
Average consumption in m <sup>3</sup> per pre-payment installation	N.D.	9	8.6
Average consumption in m <sup>3</sup> per contracted installation	N.D.	15	12

Source: Commercial Vice Presidency

Prepaid Electricity - EPM			
Item / Indicator	2014	2015	2016
Number of facilities connected	14,677	19,987	25,400
Number of people served	60,871	82,346	127,000
COP million invested	4,666	5,035	16,164
Average consumption in kWh per prepayment installation	105	112	118
Average consumption in kWh per contracted installation	207	140	172

Source: Commercial Vice Presidency

Prepaid Electricity - ESSA			
Item / Indicator	2014	2015	2016
Number of facilities connected	1,599	685	3,770
Number of people served	6,396	2,740	15,080
COP million invested	1,220	523	2,528
Average consumption in kWh per prepayment installation	114	112	132
Average consumption in kWh per contracted installation	140	141	142

Source: Commercial Vice Presidency

## Management indicators

**G4-EC8** Significant indirect impacts, including the extent of these impacts.



# Biodiversity

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# Biodiversity

For the EPM Group, biodiversity is the functional basis to maintain essential ecosystem services such as water resource protection and erosion control. Climate Change, deforestation, river contamination, among other factors, generate higher pressure conditions over water, forests, and natural resources in general. Aware of this, the organization is committed to develop a comprehensive management of biodiversity and to ensure protection, restoration, sustainable use and management of its impacts, mainly on forests, forest plantations and ecosystems located in the areas of influence of the projects, works and activities of both businesses: generation, transmission and distribution of energy, and supply of drinking water.

## Stakeholders vision

Besides the EPM Group's actions, it is important to form alliances and take part in joint initiatives with other actors seeking to preserve biodiversity and maintain the goods and services that ecosystems offer. For stakeholders, it allows continuity of its productive activities, population's quality of life, supply of raw materials and cultural services, which are crucial to the sustainable development of territories.

## Importance

Biodiversity itself is very valuable. It creates high economic, environmental and social value for the EPM Group and stakeholders, since it is the functional basis for the maintenance of the goods and services of support, regulation and supply; as well as cultural values offered by the ecosystems and necessary to protect water resources and soils, regulate climate, and keep the supply of raw materials, food and spaces for recreation and enjoyment, among others.





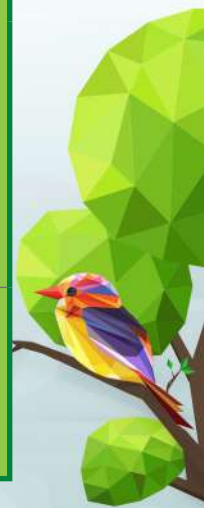


## Main achievements

Goals for 2016	Achievements in 2016	Compliance
<p>Monitoring flora, fauna, otter, silvery-brown tamarin, fish, and landscapes associated with the Guadalupe-Porce biological corridor, through the REDD+EPM program and environmental legal commitments (Porce, Guatrón, Riogrande.)</p>	<p>Biodiversity monitoring was carried out to meet the requirements of the environmental license of Porce III (monitoring of otter, fish, fauna and flora, and control of the use of canopy bridges by groups of silvery-brown tamarins), as well as the environmental license of Porce II (monitoring of fish, terrestrial fauna and flora).</p> <p>Biodiversity component was monitored within the framework of the REDD+EPM project, through the tracking of fauna and flora in Miraflores and Riogrande, along with Porce II and III.</p> <p>With the development of the landscape monitoring, maps of land covers and land uses of the Guadalupe-Porce and Peñol-Guatapé-Playas biological corridors are being updated. In this way, requirements of Porce II and Porce III environmental licenses are also met with the execution of the monitoring of landscape and climate component of the CCB standards for the REDD+EPM project, measuring regional deforestation rates.</p>	<p>Total</p>
<p>Making a sustainable use of the forest plantations located around the reservoirs, including actions to renew plantations and turn them into natural or mixed forests.</p>	<p>Forest harvesting of 120 hectares was carried out, within the context of the Aldeas program. Approximately 50 hectares of forest lots were renewed and 94 hectares were transformed through ecological restoration strategies (planting of native forest species.)</p>	<p>Total</p>
<p>Carrying out characterization studies of flora and fauna for new projects.</p>	<p>Studies were conducted during the projects of the expansion plan, both for the characterization of flora and fauna and for the ending of the closed season. Likewise, the Center for Technical Excellence made progress on the characterization of flora for the planning of new projects, such as Metropolitan Aqueduct, Tibú - Campo Dos Line, Aguachica - Ayacucho Line and Gramalote. Additionally, in El Sireno power generation project, studies on the biotic component, flora and fauna, were also performed. The group works hard to comply with current regulations and make possible the development of the operation.</p>	<p>Total</p>



Goals for 2016	Achievements in 2016	Compliance
<p>Carrying on with the implementation and execution of the program for afforestation and revegetation of the PTAR Bello and North Interceptor project, licensed by Metropolitan Ruling No. 00523 of May 8, 2009; through the execution of the forest offset proposal approved by the Environmental Authority.</p>	<ul style="list-style-type: none"> <li>• Planting of 8,213 trees distributed as follows: 6,468 in the 10 micro-watersheds of the municipality of Bello, 123 in Plaza del Agua, 825 in the Piamonte Protected Area, and 797 in the intervened areas of the North Interceptor. Every tree is duly referenced with a technical data sheet.</li> <li>• Second maintenance in 5,020 trees and a first maintenance in 4,188 trees. Seed mortality was determined to be 18% (1,478 trees.)</li> <li>• Start of the replanting process with 995 trees.</li> <li>• Design of the Piamonte Afforestation Plan and development of the communication exercise around the protected area with its respective informative and educational signage.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Completion of 100% of the environmental education process approved by the environmental authority, with the participation of 1,935 people, including community action boards, local boards, educational institutions and environmental organizations.</li> <li>• Support to 20 educational institutions in their Prae (School education projects) and to 8 social organizations in their Proceda (Civic projects for environmental education.)</li> <li>• Formation and consolidation of a labor team for planting and maintaining trees; all the members live in the municipality of Bello.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Creation of an educational publication, as well as a microsite on the Aguas Nacionales website.</li> <li>• Submission of a consolidated report with its respective means of verification, including the whole process carried out until December 30, 2016.</li> <li>• Development of three meetings with the Municipal Administration of Bello to make partial deliveries.</li> </ul>	<p>Total</p>
<p>CENS: Implementing an ecological cable to reduce the pruning of trees under electrified networks.</p>	<p>Installation of 22.26 km of ecological cable in replacement projects: 63.85%; for a total of 86.11 km of network. A significant figure that reduces the impact on the tree component. An increase of 21% in relation to the previous year is remarkable.</p>	<p>Total</p>





Goals for 2016	Achievements in 2016	Compliance
Eegsa: Performing reforestation activities to benefit the departments in which the company operates.	As part of the corporate reforestation activity, 2,000 forest species were planted in the United Nations National Park, an area administered by the Defensores de la Naturaleza Foundation. Additionally, some agreements were signed with three municipalities (San Lucas, San Raymundo and Antigua Guatemala) located in the area covered by Eegsa, with the delivery of 6,000 trees for reforestation of 8 hectares. The forest species planted were cypress, pine and poplar, which are native to the area.	Total
Documenting the final version of the biodiversity strategy defined by WWF and Proterra for EPM, and managing their internal presentation.	Review of the final version of the analyses, the declaration and the strategic guidelines proposal obtained with the advice of WWF and Proterra. The Water and Biodiversity RIC was created for the discussion and review of the biodiversity strategy and the integrated water resources management strategy. Guidelines were discussed within the working group and the review of the scope to define common actions in both strategies was proposed. Internal discussion must be performed in the companies of the Group.	Partial
Evaluating the appropriateness of taking to the Group the biodiversity strategy proposal by EPM.	The RIC agreed that the specific work sessions with the affiliated companies would begin in the first half of 2017, once the common actions and guidelines of both the biodiversity strategy and the integrated water resources management strategy are defined.	Total



## Challenges

Challenge	Compliance year	Extent and coverage			Compliance indicator
		Geography	Business	Company	
Implementing the guidelines for the management and protection of biodiversity in EPM.	2017	Colombia - Antioquia	All the businesses	EPM	Number of actions implemented / Number of actions planned.
Defining and starting the strategy implementation plan, its declaration and its information system, through the RIC for the Integrated Management of Water Resources and Biodiversity.	2017	All the geographies	All the businesses	EPM Group	Compliance with the work plan.
Disseminating the strategy, defining concrete goals by affiliated company and agreeing on a monitoring and reporting scheme.	2017	All the geographies	All the businesses	EPM Group	Compliance with the work plan.
Taking part in the biodiversity strategy proposal for the Group and in the definition of specific goals for Antioquia.	2017	Colombia - Antioquia	Water and Sanitation	EPM	Compliance with the work plan.
Taking part in the biodiversity strategy proposal for the Group and in the definition of specific goals for the affiliated company.	2017	All the geographies	All the businesses	EPM Group	Compliance with the work plan.
Implementing the strategy and the action and monitoring plans.	2018	All the geographies	All the businesses	EPM Group	Implementing the strategy and complying with the associated work plan.
Implementing the strategy and the Group's integrated action plan.	2019	All the geographies	All the businesses	EPM Group	Implementing the strategy and complying with the associated work plan.





## Management indicators

- G4-EN11** Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.
- G4-EN12** Description of the most significant impacts on biodiversity in protected areas and areas of high biodiversity value outside protected areas, derived from activities, products and services in protected areas and areas of high biodiversity value outside protected areas.  
Electricity sector: Report the nature of significant direct and indirect impacts on biodiversity with reference to: i) maintenance of transmission linear corridors, ii) fragmentation and isolation, iii) impacts of thermal discharges.
- G4-EN13** Habitats protected or restored.
- G4-EN14** Total number of UICN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.
- G4-EU13** Comparison of biodiversity between compensated habitats and areas affected.
- EPM-01** Conservation areas.

## Sustainable Development Goals





# Preservation and restoration

Due to the nature of its activities, EPM depends on important ecosystem services, such as water regulation and sediment control, for its businesses of Power Generation and Drinking Water Supply. For this reason, the EPM Group's companies carry out actions and join forces with other actors with the purpose of preserving the areas that still have natural forests and performing ecological restoration of areas that require it, either through the establishment of plantations, assistance to natural succession or planting of native forest species.

Through these actions, the companies of the Group take part in different inter-institutional spaces for the environmental management of the territory (EOT, Pomca), in order to strengthen protected areas systems, consolidate regional biological corridors and implement actions included in the environmental management plans, among others steps. Moreover, ecological restoration is currently being developed in the forest protection areas of reservoirs and in other lands for protection and compensation.

## Management in 2016

Development of initiatives for the protection of water resources in strategic watersheds, through forest conservation actions (46.3 km<sup>2</sup>), restoration and reforestation (35.1 km<sup>2</sup>), promotion of sustainable practices and uses (16.0 km<sup>2</sup>) and acquisition of new areas for compensation and protection (37.2 km<sup>2</sup>). The EPM Group, in general, achieved 134.6 km<sup>2</sup>, for a 110% compliance of the established goal.

Inter-institutional alliances were established and formalized. They include lines of action on preservation, ecological restoration and sustainable production projects, mainly with environmental authorities, municipalities, foundations, corporations and cooperation agencies, among others.

**Management of Forest Protection Areas in Reservoirs and Basins:** Forest plantations located around the reservoirs were harvested. Most of the wood was used in the Aldeas program for the construction of houses. In the intervened sites, ecological restoration was carried out with the establishment of new plantations of native species, mainly in distant areas of the reservoir and riparian zones. Additionally, CHEC purchased La Cabaña, a 121-hectare land located in the upper section of the Chinchiná basin.

**Forest Development Program:** About 1,850,000 seedlings were produced in three corporate nurseries and subsequently delivered to the community, institutions or alliances for reforestation or ecological restoration of approximately 1,515 hectares.





**Alliances for Development:** The Group worked on some alliances whose lines of action include strengthening of protected areas systems, ecological restoration, ecotourism, sustainable production projects, good agro-environmental practices, forest fire control, among others.

Some alliances are listed below:

- **EPM – Corantioquia:** 21 hectares of silvopastoral systems and purchase of 481 hectares for protection in the Belmira paramo.
- **EPM – Chemonics:** Apiculture projects in natural forests in alliance with coffee growers.
- **EPM – Cornare and Municipalities of Eastern Antioquia:** Environmental management in the Rionegro and Nare rivers basins.
- **EPM – Parque Arví Corporation:** Ecological restoration of 5.5 hectares with the support of the community, control of invasive species, grass-cutting and thinning, maintenance and planting of native species.
- **Corpourabá – Aguas Regionales EPM:** Protection of 249 hectares through the payment for environmental services, and supply of plant material to the communities of the supply basins in the municipalities of Turbo and Carepa.
- **CHEC, Municipalities (Neira, Villamaría, Chinchiná), Ascondesarrollo, Dicar Foundation and Fundación Ecológica Cafetera (FEC):** Agroforestry, silvopastoral, among other actions of reforestation, restoration and sustainable use in 2,983 hectares.

**BanCO2 Program:** Some transmission network projects were compensated through the BanCO2 strategy of payment for environmental services. Additionally, the Group managed to preserve 1,364.3 hectares of natural forests in the Nare basin, 599 hectares in the basins of La Fe supply system and 719 hectares in the basins under the influence of CHEC.

**Water Fund:** In partnership with the CuencaVerde Corporation, some actions for reforestation, protection of springs and hillside forests, ecological restoration, sustainable practices, property management and natural forest preservation agreements with owners were implemented in the drinking water supply basins for the Medellín metropolitan area, in Riogrande and La Fe reservoirs.

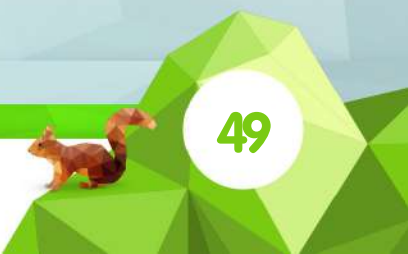
**Management of geographic:** Information on hydrographic basins and strategic areas for EPM, in order to identify issues and priority areas for implementing conservation, restoration and sustainable use strategies.



Ecological preservation and restoration actions (km <sup>2</sup> ) - By company and business				
Company / Business	Passive Restoration (Assistance to Natural Succession)	Active Restoration (Planting of Native Species)	Functional Restoration (Forest Plantations)	Protection (Natural Forests)
EPM - Power Generation	100.19	2.88	59.55	94.53
EPM - Water and Sanitation	8.52	0.22	14.55	4.30
EPM - Transmission and Distribution	0	0	0	0
EPM - Ituango Project	139.29	0	0	37.52
CHEC - Transmission and Distribution	3.89	0	0	56.98
EPM Chile - Generation	0	0	0.06	16.30
ENSA - Transmission and Distribution	0	0.02	0	0
<b>Total</b>	<b>251.89</b>	<b>3.12</b>	<b>74.15</b>	<b>209.63</b>

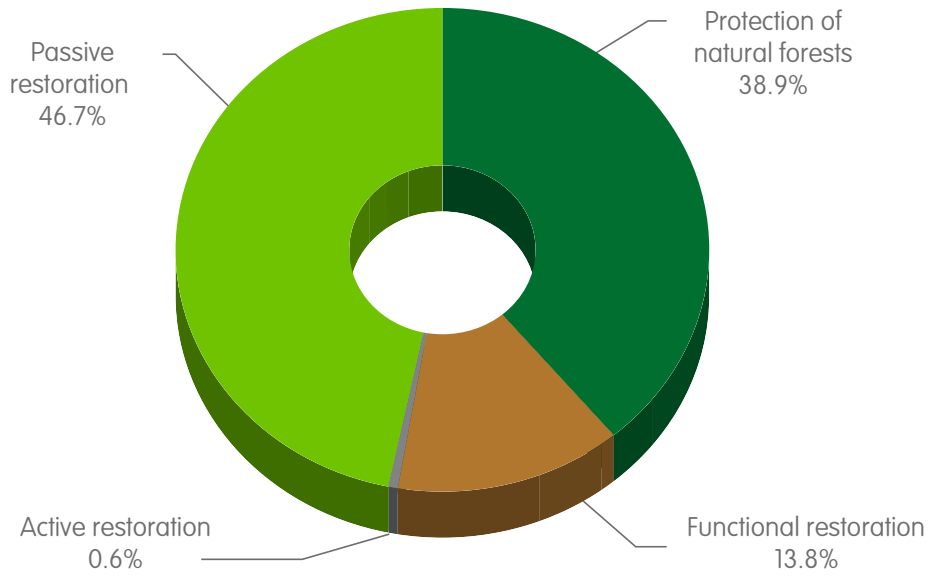
Source: Idsos (EPM, EPM Chile, Aguas Regionales EPM, CHEC, ENSA)

The 2016 report includes actions for natural forest protection and ecological restoration. According to the reports, the EPM Group currently protects about 209.6 km<sup>2</sup> of natural forests. The figure increased in relation to 2015 due to the purchase of lands in the Ituango Hydroelectric Project. Restoration actions were carried out in 329.1 km<sup>2</sup>, mainly around the reservoirs, using different techniques: assistance to natural succession (passive), planting of forest plantations (functional) and planting of native species (active).





### Protection and restoration actions – EPM Group



Source: Idsos (EPM, EPM Chile, CHEC, ENSA)

### Ecological restoration and reservation actions – EPM Group



Source: Idsos (EPM, EPM Chile, CHEC, ENSA)

**Trend:** In 2016, there was a significant increase in the size of protected natural forests and areas under passive restoration located in properties of the EPM Group, mainly due to the acquisition of new lands for the development and construction of the Ituango Hydroelectric Project in Western Antioquia, Colombia. Functional restoration decreased due to the forest harvesting program and the subsequent replacement with native species (active restoration).

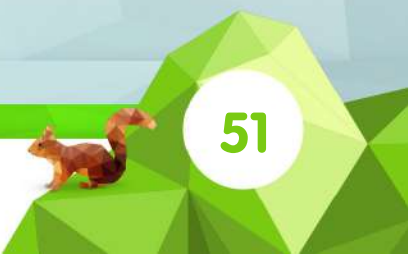


## Protected, adjacent or high-biodiversity areas

Protected, adjacent or high-biodiversity areas (km <sup>2</sup> ) - EPM Group				
Company / business	Declared protected areas	Adjacent areas	Non-protected high-biodiversity areas	Other non-protected areas
Power Generation	180.97	31.58	75.64	89.88
Water and Sanitation	26.95	2.69	0	0.68
Transmission and Distribution	10.10	0	0	0
Ituango Project	55.53	38.00	100.38	5.59
CHEC - Transmission and Distribution	38.93	5.70	16.24	2.15
EPM Chile - Generation	0.11	16.60	0	0
ENSA - Transmission and Distribution	0.03	0	0	0.01
<b>Total</b>	<b>312.61</b>	<b>94.56</b>	<b>192.26</b>	<b>98.31</b>

Source: Idsos (EPM, EPM Chile, CHEC, ENSA)

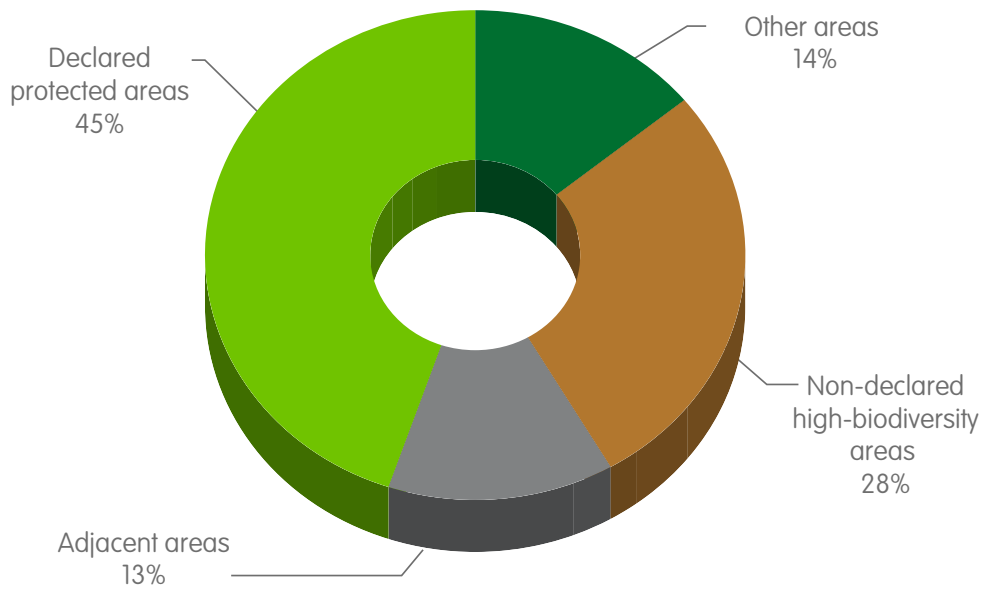
Operational sites owned, leased or managed by the EPM Group cover lands located inside or in buffer zones of areas protected at different levels (mainly national natural parks, forest reserves and integrated management districts.) The total area reported in 2016 by the EPM Group is 697.7 km<sup>2</sup>, of which 45% are located within legally declared protected areas, 54.6 km<sup>2</sup> are adjacent (buffer zones) to protected areas, and 253 km<sup>2</sup> are considered as areas with high biodiversity value, but have not yet been declared as protected areas.





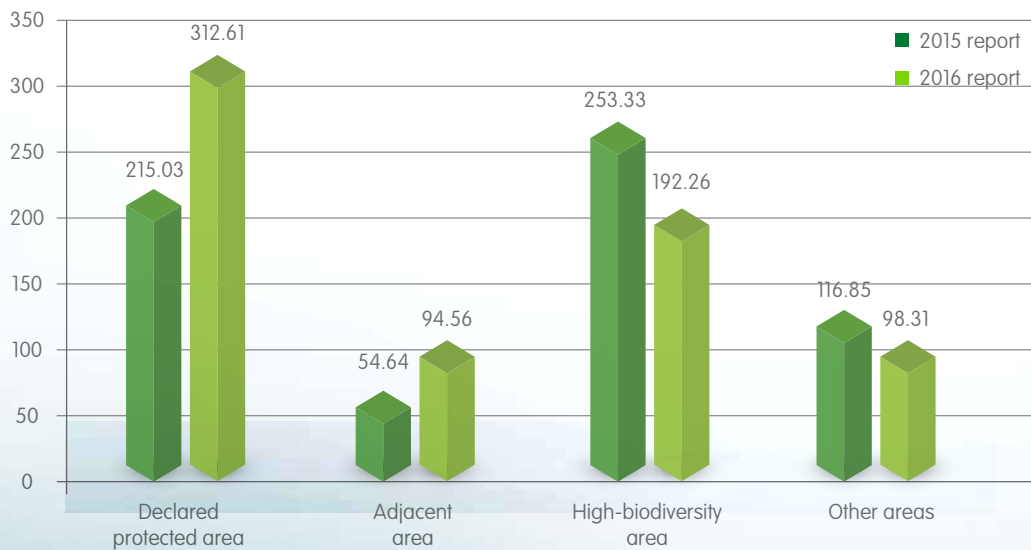


### Protected areas – EPM Group



Source: Idsos Application

### Protected areas – EPM Group



Source: Idsos (EPM, EPM Chile, CHEC, ENSA)

**Trend:** In 2016, the EPM Group had a significant increase in the amount of lands located in declared protected areas (44% of the total area reported); as well as in adjacent areas, due to the inclusion of new protected areas in Miraflores (Antioquia, Colombia), which was declared as a Municipal Forest Reserve, and in the tropical dry forest areas of the Cauca river canyon (Colombia) associated with the Ituango Hydroelectric Project.



## Management indicators

- G4-EN11** Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.
- G4-EN13** Habitats protected or restored.





# Impact management and compensation

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In the development, construction and operation of its projects, the EPM Group seeks to minimize negative impacts and strengthen positive ones on biodiversity and associated ecosystem services.

To this end, environmental restriction analysis (ERA), environmental diagnosis of alternatives (EDA), feasibility study and environmental impact assessment (EIA) are conducted since the early stages of the projects, with objectives that include the lowest possible effect on natural ecosystems. The license or permit granted by the respective environmental authority establishes the environmental management plan (EMP) of the projects, which defines the impacted areas and their corresponding mitigation or compensation actions, depending on the type of ecosystem and its vulnerability.

The EPM Group's companies are committed to the compensation and management of impacts on biodiversity; that is why they comply with the environmental legal requirements and also carry out voluntary actions (CSR). Thanks to these dynamics, conservation areas have been established to contribute to the preservation of biodiversity and the sustainability of the EPM Group and the territories.

## Management in 2016

EPM made progress with the cartographic updating and the landscape monitoring. In the Ituango Project, 32.7 km<sup>2</sup> were added for compensation, reaching 65% of the commitment (167.9 km<sup>2</sup>.) In Power Transmission and Distribution, the protected areas crossed by the networks have been identified (a total of 10.1 km<sup>2</sup>). For its part, EPM Water continued with the forest offset of the Bello Waste Water Treatment Plant (WWTP) project.

CHEC managed 60.7 km<sup>2</sup> of natural forests for the conservation and protection of water resources, and repopulated the Cauca River with native fish species. In CENS, a total of 86.1 km of ecological cable were installed to reduce the intervention on the arboreal component.



According to the report submitted by EPM and its affiliated companies, as of 2016 there is a consolidated area of 697.7 km<sup>2</sup>, of which 465.2 km<sup>2</sup> correspond to forests and natural areas (67%), 107.3 km<sup>2</sup> to reservoirs (15%), and 74.15 km<sup>2</sup> to forest plantations (11%). In this way, there is a diversity of terrestrial and aquatic ecosystems that contribute significantly to the conservation of biodiversity and to compensate the impacts generated by the operations.

In Power Generation, EPM started the execution of the contract for the landscape monitoring, through which maps of land covers and land uses of the Guadalupe-Porce and Peñol-Guatapé biological corridors are being updated. The company also complied with the requirements of the environmental licenses of Porce II and Porce III, and the climate component of the CCB standard of the REDD+EPM project, measuring regional deforestation rates. The environmental management of the reservoirs, which includes control of water hyacinth, cyanobacteria and solid waste, was carried out to improve the habitat conditions of these artificial wetlands. Additionally, the management plans for forest plantations were updated, some forest were harvested and subsequently replaced by native species, and certain contingencies, such as forest fires and pest infestation in the Riogrande area, were solved.

EPM Water continued with the forest offset of the Bello WWTP project and planted 8,213 trees distributed as follows: 6,468 in the ten micro-watersheds of the municipality of Bello, 123 in Plaza del Agua, 825 in the Piamonte Protected Area, and 797 in the intervened areas of the North Interceptor.

Within the framework of the Ituango Hydroelectric Project, 32.7 km<sup>2</sup> of new areas were acquired to compensate for the ecosystems that will be impacted by the project and the flood area of the reservoir. The compensation area accumulated as of 2016 is 109.5 km<sup>2</sup> (progress of 65%).

In CHEC, the Cauca River was repopulated with native fish species: striped catfish, bocachico and dorada fry in the section between the San Francisco power plant and the urban area.

CENS installed 22.26 km of ecological cable in expansion and replacement projects of 63.85 km, for a total of 86.11 km of network, a significant figure that reduces the impact on the tree component. There was a remarkable increase of 21% in relation to the previous year.





### Areas and uses of the soil (km<sup>2</sup>) - EPM Group

Company / business	Reservoirs	Building area	Forests and natural areas	Forest plantations	Non-classified area	Total area
EPM - Power Generation	104.51	3.22	198.14	59.55	12.66	378.08
EPM - Water and Sanitation	1.52	0.27	13.06	14.55	0.91	30.31
EPM - Transmission and Distribution	0	10.10	0	0	0	10.10
EPM - Ituango Project	0	5.59	176.81	0	17.09	199.49
CHEC - Transmission and Distribution	1.33	0.82	60.87	0	0	63.02
EPM Chile - Generation	0	0.35	16.30	0.06	0	16.70
ENSA - Transmission and Distribution	0	0.02	0.02	0	0	0.04
<b>Total</b>	<b>107.36</b>	<b>20.38</b>	<b>465.20</b>	<b>74.15</b>	<b>30.66</b>	<b>697.74</b>

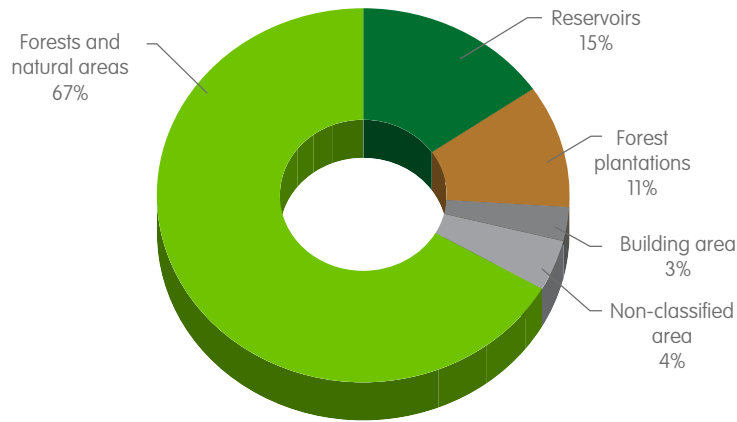
Source: Ildso. Génesis geographic information system (EPM)

The areas reported in 2016 amount to 697.7 km<sup>2</sup>, of which 54% correspond to EPM Power Generation and 28.6% to the Ituango Project (EPM), where 199.5 km<sup>2</sup> have been acquired for protection and compensation of impacts on tropical forest ecosystems. It is worth noting that there are 60.9 km<sup>2</sup> of conservation areas in the watersheds under the influence of CHEC; and 10.1 km<sup>2</sup> reported by EPM (Transmission and Distribution) and that correspond to the electrical network easements that pass through declared protected areas.





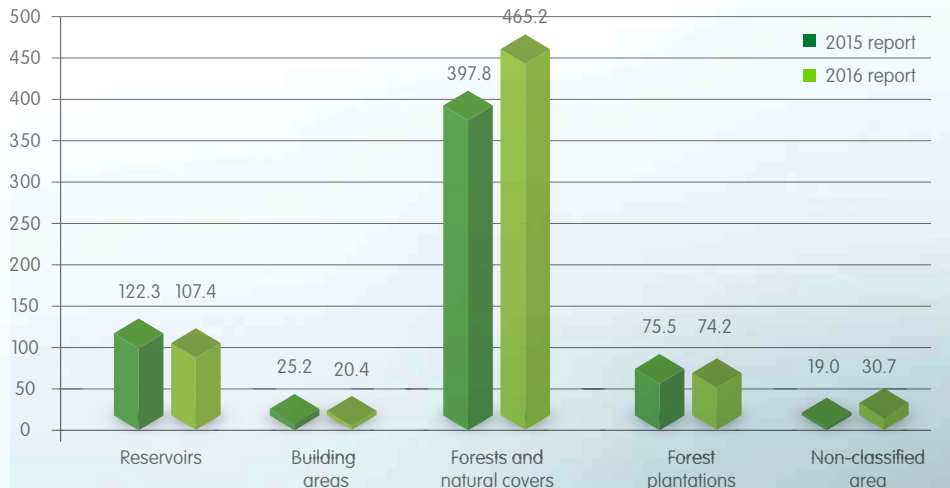
## Classification of areas – EPM Group



Source: IDSOS

The areas reported by EPM (Water, Power Generation, Ituango Project), CHEC, EPM Chile and ENSA amount to 697.7 km<sup>2</sup>, 78% of which correspond to natural covers (67%) and forest plantations (11%) intended to protect the water resource in reservoirs (15%), and necessary for the provision of public services. They make up important terrestrial and aquatic ecosystems that contribute to the conservation of biodiversity and ecosystem services. Only 3% of the total area is occupied by buildings and operational infrastructure.

## Classification of areas and coverages – EPM Group



Source: Idsos. (EPM, EPM Chile, CHEC, ENSA)

During 2016, there was a significant increase in the natural forests area located in properties of the EPM Group, mainly due to the acquisition of new lands for the development of the Ituango Hydroelectric Project. The area of reservoirs decreased because the reservoir projected area for the Ituango Project was not included in the 2016 report. It will be reported once the filling process is completed. Forest plantations also decreased due to harvesting and replacement with native species.



### Impacted and compensated areas (km<sup>2</sup>) - EPM Group

Company - business	Name	Area impacted	Compensation target area	Area compensated in 2016	Aggregate compensation area	Progress (%)
EPM - Power Generation	La Sierra Thermal Power Station	0.14	0.14	0	0.14	100%
	Porce III Reservoir	3.09	4.07	0.12	1.14	28%
EPM - Ituango Project	Ituango Project	54.30	167.89	32.68	109.49	65%
<b>Total</b>		<b>57.53</b>	<b>172.10</b>	<b>32.80</b>	<b>110.78</b>	<b>64%</b>

Source: Idsas

The EPM Group's companies are committed to the compensation of impacts generated on biodiversity. The 2016 report describes the natural ecosystem areas impacted by the development, construction or operation of the projects, according to the environmental impact assessments and the licenses granted by the corresponding environmental authority, which constitute environmental legal commitments. An overall progress of 64% is observed in the compensation goals of the EPM Group. Compensation of the Bello WWTP Project was developed through the planting of 8,213 trees.

## Management indicators

- G4-EN12** Description of the most significant impacts on biodiversity in protected areas and areas of high biodiversity value outside protected areas, derived from activities, products and services in protected areas and areas of high biodiversity value outside protected areas.  
Electricity sector: Report the nature of significant direct and indirect impacts on biodiversity with reference to: i) maintenance of transmission linear corridors, ii) fragmentation and isolation, iii) impacts of thermal discharges.
- G4-EU13** Comparison of biodiversity between compensated habitats and areas affected.



# Conservation of threatened species

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Operational sites owned, leased or managed by EPM Group's companies are located in different biogeographic regions and landscapes, from Mexico to Northern Chile. These sites include different ecosystems, from coastal and desert areas to montane forests and paramos, which contribute to the conservation of biodiversity and ecosystem services, generate regional biological corridors and provide shelter for flora and fauna species that are considered threatened, mainly due to their overexploitation or to the loss or alteration of their habitats.

The companies of the EPM Group take part in mandatory and voluntary programs, projects and initiatives, in their own or in alliance with other actors, in order to preserve biodiversity and especially threatened species included in the IUCN Red List and other national lists, and whose habitats are located in areas where operations are developed.

## Management in 2016

New threatened species reported in studies conducted by EPM, Aguas Regionales EPM, CHEC and HET were included, expanding the report coverage to other biogeographic regions, life zones and biological groups.

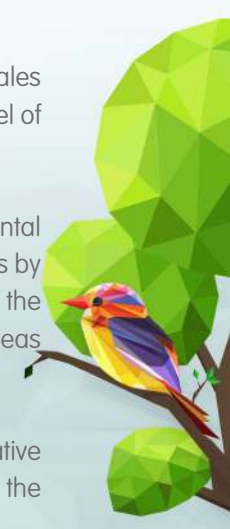
The biodiversity monitoring contract is being carried out in the Porce-Guadalupe biological corridor, which is part of the Porce II and III environmental management plan, as well as of the REDD+EPM project, under the CCB (Climate, Community and Biodiversity) standard, including the areas of Troneras, Miraflores and Riogrande.

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For this 2016 report, EPM (Energy, Water, Projects and Engineering, Ituango Hydroelectric Project), Aguas Regionales EPM, EPM Chile, CHEC and HET reported a total of 125 species from different biological groups under some level of threat, which doubles the amount of species of the 2015 report (see Annex: List of threatened species.)

In EPM Energy, the biodiversity monitoring contract was started to meet the requirements of the environmental license of Porce III (monitoring of the neotropical otter, fauna and flora; and control to the use of canopy bridges by groups of silvery-brown tamarins) and Porce II (monitoring of fauna and flora.) This agreement also supervises the REDD+EPM project in its biodiversity component (CCB standard), with the monitoring of fauna and flora in the areas of Miraflores and Riogrande, which complements the information of the canyon of the Porce river.

In EPM Water, it is worth pointing out the agreement with the Parque Arví Corporation. Planting of some native species such as oak and Colombian pine was carried out, besides supporting the ecotourism offer and the environmental education, including the opening of the Vital Path.





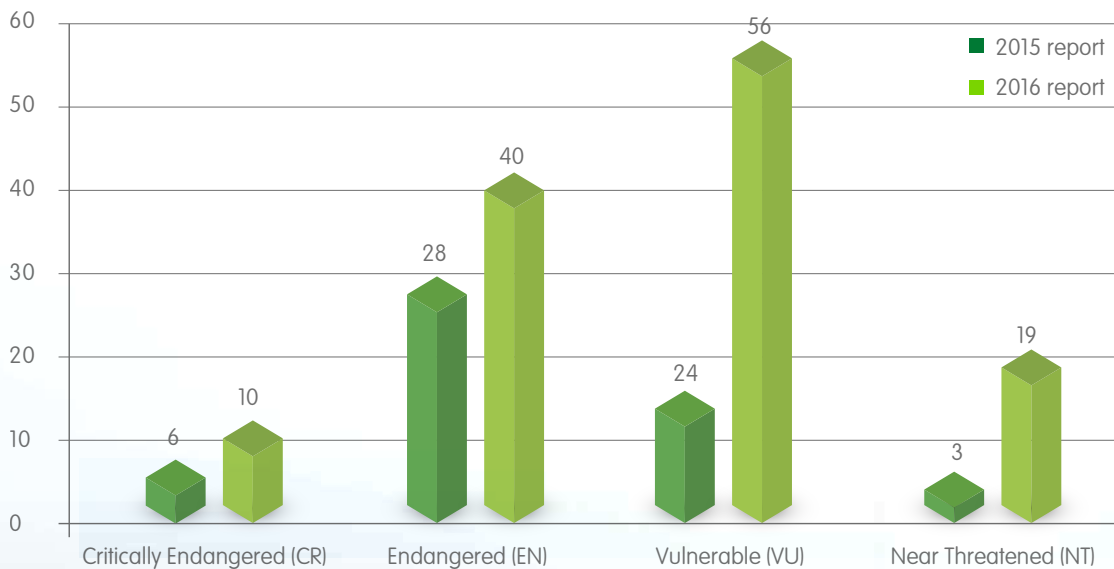
In the Ituango Hydroelectric Project, we highlight the purchase of 3,715 hectares with fragments of tropical dry forest and tropical moist forest, which are part of the compensation for loss of biodiversity within the project.

Aguas Regionales EPM reported for the first time this year. The most important aspect was the identification of threatened species from coastal ecosystems to montane forests, including six species of sea turtles and blue crab.

In CHEC, it is worth mentioning the conservation of fauna and flora species associated with paramo and subparamo ecosystems and high Andean forests, besides including new species in tropical moist forests of the department of Risaralda. The company also developed environmental education programs, through paths for endemic and migratory birds watching in the protected area of CHEC Forests, and a series of initiatives for the management of conservation lands, the "Route of the Condor" project and the Program for "Repopulation of the Cauca River with species of native fish."

In HET, eight threatened species were reported in the tropical moist forests of Panama, associated with the Bonyic hydroelectric power station.

### Number of threatened species reported per year

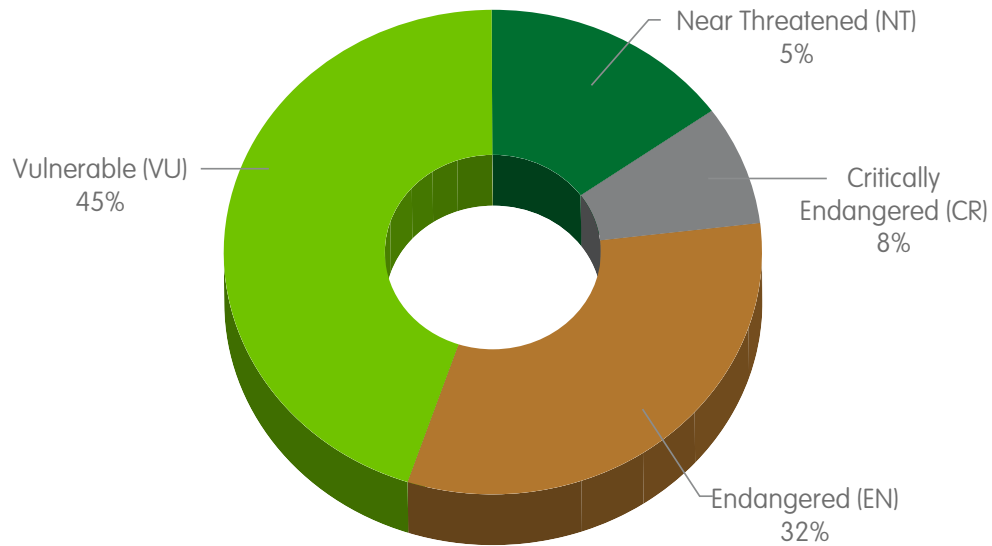


Source: Idsos (EPM, Aguas Regionales EPM, EPM Chile, CHEC, HET)

With the environmental management performed in 2016, threatened species reported in Aguas Regionales EPM and HET were included, as well as new studies and new areas managed in EPM and CHEC. At the operational sites of the EPM Group, a total of 125 threatened species were reported in 2016, doubling the 2015 report (61 species.) The report of species increased in all threat categories, especially in the Vulnerable (VU) and Near Threatened (NT) categories.



## Threatened species – EPM Group



Source: Idsos

Ecosystems protected by the EPM Group are habitats that contribute to the conservation of biodiversity and ecosystem services, generate regional biological corridors and provide shelter to threatened flora and fauna. During 2016, 10 Critically Endangered (CR) species were reported, as well as 40 Endangered (EN) species, 56 Vulnerable (VU) species and 19 Near Threatened (NT) species, for a total of 125 species (IUCN categories.)

Number of threatened species by biological group					
Biological Group	CR	EN	VU	NT	Total
<b>Fauna</b>					
Invertebrates	0	0	1	0	1
Fishes	2	4	6	0	12
Amphibians	0	3	3	4	10
Reptiles - Turtles	2	1	3	0	6
Birds	3	18	21	9	51
Mammals	0	5	12	2	19
<b>Flora</b>					
Trees	3	7	9	4	23
Palms	0	2	1	0	3
<b>Total</b>	<b>10</b>	<b>40</b>	<b>56</b>	<b>19</b>	<b>125</b>

Source: Idsos (EPM, Aguas Regionales EPM, CHEC, EPM Chile, HET).

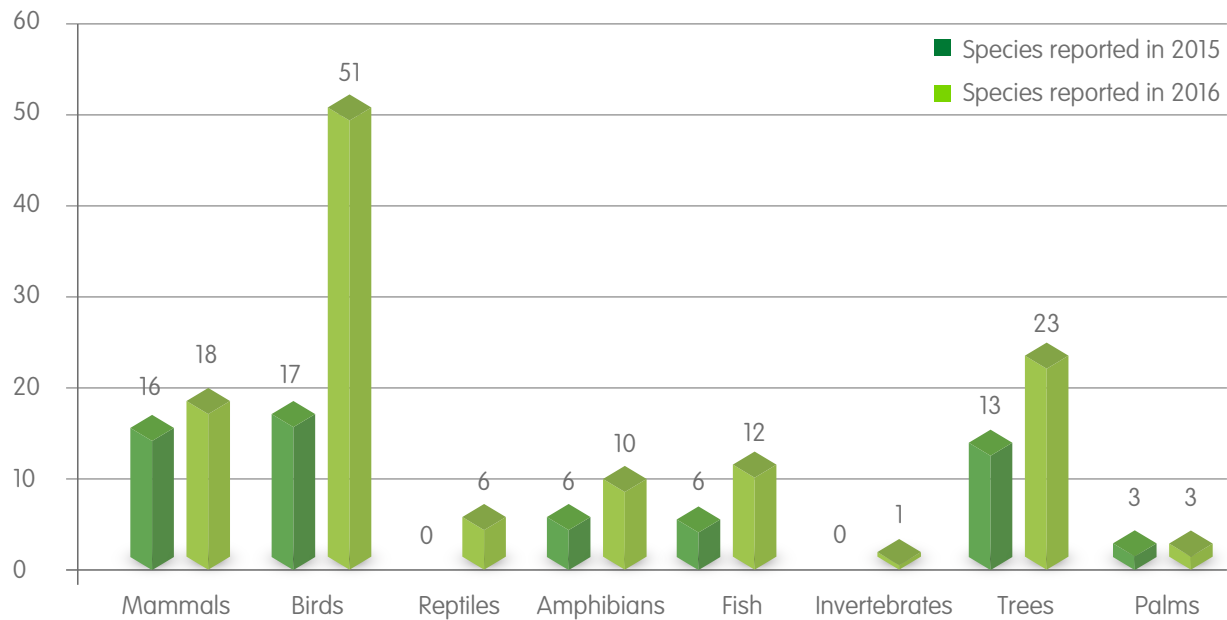
Categories: Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT)

In the operational sites of the EPM Group, thanks to the diversity of ecosystems and geographies, species of different biological groups are protected, many of them threatened due to overexploitation or to the loss, alteration or fragmentation of their habitats. Birds, mammals and trees are the most affected groups. Andean condor, spectacled bear, mountain tapir, sea turtles, jaguar, silvery-brown tamarin, otter and wax palm are some of the species reported.





## Number of threatened species by biological group



Source: Idsos. (EPM, Aguas Regionales EPM, EPM Chile, CHEC, HET)

By 2016, reports of threatened species increased in almost all biological groups, especially birds, in relation to the 2015 Sustainability Report. This is due to the input of new information from EPM, Aguas Regionales EPM, CHEC and HET. Moreover, two new biological groups were added: reptiles and invertebrates, which include six sea turtles and the blue crab respectively, reported by Aguas Regionales EPM on the shores of the Gulf of Urabá.



Number of threatened species by type of ecosystem				
Life zone / Ecosystems	EPM	Aguas regionales EPM	CHEC	HET
Montane Rain Forest	0	2	0	0
Montane Very Moist Forest	1	0	0	0
Montane Moist Forest	6	2	35	0
Low Montane Very Moist Forest	2	0	0	0
Low Montane Moist Forest	13	0	8	0
Low Montane Dry Forest	0	2	0	0
Premontane Very Moist Forest	1	0	0	0
Premontane Moist Forest	5	0	3	0
Tropical Very Moist Forest	1	0	0	0
Tropical Moist Forest	36	8	25	8
Tropical Dry Forest	2	0	1	0
Coastal and Marine Ecosystems	0	5	0	0
Xeromorphic Semi-Arid Ecosystems (Chile)	1	0	0	0

**Source:** *Idsos (EPM, CHEC, EPM Chile, HET, Aguas Regionales EPM)*

*The operational sites owned, leased or managed by EPM Group's Companies include diversity of life zones and terrestrial and aquatic ecosystems, from coastal and desert areas to montane forests, which contribute to the conservation of biodiversity. The amount of threatened species reported in tropical moist forests and montane forests of the area of influence of Los Nevados National Park (CHEC) is considerable. (Some species are reported in several ecosystems.)*





Number of threatened species by biogeographic region					
Company / biogeographic region	CR	EN	VU	NT	Total
<b>EPM</b>					
Colombia - Antioquia - Metropolitan Area - Aburrá River Basin	1	5	6	0	12
Colombia - Antioquia - Middle Magdalena Region - La Sierra Thermal Power Station	2	4	1	0	7
Colombia - Antioquia - Western Region - Cauca River Basin - Hidroituango	2	6	12	1	21
Colombia - Antioquia - Eastern Region - Nare and Arma Rivers Basins	1	1	2	0	4
Colombia - Antioquia - Northern and Northeastern Regions - Nechí and Porce Basins	3	7	15	0	25
Colombia - Antioquia and Córdoba - Lower Cauca Region	0	1	0	0	1
Colombia - Cundinamarca - Nueva Esperanza Line Corridor	0	2	2	0	4
Chile - Coquimbo Region - Ovalle - Los Cururos Wind Farm	0	1	0	0	1
<b>Aguas Regionales EPM</b>					
Colombia - Antioquia - Urabá Region	2	2	10	4	18
<b>CHEC</b>					
Colombia - Caldas	0	3	8	11	22
Colombia - Caldas - CHEC Forests	0	9	12	1	22
Colombia - Risaralda - Chinchiná River Basin - Santa Rosa de Cabal	2	14	12	0	28
<b>HET</b>					
Panamá - Bocas del Toro - Changuinola District - Bonyic Hidroelectric Power Station	0	2	2	4	8

**Source:** *Idsos (EPM, Aguas Regionales EPM, CHEC, EPM Chile, HET).*

*Categories: Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT)*

*Operational sites owned, leased or managed by EPM Group's companies are located in different regions, hydrographic basins and topographies. Biogeographic regions with the highest amount of threatened species reported are: in EPM, the Porce-Guadalupe biological corridor (REDD+ program) and the Hidroituango Project; in CHEC, the conservation forests; and in Aguas Regionales EPM, the coastal and forest ecosystems of Urabá (some species are reported in several regions.)*

## Management indicators

- G4-EN14** Total number of UICN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.
- EPM-01** Conservation areas.



## Annexes: Lists of threatened species

List of critically endangered (CR) species - EPM Group		
Biological group	Scientific name	Common name
Trees	<i>Aniba perutilis</i>	Cumin
	<i>Cariniana pyriformis</i>	Colombian Mahogany
	<i>Magnolia espinalii</i>	Hojarasco de Espinal
Birds	<i>Hapalopsittaca fuertesi</i>	Indigo-winged Parrot
	<i>Lipaugus weberi</i>	Chestnut-capped Piha
	<i>Ognorhynchus icterotis</i>	Yellow-eared Parrot
Fishes	<i>Prochilodus magdalenae</i>	Bocachico
	<i>Pseudoplatystoma fasciatum</i>	Barred sorubium, Tiger catfish
Reptiles - Turtles	<i>Eretmochelys imbricata</i>	Hawksbill Turtle
	<i>Geochelone carbonaria</i>	Red-footed Tortoise

Source: *Idsos (EPM, Aguas Regionales EPM, CHEC, EPM Chile, HET)*

List of endangered (EN) species - EPM Group		
Biological group	Scientific name	Common name
Birds	<i>Anas cyanoptera</i>	Cinnamon teal
	<i>Atlapetes flaviceps</i>	Yellow-headed Brush-finch
	<i>Bangsia aureocincta</i>	Gold-ringed Tanager
	<i>Capito hypoleucus</i>	White-mantled barbet
	<i>Coeligena prunellei</i>	Black Inca
	<i>Grallaria alleni</i>	Moustached Antpitta
	<i>Grallaria milleri</i>	Brown-banded Antpitta
	<i>Harpyhaliaetus solitarius</i>	Solitary Eagle
	<i>Hypopyrrhus pyrohypogaster</i>	Red-bellied Grackle
	<i>Leptotila conoveri</i>	Tolima Dove
	<i>Oroaetus isidori</i>	Isidor's Eagle
	<i>Oxygogon stubelii</i>	Buffy Helmetcrest
	<i>Oxyura jamaicensis</i>	Ruddy Duck
	<i>Penelope perspicax</i>	Cauca Guan
	<i>Podiceps occipitalis</i>	Southern Silvery Grebe
	<i>Sarkidiornis melanotos</i>	Comb Duck
	<i>Spizaetus isidori</i>	Black-and-chestnut Eagle
<i>Vultur gryphus</i>	Andean Condor	
Mammals	<i>Spalacopus cyanus</i>	Coruro
	<i>Tapirus bairdii</i>	Baird's Tapir
	<i>Tapirus pinchaque</i>	Mountain Tapir





### List of endangered (EN) species - EPM Group

Biological group	Scientific name	Common name
Mammals - Primates	<i>Ateles geoffroyi</i>	Geoffroy's Spider Monkey
	<i>Saguinus oedipus</i>	Cotton-headed Tamarin

Source: Idsos (EPM, Aguas Regionales EPM, CHEC, EPM Chile, HET)

### List of endangered (EN) species - EPM Group

Biological group	Scientific name	Common name
Reptiles - Turtles	<i>Chelonia mydas</i>	Green Turtle
Amphibians	<i>Andinobates bombetes</i>	Cauca Poison Frog
	<i>Hypodactylus latens</i>	Boqueron Robber Frog
	<i>Osornophryne percrassa</i>	Herveo Plump Toad
	<i>Aspidosperma polyneuron</i>	Carretto, Peroba Açú
Fishes	<i>Ageneiosus caucanus</i>	Doncella, Niña, Gata, Fría, Señorita, Barbul Rollera
	<i>Curimata mivartii</i>	Vizcaina, Cachaca, Sardina
	<i>Ichthyocephalus longirostris</i>	Jetudo, Pataló, Besote
	<i>Sorubim cuspicaudus</i>	Trans-Andean Shovelnose Catfish
Trees	<i>Aspidosperma polyneuron</i>	Carretto, Peroba Açú
	<i>Cedrela odorata</i>	Spanish Cedar
	<i>Juglans neotropica</i>	Andean Walnut, Cedro Negro
	<i>Magnolia hernandezii</i>	Molinillo del Rio Cauca, Copachi
	<i>Magnolia sp. nov.2</i>	Magnolio de Jardin
	<i>Pachira quinata</i>	Ceiba Toluca, Pochote
Palms	<i>Prioria copaifera</i>	Cativo
	<i>Ceroxylon quinduense</i>	Quindío Wax Palm
	<i>Elaeis oleifera</i>	American Oil Palm

Source: Idsos (EPM, Aguas Regionales EPM, CHEC, EPM Chile, HET)





### List of vulnerable (VU) species - EPM Group

Biological group	Scientific name	Common name
Mammals	<i>Coendou vestitus</i>	Brown Hairy Dwarf Porcupine
	<i>Dinomys branickii</i>	Pacarana
	<i>Lontra longicaudis</i>	Neotropical Otter, Neotropical River Otter
	<i>Mazama rufina</i>	Dwarf Red Brocket, Little Red Brocket
	<i>Myrmecophaga tridactyla artata</i>	Giant Anteater
	<i>Tayassu pecari</i>	White-lipped Peccary
	<i>Tremarctos ornatus</i>	Andean Bear, Spectacled Bear
Mammals - Felines	<i>Leopardus tigrinus</i>	Northern Tiger Cat
	<i>Leopardus tigrinus pardinoides</i>	Oncilla, Tiger Cat
	<i>Panthera onca centralis</i>	Central American Jaguar
Mammals - Primates	<i>Aotus lemurinus</i>	Colombian Night Monkey
	<i>Saguinus leucopus</i>	Silvery-Brown Tamarin

Source: Idsos (EPM, Aguas Regionales EPM, CHEC, EPM Chile, HET)

### List of vulnerable (VU) species - EPM Group

Biological group	Scientific name	Common name
Birds	<i>Andigena hypoglauca</i>	Grey-breasted Mountain-toucan
	<i>Anthocephala floriceps</i>	Blossomcrown
	<i>Ara ambigua</i>	Great Green Macaw
	<i>Ara militaris</i>	Military Macaw
	<i>Atlapetes fuscolivaceus</i>	Dusky-headed Brush-finch
	<i>Bangsia melanochlamys</i>	Black-and-gold Tanager
	<i>Bolborhynchus ferrugineifrons</i>	Rufous-fronted Parakeet
	<i>Chlorochrysa nitidissima</i>	Multicolored Tanager
	<i>Crax rubra</i>	Great Curassow
	<i>Grallaria rufocinerea</i>	Bicolored Antpitta
	<i>Grallaricula cucullata</i>	Hooded Antpitta
	<i>Grallaricula lineifrons</i>	Crescent-faced Antpitta
	<i>Hapalopsittaca amazonina</i>	Rusty-faced Parrot
	<i>Leptosittaca branickii</i>	Golden-plumed Parakeet
	<i>Ortalis erythroptera</i>	Rufous-headed Chachalaca
	<i>Patagioenas subvinacea</i>	Ruddy Pigeon
	<i>Penelope ortonii</i>	Baudo Guan
	<i>Pyroderus scutatus</i>	Red-ruffed Fruitcrow
	<i>Saltator cinctus</i>	Masked Saltator
	<i>Sericossypha albocristata</i>	White-capped Tanager
<i>Setophaga cerulea</i>	Cerulean Warbler	

Source: Idsos (EPM, Aguas Regionales EPM, CHEC, EPM Chile, HET)





### List of vulnerable (VU) species - EPM Group

Biological group	Scientific name	Common name
Reptiles - Turtles	<i>Caretta caretta</i>	Loggerhead Turtle
	<i>Dermochelys coriacea</i>	Leatherback
	<i>Lepidochelys olivacea</i>	Olive Ridley
Amphibians	<i>Bolitoglossa lozanoi</i>	Lozano's Salamander
	<i>Eleutherodactylus fallax</i>	Rana de garganta manchada
	<i>Nymphargus griffithsi</i>	Ecuador Cochran frog
Fishes	<i>Abramites eques</i>	Totumito
	<i>Callichthys fabricioi</i>	Roño
	<i>Genycharax tarpon</i>	Boquiancha
	<i>Plagioscion magdalenae</i>	Pacora, Bashaw
	<i>Pseudocoloptyx acutipennis</i>	Subtropical Doradito
	<i>Salminus affinis</i>	Dorada, Picuda
Invertebrates	<i>Cardisoma guanhumí</i>	Blue Land Crab
Trees	<i>Caryocar costaricense</i>	Plomillo
	<i>Dipteryx panamensis</i>	Tonka Bean
	<i>Otoba lehmannii</i>	Cuángare Otobo
	<i>Peltogyne SP</i>	Nazareno
	<i>Podocarpus guatemalensis</i>	Mountain Cypress
	<i>Podocarpus oleifolius</i>	Colombian Pine, Pino de Pasto
	<i>Prumnopitys harmsiana</i>	Uncumanu, Pino Chaquiro
	<i>Quercus humboldtii</i>	Roble, Andean oak
Palms	<i>Tapura colombiana</i>	Nacedero
	<i>Cryosophila kalbreyeri</i>	Palma Escoba

Source: Idsos (EPM, Aguas Regionales EPM, CHEC, EPM Chile, HET)



### List of near threatened (NT) species - EPM Group

Biological group	Scientific name	Common name
Mammals - Felines	<i>Leopardus wiedii</i>	Margay
	<i>Puma concolor</i>	Puma, Mountain Lion, Cougar
Birds	<i>Contopus cooperi</i>	Olive-sided Flycatcher
	<i>Eriocnemis derbyi</i>	Black-thighed Puffleg
	<i>Gallinago nobilis</i>	Noble Snipe
	<i>Odontophorus hyperythrus</i>	Chestnut Wood-quail
	<i>Psittacara wagleri</i>	Scarlet-fronted Parakeet
	<i>Spizaetus ornatus</i>	Ornate Hawk-eagle
	<i>Tinamus major</i>	Great Tinamou
	<i>Tryngites subruficollis</i>	Buff-breasted Sandpiper
	<i>Vermivora chrysoptera</i>	Golden-winged Warbler
Amphibians	<i>Colomascirtus larinopygion</i>	Rana chocolate
	<i>Colostethus fraterdanieli</i>	Santa Rita Rocket Frog
	<i>Pristimantis altae</i>	Mountain Robber Frog
	<i>Pristimantis simoterus</i>	Albania Robber Frog
Trees	<i>Hymenea courbaril</i>	Courbaril, West Indian Locust
	<i>Myroxylon balsamum</i>	Tolu Balsam
	<i>Platymiscium SP</i>	Clover
	<i>Retrophyllum rospigliosii</i>	Pino Hayuelo, Pino de Monte

Source: Idsos (EPM, Aguas Regionales EPM, CHEC, EPM Chile, HET)



# Quality of the organizational climate

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## Quality of the organizational climate

Collective perception of employees regarding the company's practices, policies, structure, processes, and systems that has an impact on the human environment in which daily work takes place.

Organizational climate directly influences employees' satisfaction, commitment, and productivity, which allows for the achievement of the company's goals.

### Stakeholders vision

Transparent communication expectations, creation of spaces of trust to express the feelings regarding organizational dynamics, coherence between strategic speeches and decisions, employees' emotional well-being, balance between work and family life, and balance between professional contribution and recognition.

### Importance

The quality of the organizational climate directly influences employees' satisfaction, commitment, and productivity, and therefore, the achievement of the company's goals. It creates social value among EPM Group's people and EPM Group's companies and extends it to the other stakeholders in terms of trust and legitimacy.





## Main achievements

Goals for 2016	Achievements for 2016	Compliance
<p><b>EPM:</b> Definition and implementation of an action plan based on the organizational climate survey results.</p>	<p>Actions led by the organization:</p> <p><b>Head's Support - Leadership Features:</b></p> <ul style="list-style-type: none"> <li>• Twenty-two "Coffee with the Manager" conversations were held, where EPM managers talked about what was expected from the leader EPM and the organization climate and risk improvement plans.</li> <li>• Executive coaching support to 87 out of the 145 prioritized executives.</li> </ul> <p><b>Organizational Clarity - Role Clarity:</b></p> <ul style="list-style-type: none"> <li>• The 2016 - 2019 challenges and the statement of EPM People Closeness were socialized.</li> <li>• All EPM executives participated in the meetings with the CEO regarding the Balanced Scorecard and its progress.</li> <li>• Interpersonal Relationships – Social relationships at work: Support to 40 work teams for their development.</li> </ul> <p><b>Perceived organizational support:</b></p> <ul style="list-style-type: none"> <li>• The overtime notice was adjusted, which benefited 480 employees with the inclusion of the following positions: integrated operations leader and maintenance and service operations technologist.</li> <li>• The promotion process was developed as a tool for the promotion and development of talent.</li> <li>• The skills of 2,407 technicians and technologists were evaluated, and 1,148 employees started to be evaluated on the sustainability curve, in order to identify their capacities and continue with their comprehensive development.</li> </ul>	<p>Total</p>
<p><b>CHEC:</b> Analysis of the results obtained in the survey, and delivery of these results to the entire company.</p>	<p>The results of the measurement were socialized with the members of the work teams and individual contributors of the areas, and Nominal Groups were created to identify the shared perceptions in relation to some strategic variables.</p>	<p>Total</p>



Goals for 2016	Achievements for 2016	Compliance
<b>CHEC:</b> Definition and implementation of an action plan based on the organizational climate survey results.	The preparation of action plans with the different work teams, integrating the results of the organizational climate and quality of life measurements, was supported. Improvement actions were identified for Organizational Development, Communications, Learning, Quality of Life and IT. Based on the concerns identified in Organizational Clarity, a presentation of frequently asked questions and answers was prepared and it was then shared with heads and managers and published in a blog for consultation by all employees.	Total
<b>CENS:</b> Definition and implementation of an action plan based on the organizational climate survey results.	<p>The 2015 measurement report was received and the results of the assessment were delivered and disseminated to CENS steering group and its work teams.</p> <ul style="list-style-type: none"> <li>• The action plans defined under the Nominal Group methodology were formally delivered.</li> <li>• The action plan documents were created in the management system module.</li> <li>• The Human and Organizational Development Team monitored every three months the follow-up of the actions defined in the plans of the work teams intervened.</li> </ul>	Total
<b>EDEQ:</b> Definition and implementation of an action plan based on the organizational climate survey results.	<ul style="list-style-type: none"> <li>• Delivery of results to the steering group and to the entire organization through the Business Forum, where EDEQ's organizational climate profile was announced (100%).</li> <li>• Delivery of results to the planned teams, which allowed each one to contribute from their role and relationship to the improvement of the variables with a poor score in their work team (86%).</li> <li>• Strengthening of the leaders' competences to manage organizational climate in their work teams (83%).</li> <li>• Implementation of the training spaces planned, which were voluntarily attended by employees from different work teams. This allowed clarifying and strengthening concepts and practices related to relationships, work environment and role clarity, among others (100%).</li> </ul>	Partial
<b>ESSA:</b> Definition and implementation of an action plan based on the organizational climate survey results.	100% progress in monitoring the development of the plan to close the gaps in organizational climate.	Total
<b>Aguas del Oriente:</b> Definition and implementation of an action plan based on the organizational climate survey results.	<ul style="list-style-type: none"> <li>• To improve the results, two meetings to strengthen relationships with employees were held.</li> <li>• To avoid stress due to availability, work shifts were not modified.</li> </ul>	Partial





Goals for 2016	Achievements for 2016	Compliance
<b>Aguas Nacionales:</b> Definition and implementation of an action plan based on the organizational climate survey results.	Implementation of the activities scheduled to achieve the goal.	Total
<b>Emvarias:</b> Definition and implementation of an action plan based on the organizational climate survey results.	No organizational climate survey was conducted in 2015 and 2016.	Not met
<b>Aguas Regionales:</b> Definition and implementation of an action plan based on the organizational climate survey results.	The action plan was not defined because no quality of life survey was conducted in 2015.	Not met
<b>Aguas de Malambo:</b> Definition and implementation of an action plan for the organizational climate survey results.	The organizational climate survey was not conducted. In October, the quality of life survey was conducted.	Not met
<b>HET:</b> Consolidation of a human team for management per areas in the organization.	Structuring of processes and procedures per area of work, specialization of roles and horizontal integration of the organization.	Total
<b>Aguas Antofagasta:</b> Definition and implementation of an action plan for the organizational climate survey results.	An organizational climate improvement action plan, approved by the executive team, was defined and implemented in accordance with the results obtained at the end of 2015 in the Great Place to Work assessment. In the measurement, an average of 85.6 was achieved.	Total



## Challenges

Challenge	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Delivering the 2016 organizational climate measurement, with nominal groups and action plan.	2017	Caldas	Power Generation and Transmission	Central Hidroeléctrica de Caldas - CHEC	100%
Measuring organizational climate for the October-November 2017 period.	2017	Santander	Power Generation and Transmission	Electrificadora de Santander - ESSA	100%
Increasing the indicator in the aspects approved by the Steering Committee on January 30, 2017.	2017	Santander	Power Generation and Transmission	Electrificadora de Santander - ESSA	100%
Monitoring the departments and work teams so that they will implement the proposed plan.	2017	Santander	Power Generation and Transmission	Electrificadora de Santander - ESSA	100%
Measuring organizational climate in 2017, as defined by the Corporate Core.	2017	Caldas	Power Generation and Transmission	Central Hidroeléctrica de Caldas - CHEC	Report submitted by the provider of the results of the 2017 organizational climate measurement.
Defining action plans based on the results of the organizational climate survey.	2017	Rionegro	Water Supply	Empresa de Aguas del Oriente Antioqueño	100% compliance with plan.
Defining the human resource management plan.	2017	Panama	Power Generation	Hidroecológica del Teribe - HET	Document approved by the president and validated by EPM parent company.
Implementing the strategies of the human resource program.	2018	Panama	Power Generation	Hidroecológica del Teribe - HET	Compliance with the program per year and semester.



Challenge	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Achieving a score equivalent to or greater than 71.6 in the 2017 organizational climate survey.	2017	Chile	Water Supply	Aguas de Antofagasta - Adasa	Percentage obtained in the organizational climate survey.
Establishing and implementing strategies (spaces for integration, learning and professional, family and social development) to face situations that may alter welfare and generate negative changes in professional and non-professional conditions, or levels of stress in the employees of the company.	2017	Antioquia	Water Supply	Aguas Nacionales EPM	Activities implemented/ Activities planned.
Disclosure to all levels of the organization.	2017	El Salvador	Power Distribution	Distribuidora de Electricidad del Sur - Delsur	Number of areas where disclosure took place / Number of areas of the company.
Defining and implementing, in each management, an action plan based on the results of the organizational climate survey.	2017	El Salvador	Power Distribution	Distribuidora de Electricidad del Sur - Delsur	Number of plans authorized per management/ Number of managements.
Implementing the permanent organizational climate management plan.	2017	Guatemala	Power Distribution	Empresa Eléctrica de Guatemala - Eegsa	100% compliance with plan.
Measuring 2017 organizational climate.	2017	Norte de Santander	Power Transmission	Centrales Eléctricas del Norte de Santander - CENS	Percentage of progress regarding timetable.
Delivering the results to the remaining 10 work teams, so that leaders can include activities for improving or sustaining variables in their work plans.	2017	Quindío	Power Transmission	Empresa de Energía del Quindío - EDEQ	Reports submitted / Planned report submissions.



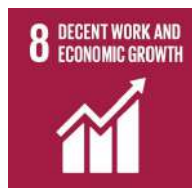


Challenge	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Measuring organizational climate in 100% of the EDEQ plant operating on the implementation date defined by the business group.	2017	Quindío	Power Transmission	Empresa de Energía del Quindío - EDEQ	Organizational climate profile of 54% within the average high level of the reference.
Defining and implementing an action plan for the quality of life survey results.	2017	Antioquia	Water Supply	Aguas Regionales EPM	Action plan defined.
Implementing actions defined in the action plan.	2017	Antioquia	Water Supply	Aguas Regionales EPM	Actions implemented/ Actions proposed.

## Management indicators

**EPM-02** Results of the organizational climate assessment.

## Sustainable Development Goals





# Organizational climate

Collective perception regarding the company's practices, policies, structure, processes, and systems and its resulting reaction that has an impact on the human environment in which daily work, satisfaction, commitment, and productivity take place.

It is defined by the leader's performance, people's commitment, and the way they work and interact. In this regard, organizational climate is a collective development that calls for the commitment of all those involved.

The quality of the organizational climate directly influences employees' satisfaction, commitment, and productivity, and therefore, the achievement of the company's goals. It creates a social value among EPM Group's people and EPM Group's companies and extends it to the other stakeholders in terms of trust and legitimacy.

## Management in 2016

To nurture the work environment, "A Coffee with the Manager" becomes an opportunity for executives in the organization to chat and talk about their management with their work teams.



At EPM, organizational climate was measured, with a participation of 78.4% of the population. The score obtained is set at the mid-high level of the scale, with a score of 54.2, which suggests favorable perceptions in relation to the work realities studied.

Executives in the organization were delivered the results of the quality of life, psychosocial risk and organizational climate measurements. With their human team, each head established actions to strengthen the work environment in their respective department, while a meeting was held with managers and leaders to socialize the activities that the organization is implementing to strengthen the work environment. Likewise, an activity was carried out to socialize and share success stories and opportunities for improvement based on the actions that have strengthened the work environment within the departments.

In general, in all the companies of the Group where this measurement took place in 2016, there was a significant improvement in the result compared to that of the previous year. Actions for the improvement of the organizational climate are being developed under suitable conditions within the framework of the management plans defined in each of these companies. In the Group's companies in Colombia, the measurement focused on the promotion of the target culture, the style of leadership and the comprehensive management of human talent.

It is noted that EPM and some affiliate companies were able to integrate the results of the organizational climate and quality of life measurements to develop their action plans.



Organizational climate results			
Indicators	2014	2015	2016
EPM	54.0	52.9	54.2
Aguas de Oriente Antioqueño	36.4	N.A.	N.A.
Adasa	72	65	71.6
Emvarias	67.7	N.A.	N.A.
CHEC	N.A.	52.8	N.A.
ESSA	N.A.	47.7	49.4
EDEQ	N.A.	53.3	N.A.
CENS	N.A.	N.A.	55.7
Delsur	N.A.	N.A.	85.6
Eegsa	80 pts	84 pts	86 pts
ENSA	84	79	77

*The measuring tool and the frequency of implementation are not the same for all the Group's companies. For this reason, it is not possible to have a consolidated analysis of the results. However, the upturn in the results obtained in EPM, ESSA and Eegsa should be highlighted.*

*In general, in all the companies of the Group where this measurement took place in 2016, there was a significant improvement in the result compared to that of the previous year.*

*The results of EPM's organizational climate are updated for 2016. Information provided by the consultant.*

## Management indicators

**EPM-02** Results of the organizational climate assessment.



# Quality and safety of products and services

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## Quality and safety of products and services

Technical and commercial characteristics inherent to the service, to meet the expectations of customers and users and regulatory and control requirements. This aspect includes service quality, continuity, and safety, as well as issues related to assistance, education, communication, customer satisfaction, and corporate reputation.

### Stakeholders vision

Stakeholders, especially customers and users, mainly expect the organization to provide safe and quality services.

### Importance

Economic value is associated with the objective of process optimization—basis of the competitiveness of the Group's businesses—and quality to satisfy customers and users requirements.

Regarding social value, product quality has an impact on quality of life and human development. Moreover, safety protects life and health of internal and external stakeholders.





## Main achievements

Goals for 2016	Company	Achievements for 2016	Compliance
Keeping the water quality risk index (WQRI) lower than 5%, through the water purification process control and management in all affiliate companies, in order to preserve users' health.	EPM	To December, 2016, the Water Quality Risk Index (WQRI) was below 5%.	Total
Keeping the water quality risk index (WQRI) lower than 5%, through the water purification process control and management in all affiliate companies, in order to preserve users' health.	Aguas del Oriente	To December, 2016, the Water Quality Risk Index was below 0.64%.	Total
Keeping the water quality risk index (WQRI) lower than 5%, through the water purification process control and management in all affiliate companies, in order to preserve users' health.	Aguas de Malambo	To December, 2016, the Water Quality Risk Index was below 0.0%.	Total
Keeping the water quality risk index (WQRI) lower than 5%, through the water purification process control and management in all affiliate companies, in order to preserve users' health.	Aguas Regionales	To December, 2016, the Water Quality Risk Index was below 0.3% for the Western Region and 0.1% for the Urabá Region.	Total
Keeping the water quality risk index (WQRI) lower than 5%, through the water purification process control and management in all affiliate companies, in order to preserve users' health.	Aguas Nacionales	To December, 2016, the Water Quality Risk Index was below 2.8%.	Total
Increasing the continuity of the water supply service to 84% in the Urabá region.	Aguas Regionales	Continuity of service in 2016 was 84%. Pressurization actions, valve handling, adjustments in plants, among other actions, were carried out allowing the Carepa and El Reposo systems to have a 24-hour continuity in their services.	Total



Goals for 2016	Company	Achievements for 2016	Compliance
Providing water supply service in western Antioquia, with a 99.6% continuity.	Aguas Regionales	The continuity of the service in 2016 was 99.7%, thanks to the implementation of the strategy of systematic search for leaks, as well as the timely repair of leaks and damages.	Total
Providing water supply service in eastern Antioquia, with a 99.9% continuity.	Aguas del Oriente	Continuity of service in 2016 was 99.8%. The goal was not achieved mainly because of the following: * Deterioration of water supply networks causing more damages. * Execution of infrastructure works causing cutoffs and damages. * Criticality of pressure and continuity in upper-ground sector in the municipality which was solved with the installation of a tank in the sector.	Partial
Decreasing to 7.04 the indicator of water losses (LRBU) - Water Supply.	EPM	For 2016, the Loss Rate per Billed User was 6.63.	Total
Decreasing to 23.01 the indicator of water losses (LRBU)- Water Supply.	Aguas de Malambo	For 2016, the Loss Rate per Billed User was 19.54. Progress was made in the replacement of networks in the municipality with resources from the department, as well as in the installation of 2,926 micrometers in different sectors of the municipality.	Total
Aguas de Occidente: Decreasing to 8.20 the indicator of water losses (LRBU)- Water Supply.	Aguas Regionales	For 2016, the Loss Rate per Billed User was 8.81. Although the goal was not achieved, actions were established to improve the metering and the search for leaks.	Partial
Aguas de Urabá: Decreasing to 13.91 the indicator of water losses (LRBU) - Water Supply.	Aguas Regionales	For 2016, the Loss Rate per Billed User was 12.16. Strategies of loss management, systematic search for leaks, pressurization of the Brisas del Mar neighborhood in Turbo, installation of public standpipes in informal settlements, among other strategies, were carried out.	Total
Decreasing to 3.20 the indicator of water losses (LRBU)- Water Supply.	Aguas del Oriente	For 2016, the Loss Rate per Billed User was 7.30. An action plan was prepared to detect technical or commercial leaks.	Partial





Goals for 2016	Company	Achievements for 2016	Compliance
<p>Managing the maintenance and operation of the water supply, sewerage and sanitation systems in the urban area of the municipality of Quibdó, in Chocó.</p>	<p>Aguas Nacionales</p>	<p>Continuity of the water service during 11 hours in average.</p> <p>As for water quality, the Water Quality Risk Index (WQRI) &lt; 5 average was achieved for 2016.</p>	<p>Total</p>
<p>Energy service: Reducing SAIDI's value to 13.06 and SAIFI's to 6.39.</p>	<p>EPM</p>	<p>SAIDI: 14.71 SAIFI: 7.59</p> <p>In December, SAIDI's value decreased by 0.3%, reaching a value of 14.71 hours, which means the target was not met (1.1 hours over it).</p> <p>The indicator of the quality group 2 showed the greatest variation, with an increase of 3.5%. The causes that most influenced SAIDI were those associated to atmospheric conditions (18%), tree or branch (15%) and extension and/or rectification in distribution networks (9%).</p> <p>In December, SAIFI's value decreased by 1%, reaching a value of 7.59 times, which means the target was not met (0.83 times over it).</p> <p>The quality group 4 showed the greatest variation, with a decrease of 2.4%. The causes that most influenced SAIFI were those associated to distribution sub-transmission line failure (16%), unknown cause (11%) and extension and/or rectification in distribution networks (9%).</p>	<p>Partial</p>



Goals for 2016	Company	Achievements for 2016	Compliance
<p>Achieving the following values in the indicators of quality and continuity of the energy service:</p> <p>ESSA: SAIDI 37.22 SAIFI 18.91</p>	ESSA	<p>SAIDI: 32.85 SAIFI: 21.17</p> <p>The SAIDI indicator shows that, by December 2016, the service was interrupted for 32.8 hours, time during which the average customer experienced an interruption in the electricity supply in a period of one year. This average time in which ESSA's customers experienced this interruption was mainly due to scheduled maintenance activities, weather conditions, and failures on the network. However, the indicator met the target satisfactorily, improving by 5 hours the limit value.</p> <p>This evident improvement in the performance of the SAIDI indicator is influenced by the actions implemented during part of 2015 and throughout 2016 under the Phase I quality improvement plan. These activities comprised four lines of action: installation of reclosers, maintenance and implementation of the study of coordination of protections, maintenance of 34.5 kV lines and communications; all these implemented in the feeders having a greater impact in the average quality of the system.</p>	Partial
<p>Achieving the following values in the indicators of quality and continuity of the energy service:</p> <p>CENS: SAIDI 33.06 SAIFI 11.00</p>	CENS	<p>SAIDI: 40.02 SAIFI: 10.57</p> <p>During 2016, the SAIDI increased by 7.57 points and the SAIFI decreased by 0.54 points compared to the previous year, that is, an improvement in the SAIFI was observed during this period.</p> <p>The climate conditions of last semester, particularly the strong winds from July to September and the rains of the end of the year, increased the SAIDI by 20% compared to 2015. Next year, an action plan will be developed to align the index with the regulatory demands and the Business Group goals.</p>	Partial



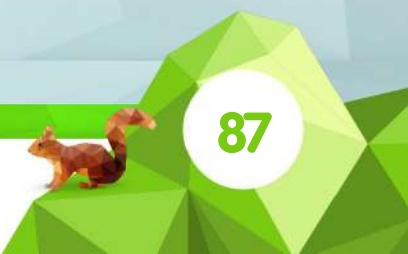


Goals for 2016	Company	Achievements for 2016	Compliance
Achieving the following values in the indicators of quality and continuity of the energy service: EDEQ: SAIDI 9.24 SAIFI 13.3	EDEQ	The SAIDI registered in 2016 is 8.89 hours, meeting the annual goal of 9.24 hours at 104%. Quality groups 2, 3 and 4 improved compared to the previous year. On average, a good indicator is perceived throughout the year, registering the best values in the months of October and November.	Total
Achieving the following values in the indicators of quality and continuity of the energy service: CHEC: SAIDI 26.33 SAIFI 24.62	CHEC	SAIDI went from 27.5 hours in 2015 to 26.01 hours in 2016, and SAIFI went from 25.59 times in 2015 to 24.21 times in 2016.  In 2016, it was possible to continue with the expansion and replacement of the key electrical infrastructure. With this, it has been possible to improve the quality of the energy service, thereby enabling to meet the goals proposed for 2016 in terms of SAIDI and SAIFI. This improvement in infrastructure and maintenance strategies leads to a percentage of local distribution system availability of 99.7%.	Partial
Achieving the following values in the indicators of quality and continuity of the energy service: Eegsa: SAIDI 3.59 SAIFI 2.56	Eegsa	SAIDI: 3.6 SAIFI: 2.5 In 2016, at Eegsa, the SAIDI and SAIFI indicators reduced by 2.5 and 6.3%, respectively, compared to 2015.	Total
Achieving the following values in the indicators of quality and continuity of the energy service: Delsur: SAIDI 29.3 SAIFI 12.6	Delsur	SAIDI: 22.9 SAIFI: 11.5 Continuity in changing the protection coordination scheme, and successful development of several pilot tests for the installation of equipment called fuse saver, which will support the improvement of the technical indicators, as well as the failure rate.	Partial





Goals for 2016	Company	Achievements for 2016	Compliance
<p>Achieving the following values in the indicators of quality and continuity of the energy service:</p> <p>ENSA: SAIDI 18.35 SAIFI 9.27</p>	ENSA	<p>SAIDI 15.44 SAIFI 7.36</p> <p>The results obtained in 2016 show that investment in projects to improve the reliability of the service (Installation of Protective Equipment-Reclosers, Reflection Centers and Shielded Cable) coupled with the implementation of a maintenance plan have yielded good results.</p> <p>In 2016, there was an improvement of 16% for SAIFI and 2% for SAIDI compared to 2015.</p>	Total
<p>Decreasing to 8.84% the indicator of energy losses (loss rate).</p>	EPM	<p>LRRNO: 7.58</p> <p>Actions have been taken to control and reduce losses in the Antioquia region, meeting the loss indicator (EPM's official NO loss index in December 2016 closed at 7.58%, i.e. 0.89% below the target set for this month, which was 8.43%). The energy recovery target was met, which was 27.26 GWh for December, obtaining in total a recovery of 36.69 GWh without having fully consolidated December.</p>	Total
<p>Decreasing to 11.95% the indicator of energy losses (loss rate).</p>	CENS	<p>In December 2016, the loss index was 13.59%. The following were some of the causes that affected the expected result: irregular connections in substandard human settlements (SHS) and illegal connection of transformers in rural areas. Work continues on the control and reduction lines of action, giving priority to constructing networks and allowing customers in SHS access to the service and approaching municipal entities in order to obtain permits to be able to provide the service in new sectors.</p>	Partial





Goals for 2016	Company	Achievements for 2016	Compliance
Decreasing to 12.06% the indicator of energy losses (loss rate).	ESSA	In December 2016, the loss index was 12.19%, not meeting the projected target for the end of the year which was 12.06%. One of the causes that affected the expected result was that the operational management was not fully developed. We highlight the development of activities such as: Management in transformers with high losses, entrance to billing of customers-users by Dignifying Homes program, intervention of customers-users including social management, intervention in settlements.	Partial
Decreasing to 8.55% the indicator of energy losses (loss rate).	EDEQ	LRRNO: 8.27 By November, the loss rate of the NO has a compliance of 103% regarding the proposed target. The 12-month billed days are 365.71, 0.29 days less than those of purchase. Due to this, the indicator is affected at 285 MWh/year. Level-1 losses represent 5.76%, 2.30 percentage points below the regulatory set value for this level of voltage.	Total
Decreasing to 9.26% the indicator of energy losses (loss rate).	CHEC	The target of recovery of energy losses is met, placing them at 8.92%, lower than the levels approved by the regulatory entity, with investments, in 2016, of COP 4.7 billion and a reduction of 0.24% in the loss indicator. This has allowed us to recover the rate of 100% of the current losses, all this betting on sustainability.  Regarding Social Management of losses, the development of 13 community and interinstitutional processes, participatory and civic in nature, impacted 19,767 people in the municipalities of Manizales, La Dorada and the indigenous reserves of Riosucio, specifically San Lorenzo and Cañamomo Lomapieta. The themes addressed with the communities were civic culture, culture of legality and rational use of energy.	Total



Goals for 2016	Company	Achievements for 2016	Compliance
Decreasing to 5.35% the indicator of energy losses (loss rate).	Eegsa	LRRNO: 4.94 For this 2016, as a result of the management of non-technical losses and the investment projects to reduce technical losses, the closing loss level of Eegsa reduced by 7.7% compared to 2015.	Total
Decreasing to 9.3% the indicator of energy losses (loss rate).	Delsur	In December 2016, the loss index was 9.26%, meeting the target set for the end of the year which was 9.3% of total losses. An action plan has been defined besides the initially considered, so that in 2017 the target of 8.5% will be achieved.	Total
Decreasing to 11.55% the indicator of energy losses (loss rate).	ENSA	In December 2016, the loss rate was 11.12%, meeting the target set for the end of the year which was 11.55%. We managed to reduce the management indicators for the analysis. In operational management, the annual inspection of indirect customers was implemented and the effectiveness of the actions sent to the field increased. The increase in operational capacity did not occur at the beginning of 2016 as planned, but in the second half of the year, and SAP is implemented.	Total
Having overcome the crisis of El Niño, continuing to spread the messages of responsible consumption of public utilities, as a coherent expression of the EPM Group on how convenient it is for the society to properly use them.	EPM Group	Programs of direct contact with customers, users and the community, such as We Are There For You, World's Protector in Your School, Hanging Out at the UVA, among others, included fun and awareness-raising activities regarding good use of resources and responsible use of public utilities.  Moreover, through mass-media campaigns, educational messages were transmitted to more than 2 million people. The following campaigns are highlighted: Safe and Legal Use of Electrical Energy, Periodic Inspections of the Natural Gas Service, Water Month, El Niño, and New Pricing Framework for the water supply and sewerage services.	Total



The EPM Group, with the purpose of continuously improving its relationship, closeness and engagement with the customers, modified in 2016 the loyalty assessment methodology, in which satisfaction is an input that contributes to its construction, considering the different attributes assessed. The recommendation factor was included in the model, and it was decided to weigh the indicators based on entries, according to each segment established, just as companies currently use it worldwide. Therefore, the values of the goals set in 2015 are not comparable with the results obtained in 2016. The improvement in the indicators will be assessed taking this baseline into account, as a result of the initiatives that will be developed since 2017 to improve the customer's experience and, consequently, their loyalty. Among these initiatives are: strengthening of the systems of service and repair of damages, improvements in the communication and implementation of cutoffs, scheduling of special activities of the commercial operation; "More Convenient Bill", to provide customers with relevant and specific information through the bill; the education and communication program, "We are there for you", with presence in 35 places of Antioquia; proactive conversations with customers through employees and contractors who have contact with them in the field, and analysis of the customer's experience with EPM in the actual relevant moments, in order to define and implement timely actions and thus, generate greater closeness.

## Challenges

Challenges	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Decreasing to 6.96% the indicator of water losses (LRBU) - Water Supply.	2017	Colombia - Antioquia	Water supply and Sanitation	EPM	Loss rate
Decreasing to 22.11% the indicator of water losses (LRBU) - Water Supply.	2017	Colombia - Malambo	Water supply and Sanitation	Aguas de Malambo	Loss rate
Aguas de Occidente: Decreasing to 7.90% the indicator of water losses (LRBU) - Water Supply.	2017	Colombia - Antioquia	Water supply and Sanitation	Aguas Regionales	Loss rate
Aguas de Urabá: Decreasing to 13.42% the indicator of water losses (LRBU) - Water Supply.	2017	Colombia - Antioquia	Water supply and Sanitation	Aguas Regionales	Loss rate
Decreasing to 2.95% the indicator of water losses (LRBU) - Water Supply.	2017	Colombia - Antioquia	Water supply and Sanitation	Aguas del Oriente	Loss rate
Keeping the water quality risk index (WQRI) lower than 5%, through the water purification process control and management in all affiliate companies, in order to preserve users' health.	2017	Colombia - Antioquia	Water supply and Sanitation	Aguas del Oriente	Water quality risk index (WQRI).



Challenges	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Keeping the water quality risk index (WQRI) lower than 5%, through the water purification process control and management in all affiliate companies, in order to preserve users' health.	2017	Colombia - Antioquia	Water supply and Sanitation	Aguas Regionales	Water quality risk index (WQRI).
Keeping the water quality risk index (WQRI) lower than 5%, through the water purification process control and management in all affiliate companies, in order to preserve users' health.	2017	Colombia - Antioquia	Water supply and Sanitation	Aguas de Malambo	Water quality risk index (WQRI).
Keeping the water quality risk index (WQRI) lower than 5%, through the water purification process control and management in all affiliate companies, in order to preserve users' health.	2017	Colombia - Antioquia	Water supply and Sanitation	EPM	Water quality risk index (WQRI).
Reducing the indicator of losses and recovering energy, 11.33% - 33.96 GWh	2017	Colombia	Energy	ESSA	Loss rate
Reducing the indicator of losses and recovering energy, 13% - 20 GWh	2017	Colombia	Energy	CENS	Loss rate
Reducing the indicator of losses and recovering energy, 8.46% - 1.08 GWh	2017	Colombia	Energy	EDEQ	Loss rate
Reducing the indicator of losses and recovering energy, 8.84% - 7.93 GWh	2017	Colombia	Energy	CHEC	Loss rate
Reducing the indicator of losses and recovering energy, 7.52% - 71.46 GWh	2017	Colombia	Energy	EPM	Loss rate







Challenges	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Achieving the following values in the indicators of quality and continuity of the energy service: SAIDI 31.27 SAIFI 33.27	2017	Colombia	Energy	CENS	Indicators of quality and continuity.
Achieving the following values in the indicators of quality and continuity of the energy service: SAIDI 30.36 SAIFI 23.65	2017	Colombia	Energy	ESSA	Indicators of quality and continuity.
Achieving the following values in the indicators of quality and continuity of the energy service: SAIDI 8.92 SAIFI 25.17	2017	Colombia	Energy	EDEQ	Indicators of quality and continuity.
Achieving the following values in the indicators of quality and continuity of the energy service: SAIDI 28.40 SAIFI 29.20	2017	Colombia	Energy	CHEC	Indicators of quality and continuity.
Achieving the following values in the indicators of quality and continuity of the energy service: SAIDI 14.38 SAIFI 9.47	2017	Colombia	Energy	EPM	Indicators of quality and continuity.
Meeting the regulated loss levels with a value lower than 3.3% of total system losses.	2017	Colombia - Antioquia	Gas	EPM	Indicator of losses



## Management indicators

<b>G4-PR2</b>	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes.
<b>G4-PR5</b>	Results of surveys measuring customer satisfaction.
<b>G4-PR7</b>	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes.
<b>G4-PR8</b>	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.
<b>G4-PR9</b>	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.
<b>G4-EU25</b>	Number of injuries and deaths involving the organization's assets, including legal sentences, settlements and pending legal cases of diseases.
<b>G4-EU28</b>	Average frequency of blackouts.
<b>G4-EU29</b>	Average duration of blackouts.
<b>G4-EU30</b>	Average availability of generation plants, by energy source and regulatory system.
<b>EPM-03</b>	Loss rate.
<b>EPM-04</b>	Customer service channels.
<b>EPM-05</b>	Grievance indicator.

## Sustainable development goals





## Service quality and continuity

Service quality comprises technical and commercial characteristics inherent to its provision that must meet the expectations of users and the requirements of regulatory and control entities.

Continuity refers to how long the user has access to the service.

### Management in 2016

The EPM Group supplied water suitable for human consumption. Among the companies that supply water, the water quality risk index (WQRI) highest value was 1.7%, significantly lower than the maximum permitted by law, which is 5%. Continuity in the water supply service is highlighted in the Urabá region, where the continuity indicator increased from 77.5% to 84.3%.

With the aim of optimizing and improving the provision of the electrical energy service, the EPM Group allocates each year resources for the maintenance and modernization of its networks and equipment. We highlight the improvement in infrastructure and maintenance strategies at the company CHEC, which reached a local distribution system availability of 99.7%.



EPM Group's energy companies improved the SAIDI indicator results in 2016, with the exception of CENS that obtained 40.02 in 2016 compared to the good result it achieved in 2015, which was 32.45.

The SAIFI indicator results improved in six Colombian companies of the EPM Group, with the exception of the companies EPM and ESSA which showed increases compared to 2015.

The international affiliates improved their indicators in 2016 with changes in the protection coordination scheme and installation of protective equipment and shielded cable. We highlight the average indicators of service quality and continuity in the last three years for the companies Eegsa (Guatemala) and ENSA (Panama).

The following activities and results stand out in 2016:

**ESSA:** The SAIDI indicator shows that there were 32.8 hours of interruption during the year, which means that the goal has been satisfactorily met, with a 5-hour improvement over the limit value, thanks to the actions carried out in 2015 and 2016 within the framework of the Phase I quality improvement plan. The SAIFI indicator, meanwhile, shows that 21.17 times the average customer of the system experienced service interruption along the year.



**CENS:** The SAIDI indicator increased by 20% compared to that of 2105. Among other situations, there were strong winds from July to September and frequent rains at the end of the year.

**CHEC:** Network optimization (installation of electronic equipment for network automation) and effective coordination activities between operation and maintenance were carried out, which mitigated the time of service interruptions. Improvement in infrastructure and maintenance strategies leads to a percentage of local distribution system availability of 99.7%.

**EDEQ:** Users experienced electricity interruption for an average of 8.89 hours in 2016, according to the value obtained for the SAIDI indicator, which improved by 8.4% compared to that in 2015 and exceeded the target of 4%. Activities to improve the quality of the service were developed such as implementation of the program of continuous improvement of quality of service (PCIQS), phase marking and circuit balancing and installation of repeater fuses, among others. The SAIFI indicator exceeded the 2016 target by 3.9%. On average, users experienced electricity interruption 12.62 times in the year. In spite of the failures registered in the 33 kV lines, actions such as the decrease in the time of response to unscheduled events and the installation of reclosers in the network contributed to the good result.

**Eegsa:** In 2016, there was a reduction in the SAIDI (3.59) and SAIFI (2.46) indicators, as a result of the improvement projects developed to mitigate problems in the distribution network.

**Delsur:** Several pilot tests for the installation of equipment called fuse saver were successfully conducted, which will support the improvement of the technical indicators.

**ENSA:** The company invested in projects to improve the reliability of the service. The installation of protective equipment-reclosers, reflection centers and shielded cable allowed achieving the good results of 2016.

At EPM, the water service continuity index was 99.9%, higher than the 99.7% target, maintaining the service provision above what is defined by regulations.

In Urabá, it was possible to provide the service 24 hours a day in the Carepa and El Reposo systems, as a result of the distribution of flows and sectorization, as well as increases in capacity in the water purification process, respectively. In order to comply with the "Turbo 24 hours" program, infrastructure optimization, neighborhood standardization and management of contributions under condition were carried out in this location.

**Emvarias** provided services of waste collection and disposal at La Pradera landfill, which benefits the inhabitants of 30 municipalities of Antioquia. In order to ensure 100% continuity in the provision of this service, the third and fourth phases of the Altaír landfill cell were built, and studies to process the license of the Cumbre I and Cumbre II landfill cells were started. In addition, door-to-door waste collection in Medellín was contracted with 33 community action boards in areas of the city where, due to impossibility of the collecting vehicle to access them, it is not possible to provide the service under normal conditions. This measure represents a solution in providing the service to 41,710 inhabitants on average, with an additional benefit in the generation of 194 jobs.



In the affiliate company, **Ticsa**, service quality is measured in all the wastewater treatment plants. Laboratory tests are conducted to verify that the quality of the water treated meets the standard agreed in the service contract.

In 2016 and according to what is required by regulations, EPM's gas supply service had 100% compliance with ELSI (Equivalent length of service interruption), PIIP (Pressure index in individual pipeline), and OI (Odorization index) indicators. The indicator of response to high priority events, which aims at being present in high priority events in less than one hour, obtained a result of 97% in 2016.

Companies in Colombia			
Company	2014	2015	2016
EPM	99.90%	99.94%	99.9%
Aguas del Oriente	100%	99.86%	99.8%
Aguas Regionales			
Western Region	99.50%	99.63%	99.7%
Urabá Region	83.90%	77.52%	84.3%
Aguas de Malambo	37.50%	45.81%	26.9%
Emvarias	100%	100%	100%
International Companies			
Ticsa	N.D.	100%	99.53%
Adasa	98.79%	97.81%	97.64%

Source: Vice Presidency of Water Supply and Sanitation

WQRI (Water Quality Risk Index)			
Companies in Colombia			
Company	2014	2015	2016
<b>EPM</b>			
Medellín	0.01%	0.03%	0.07%
Copacabana	0.02%	0.07%	0.09%
Girardota	0.02%	0.05%	0%
La Estrella	0.03%	0.10%	0.09%
Caldas	0%	0.13%	0.20%
Barbosa	0%	0.05%	0.23%
Sabaneta	0.03%	0.26%	0.37%
Envigado	0.01%	0.09%	0.08%
Bello	0.04%	0.02%	0.06%
Itagüí	0%	0.03%	0.05%





<b>WQRI (Water Quality Risk Index)</b>			
<b>Companies in Colombia</b>			
<b>Company</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Aguas del Oriente</b>			
El Retiro	0%	0.01%	0.64%
<b>Aguas Regionales</b>			
Sopetrán	0%	0%	0.30%
San Jerónimo	0.06%	0.00%	0.10%
Santa Fé de Antioquia	0.09%	0.24%	0.10%
Olaya	0.63%	0%	1.70%
Apartadó	0%	0%	0%
Turbo	0.48%	1.45%	0.60%
Chigorodó	0.19%	0%	0%
Carepa	0.45%	0.06%	0%
Mutatá	0%	0%	0%
El Reposo	0%	0%	0%
Bajirá	0.53%	0%	0%
<b>Aguas de Malambo</b>			
Malambo	0%	0%	0%

Source: Vice Presidency of Water Supply and Sanitation

The WQRI (Water quality risk index) is calculated in accordance with the provisions of Decree 1575 and Resolution 2115 of 2007 by the Ministry of Social Protection in Colombia. A 5% maximum value is allowed and it is established that if the obtained value is lower than 5%, water has no risk. The Ministry states that control and monitoring activities must continue within this range of values, and water can be declared suitable for human consumption.

<b>Quality and Continuity of EPM's Energy Service</b>			
<b>Company / Indicator</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>EPM</b>			
SAIDI	17.03	15.22	14.71
SAIFI	7.94	7.26	7.59
<b>CHEC</b>			
SAIDI	29	27.50	26.01
SAIFI	27.68	25.59	24.21
<b>ESSA</b>			
SAIDI	27.78	39	32.85
SAIFI	25.60	18	21.17





Quality and Continuity of EPM's Energy Service			
Company / Indicator	2014	2015	2016
<b>CENS</b>			
SAIDI	42.24	32.45	40.02
SAIFI	11.43	11.11	10.57
<b>EDEQ</b>			
SAIDI	10.66	9.70	8.89
SAIFI	13.05	13.65	12.61
<b>Delsur</b>			
SAIDI	33.74	27.21	22.92
SAIFI	14.74	14.00	11.50
<b>Eegsa</b>			
SAIDI	4.06	3.68	3.59
SAIFI	2.89	2.62	2.46
<b>ENSA</b>			
SAIDI	20.47	15.74	15.44
SAIFI	10.72	8.81	7.36

Source: Vice Presidency of Power Transmission and Distribution

SAIDI – average interruption duration index (total interruption time, in hours, the average system user experienced an interruption in the electrical energy service during the period assessed).

SAIFI- average interruption frequency index (number of times an average system user experiences an interruption in the electrical energy service during the period assessed).

Quality and Continuity of EPM'S Gas Utility			
Indicator	2014	2015	2016
PIIP - Pressure index in individual pipelines	100%	100%	100%
OI - Odorization index	100%	100%	100%
ELSI - Equivalent length of service interruption	0	0	0
RHPE - Response to high priority events	N.A.	97%	97%

Source: Vice Presidency of Gas

## Management indicators

- G4-EU28** Average frequency of blackouts.
- G4-EU29** Average duration of blackouts.



# Education for and communication with customers, users and the community

As part of the CSR, communication with customers is handled through educational communication, marketing communication and communication due to scheduled disconnections. Educational communication regarding residential public utilities is developed by the EPM Group through awareness-raising, information and training solutions, using engagement tools based on knowledge of, recognition of and respect for our communities, their cultural aspects and their everyday spaces, establishing the necessary partnerships with external entities and institutional and community leaders. Communication due to disconnections aims at minimizing inconvenience due to scheduled disconnection of services. Marketing communication includes different strategies such as advertising, sponsorship, sales promotion, public relations, among others, seeking to position the EPM Group's brand, its services and the different offers concerning purchasability and access.

## Management in 2016

EPM developed educational communication programs in 2016 for users and the community for a value of COP 7.54 billion, benefiting 4.8 million people.



**EPM** benefited more than 350,000 people with 1,200 educational activities in the department of Antioquia, especially in the metropolitan area of Medellín and the Urabá area.

Some of the most relevant actions were:

- As part of the "We Are There for You" program that includes educational and relational interventions in the territory and that ends with a special ludic and awareness day, 13 events were carried out during the year, with the participation of more than 12,600 people who received information on good behaviors, EPM's processes and value propositions.
- 15 engagement, training and closeness activities were carried out with the municipal administrations of the department, including mayors, clerks, councilors, executives from decentralized entities, and managers from municipal public services. This closeness action is called "Government Seminars" and more than 350 people took part during the year.
- In the "Friend Leaders" program, conversation groups, training meetings, visits to projects of EPM and other activities were carried out so that community leaders get to know the basic and human aspects of the brand, services and procedures of EPM and be able to multiply them in their communities. More than 2,800 people took part in 49 activities.





- In sites called UVAs (Articulated Life Units) and neighboring sectors, the offer of the EPM services are promoted, and people are encouraged to engage in commitments, as well as to adopt and respectfully enjoy public spaces. 6 meetings called "Hanging out at the UVA" were carried out with the participation of more than 2,000 people.
- With the "Home Visits," "We Keep our Word" and "On Stage" initiatives, 19,800 people benefited with 150 activities.
- Through the "Reading at Your Measure" program, training is provided to read the meters and promote, in that way, the efficient use of residential public utilities and the understanding of the bill. More than 190,000 people took part.
- Through the "World's Protector in Your School" strategy, activities in educational institutions were carried out to promote the adoption of responsible habits and the recognition of EPM as a social, close and responsible brand. More than 41,000 people, including students, parents and teachers, took part.
- As part of the partnership with Parque Arví Corporation, ludic and pedagogical activities were developed with visitors to the Arví Park to generate knowledge and favor responsible behaviors towards natural resources and residential public utilities. 21,000 people had access to the educational contents.
- Civic culture strategies were developed through the "Workshop of Dreams" and "Reliquary of Trust" strategies, with 39 activities and the participation of more than 1,700 people.
- Users of the gas service were contacted through visits to 10,800 homes; additionally, meetings were held with the administrations of the municipalities where EPM introduced the natural gas service, as well as with the fire departments, the community leaders, the stakeholders and the community in general to assist and raise awareness on the service. The attributes and competitiveness of natural gas are emphasized comparing them with other energy sources, and orientation is provided on use habits and bill interpretation.
- Educational activities were developed on "periodic inspections" for users of natural gas who reach five years of use.

Through mass advertising campaigns, educational messages were broadcasted to more than 2 million people. The following campaigns stand out: Safe and Legal Use of Electrical Energy, Periodic Inspections of the Natural Gas Service, Water Month, El Niño, and New Pricing Framework for Water Supply and Sewerage.

The energy affiliated companies of the EPM Group developed awareness, information and discussion initiatives with stakeholders in aspects such as processes in the provision of the energy service; understanding of the bill; rights and obligations of users; Retie compliance; legal, safe and efficient use of energy; and electrical risks. Educational strategies are addressed in a specific way considering the characteristics of the regions and the target audience (children, teenagers, teachers, leaders, parents, public and private institutions and the community in general).

Among the programs carried out by the different companies are:

**ESSA:**

- 19 activities of the ESSA Expedition, with 3,698 users.
- 12 activities of the Energy Festival, with 4,310 users.
- 472 activities of the School of Leaders, with 7,859 users.
- 16 activities of the Meeting with Leaders, with 633 users.
- 266 activities of the Energy Incubator, with 11,645 students.



- 7 activities of “Visiting ESSA,” with 245 users.
- 14 activities of “ESSA to the fullest,” with an attendance of 426 users.
- 10 activities of RUE (rational use of energy) in companies, for 301 users.
- 17 activities of the Entrepreneurship Workshop, with 627 users.
- 117 activities of social support to institutional programs, with a participation of 22,925 customers and users.
- 6,791 home visits.

### **CENS**

- “Music Festival”: with attendance of 1,200 people.
- “Know your consumption”: training to 60 meter readers and, through them, to 12,886 users of the five regional offices of CENS.

### **CHEC**

- “Learning with Energy at Home”: activities with the participation of 1,031 people were carried out in the municipalities where there are free housing projects, in aspects such as the importance of planning the service consumption, in line with the ability to pay, in order to reduce the possibility of defaulting.
- “Learning with Energy at School”: the Student Body Social Service is carried out, aimed at strengthening practices to build sustainable territories. Besides students, principals, teachers and parents also participate.
- “Learning with Energy in the Community”: 11,648 people benefited from activities of handicrafts, cooking and sewing, to promote the development of ideal behaviors related to the provision of the energy service.
- “Learning with Energy in the Government” and “Learning with Energy in the Company”: development of training activities addressed to members of municipal administrations, ombudsman’s office, municipal councils, development and social control committees, community action boards and control members, as well as operators, administrative staff and executives of the user companies of the energy service. In total, there were 61 participants, including mayors, clerks and other employees of the municipal administration and representative leaders. 1,578 people from the companies participated.

### **Delsur**

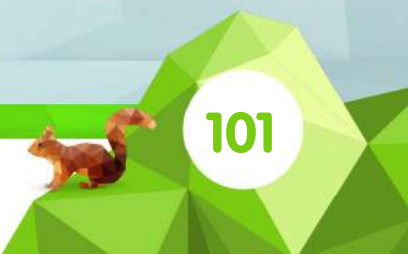
- Signature of the agreement with Radio UPA to foster the “Ambassadors of Safety” project.

### **ENSA**

- Development of different activities with customers, users and communities in different offices of the company with the “Customer Service Week” program and the “You have the power” collection campaign, which allowed ENSA to have a direct and face-to-face contact with its customers. Likewise, it participated in four fairs with an educational stand about the responsible consumption of energy and signed the agreement called “My School First,” with the Ministry of Education.

### **Eegsa:**

- In its social management, 3,050 leaders were informed through the “Lighting Up My Community” program, with 56 visits to different communities and 15,250 participants.
- The “Better Families” program, in alliance with Fundazucar, provided trainings, customer service and advice to get to the communities and promote sustainable development.







The water and sanitation companies of the EPM Group carried out educational communication programs to promote appropriate social practices in the use of the water resource.

**Aguas del Oriente:**

- The “Irregular Connections” campaign was carried out to reduce water losses.

**Aguas de Malambo:**

- 8,133 beneficiaries through the community assembly strategy, meetings with CABs (community action boards), control members and community leaders. It includes “Water World’s Protectors,” with the participation of 10 educational institutions and 280 students.
- 1,475 users took part in learning activities on the importance and acceptance of the meter.

**Aguas Regionales:**

- “24-Hour Water Culture in Turbo” campaign in a strategic alliance with this Urabá municipality’s Mayor’s Office, Colombia, the artistic and cultural corporation Mezclarte and the Pueto Visión corporation to develop block events, plays, audiovisual productions and the “Water’s Titans” contest.
- “Water Care, everybody’s commitment,” campaign addressed to educational institutions.
- Block meetings to generate spaces of education, information and approach to the community, as well as brand positioning. Working time with community leaders, training workshops with the community, door-to-door visits and community meetings.

**Emvarias:**

- Awareness was raised in 8,291 people through the play of the Linda Calle institutional character, in 69 educational institutions and 39 community events.
- The “I Commit Myself” campaign raised awareness in 3,660 commercial users on the appropriate way to take the solid waste out in the streets for its collection.
- As part of the Buen Comienzo Festival, children and parents took part in solid waste management workshops.
- During “Las Colchonadas,” awareness was raised in 8,500 people on the importance of keeping the streams’ beds clean and free of waste such as mattresses, pieces of furniture and fixtures.
- 35,000 people were informed on radio campaigns about the good management of solid waste.

**Adasa:**

- Preparation of the Yaky educational material, initiative born from the “Our North” educational program in alliance with the Regional Ministerial Secretariat of Education, the Regional Ministerial Secretariat of Health, the University of Antofagasta and Explora Conicyt. This material main goal is to inform about the water resource, from the scientific facts to the water care promotion. Additionally, the “Neighbor Boards” program was created, which has a specific guideline for education in the community.

The policy framework for responsible advertising directs the definitions in the fields of marketing and institutional communication of the EPM Group, especially in relation to the development of materials and campaigns, photographs, audiovisual media, events and sponsorship connections.



Taking into account the guidelines of the framework for responsible advertising, 13 milestones, including campaigns and events, were evaluated in 2016. A score of 96% was obtained in the general evaluation. No grievance requests were received relating to advertising.

<b>Education for customers, users and the community</b>			
<b>People impacted by programs of education for customers, users and the community</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
EPM	14,124,959	3,361,501	4,784,440
Aguas Regionales	29,270	40,996	25,471
Aguas del Oriente	15,918	17,354	46,905
Aguas de Malambo	8,406	7,963	9,888
Emvarias	84,608	30,021	71,844
Adasa	9,450	16,932	16,731
CHEC	51,051	33,626	32,105
ESSA	93,227	31,623	59,480
CENS	83,123	49,506	67,905
EDEQ	34,318	14,628	14,454
Delsur	350,000	406,650	482,344
Eegsa	N.D.	146,191	22,604
ENSA	282,676	380,872	383,054
<b>Investment in education for customers, users and the community (million COP)</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
EPM	4,485	3,463	7,542
Aguas Regionales	81	109	94
Aguas del Oriente	10	12	6
Aguas de Malambo	1	2	4
Emvarias	N.D.	97	227
Adasa	N.D.	N.D.	135
CHEC	899	280	595
ESSA	2,046	793	488
CENS	754	881	944
EDEQ	105.6	50.5	44.2
Delsur	744	929	355
Eegsa	N.D.	3,344	286
ENSA	N.D.	808	1,191

**Source:** Commercial VP, Power Transmission & Distribution VP, Water & Sanitation VP EPM

*The number of beneficiaries in Eegsa in 2015 includes communication activities not included in the 2016 figure.*



## Management indicators

### **G4-PR7**

Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes.



# Loss management

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Loss control and reduction programs in the water supply service are aimed at reducing the waste of the water resources by controlling and preventing leaks and through commercial activities and social interventions to promote a responsible use by users and the community.

In the energy and gas services, programs include education, access to and purchasability value offers and technologies to minimize vulnerability of the infrastructure concerning fraudulent actions.

## Management in 2016

EPM performed technical, social, and commercial activities to reduce risks in poor settlements. 400 families were intervened through four Risk Mitigation Community Brigades.

As for the energy service, EPM legalized 5,745 energy installations in difficult management areas (invasions), in sectors of Medellín, Bello, Itagüí and La Estrella. The goal of 4,250 installations for 2016 was surpassed.



**EPM** updated 119,470 meters, executed physical works in 2,208 houses for the Pila Pública (public standpipe) program, optimized 76 pressure regulating stations in the Valle de Aburrá and adjusted pressures in 91 circuits of the system. Moreover, it carried out 14,082 inspection visits for the identification of leaks in 2,028 km of networks, engaged 8,923 users to prepaid measurement to normalize the service, visited 122 homes and carried out 155 workshops for people who work illegally in informal car wash, in 50 establishments of this kind in districts 4, 5 and 15 of Medellín.

Water supply affiliated companies of the EPM Group developed commercial and technical strategies addressed to user safety and recovery of water losses.

**Aguas de Malambo** reduced by 8.04 points the loss rate per billed user (LRBU), going from 27.58 to 19.54, as a result of the installation of 8,580 metering centers, of which 7,000 were installed with the zoning contract developed with resources of the department and the Fuente de Vida foundation.

In the Urabá region, the monitoring to heavy consumers and the recovery plan of debts were implemented until achieving the normalization of 2,222 users who were in a cutoff status and the recovery of 90,889 m<sup>3</sup> and COP 1.06 billion of financed debts.



The program of energy loss recovery and control in the EPM Group comprises control of installations, reduction of network vulnerability, cutoff and reconnection, as well as social programs of awareness-raising and assistance to create a culture of legality. Reduction of losses is an obligation of the energy distribution companies to ensure the feasibility of the business and have fair prices, since the issue of losses affects the prices of all the system.

**EPM** carried out the campaign of legal use, which consists in inviting users to be supervisors of the legal use of public utilities and report, anonymously by phone, the irregular connections to the services, so that we all consume energy legally and pay a fair price for it.

The affiliated company **ESSA** carried out normalization works in 4,918 installations, through the Habitable Homes program. 13 settlements were intervened (940 users) recovering 1,021 GWh-year; in the Las Montoyas settlement in the municipality of Puerto Parra, 140 users with 423 MWh-year were recovered. Likewise, 1,582 two-piece prepayment meters were installed in informal settlements (invasions) and in recurrent installations.

**CENS** engaged 5,034 new users and managed to recover 14.01 GWh of energy.

The loss rate of **CHEC** was 8.92%, less than the levels accepted by the regulatory body. COP 4.70 billion were invested, which allowed recovering, through pricing, 100% of the losses to contribute to the company's sustainability.

Level-1 losses in **EDEQ** in 2016 were of 5.76%, 2.30 percentage points below what is accepted by the regulations for this voltage level. By the end of the year, it was possible to implement the planning of the on-site crew through the RI software, complemented by a diagnosis of the transformers that do not react at first.

In 2016, **Eegsa** reduced the level of losses by 7.7%, compared to 2015.

In this regard, **Delsur** developed the following activities: installation of 550 residential meters and 100 remotely operated industrial meters, construction of 5 theftproof networks, replacement of 10,879 obsolete electromechanical meters and installation and operation of 800 low-voltage macrometers. The invoicing increased by 5.62 GWh, thanks to supply regularizations.

**ENSA** strengthened the operational capability with a 50% increase of the annual inspection tasks of indirect customers.

In **EPM**, the gas loss rate in 2016 was 2.85%, achieving the goal which was 3.69%, as a result of the strict control of the amounts delivered by transporters in the nodes of entry to the different natural gas distribution systems through pipelines of EPM. Additionally, as part of the "Guardians of public utilities" Group project, it was possible to start producing the Rihana app for the detection of abnormal consumptions and then improve the control of users behaving fraudulently regarding the service.





Non-Revenue Water			
Company	2014	2015	2016
<b>EPM</b>	31.83%	31.87%	31.53%
<b>Aguas del Oriente</b>	18.86%	29.22%	41.05%
<b>Aguas Regionales</b>			
Western Region	31.44%	33.25%	34.94%
Urabá Region	58.14%	53.55%	48.38%
<b>Aguas de Malambo</b>	59.41%	67.71%	59.59%
<b>Adasa</b>	23.80%	24.80%	24.28%

Source: Vice-presidency of Water and Sanitation

Loss Rate per Billed User			
Company	2014	2015	2016
<b>EPM</b>	7.20	7.15	6.63
<b>Aguas del Oriente</b>	2.64	4.58	7.30
<b>Aguas Regionales</b>			
Western Region	8.35	8.84	8.81
Urabá Region	20.88	14.93	12.16
<b>Aguas de Malambo</b>	18.41	27.58	19.54
<b>Adasa</b>	7.80	7.10	6.90

Source: Vice-presidency of Water and Sanitation





Company / Indicator	2014	2015	2016
<b>EPM</b>			
Loss rate of the regulated network operator (LRRNO)	7.79	8.15	7.58
Commercial loss rate (CLR)	12.57	12.24	11.36
Loss rate in transmission	1.46	1.27	1.43
<b>CHEC</b>			
Loss rate of the regulated network operator (LRRNO)	9.57	9.40	8.47
Commercial loss rate (CLR)	13.74	13.12	12.81
<b>ESSA</b>			
Loss rate of the regulated network operator (LRRNO)	12.09	12.78	12.19
Commercial loss rate (CLR)	15.13	16.05	14.37
<b>CENS</b>			
Loss rate of the regulated network operator (LRRNO)	11.87	12.50	13.59
Commercial loss rate (CLR)	14.07	16.01	16.70
<b>EDEQ</b>			
Loss rate of the regulated network operator (LRRNO)	8.51	8.47	8.17
Commercial loss rate (CLR)	10.94	11.21	10.94
<b>Delsur</b>			
Delsur loss rate	8.77	8.69	9.26
Commercial loss rate (CLR)	8.78	8.75	9.33
<b>Eegsa</b>			
Loss rate of the regulated network operator (LRRNO)	5.71	5.35	5.04
<b>ENSA</b>			
ENSA loss rate	10.21	10.65	11.12

Source: Vice Presidency of Power Transmission and Distribution

LRRNO: Loss rate of the regulated network operator.

CLR- Commercial loss rate (Regulated Market).

NTSLR: National Transmission System loss rate (Regulated Market).



Gas Loss Management in EPM			
Indicator	2014	2015	2016
Gas loss indicator (%)	2.1%	3.7%	2.85%

Source: Vice Presidency of Gas

## Management indicators

**EPM-03**      Loss rate.



# Customer satisfaction

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In the national context, the EPM Group uses several tools to measure the satisfaction and loyalty of its customers, assess their perceptions, relationships, needs and experiences with the product, services and assistance for the different segments of defined customers.

The results are used to implement corrective and preventive actions, improve the processes, the relationship and the bond with customers, as well as to configure value offers adjusted to the needs of each segment.

The following are the tools used: satisfaction index, loyalty index, indicator of satisfaction with customer service channels, complaints and claims indicators, and reputation indicators.

## Management in 2016

In 2016, the EPM Group conducted a reputation assessment among its stakeholders, with a result in the GCRI (Global Corporate Reputation Index) of 846 points out of a maximum of 1,000.

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## Satisfaction and Loyalty:

The 2016 results show a decrease in the satisfaction and loyalty indicators, largely due to the impact of the cost perception on the value of the product, generated by situations such as El Niño and the measures resulting from the regulations issued by the national government within the framework of the “Turning off pays” campaign. This focus of attention—that had been mentioned in 2015—has been consolidated.

It should be noted that EPM has made an effort to provide alternatives that mitigate the cost perception such as the Pay According to Your Needs, micro-top-ups and credit in advance options in the prepaid electricity service.

By 2017, much of the work will focus on the basic elements of services, improving perceptions regarding response to damages and promoting understanding of the benefits of products and factors influencing the fee, to mitigate the impact of cost on satisfaction and loyalty.



The EPM Group has defined as one of its strategic focus the closeness with Customers and Users. In this sense, EPM will develop, in 2017, initiatives that will improve the customers' experience and, therefore, their satisfaction, among which are: scheduling of special activities of the commercial operation; "More Convenient Bill", to provide customers with relevant and specific information through the bill; the education and communication program, "We are there for you", with presence in 35 places of Antioquia; proactive conversations with customers through employees and contractors who have contact with them in the field, and analysis of the customer's experience with EPM in the actual relevant moments, in order to define and implement timely actions and thus, generate greater closeness with customers.

## Satisfaction and Loyalty Indicators

Indicators of satisfaction with customer service and complaints and claims channels:

**EPM** conducts, on a bimonthly basis, a survey of satisfaction, with the aim of understanding the perception of customers regarding customer service and thus, obtaining clear and timely information that allows for the implementation of improvement actions that will increase their satisfaction. Customers who approach the headquarters and call the hotline are surveyed in the corresponding month. With this, we try to ensure that the response given by customers is adjusted to their recent experience, in favor of the continuous improvement of the process. The results of the satisfaction survey were stable compared to those in 2015. Customer comments are analyzed to identify opportunities for improvement.

In the EPM Group's affiliates, there was a positive variation in the complaints and claims indicators compared to 2015. During 2016, the results of the indicators were monitored every month, identifying the most recurrent causes of complaints and claims to implement specific actions that will lead to improved behavior.

**Emvarias**, an affiliate company of the EPM Group, conducted, through the Colegio Mayor de Antioquia, a survey on the perception of the service provided by the company to citizens, in which a score of 4.62 out of 5 was obtained. With respect to the complaints indicator, there was an improvement of 11% compared to the previous year, as a result of a greater availability of collection vehicles and the impact of the "I Commit Myself" campaign, which focused on helping commercial users to be more aware on the appropriate way to put solid waste in public spaces.

In order to improve customer perception, the Chilean affiliate company, **Adasa**, focused on the communication of works and field activities and work feedback, while establishing greater contact with the community through visits to customers.

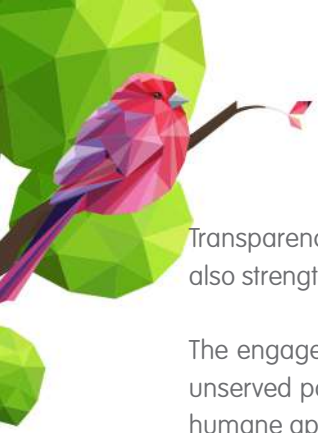
## Reputation

In 2016, the EPM Group conducted a reputation assessment among its stakeholders, with a result in the GCRI (Global Corporate Reputation Index) of 846 points out of a maximum of 1,000.

In 2016, the EPM Group's companies managed their relationships with stakeholders based on three material aspects: Transparency and disclosure of information, access to and purchasability of public utilities and water conservation.







Transparency and disclosure of information was the axis on which their relationship and communication revolved, also strengthening trust and familiarity.

The engagement plans developed activities on other material aspects such as climate strategy, biodiversity and unserved population. The value of the EPM brand focused on bringing stakeholders closer together from a more humane approach, to achieve greater familiarity with and trust in the initiatives of EPM and its affiliate companies, within a transparent relationship framework. Warmth, human sensitivity and responsibility are the values that characterize the process of closeness with all the stakeholders.

Satisfaction and Loyalty Results						
	Satisfaction Index			General Loyalty Index		
	2014	2015	2016	2014	2015	2016
EPM Group	79.9	79.3	77.7	78.5	77.1	75.9
General EPM	80.6	80.3	78.8	80	78.3	77.9

Source: Commercial Vice Presidency

The EPM Group has focused on the Loyalty indicator as the best tool that consolidates the relationship and bond with its customers and users, through our value offer that seeks to meet their needs and create relationships of mutual benefit. The model includes dimensions of attitude and behavior. Attitude measures the satisfaction with the attributes of the value offer, while behavior establishes the evolution of the relationship and bond that is created. Starting in 2016, it is decided to weigh global indicators based on the entry of segments and affiliates; therefore, the complete historical data series presented is recalculated.

EPM satisfaction index			
Service	2014	2015	2016
Distribution - EPM	87.9	87	84
Water Supply - EPM	88.6	86.4	84.1
Wastewater - EPM	87.3	86.4	81.2
Gas - EPM	91.7	89.2	89.3
<b>Commercial services - EPM</b>	74.7	73.2	68.3
Complaints	62.6	60.6	54.2
Claims	66.8	61.7	55.9
Customer service points	82.7	81.9	78
Hot lines	79.5	81	78.6
Bill	83.1	81.2	75.9

Source: Commercial Vice Presidency



Companies	Satisfaction Index			General Loyalty Index		
	2014	2015	2016	2014	2015	2016
Aguas del Oriente	86.90	84	83.40	82.50	74.40	66.90
Aguas de Occidente	78.90	71	72.30	75	70.30	72.10
Aguas de Urabá	59.20	56	57.70	68.50	64.20	63
Aguas de Malambo	51.30	61.5	62.30	58.50	65.00	58.20

Source: Commercial Vice Presidency

Emvarias still does not measure its satisfaction index based on the study of satisfaction and loyalty used for the other companies of the Group in the national context.

Satisfaction indicators are general per company, not per service.

Starting in 2016, it is decided to weigh global indicators based on the entry of segments and affiliates; therefore, the complete historical data series presented is recalculated.

Satisfaction and Loyalty - Energy affiliate companies						
Companies	Satisfaction Index			General Loyalty Index		
	2014	2015	2016	2014	2015	2016
CHEC	80.80	80	80.90	75.70	72.30	74.90
EDEQ	78.40	75.10	77.60	74.50	73.90	73.30
ESSA	77	76.20	73.30	74.20	74.10	68.20
CENS	79.30	76.80	72.90	73.70	74.60	70.10

Source: Commercial Vice Presidency

Satisfaction indicators are general per company, not per service.

Starting in 2016, it is decided to weigh global indicators based on the entry of segments and affiliates; therefore, the complete historical data series presented is recalculated.

Complaints and Claims - EPM			
Service	2014	2015	2016
Complaints - EPM	7.3	6.5	6.5
Claims - EPM	2.5	2.4	2.3

Source: Commercial Vice Presidency

The complaints indicator measures the ratio between the number of complaints that are EPM's responsibility and the number of total customers, per 10,000 customers. The claims indicator measures the ratio between the number of modifications made in the bill due to causes attributable to the company and the total number of bills issued, per 10,000 customers.



Complaints and claims in water supply and sanitation affiliate companies			
Company / Indicator	2014	2015	2016
<b>Aguas Regionales - Western Region</b>			
Complaints	6.1	4.1	2
Claims	3.0	4.5	2.8
<b>Aguas Regionales - Urabá Region</b>			
Complaints	18.6	10.7	4.6
Claims	15.8	8.7	7.6
<b>Aguas del Oriente</b>			
Complaints	5.4	6.7	6.4
Claims	1.4	8.5	4.1
<b>Aguas de Malambo</b>			
Complaints	11.9	23.3	23.7
Claims	14.9	14.6	26.6
<b>Envvarias</b>			
Complaints	N.D.	8.7	5.4
Claims	N.D.	2.5	3.1

Source: Vice Presidency of Water Supply and Sanitation

Complaints and claims in energy affiliate companies			
Company / Indicator	2014	2015	2016
<b>CHEC</b>			
Complaints	1.87	1.09	1.03
Claims	4.09	3.65	3.63
<b>ESSA</b>			
Complaints	0.09	2.24	2.47
Claims	9.77	8.61	7.15
<b>CENS</b>			
Complaints	0.52	0.59	0.76
Claims	6.82	7.49	8.51
<b>EDEQ</b>			
Complaints	0.21	0.30	0.31
Claims	1.22	1.10	0.74
<b>Delsur</b>			
Complaints	6.23	6.05	5.17
<b>Eegsa</b>			
Complaints	109	87	83
Claims	3,561	2,191	2,172
<b>ENSA</b>			
Complaints	N.D.	7.58	1.12

Source: Vice Presidency of Power Transmission and Distribution

The energy affiliate companies in Central America have an indicator with a different structure compared to that of the affiliates in Colombia.



Global corporate reputation index (GCRI)		
Company / Indicator	2014	2016
EPM Group	847	846
EPM	875	879
ESSA	784	821
CHEC	842	855

Source: Communication and Corporate Relations VP

## Management indicators

- G4-PR5** Results of surveys measuring customer satisfaction.
- EPM-05** Grievance indicator.



## Reliability in the provision of the service

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Operational excellence is one of the EPM Group's strategic focuses in the provision of services. For that purpose, the group develops prevention, mitigation and risk control plans, as well as contingency plans to handle events, applies methods and technologies with quality standards and carries out educational actions to ensure the adoption of practices that guarantee the integrity of infrastructure and the safety of employees, users and the community.

### Management in 2016

As part of the provision of the energy service, the EPM Group conducts studies and practices to continuously improve the management of warnings and optimal risk assessments.

The decrease by 46.6% of the number of electrical events occurring in ESSA during 2016 is emphasized.



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The energy service companies of the EPM Group comply with the current applicable legal regulations and administer the required resources to mitigate and control the hazards identified for the comprehensive welfare of employees, contractors and the community, ensuring sustainable development and productivity.

Investment plans include relocation of infrastructure because of electrical risks for the community in sites such as substations (because of urban enclosure, land instability, safety distances, etc.) and lines (because of easement invasion, land instability, etc.). Since the project formulation, the optimal location of substations, the appropriate enclosures, the potential risks and the optimal line routes, among others, are evaluated considering the environmental and social management of the impacted territories. The Retie (technical regulations for electrical installations) are applied to ensure the safety of people. The system expansion plans include the repowering of lines with detours in their routes to avoid problems associated with easement invasions and to mitigate electrical risks.

In 2016 **EPM** carried out activities as part of the Occupational Health and Safety Management System, which allows employees, suppliers and contractors to have work environments based on self-care, well-being and calm. The programs of modernization of substations, in both the region and the metropolitan area, were strengthened ensuring the compliance with the Retie, the automation of equipment, the safety of the system and the people and the reliability of the service.

**CENS:** no occupational fatalities were reported during 2016. The sixth version of the occupational health and safety week took place; contractors were included. During the event "Legal Updating on Occupational Health and Safety" addressed to contractor firms, auditors and employees of CENS, 99 people from 54 contractor firms, 44 internal auditors and members of the Copasst of the 5 regional offices of the company participated.





**CHEC:** 62,732 people participated in educational, training and social management activities that were carried out in 2016. Of the total number of deaths caused by electrical accidents in 2016, none were from the company or its contractors.

**EDEQ:** the goal of 0.26 in the DIFR (disabling injury frequency rate) was achieved and there was a reduction in relation to the last three years. There were no fatal or serious accidents caused by works at heights, electrical hazards or enclosed spaces.

**Eegsa:** fatalities or life-altering accidents were not reported. The regulations for occupational health and safety contractors were reviewed, the contractor convention was carried out and there were permanent meetings with the representatives of the contractor firms.

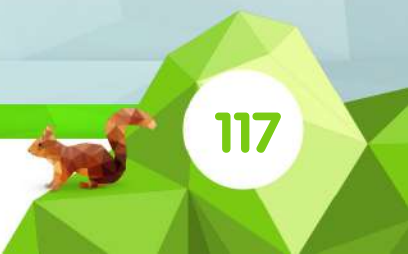
**Delsur:** in 2016, the School of Technical Training of Delsur was implemented, which provides specialized training to the staff directly connected with the operations of the company. There were training activities for the community, customers and users, as well as a periodic inspection of primary circuits to detect their condition, check safety distances of the conductors, transformers and structures or any other situation that may pose risks. In the same way, insulating material was installed in conductors and transformers, and there was a systematic pruning of trees per primary circuit.

In the water services of **EPM**, the emergency and contingency plans were implemented for water supply and sewerage, emergency drills were carried out in the processes of waste water transport and raw water catchment, and the business risk management was monitored.

Water companies continued the physical and chemical and microbiological analyses to ensure the drinking water supply and prevent diseases that affect the quality of life of the inhabitants. Additionally, preventive activities were carried out to avoid third-party accidents of deaths, as part of the NEGC1300 (General Standards and Specifications on Construction) impacting the community:

1. Appropriate signage in the works.
2. Use of personal protective equipment by employees and contractors.
3. Avoid leaving open holes and cover them the same day they are opened.
4. Light signals for works done overnight in high-traffic roads.
5. Awareness program for the community when a project is going to be executed.
6. Inspection of the water supply, sewerage and gas network plans before executing a technical intervention.

**Emvarias** has vehicles that meet the provisions of Decree 1077 of 2015, which states the guidelines for the provision of the waste collection public service. With the purpose of reducing accidents, it formulated the road safety strategic plan.





**EPM** carried out preventive and corrective actions to ensure the safety in the operation of the gas service infrastructure and promoted safe practices among the service users:

- Through the inspection agency hired by the company for the periodic inspections of the gas installations, EPM inspected and certified 153,780 installations.
- The “Call before You Dig” program was implemented to reduce damages to third parties on the gas distribution lines. In this regard, awareness has been raised in contractors, companies, physical infrastructure offices, public works and planning offices, EPM’s dependencies, firefighters, the Red Cross, the civil defense of the metropolitan area of Medellín and Urabá, construction companies and third parties.
- 23,176 requests from users and the community dealing with possible damages to the gas pipeline infrastructure or the houses’ internal installations were addressed in 2016, of which 3,180 were high-priority and 19,996 medium- and low-priority

EPM paid 12 million Colombian pesos in 2016 to the Superintendency of Residential Public Utilities on account of fines concerning requests and grievances file.

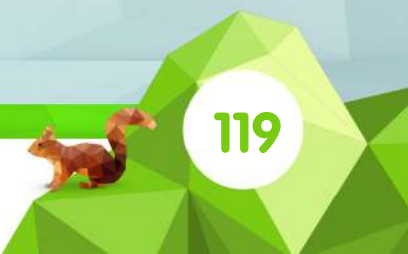
<b>Incidents and grievances due to service provision - EPM</b>			
	<b>2014</b>	<b>2015</b>	<b>2016</b>
Incidents or grievances due to harms or injuries to people, filed in the year.	49	39	54
Incidents or grievances due to harms or injuries to people, closed in the year in favor of EPM.	35	32	17
Incidents or grievances due to harms or injuries to people, closed in the year in favor of the claimant.	6	7	5
Incidents due to deaths in the year in favor of the claimant.	8	0	0
Incidents or grievances due to damages to fixtures, filed in the year.	1,641	1,328	1,348
Incidents or grievances due to damages to fixtures, closed in the year in favor of EPM.	858	802	903
Incidents or grievances due to damages to fixtures, closed in the year in favor of the claimant.	538	569	374

*Source: Legal Management, Customer Service Management*



### Incidents and grievances due to service provision - Water and sanitation affiliated companies

	Aguas del Oriente		Aguas Regionales		Aguas de Malambo		Emvarias		Adasa	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Incidents or grievances due to harms or injuries to people, filed in the year.	0	0	0	0	0	0	5	9	0	0
Incidents or grievances due to harms or injuries to people, closed in the year in favor of the EPM Group.	0	0	0	0	0	0	0	0	0	0
Incidents or grievances due to harms or injuries to people, closed in the year in favor of the claimant.	0	0	0	0	0	0	1	4	0	0
Incidents due to deaths in the year in favor of the claimant.	0	0	0	0	0	0	0	0	0	0
Incidents or grievances due to damages to fixtures, filed in the year.	0	0	0	0	0	0	0	85	0	749
Incidents or grievances due to damages to fixtures, closed in the year in favor of the EPM Group.	0	0	0	0	0	0	0	0	0	338
Incidents or grievances due to damages to fixtures, closed in the year in favor of the claimant.	0	0	0	0	0	0	0	75	0	237
Number of resources related to the service provision, filed by customers.	14	15	60	334	0	28	5	0	0	0
Number of fines due to regulatory non-compliance (filed by the Superintendency of Residential Public Utilities).	0	0	1	0	3	0	0	0	0	5
Number of fines due to regulatory non-compliance (filed by the Superintendency of Industry and Commerce).	0	0	0	0	0	0	0	0	0	0
Number of fines due to regulatory non-compliance (filed by the Financial Superintendency).	0	0	0	0	0	0	0	0	0	0
Number of fines due to regulatory non-compliance (filed by the Office of the Comptroller).	0	0	0	0	0	0	0	0	0	0
Number of fines due to regulatory non-compliance (filed by other entities).	0	0	0	2	0	0	0	0	0	0
Amount of fines due to regulatory non-compliance (million COP).	0	0	0	394	5	0	0	0	0	465



### Incidents and grievances due to service provision - Water and sanitation affiliated companies

	Aguas del Oriente		Aguas Regionales		Aguas de Malambo		Emvarias		Adasa	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
	Number of incidents due to regulatory non-compliance in advertising and marketing communication.	0	0	0	0	0	0	0	0	0

Source: Vice-presidency of Water and Sanitation

In Chile the monitoring and control entity is called Superintendency of Sanitary Services (SISS). Incidents or grievances due to damages to third parties are considered claims for compensation. Incidents or grievances due to damages to fixtures, closed in the year in favor of the company, are considered claims without arguments; and incidents or grievances due to damages to fixtures, closed in the year in favor of the claimant, are considered claims in favor of the customer.

### Incidents and grievances due to service provision - Energy affiliated companies

	CHEC		ESSA		CENS		EDEQ		Delsur		Egsa		ENSA	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Incidents or grievances due to harms or injuries to people, filed in the year.	10	11	5	9	2	6	8	3	0	0	39	46	42	57
Incidents or grievances due to harms or injuries to people, closed in the year in favor of the EPM Group.	0	5	5	5	2	6	2	3	0	0	0	0	0	0
Incidents or grievances due to harms or injuries to people, closed in the year in favor of the claimant.	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Incidents due to deaths in the year in favor of the claimant.	1	1	0	1	0	0	0	0	0	0	1	0	0	0
Incidents or grievances due to damages to fixtures, filed in the year.	386	296	1,121	870	143	32	15	288	163	175	172	215	2,679	2,888



### Incidents and grievances due to service provision - Energy affiliated companies

	CHEC		ESSA		CENS		EDEQ		Delsur		Egsa		ENSA	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Incidents or grievances due to damages to fixtures, closed in the year in favor of EPM.	289	228	397	694	87	19	7	175	115	119	74	69	1,993	2,034
Incidents or grievances due to damages to fixtures, closed in the year in favor of the claimant.	97	68	365	176	56	13	8	103	48	56	98	146	686	853
Number of resources related to the service provision, filed by customers.	517	0	852	1,465	332	871	4,859	0	0	0	61	0	255	0
Number of fines due to regulatory non-compliance (filed by the Superintendency of Residential Public Utilities).	4	0	12	11	1	1	0	3	0	0	0	0	2	0
Number of fines due to regulatory non-compliance (filed by the Superintendency of Industry and Commerce).	0	0	0	0	0	0	0	0	0	0	N.A.	N.A.	0	0
Number of fines due to regulatory non-compliance (filed by the Financial Superintendency).	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of fines due to regulatory non-compliance (filed by the Office of the Comptroller).	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of fines due to regulatory non-compliance (filed by other entities).	1	0	0	3	0	1	0	0	0	0	3	3	0	2



### Incidents and grievances due to service provision - Energy affiliated companies

	CHEC		ESSA		CENS		EDEQ		Delsur		Egsa		ENSA	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Amount of fines due to regulatory non-compliance (million COP).	364	0	0	271	105	13	0	155	0	0	0	73	4	62
Number of incidents due to regulatory non-compliance in advertising and marketing communication.	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Vice Presidency of Power Transmission and Distribution

### Incidents in the provision of the energy service

	2014	2015	2016
<b>EPM</b>			
No. of accident victims	38	21	26
No. of deaths caused by electrical accidents	9	8	6
No. of fire victims due to electrical accidents	17	9	13
<b>ESSA</b>			
No. of accident victims	15	15	8
No. of deaths caused by electrical accidents	4	3	1
No. of fire victims due to electrical accidents	10	6	3
<b>CENS</b>			
No. of accident victims	13	9	112
No. of deaths caused by electrical accidents	1	3	0
No. of fire victims due to electrical accidents	2	3	0
<b>CHEC</b>			
No. of accident victims	10	19	24
No. of deaths caused by electrical accidents	3	6	1
No. of fire victims due to electrical accidents	7	13	18
<b>EDEQ</b>			
No. of accident victims	5	3	19
No. of deaths caused by electrical accidents	0	0	0
No. of fire victims due to electrical accidents	4	2	0



Incidents in the provision of the energy service			
	2014	2015	2016
<b>Eegsa</b>			
No. of accident victims	103	39	63
No. of deaths caused by electrical accidents	4	6	7
No. of fire victims due to electrical accidents	4	4	6
<b>Delsur</b>			
No. of accident victims	11	9	8
No. of deaths caused by electrical accidents	1	0	0
No. of fire victims due to electrical accidents	7	7	5

Source: Vice Presidency of Power Transmission and Distribution

## Management indicators

- G4-PR2** Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes.
- G4-EU25** Number of injuries and deaths involving the organization's assets, including legal sentences, settlements and pending legal cases of diseases.



## Customer service

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Customer service at the EPM Group is based on providing our customers with satisfying experiences when interacting with the company. To do this, we have different service schemes to address all the requirements.

EPM offers multiple options to their customers: customer service offices, online representatives, free customer service hotline 24/7, written assistance via mail, website and specialized assistance to constructors and property administrators.

### Management in 2016

EPM has 151 face-to-face customer service offices, online representatives (remote assistance), free customer service hotline 24/7, virtual assistance (chat) and written assistance (written communication and requests through the website).

For collection, it has different payment methods for customers: collection through teller windows, credit card terminals, mobile network, website, non-banking correspondents, collection centers and mobile app.



**EPM** implemented in 2016 the scheme of self-management modules so that customers themselves can generate the payment coupon, which substantially improves the customer service time in the offices regarding this transaction. There are 40 modules installed, each one of them with a touch-screen PC and a thermal printer that generates a strip-shape coupon with all the required information for the payment.

The development and improvement of the in-office virtual customer service scheme continued, through which remote assistance by videoconference interaction is provided to customers who are in offices of high-flow of users, with the purpose of improving customer service times. By the end of 2016, there were 59 modules of this type.

To improve the customer service spaces, nine offices were moved: Carmen de Atrato, Itagüí, Titiribí, San Pedro de Urabá, Carepa, Andes, Copacabana, San Pedro de los Milagros and Sabanalarga.

The website is a channel that enables customer-company prompt interaction; requests submitted by customers through the website increased by 30% in 2016, from 6,520 in 2015 to 8,484 in 2016.



In 2016, an inter-administrative agreement with the Superintendency of Notary and Registry was signed to access the databases of public records online with the purpose of querying data relating to ownership of properties and, in that way, enable a prompt procedure for users. Likewise, the Confec amaras platform was enabled to query the certificate of incorporation and legal representation available in all chambers of commerce nationwide, so that the company does not have to request this document to the customers.

The customer service process of the EPM Group is standardized in the affiliated companies of Colombia, with the purposes of achieving high standards of service and assistance, complying with the due process and reducing the risks of impact of public resources. Annual inspections are conducted in order to check its operation and identify improvement opportunities that favor the customer.

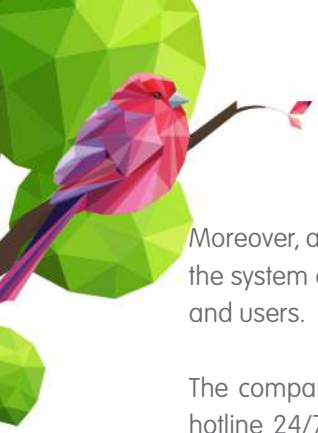
The affiliated company **EDEQ** of the EPM Group offers customer service through written assistance (written communications, e-mail and website), chat online, 13 points of customer service in the department of Quind o and free customer service hotline. In 2016, the queue management system was implemented in the 13 customer service offices, and progress was made to implement the virtual advisor, the virtual kiosk and the payment with the user identification number (UIN). Moreover, the customer service offices were remodeled with the brand and current corporate image.

**CHEC** has 40 customer service offices in Caldas and Risaralda, free customer service hotline, written assistance (written communications, e-mail and website) and chat online.

**ESSA**, affiliated company of the EPM Group in Santander, is present in 94 municipalities with 80 offices and 14 agreements with municipal administrations, virtual kiosks, mobile offices, free customer service hotline 24/7, virtual assistance (chat) and written assistance (written communication and requests through the website).

The company carried out the following actions to improve customer service in 2016:

- Enabled, from the contact center, the online assistance chat appearing on the website and the app 24/7.
- Designed a tool on the website that allows constructors the possibility to schedule an appointment with the employees of ESSA to speed up the solution of concerns and coordinate appointments for the review of electrical projects.
- Implemented the App Store technology: design of the ESSA app in mobile devices that, with an Android, iOS or Windows Mobile system, will allow any user to perform the following actions:
  - Consultation of value to pay, number of bill and due date and online payment through the PSE option.
  - Consultation of scheduled cutoffs, fee structure, fees, connection costs, customer service offices and identity of contractors and employees.
  - Access to online chat and free communication with contact center.
  - Generation of barcode for payment with mobile device.
  - Reception of RCCs (requests, claims and complaints).
  - Electronic signature of customers and users. With this implementation, the digital record of the documents generated in the transactions performed through the face-to-face channel can be obtained real time.
  - Electronic submission of bills: it is executed through the contact center when customers and users request copies, installments or balances.



Moreover, an inter-administrative agreement with the Superintendency of Notary and Registry was signed to access the system of information of records with the purpose of querying the identification of the properties of customers and users.

The company **CENS** (Norte de Santander) has 51 customer service offices, mobile office, free customer service hotline 24/7, virtual assistance (chat) and written assistance (written communication and requests through the website). The company carried out the following actions to improve customer service in 2016:

Opening of an additional customer service office located in Cúcuta's downtown. Two offices implemented two customer service modules to improve service times.

The implementation on early stages of a self-service kiosk where customers access the module, without any turns, to generate installments of 70%, copies of the bills and overdrafts.

For its part, **Emvarias** has the following assistance channels:

- Face-to-face: the offices were remodeled in 2016 to offer the citizens a more appropriate space to address their RCCs (requests, claims and complaints). Additionally, there is an online virtual assistance channel and, in order to assist citizens who require proofs of payment, an additional face-to-face assistance module was implemented, for a total of three face-to-face modules.
- Hotline: the company has seven advisors.
- Written: it has two e-mail boxes where RCCs are received.

**Adasa**, in Chile, has the following assistance channels:

- Commercial offices in Antofagasta, Calama, Tocopilla, Taltal and Mejillones.
- Mobile office that can be moved to other places.
- Call center and Twitter available 24 hours each day of the year.
- External payment centers where bills can be paid, such as Servipag, Líder, Unimarc, CajaVecina, Sencillito and ServipagExpress, and websites such as Banco Santander, Aguas Antofagasta, Servipag and Banco Estado.

The energy company **ENSA** implemented in 2016 the use of Twitter as a new channel and automatized the password service for the "Check your account" section.

The company **Delsur** has several customer service channels. The main channels are the new face-to-face customer service centers, the hotline through the contact center and the chat assistance through the website.

65% of the **Delsur** collection is through external collectors and 35% through the 9 points of payment owned by the company, and the mobile office.

In 2016, **EPM** continued the implementation of the collection online to ensure the application of payment real time; 75% of all the bills were collected through this channel. Non-effective cutoffs are avoided and the time spent to reconnect the customers who pay their defaulting bills is optimized.





These are the main actions by **EPM**:

- As a result of the management to increase payments through electronic means, 36,000 new customers started using this method.
- Implementation of the service of credit in advance, which allows prepaid energy users to add a credit of COP 2,000 in advance, which are deducted from the next top up.
- Negotiation of the prepaid energy collection service for EPM with new entities. In this way, 8,000 new points of collection were put at the service of customers. Likewise, coverage increased in more number of points of payment of the bill in rural settlements and small towns.
- Negotiation with collection entities to not to increase the CPI, which allowed saving COP 261 million in the cost of the prepaid energy collection service in 2016.
- Implementation of the service of credit in advance, which allows prepaid energy users to add a credit of COP 2,000 in advance, so that power is not cut off to them; this money is deducted from the next top-up payment.
- Stabilization of the prepaid water collection service.
- Implementation of payment of bills through the website of the affiliated companies of the Group in Colombia.

In 2016, the companies of the EPM Group continued working on the strengthening of processes to ensure the appropriate data management in accordance with the regulations. The following actions were developed in EPM:

- Design and incorporation, into the contracting bid specification model of EPM, of the international personal data transfer to comply with the provisions of the regulations referring to the treatment of data outside the Colombian territory.
- Design of a template to fill in the information of the inventoried databases in compliance with the national registry of databases.
- Preparation of the Habeas data procedure in EPM and its affiliated companies.
- Implementation of the Accountability Guidelines of the Superintendency of Industry and Commerce. Initial stage of the design of the program documentation with issues such as training and awareness-raising, publication media, review of policies, inventory of databases, risk map, privacy notices, authorizations, etc.
- Definition of the risk matrix in workshops with the people responsible for each database.

The diagnosis in terms of protection of personal data in the affiliated companies ESSA, CENS, Emvarias and Aguas Nacionales.

EPM did not receive requests or complaints in 2016 regarding breaches of customer privacy and leaks of customer data.

## Management indicators

- |               |  |
|---------------|--|
| <b>G4-PR8</b> | Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data. |
| <b>EPM-04</b> | Customer service channels.   |

# Responsible contracting for local development

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## Responsible contracting for local development

Contracting criteria and practices that promote sustainable development and competitiveness of the territories where the EPM Group operates.

### Stakeholders Vision

Development of local capacities and sustainability of the territories where the EPM Group is present, through practices that promote the local business fabric.

### Importance

It is a fundamental tool to leverage sustainability and competitiveness of the territories. It involves the recognition of the potential of suppliers and contractors and the generation of local capacities. Additionally, it potentially improves economic dynamics with revenues for the community and promotes the local business fabric.

It contributes to:

- Strengthening stakeholders trust and engagement.
- Responding from business actions to expectations of the society.

### Main achievements

Goals for 2016	Achievements for 2016	Compliance
Defining a local contracting goal in the national subsidiaries of the EPM Group to guide the contracting process during 2017 and subsequent years.	The goal was not fulfilled in 2016, due to contextual and regulatory changes. During 2017, the Group will work on the regulatory and procedural framework, in order to enable a target for 2018 in social, local and regional contracting.	Not met



Goals for 2016	Achievements for 2016	Compliance
Approval of wage floors with management (governance) scheme and methodology for EPM by the Planning Committee. The approval must be supported with the resources allocation by the Vice Presidency of Shared Services and Supplies and the Vice Presidency of Human Development and Organizational Capabilities.	The wage floors project reached the stage of definition of activities and resources, but due to the Decree 583 of 2016, which regulates work outsourcing in Colombia, and the Resolution 5670 of the same year, EPM decided to give priority to the outsourcing project and, depending on the findings, define the impact and way to proceed with the homologation or not of the wage floors.	Not met
Structuring a "sustainable ecosystem of suppliers." It means articulating different existing initiatives and spaces of work with suppliers (Sapiencia, Energy Cluster, Global Compact), in order to leverage their development and seek the organization's competitiveness and sustainability.	The initiative was presented internally (EPM affiliate) and externally (potential anchor companies).  A schedule was established to develop the 2016 and 2017 activities.	Total
Identifying suppliers with a high level of social and environmental sustainability risks, in order to guide them in the implementation of improvement actions.	During 2016, a methodology to identify risks and raise awareness on this matter was established. The challenge for 2017 will be the identification and the respective analysis of results.	Total
Designing a policy that directs the implementation of an outsourcing scheme within the EPM Group, with balanced relationships among the parties: contractor, contractor worker or outsourced worker, and companies of the EPM Group.	Due to changes in the administrative structure and the allocation of resources for the development of the initiative, the policy was not approved for this year.	Not met
Defining a baseline for the contractors' employees' commitment index.	The Group worked on the design of a measurement model under the emphasis for 2016 - 2019: closeness with suppliers and contractors. Different proposals of suppliers were analyzed for this measurement, as well as the qualitative studies with nine focal groups before conducting the quantitative study.	Total
Ensuring the capture of budget savings and expected benefits, and seeking to achieve additional synergies that enable the Group to get profits in advance from the project business plan.	With the savings obtained in 2016, the cumulative goal was exceeded by 2%.	Total



Goals for 2016	Achievements for 2016	Compliance
Implementing a methodology for assessing the performance of contractors in 80% of the international operating affiliates of the EPM Group.	Implementation at the international level will take place in 2018 due to delays in implementation at the national level.	Not met

## Challenges

Challenge	Year in which it was achieved	Scope and Coverage			Achievement indicator
		Geography	Business	Company	
Capture of benefits in the supply chain.	2017	All the geographies	All the businesses	All the companies	Compliance of the indicator of benefits.
Implementation of the Ariba system.	2017	Colombia	All the businesses	All the companies	Compliance with the project schedule.
Unification of the master of goods and services for the EPM Group - Cataloging.	2017	Colombia	All the businesses	All the companies	Compliance with the project schedule.
Definition of a measurement model to improve and strengthen relationships with suppliers and contractors.	2017	Colombia	All the businesses	All the companies	Definition of a new indicator.
Structuring of a "sustainable ecosystem of suppliers and contractors." It means articulating different existing initiatives and spaces of work with suppliers (Sapiencia, Energy Cluster, Global Compact), in order to leverage their development and seek the organization's competitiveness and sustainability.	2017	Colombia	All the businesses	All the companies	Compliance with the initiative schedule.



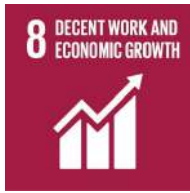




## Management indicators

<b>G4-EC9</b>	Proportion of spending on local suppliers at significant locations of operation.
<b>EPM-06</b>	Number and value of social contracting contracts.
<b>EPM-07</b>	Number, value and type of contracts at EPM Group.
<b>EPM-08</b>	External employment generated in EPM Group's contracts.
<b>EPM-09</b>	Suppliers' satisfaction.

## Sustainable development goals



## Impact on the contracting process

Besides meeting the operational and administrative needs of the organization, the process of contracting goods and services aims to support social and environmental policies to contribute to the development of sustainable and competitive territories in the areas where the EPM Group operates.

### Management in 2016

Implementation of new mechanisms for the engagement with suppliers and contractors, which allows the improvement of contracting processes and optimization of times.

Management of joint purchases among national and international affiliated companies, in order to achieve benefits, administrative efficiencies and economies of scale.



EPM Group total contracting				
Company	2015		2016	
	Number of contracts	Value of the contracts (Million COP)	Number of contracts	Value of the contracts (Million COP)
EPM	34,118	3,662,004	29,901	2,075,153
CENS	398	171,935	512	171,529
CHEC	313	102,486	1,300	144,600
EDEQ	387	31,260	373	29,539
ESSA	892	236,037	697	450,876
Aguas de Malambo	67	2,175	67	6,083
Aguas Regionales (Aguas de Urabá and Aguas de Occidente)	225	28,870	135	17,612
Aguas Nacionales EPM	8	17,809	7	178,808
Empresa de Aguas de Oriente Antioqueño	51	1,023	51	761
Empresas Públicas del Oriente Antioqueño	16	139	0	0
Emvarias	141	64,570	155	141,955
Ticsa	43	79,981	123	43,341
Delsur	0	0	220	10,516



EPM Group total contracting				
Company	2015		2016	
	Number of contracts	Value of the contracts (Million COP)	Number of contracts	Value of the contracts (Million COP)
Adasa	0	0	83	91,011
EPM Chile	8	1,065	6	325
HET	24	2,405	N.D.	N.D.
ENSA	979	499,057	N.D.	N.D.
Eegsa	415	84,806	271	47,639
<b>EPM Group total contracting</b>	<b>38,085</b>	<b>4,985,622</b>	<b>33,901</b>	<b>3,409,748</b>

Source: Vice Presidency of Shared Services and Supplies

Numbers and values correspond to the contracts of each year. In 2016, the affiliates Aguas de Urabá and Aguas de Occidente merged into Aguas Regionales.

Types of contracts in Colombian companies of the EPM Group				
Company	2015		2016	
	Number of contracts	Value of the contracts (Million COP)	Number of contracts	Value of the contracts (Million COP)
Supply of goods and services	24,122	2,519,132	21,406	952,905
Construction contracts	239	624,217	150	654,044
Provision of services	1,690	736,083	1,529	935,779
Movables and small purchases	258	131,743	294	275,826
Consultancy	99	76,016	93	49,738
Advertising agreements	79	45,701	182	56,387
Other	10,129	185,416	9,544	292,237
<b>Total</b>	<b>36,616</b>	<b>4,318,308</b>	<b>33,198</b>	<b>3,216,915</b>

Source: Vice Presidency of Shared Services and Supplies

Numbers and values correspond to the contracts of each year at the national level.

## Contracting by modality

The value contracted through public modality is superior to those of private and single modalities, which represents up to 60% of the contracts managed by the EPM's supply chain.



In the number of contracts, the figure is higher for contracts through single and private request for proposals, since these modalities are implemented in the following cases: supplies for the procurement department, services of the medical and dental service unit, fuel supply for the fleet of cars, and other processes for which the public modality does not apply; therefore, they are not managed through the supply chain.

Contracts by modality in Colombia				
Modality	2015		2016	
	Number of contracts	Value of the contracts (million COP)	Number of contracts	Value of the contracts (million COP)
Public request for proposals	8,045	2,576,571	8,433	1,801,814
Private request for proposals	26,669	728,681	22,466	671,024
Single request for proposal	1,876	832,290	2,299	744,077
Non-binding offer request	26	180,766	0	0
<b>Total contracting by modality</b>	<b>36,616</b>	<b>4,318,308</b>	<b>33,198</b>	<b>3,216,915</b>

Source: Vice Presidency of Shared Services and Supplies

Numbers and values correspond to the contracts of each year.

## External jobs

It corresponds to the external persons linked to the EPM Group by contracts and subcontracts of work, service and consultancy, among others that present a high labor component.

For the EPM Group is important to determine this type of measurements, since they allow it to supervise the quality, stability and equity of the jobs created, in accordance with the Group's sustainability purpose and its relationship with this group.

External jobs of the EPM Group in Colombia		
Company	2015	2016
EPM	19,757	18,609
Aguas Regionales	217	262
Aguas Nacionales EPM	486	1,968
Empresa de Aguas de Oriente Antioqueño	1	5
Emvarias	832	2,382
Aguas de Malambo	36	105
CHEC	1,349	2,286
CENS	1,001	586



External jobs of the EPM Group in Colombia		
Company	2015	2016
ESSA	1,141	2,857
EDEQ	353	549
<b>Total external jobs created</b>	<b>25,174</b>	<b>29,610</b>

Source: Vice Presidency of Shared Services and Supplies

Only employment contracts valid during 2016 in Colombia are included. In 2016, the affiliates Aguas de Urabá and Aguas de Occidente merged into Aguas Regionales.

## Management indicators

- G4-12** Describe the organization's supply chain.
- EPM-07** Number, value and type of contracts at EPM Group.
- EPM-08** External employment generated in EPM Group's contracts.





# Local, regional, national and foreign contracting

The origin refers to the place where contracted suppliers are located. It indicates whether the supplier is local, regional, national or foreign.

For the EPM Group, a **local** supplier is the one located in the municipalities, small towns and rural settlements covered by the metropolitan area of the company under evaluation. A **regional** supplier is understood as the supplier based in the same region of the company that supplies, but outside the metropolitan area. The **national** supplier is the one operating in several departments. **Foreign** suppliers are those located outside the country.

## Management in 2016

In 2016, the EPM Group signed contracts for COP 3.21 trillion, of which 37.8% were awarded to local suppliers, 3.45% to regional suppliers, 55.18% to national suppliers and the remaining 3.6% to foreign suppliers.

Contracts of the EPM Group in Colombia amounted to COP 3.10 trillion.

In relation to 2015, there was a 9% increase in the value of national contracts, which contrasts with a 3% reduction in the number of contracts. The difference is thanks to administrative efficiencies achieved through the integration of contracts, grouping of processes, standardization of activities, integration of areas, projection of contracts in a longer term and realization of joint purchases.

There was a decrease in foreign contracting in terms of value (34%), in contrast to an increase in the number (13%).

Number of contracts by origin			
Origin of the contractors	2014	2015	2016
Local	N.A.	N.A.	24,976
Regional	37,074	30,173	1,939
National	7,934	6,396	6,230
Foreign	114	47	53
<b>Total type of contracting</b>	<b>45,122</b>	<b>36,616</b>	<b>33,198</b>

Source: Vice Presidency of Shared Services and Supplies



Value of contracts by origin (million COP)			
Origin of the contractors	2014	2015	2016
Local	N.A.	N.A.	1,215,150
Regional	2,156,690	2,518,166	110,956
National	1,255,415	1,624,997	1,774,998
Foreign	208,937	175,141	115,811
<b>Total</b>	<b>3,621,043</b>	<b>4,318,308</b>	<b>3,216,915</b>

Source: Vice Presidency of Shared Services and Supplies

Classification of contracts was reconfigured in 2016. In previous years, regional contracts included local contracting; however, local and regional suppliers constitute now different categories.

## Management indicators

- G4-EC9** Proportion of spending on local suppliers at significant locations of operation.
- G4-12** Describe the organization's supply chain.



# Social contracting

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It is a strategy through which EPM contracts works and services with community action boards and other community associations, with the purpose of contributing to the strengthening and sustainable development of the communities where it operates.

It relies on regulatory, procedural and management resources that, without detriment to transparency, economic convenience and technical and legal rigor, favor the inclusion of suppliers and contractors at the base of the pyramid, who, otherwise, could not be considered.

Social contracting aims at:

- Creating jobs through a concentric action in the area of influence of the project or service required by EPM, in such a way as to effectively contribute to leveraging the development of the communities in these areas where EPM operates.
- Reinvesting surpluses in the community impacted by the project or service required, in order to improve their quality of life and development.

## Management in 2016

Regulations and procedures for the execution of social contracting in the Group were reviewed during 2016.

The Colombian energy affiliated companies made progress in the diagnosis and inventory of community action boards and community associations; a task that will continue in 2017.

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- Through the Social Contracting program, 99 contracts for public works and services were signed in the EPM Group, which amounted to COP 72.12 billion. On its part, EPM executed a total of COP 17.32 billion in social contracting (with a decrease of 9.6% in relation to 2015).
- An information session was developed with community action boards and community associations, with the purpose of giving context on social contracting, aligning expectations and addressing relevant subjects such as: registration of suppliers in the Ariba system, anti-corruption policies, human rights, corporate social responsibility and code of conduct.
- The Social Merchandising program is a social responsibility initiative of EPM for the procurement of goods to merchandising suppliers of the region and, this way, provide opportunities to small entrepreneurs that seek to participate in the EPM contracting processes. Currently, the possibility of articulating this program with the supplier development and growth initiative is being analyzed, in order for it to receive human and financial resources required. That is why the program was not executed during 2016.





Social contracting				
2015			2016	
Affiliated company	Number of contracts	Value (Million COP)	Number of contracts	Value (Million COP)
EPM	52	15,049	60	23,625
CENS	0	0	1	28
Emvarias	0	0	38	48,466
<b>Total</b>	<b>52</b>	<b>15,049</b>	<b>99</b>	<b>72,120</b>

Source: Vice Presidency of Shared Services and Supplies

In relation to the information submitted in 2015, there is a difference in the way of presenting the data and the analysis of the information. Values of social contracting by the affiliated companies CENS and Emvarias are included this year. The values presented correspond to those recorded in contracts.

## Management indicators

- G4-12** Describe the organization's supply chain.
- EPM-06** Number and value of social contracting contracts.



# Implementation and impact of the supply chain

The implementation of a supply chain is one of the transformation pillars of the EPM Group.

It is a process designed to strategically obtain the goods and services we need to operate, which also strengthens the relationship with our stakeholders, especially with suppliers and contractors, in order to contribute to their development in the sectors where they operate.

## Gestión en 2016

Response to complaints about contractors made by the employees through the Transparent Contact line and due diligence to deal with each case.

With the savings obtained in 2016, the cumulative goal was exceeded by 2%. The cumulative period started in 2014.

The efficient and collaborative work and the planning and monitoring processes to import the cable for the repair works in the Guatapé hydroelectric power station reduced the economic losses and the negative impact on the company and the country.

Homologation, standardization and improvement of the EPM Group's goods and services master, in order to optimize the purchase and inventory of goods and services of the companies, which simplifies their administrative control and improves the efficiency in the business processes.

## Supply chain planning

- The planning process of the EPM supply chain adopted the Sales and Operations Planning (S&OP), in order to strengthen the interdisciplinary work with business units that require goods and services. In this way, 12 monthly cycles were carried out putting an emphasis on meeting the contracting needs and grouping them for projects, business and support.
- Two international engagement forums were held, where the first joint purchase of the Group was agreed for the Energy Meters category, with the participation of the affiliated companies Eegsa, ENSA and Delsur. EPM took part in the initiative with the establishment of the respective guidelines.



## Category management

- We maintained the Strategic Management methodology, with priority categories (focus on contracting processes), and achieved administrative benefits, efficiencies in new modalities of work, and support in the chain to obtain economic benefits.
- In 2016, we worked on four macrocategories that represented 80% of the expenditure: operation support, construction materials and services, technical and engineering services, and professional and corporate services. During 2016, the selected categories participated with 45% of the expenditure manageable through the supply chain.

Contracting by macrocategories				
Macrocategory	2015		2016	
	Number of contracts	Value of the contracts (million COP)	Number of contracts	Value of the contracts (million COP)
Real estate *	409	23,338	565	43,261
Engineering equipment	638	280,005	1,053	545,405
Expenses not included in the supply chain **	24,104	2,029,506	21,870	619,609
Indirect	1,151	190,918	1,325	190,953
Standard materials	3,991	269,972	2,804	207,568
Maintenance services	240	75,435	359	202,255
Professional/corporate services	1,240	447,285	1,280	571,710
Technical/engineering services	485	533,112	512	523,794
Construction materials and services	287	318,176	239	189,950
Operation support	4,071	150,561	3,191	122,409
<b>Total</b>	<b>36,616</b>	<b>4,318,308</b>	<b>33,198</b>	<b>3,216,915</b>

Source: Vice Presidency of Shared Services and Supplies

\* Not negotiated in the supply chain.

\*\* Only information about companies in Colombia is included. Small purchases (equal or less than 100 MMW) are also included.

In 2016, after a review of categories, some changes were made in the macrocategories of Engineering Equipment, Standard Materials, and Operation Support. For example, the Other Special Equipment category, belonging to the Engineering Equipment macrocategory, was reclassified; Other Standard Materials and Hardware Elements, in particular, goes from the Standard Materials macrocategory to Operation Support (Consumables category).



## Supply management

- Progress was made in the standardization of the general contracting conditions and the financial requirements in Colombian energy affiliated companies.
- The process of minor purchases was implemented in Aguas de Malambo and Aguas de Urabá.
- In the new contracting management model, seven working groups were created and are monitored every week. They include: forms, bid specifications, coercive measures, management of advances, management of readjustments, payment monitoring, risks and labor review.
- Thanks to the process of joint purchases, a cumulative profit of COP 88.91 billion was achieved as of December, 2016, through negotiations in the Group's companies.

## Materials management

- The group managed to save COP 5.71 billion thanks to the exemption from tariff rates, as well as COP 132 million for financial yields due to its status of permanent customs user.
- Some strategies for the management of inventories were implemented, thus improving their turnover rate and obtaining a result of 0.72 over a goal of 0.70.
- Profits for COP 7.78 billion were obtained from the sale of planning public uses

## Management indicators

**G4-12** Describe the organization's supply chain.

**G4-10** Report the following labor information:

- Report the total number of employees by employment contract and gender.
- Report the total number of employees by region and gender.



## Strengthening and development of suppliers

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The EPM Group fosters the local business sector in the regions where it operates, through contracting processes and development of capacities in suppliers and contractors. In this sense, strengthening and development of suppliers and contractors aims to increase competitiveness and sustainability of the production chains in the short, medium and long term, through the creation and consolidation of relationships between the EPM Group and its suppliers and contractors; thus generating bonds of trust to establish specialization and productive complementation processes that benefit the parties, articulating the strategic direction of both the EPM Group and its suppliers and contractors, in order to improve economic, social and environmental conditions.

### Management in 2016

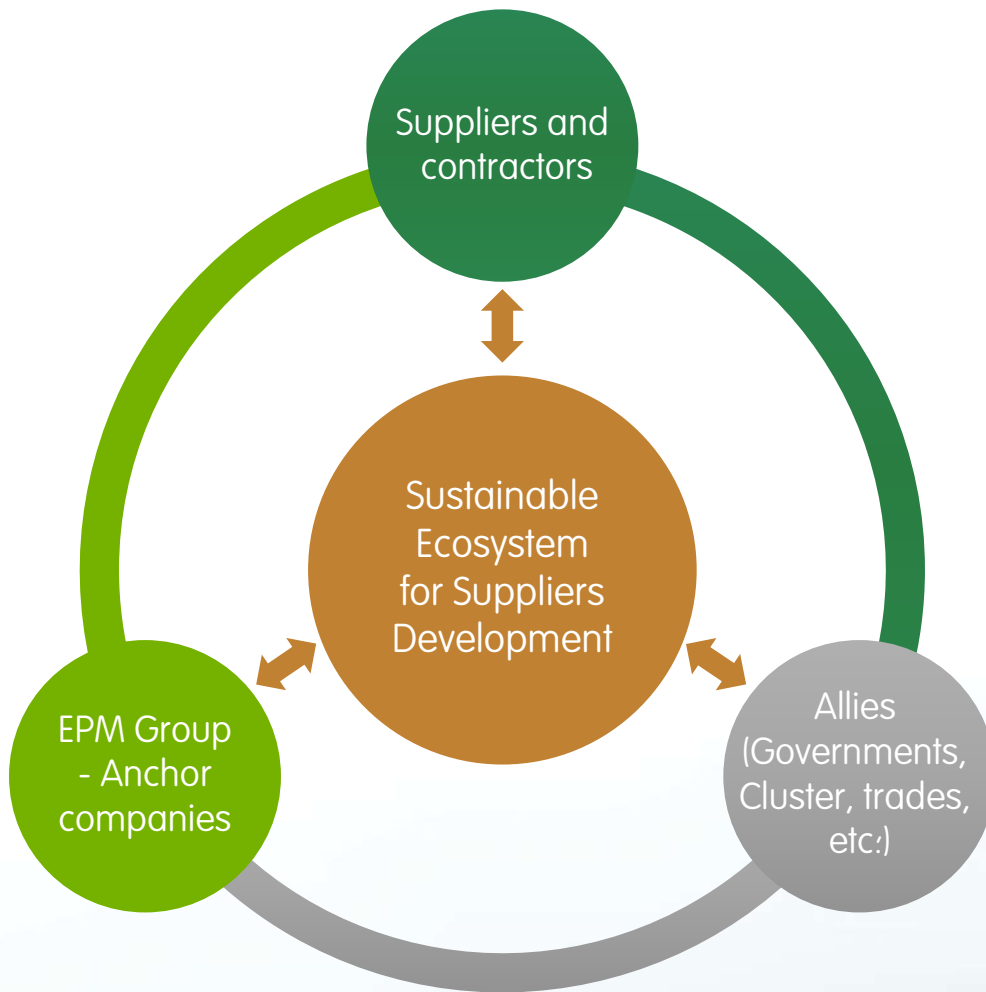
The supplier development pilot project was carried out with a group of 16 contractors of the EPM Group's, selected under different criteria. Its closure was in May 2016 and showed satisfactory results and benefits from the optimization of processes, standardization of activities, increase in productivity, among other factors.

Based on this experience, an initiative called "Sustainable Ecosystem for Suppliers Development" started to be structured, which seeks to articulate different existing initiatives, actors and spaces of work with suppliers, in order to leverage their development and achieve the organization's competitiveness and sustainability.

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- The "Sustainable Ecosystem for Suppliers Development" program seeks to articulate local, regional, national and international initiatives for business sustainability, in order to manage different tools that lead to the joint increase of capacities in the EPM Group and its suppliers and contractors, in a self-sustaining way and based on resource optimization. The structuring process continues and the initiative is expected to be defined for the first half of 2017.
  - Through the Network Group (Energy Cluster, ISA, Isagén and EPM), the EPM Group is linked to the initiative of a school for linemen. In the first phase, the objective is to train 500 technicians in power transmission lines, 40 of which already graduated.
  - The Group started the implementation of an initiative in alliance with the Energy Cluster, the Korea International Cooperation Agency (KOICA), UNOPS and other companies of the industry (Isagén, ISA, HMV) for the development of 30 local suppliers of the electricity sector.
  - The Group started to work with the Innovation Leaders programs, managed by Ruta N, with the aim of promoting business networks and sustainability.
  - Regarding the mechanism to deal with human rights incidents for employees of EPM's contractors, 17 cases have been received and addressed since August 2014. 15 of them were solved and closed, while the other two were sent to other areas of the company because they were not within the scope of the mechanism.



## Sustainable ecosystem for suppliers



*Proposed model for the Sustainable Ecosystem for Suppliers Development.*

### Management indicators

**G4-12** Describe the organization's supply chain.



## Engagement with suppliers and contractors

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The program of engagement with suppliers and contractors, known as Recyproco, is the plan that seeks to develop different actions aimed at strengthening the relationship, communication and implementation of different mechanisms of discussion, consultation and participation of suppliers and contractors with the EPM Group.

### Management in 2016

Different events were carried out with suppliers and contractors about contracting topics, such as self-registration in the Ariba tool, Human Rights, Code of Conduct, Regulations, among others.

As a result of the actions performed within the framework of the 2016 relationship plan, EPM reached a score of 82.15 in the supplier satisfaction study, surpassing the goal of 81.92. Similarly, the goal for the study with contractors was 84.50 and the Group obtained a score of 89.25, which demonstrates a positive indicator of satisfaction and even an improvement in performance, compared to 2015.

Likewise, in the reputation study, EPM reached the first place with a score of 859 in the Global Reputation Index. As for suppliers, the score was 876.



The following actions were carried out in 2016 to strengthen the relationship with suppliers and contractors:

- Support to 3,409 people from diverse suppliers and contractors companies, which means that we are directly impacting 31% of the total amount of suppliers registered for the EPM Group. 5,335 suppliers were registered during 2016.
- Development of 10 events with suppliers and contractors about the business portfolio, where technicians were involved in support and contact areas of EPM.
- Review, adjustment and redesign of the channels for communication and interaction with suppliers and contractors, thanks to the implementation of the new Ariba information system, which supports the supply chain processes of the Group.
- Opening of three rooms for the assistance and engagement with suppliers and contractors, located in the basement 2 of the EPM Building, in Medellín.
- Recognition to contractors and their employees for their contribution to the EPM Group's strategic goals with their participation in EPM-sponsored city events.
- Definition, from the digital ecosystem, of the basic contents that each website of the affiliated companies will show under the architecture defined by EPM.





- Advice and support to suppliers and contractors for the implementation of the Occupational Health and Safety Management System (OHSMS), through actions such as: awareness campaigns on the standard that regulates the OHSMS, web publications and statements, engagement with Occupational Risks Administrators to create jobs focused on the implementation of the system in suppliers, and definition of requirements that make possible to measure the disabling injury frequency rate (DIFR) in suppliers and contractors.

Events held in 2016 - EPM Group - Colombia		
Companies	Number of events	Number of attendees
EPM	18	1,515
Energy and water affiliated companies in Colombia	27	1,894
<b>Total</b>	<b>45</b>	<b>3,409</b>

Source: Vice Presidency of Shared Services and Supplies

## Management indicators

- G4-12** Describe the organization's supply chain.
- G4-58** Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines.

# Water conservation

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## Water conservation

Sustainability of water resources depends on the management of their quality, deficit and excess, along with the comprehensive management of watersheds in order to prevent their depletion. Moreover, it is influenced by the unplanned growth in demand in face of a limited net supply due to conflicts of water and soil use and to insufficient and inadequate actions to manage risk due to socio-natural events.

### Stakeholders vision

Contribution to the protection, recovery, management and sustainable use of watersheds, natural resources and environmental goods and services provided by them, necessary for the sustainability of the EPM Group and its environment as they make it possible to provide public utilities and improve the quality of life in communities settled in areas where the Group's companies operate.

### Importance

Economic and social value is influenced by both water deficit and water excess. This can cause problems in productive activities, infrastructure, people's lives, and ecosystem function, as well as generate critical scenarios in terms of availability, shortage, water rationing and floods, along their consequent harmful effects on the quality of life of the population, their economic activities, and ecosystems. The most important aspects regarding availability are associated with the supply of drinking water for the population, industrial processes, power generation, and maintenance of ecosystem functions.

Environmental and economic value is also associated when there is water excess and deficit or negative effects on water quality, since they can affect supply and distribution systems, while generating direct impacts on availability, continuity, and quality of the water to be supplied, as well as the economic costs caused by water losses and recovery works, rehabilitation, reconstruction, and protection of systems.



## Main achievements

Goals for 2016	Achievements for 2016	Compliance
<p><b>Non-revenue water management:</b> Reaching in 2017, through the non-revenue water management for the control of technical and commercial losses, an estimated volume of losses in the socioeconomic level range of water losses for the EPM system between 85 and 90 million m<sup>3</sup>.</p>	<p>Under the development of the non-revenue water program, EPM aims to reduce water losses to a volume between 85 and 90 Mm<sup>3</sup> in 2017. In 2016, the volume of losses was 88.5 Mm<sup>3</sup>.</p>	Total
<p><b>Proper management of wastewater in water purification plants:</b> Implementing solutions for sludge management in every water purification plant in the Valle de Aburrá by December 2016.</p>	<p>Transaction minutes were defined with the affiliate company, Ticsa, for the implementation of treatment systems. Detailed designs of treatment systems.</p>	Partial
<p><b>SWMP (Sanitation and Wastewater Management Plan):</b> Reducing the pollutant load discharged into Medellín River in 2017 to 37,785 BOD5 tons and 19,287 TSS tons through the SWMP-related works.</p>	<p>81.97% progress in the execution of the works of the Aguas Claras WWTP.</p> <p>Construction of 56.8 km of wastewater collection and transportation networks.</p>	Partial
<p><b>Water protection:</b> Implementing watershed protection initiatives in priority areas for conservation in 2016; 4,645 hectares equivalent to 5% of the priority areas identified (EPM, CHEC, Aguas de Urabá).</p>	<p>Water protection initiatives were implemented and 13,461 hectares were impacted in the watersheds of the Porce River (Riogrande, Aburrá River, Porce (lower part) and Guadalupe); Nare watershed (Nare and La Fe with pumping by Pantanillo, Buey and Piedras Rivers); Cauca (protected areas of the Ituango Project); Chinchiná River and others in Caldas, and Turbo River and others in Urabá.</p>	Total



Goals for 2016	Achievements for 2016	Compliance
<p><b>Conservation areas:</b> Total area where protection and maintenance actions are taken in supply watersheds in the interest of EPM and some of the Groups' companies (EPM, CHEC, Aguas de Urabá.)</p>	<p>Conservation and maintenance activities were carried out in the protected areas of watersheds and reservoirs.</p>	<p>Total</p>
<p><b>Protected areas:</b> Participating in the recovery of the Cerro Alux Protected Spring Reserve with the support of CONAP, (2016-2020).</p>	<p>Contact with institutions to build alliances and carry out a project for the protection and conservation of the Cerro Alux Protected Spring Reserve. Eegsa held meetings with the Foundation for the Conservation of Natural Resources and Environment in Guatemala (FCG), to define work options in 2017 and to prepare a cooperation agreement with CONAP (National Council for Protected Areas).</p>	<p>Total</p>





## Challenges

Challenge	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
<p><b>Water protection:</b> Implementing watershed protection initiatives in priority areas for conservation to impact 17,212 hectares (EPM, CHEC, Aguas de Urabá.)</p>	2017	Colombia	Water Supply Electrical Energy	EPM, CHEC, Aguas Regionales	Number of hectares with initiatives.
<p><b>Non-revenue water management:</b> Reaching in 2017, through the non-revenue water management for the control of technical and commercial losses, an estimated volume of losses in the socioeconomic level range of water losses for the EPM system between 85 and 90 million m<sup>3</sup>.</p>	2017	Colombia - Antioquia	Water Supply	EPM	Volume of losses in millions of m <sup>3</sup> .
<p><b>DWTP:</b> Having sludge treatment systems in nine of the drinking water treatment plants located in the Valle de Aburrá.</p>	2017	Colombia - Antioquia	Water Supply	EPM	Number of plants with sludge treatment system.



Challenge	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
<p><b>SWMP (Sanitation and Wastewater Management Plan):</b> Making progress in the reduction of the pollutant load discharged into Medellín River so that, in the last quarter of 2017, the Aguas Claras WWTP begins operating and, in 2019, the projects of modernization and expansion of the San Fernando WWTP start operations, ensuring a quality of the treated effluents of 70 mg/l of BOD5 and 70 mg/l of TSS in accordance with the maximum permissible limits defined in Resolution 00631 of 2015.</p>	2017	Colombia - Antioquia	Sanitation	EPM	Concentration in mg/l of TSS Concentration in mg/l of BOD Concentration in mg/l of COD
<p><b>Construction of the Malambo WWTP</b> with the aim of reducing the pollutant load discharged to Malambo and Mesolandia swamps, with an effluent quality that complies with Resolution 00631 of 2015.</p>	2019	Colombia - Malambo, Atlántico	Sanitation	Aguas de Malambo	Concentration in mg/l of TSS Concentration in mg/l of BOD Concentration in mg/l of COD
<p><b>Valle de San Nicolás Sanitation Project:</b> Modernization of the El Retiro WWTP to allow for the tertiary treatment of wastewater, protecting the use of the Negro River as a water source for water supply systems and construction of the El Escobero and Don Diego WWTPs so as to ensure compliance with Resolution 631 of 2015 .</p>	2019	Colombia- Antioquia	Sanitation	EPM	Concentration in mg/l of TSS Concentration in mg/l of BOD Concentration in mg/l of COD



## Management indicators

- G4-EN8** Total water catchment by source. Electricity sector: Report the use of water in processes in general, refrigeration and consumption in thermal and nuclear energy plants, including the use of water in the management of ashes and carbon cleaning.
- G4-EN10** Percentage and total volume of water recycled and reused.
- G4-EN22** Total water discharge by quality and destination. Electricity sector: Report thermal discharges as part of the total volume of planned and unplanned water discharges.
- EPM-01** Conservation areas.
- EPM-10** Water protection.

## Sustainable development goals



# Water Conservation

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The protection and improvement of the watersheds and the environmental services they provide are crucial to ensure the availability of the water resource, the sustainability of territories and the quality of life of the communities benefiting from such services.

The environmental conditions of the watersheds affect directly the water supply sources of reservoirs and other systems. To help improve these conditions and prevent the risks associated with the availability of the water resource to the populations served, the EPM Group undertakes, free-standing and with other participants, programs and projects such as the comprehensive management of the water resource and biodiversity, the erosion control, the environmental sanitation, the environmental management in reservoirs, the forest management, the restoration, the fauna management, the environmental awareness-raising and the monitoring.

## Management in 2016

Strengthening of alliances of the EPM Group companies with public and private actors, for the protection of the watersheds that supply the reservoirs and the systems for the hydroelectric power generation, the water supply and the sustainability of such watersheds.

Inclusion of a goal relating to water protection in the EPM Group's BHAG. This implies the development of different initiatives to have a positive impact, in 2025, on the protection of 137,000 hectares in the watersheds of interest.

Implementation of water protection initiatives associated with forest conservation, restoration and reforestation, sustainable practices and uses, compensation and new areas of conservation that, in 2016, had an impact on the protection of 13,461 hectares in the watersheds of Porce (Riogrande, Río Aburrá, Porce-Alto Nechí), Nare (La Fe, Río Negro-Nare), Cauca (influence of the Ituango Hydroelectric Project) and supply watersheds of the affiliated companies Aguas de Urabá and CHEC.

Definition of strategic risks, business and process for all the EPM Group, associated with the availability of the water resource and the preparation of improvement plans.

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**Main programs and initiatives developed by the EPM Group companies to protect the watersheds that supply its reservoirs or systems:**

**BanCO2 program:** initiative to pay farmer families for environmental services. The program aims at developing a forest conservation and restoration system and a compensation system for the carbon footprint. The EPM Group is involved in the program by supporting the farmers so that they take care of the forests, protect the fauna and contribute to the conservation of the environmental services they provide. The companies of the Group involved in the program are:

- **EPM** is involved in the program in two ways: voluntarily, paying for environmental services to 56 families of Eastern Antioquia that protect 1,364 hectares of forest; and mandatorily, compensating the forest exploitation and protecting 3.6 hectares. In addition, 50 more families of the BanCO2 program in Eastern Antioquia are supported through the agreement between EPM and the CuencaVerde Corporation.
- **CHEC** made compensation payments to families involved in the BanCO2 program in the department of Caldas. With these families, it was possible to protect 719 hectares of forest in the municipalities of Marulanda, Neira, Villamaría and Santuario. The recognition of the Regional Autonomous Corporation of Risaralda (Carter) stands out, which honored the CEO of this affiliated company of the EPM Group with the Gabriel Jaime Londoño Environmental Baton Order, in the gold category, for his environmental commitment and support to the BanCO2 program.
- In partnership with the Regional Autonomous Corporation of Quindío (CRQ) and the Masbosques Corporation, the affiliated company **EDEQ** implemented the BanCO2 project in Quindío. Eleven families of the department, in the municipalities of Génova, Filandia and Circasia, were paid for their environmental services. These families have approximately 200 hectares of forest; therefore, they become protectors of water sources and vulnerable fauna habitats, in accordance with the classification of the Convention on International Trade in Endangered Species of Wild Fauna and Flora —CITES.
- By supporting the BanCO2 program, the affiliated company **CENS** was able to conserve strategic environmental ecosystems such as the Sisavita Natural Park and the Santurbán páramo. With this initiative, we influence the protection and production of water of the main supply source of the city of Cúcuta (Colombia) and its metropolitan area, including 10 municipal water supply systems and the agricultural and livestock production of the inhabitants of the Zulia, Sardinata and Cáchira river basins. This project benefited 25 families of the municipalities of Cucutilla and Salazar de Palmas, covering 711 hectares of forest protected in strategic ecosystems of the department.
- **ESSA** supports the conservation of forests through the BanCO2 program in the municipalities of Charalá, Encino, Coromora, Gambita and Mogotes.
- Jointly with Corpourabá and EPM, **Aguas Regionales** started paying for environmental services through the BanCO2 program for the conservation of 249 hectares in Serranía del Abibe, where surface water sources are born and where the aquifers that supply the water supply systems operated by Aguas Regionales in the Urabá region reload.



- **Public and private alliances:** the EPM Group assumes its commitment to sustainability in the territories where it is present and establishes alliances with public and private actors to develop projects and initiatives whose aim is the conservation of the environment, especially the water.
- **Agreement for water safekeeping in Eastern Antioquia,** with the purpose of getting different actors of the territory to engage in the water conservation. Isagén, WWF, EPM and Cornare, among others, are involved in this initiative.
- **Agreement between EPM, Cornare and municipalities of Eastern Antioquia,** which includes ecological restoration, sustainable production systems, basic sanitation, erosion control, ecotourism and natural reserves among its strategic actions. Implementation agreements were signed to start the activities.
- **EPM, in conjunction with Corantioquia,** develops social and environmental management programs in areas of interest: ten municipalities of Northern and Northeastern Antioquia that are areas of influence of the Riogrande I and II and Porce II and III reservoirs. Progress was made in the execution of some of the programs, especially erosion control and basic sanitation.
- **EPM-UNDP agreement,** alliance for sustainable development in the Porce River basin, addressing, among other issues, the definition of strategies of sustainable management, designed and implemented to respond to conflicts caused by inappropriate use of natural resources: conservation actions, prevention, mitigation and compensation of the water resource and the highly environmentally-valued ecosystems.
- **Water Fund “CuencaVerde Corporation,”** public and private alliance between the municipality of Medellín, EPM, Cornare, Postobón, Grupo Nutresa, AMVA, Coca Cola–Femsa, Latin American Water Funds Partnership and Grupo Argos, for the protection of water supply basins of Riogrande II and La Fe reservoirs, main water sources of Valle de Aburrá.
- **EPM, in partnership with Parque Arví Corporation,** managed to restore 5.1 hectares in the Piedras Blancas reservoir watershed and developed activities to promote environmental culture in the community.
- **Water quality boards,** established by EPM, Corantioquia and the municipality of Medellín. Their goal is to identify the main damages in the water supply basins and undertake joint actions for their improvement.
- **Agreement between ENSA and Ecofarms Foundation.** Its goal is to reforest 3.5 hectares of native forest, as part of the Mamoní River basin tropical conservation and restoration project. This project is part of the strategies that the affiliated company ENSA will promote for the mitigation of and adaptation to climate change.
- **CHEC, in alliance with other public and private entities,** through the agreement with the municipality of Chinchiná and Ascondesarrollo, carried out restoration actions in 381 hectares; reforestation and restoration of 500 hectares in the upstream basin of the Guacaica River, in alliance with the municipality of Neira and the Dicar Foundation; reforestation and restoration of 650 hectares in the upstream and midstream basins of the Chinchiná River, in alliance with the municipality of Villamaría and Ascondesarrollo; forestry encouragement and reforestation in 1,024 hectares, in alliance with the FEC; implementation of practices and sustainable uses





(agroforestry, forest grazing and others) in 200 hectares, in alliance with the municipality of Chinchiná and Ascondesarrollo; protection, restoration and reforestation in 228 hectares of the piece of land of Camargal at the borders of the Bosques **CHEC Forest Reserve**; and acquisition of 121 hectares of the piece of land La Cabaña, in the upper part of the Chinchiná basin.

- **Alliance to raise awareness and protect the watersheds:** due to the reduction of flow and the lack of water availability in Quindío by the end of 2016, EDEQ organized the planting of 2,000 native trees in El Mudo wetland, Salento, in alliance with the municipality of Salento, the CRQ and the school of police officers. Besides this activity, which was a strategy of water conservation and an offset of CO<sub>2</sub> generated by its activities, the company planted 1,132 trees in strategic places of conservation in the department of Quindío, such as the La Pradera stream.
- **Eegsa**, affiliated company of the EPM Group in Guatemala, signed a cooperation agreement with the National Council for Protected Areas – CONAP (2016-2020) to recover the reserve that protects the springs of the Alux hill.

EPM and its affiliated companies develop other projects and activities that contribute to the protection of the watersheds and the strengthening of the water culture to raise awareness on the importance of the conservation of the water supply sources and their rational and efficient use.

- **Awareness-raising on the conservation of water and the environment:** as part of the strengthening of water culture, EPM, free-standing and also in association with other entities, held events during the celebration of environmental anniversaries, ludic and educational activities in the EPM Water Museum, environmental awareness-raising programs with the EPM Foundation, participation in the Aló EPM radio program, delivery of information on the subject in different publications, talks on environmental issues in different events and deployment of an intense campaign regarding the efficient use and conservation of water.
- **Forestry encouragement by EPM:** approximately 1,500,000 trees were delivered to protect the supply basins of EPM's reservoirs and systems, which is equivalent to promote the planting of approximately 1,600 hectares.
- **Extraction of solid waste in generation reservoirs:** the company monitors the water plants in the power generation reservoirs and, through agreements with specialized firms, manages the appropriate disposal of all the hazardous waste that gets to these bodies of water.
- **CENS:** sessions of tree planting for the protection and conservation of the Pamplonita River basin; activity carried out with different stakeholders. Likewise, the company planted 1,900 trees in the municipalities of Salazar, Tibú and Ocaña, in the development of the "We all are one" project and with the participation of the company's staff.
- **ESSA and its environmental awareness-raising:** awareness-raising events were held in the Altamar rural property located in the rural settlement of Cristales in the municipality of Piedecuesta. Such property has 5 springs and approximately 220 ha of native forest; it is visited periodically by different groups which are shown the importance of ensuring its preservation for the water conservation.



- **Aguas Regionales**, with the participation of different entities and the community of the Urabá region, implemented the “For the rivers we want, dream of and deserve” project, which included cleaning sessions and extraction of solid waste from sources and pipes. As part of the project, environmental education campaigns were organized, 20 tons of waste was collected, and awareness was raised in 3,912 people through visits to their homes.

## Management indicators

<b>EPM-01</b>	Conservation areas.
<b>EPM-10</b>	Water protection.



# Water consumption

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This action seeks to understand how water is used in processes and operations of the EPM Group, in order to implement programs and projects that allow optimizing its use and promote practices that contribute to the sustainability of this crucial resource.

## Management in 2016

Savings in water consumption were achieved thanks to the implementation of the following programs:

Water recirculation in drinking water treatment plants (DWTP): Saving of 1.5 Mm<sup>3</sup> in water consumption by EPM's DWTPs, thanks to the use of recirculated water that is returned to the purification process for cleaning water plant filters. The amount of recirculated water depends on the quality of the sources collected. Water is recycled as long as it does not affect the quality of the drinking water produced in the plant.

Reuse of 31.1 Mm<sup>3</sup> of water for power generation.

Decrease in total consumption by 7%, mainly due to the decrease in water consumption for the cooling process of the La Sierra thermal power plant, due to a lower power generation in this plant during 2016. Likewise, domestic water consumption reduced in the facilities of the EPM Group's companies thanks to the implementation of programs for the saving and efficient use of water. It is noted that there was a reduction of 21.78% in water consumption at EPM's head office in Medellín, where the monthly average consumption per capita decreased to 1.33 m<sup>3</sup> person/month.



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During 2016, water consumption by the EPM Group's companies mainly came from surface water sources and water supply system. It is used in their production processes and for domestic and cooling purposes:

- 16,312 Mm<sup>3</sup> was the total water consumption.
- 95% of consumption corresponds to surface water.
- 98% of surface water was used for power generation.
- 2% of surface water was used for water supply.



The following are the main initiatives and programs associated with the saving and efficient use of water by the EPM Group:

**Water reuse:** 31.1 Mm<sup>3</sup> were reused mainly for power generation, which allows to optimize the use of water in the process.

**Water recirculation in the EPM Group's DWTPs:** Saving of 1.5 Mm<sup>3</sup> in water consumption thanks to the use of recirculated water that is returned to the purification process for cleaning the filters of the La Ayurá, La Cascada, La Montaña, Manantiales, San Antonio de Prado, San Cristóbal, Villa Hermosa and Aguas Frías water purification plants. The goal is to reduce the consumption of water in the processes, as long as it does not affect the quality of the drinking water.

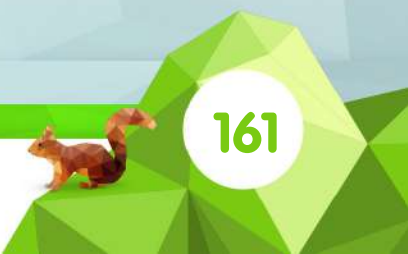
**Non-revenue water management:** Under the development of this program, EPM aims to reduce water losses to a volume between 85 and 90 Mm<sup>3</sup> in 2017. In 2016, the volume of losses was 88.5 Mm<sup>3</sup>. Among other activities are the control of technical losses that involves pressure control, modernization, replacement of networks and connection pipes, systematic detection of leaks and control of commercial losses by standardizing fraud, improvement of metering and linking of customers, relationships management and communication.

**Management of N.R.W in Aguas de Malambo:** In order to comply with the provisions of Resolution CRA 688, regarding the LRBU, the following actions were carried out: pressure control, replacement of networks and connection pipes, systematic detection of leaks, delimitation and zoning of water supply systems, increase in metering coverage, zoning and standardization of frauds. In Aguas de Malambo, 3,862 micrometers were installed with the support of the Atlántico Governor's Office and the EPM Foundation, and meetings and workshops were held with the community regarding the saving and efficient use of water, with the participation of more than 900 people.

**Aguas Regionales:** A systematic leak detection group was created to minimize system losses and repair leaks in the shortest time possible. Network inspection and detection of fraud, illegal connections and leaks are carried out. The goal is to migrate from corrective to preventive maintenance of the water supply and sewerage networks.

**Saving and efficient use of water:** Programs for the saving and efficient use of water continued in the facilities associated to the power generation, transmission and distribution, gas, and water supply and sanitation businesses. A decrease in water consumption was achieved thanks to the implementation of the following initiatives:

- **Plans for water supply systems:** The five-year water saving and efficient use plans are being implemented in all the systems where EPM operates regarding water supply. In 2016, Cornare approved the new five-year plan for the Ayurá system.





- **EPM's facilities:** There was a significant reduction in water consumption at EPM's head office in Medellín, with a consumption that went from 87,466 m<sup>3</sup> in 2015 to 68,418 m<sup>3</sup> in 2016, representing a reduction of 21.78% in water consumption. This achievement is due to the installation of the water recirculation system on the green walls of the EPM Building and the implementation of the drip irrigation system on terraces and in some of the green slopes of the Building. Likewise, the average monthly water consumption per capita in the EPM Building decreased from 1.66 m<sup>3</sup> person/month in 2015 to 1.33 m<sup>3</sup> person/month in 2016. Moreover, the Program for the efficient and rational use of water, Pueyra, was designed for EPM's head office and General Warehouse.
- **Program for the saving and efficient use of water in the Group's Power Distribution and Transmission facilities:** Awareness-raising and training activities were carried out for EPM's personnel and contractors, in order to promote rational use of water and decrease water consumption. Various strategies were used, such as lectures, newsletters and signage, as well as the installation of devices for leakage reduction and sanitary facility filling control. It was possible to reduce the total water consumption of 2016 by 50 thousand m<sup>3</sup>/year, equivalent to a decrease of 24%, compared to the previous year, which demonstrates the effectiveness of the programs, campaigns, and activities carried out.
- **Program for the saving and efficient use of water in EPM's Power Distribution and Transmission facilities:** Water consumption at Power T&D facilities has been declining, as seen in the consumption records, since 2012, being the 2013-2015 period the period with the highest percentages of decrease, with annual savings of 8,000 m<sup>3</sup>. The above data are significant if we consider that the number of facilities remains more or less stable.
- **ESSA:** Maintenance of the water supply devices in the company's headquarters was carried out. A 4.9% decrease in total water consumption in its facilities was achieved.
- **CENS:** The programs for the saving and efficient use of water in its facilities continued, focusing them on awareness-raising and promotion of behavior changes regarding its use.
- **CHEC:** In order to achieve optimization in the use of water in power generation, CHEC uses chain exploitation of sources and reservoirs. In addition, a 22% reduction in water consumption per capita was achieved at the head office's facilities, Uribe station, and Marmato, La Rosa and Dorada substations.
- **EDEQ:** Progress was made in the inspection of all the company's headquarters to define the activities and adjustments necessary for the efficient use and saving of water in the company.
- **Delsur:** 17% decrease in water consumption due to the implementation of the program for rational and efficient use of drinking water. Activities carried out by this company of the EPM Group include leak repair and the communication campaign to raise awareness among personnel regarding water saving. Moreover, consumption reduction targets were defined for the period 2015-2020.



- **Program for the saving and efficient use of water at Eegsa:** As part of the program for saving and efficient use of water in the main facilities, water saving toilet units and faucets were installed in Eegsa's administrative building and awareness-raising campaigns were carried out and behavior changes were promoted regarding this issue. In the year, there was an increase in water consumption in the company's facilities due to the transfer of workers from temporary offices to the administrative building and water consumption in remodeling and adaptation activities at the head office.

Moreover, the company started a rainwater collection project, which aims to reduce water consumption at the El Modelo headquarters and favor the use of this water during the rainy season to wash trucks.

- **Program for the saving and efficient use of water at ENSA:** This affiliate company of the Group implemented a project to reduce water consumption when washing the vehicle fleet, making the process more efficient by using water guns that reduced consumption by more than 70% compared to the previous process. In addition, the program for the rational use of water was approved, which establishes short-, medium- and long-term measures for the conservation of water resources.

**Monitoring of licenses:** Water licenses required for the company's processes and operations are monitored. The Vice Presidency of Water Supply and Sanitation monitors the requirements established in administrative acts that grant water licenses and, as a result, environmental authorities are requested to modify the license if it is established that it is necessary to meet the demand and the source has resource availability. In 2016, modifications were made to the Piedras Blancas and La Picacha streams licenses.

**Non-conventional solutions in water supply:** We highlight two research and development initiatives for unserved population to access water supply with non-conventional solutions: The pilot of aerial pipeline networks for the transport of water in the municipality of Turbo, which seeks, among other objectives, to improve the operation of the network and the provision of the service and make an efficient use of water resources, as well as the pilot of non-conventional (distributed) systems for water desalination through vacuum evaporation using solar heaters.

**Culture of Water:** The Group's companies develop directly and along with other actors a series of programs and activities to raise awareness and promote behavior changes regarding water conservation, from the sources of supply to the efficient and rational use of water in the activities developed by customers and users.

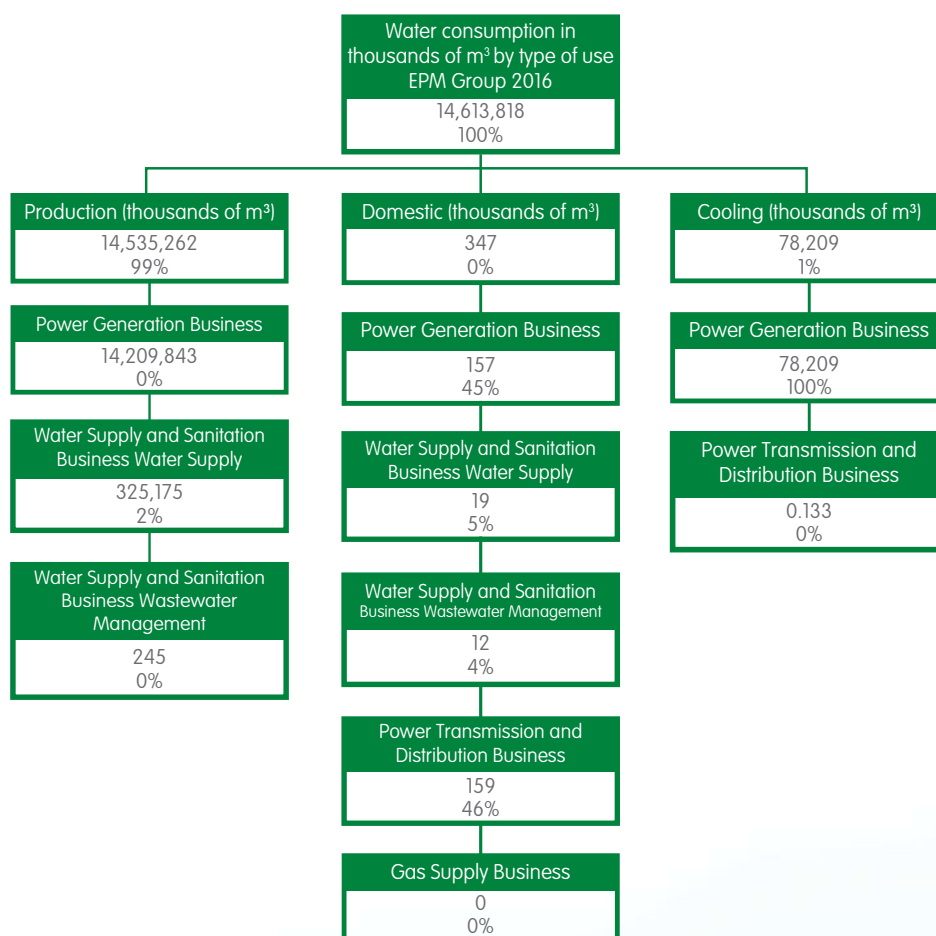




Water consumption by type of source - EPM Group (Thousands of m <sup>3</sup> )									
Business	2014		2015		2016		Variación 2016-2015		
	Surface water	Water Supply	Surface water	Water Supply	Surface water	Water Supply	Surface water	Water Supply	
Power Generation	15,886,622	95	15,367,853	82	15,987,293	9	4%	-89%	
Power Transmission and Distribution	0	111	0	209	0	159	5%	-24%	
Gas	N.A.	0	N.A.	1	0	0	N.A.	-56%	
Water Supply and Sanitation	Water Supply	298,270	23	336,216	29	325,175	19	-3%	-36%
	Wastewater Management	N.R.	179	N.R.	210	0	257	N.A.	23%
	Solid Waste Management	N.R.	64	93	46	0	0	-100%	-100%
<b>Total</b>	<b>16,184,891</b>	<b>472</b>	<b>15,704,162</b>	<b>578</b>	<b>16,312,468</b>	<b>445</b>	<b>4%</b>	<b>-23%</b>	

- The increase in total consumption of surface water was 4% in 2016 compared to 2015, mainly due to the normal demand growth.
- Decrease in water consumption for all businesses was 23%, due to the implementation of practices for the efficient use and saving of water, as well as to the reduction of power generation in the La Sierra thermal power station, besides the lack of records in 2016 for the Waste Management process.
- Consumption of water that has been treated increased by 23% for the wastewater management process due to the use of pressure washers in the San Fernando WWTP for improvements in the maintenance of the infrastructure.





Water consumption in thousands of m <sup>3</sup> by type of use - EPM Group													
Business	2014			2015			2016			2016-2015 Variation			
	Production	Domestic	Cooling	Production	Domestic	Cooling	Production	Domestic	Cooling	Production	Domestic	Cooling	
Power Generation	15,830,680	224	59,223	15,206,752	181	160,884	14,209,843	157	78,209	-7%	-13%	-51%	
Power Transmission and Distribution	N.A.	111	N.A.	N.A.	209	N.A.	N.A.	159	0.133	N.A.	-24%	N.A.	
Gas	N.A.	0.419	N.A.	N.A.	0.894	N.A.	N.A.	0.389	N.A.	N.A.	-56%	N.A.	
Water Supply and Sanitation	Water Supply	298,270	23	N.A.	336,216	29	N.A.	325,175	19	N.A.	-3%	-35%	N.A.
	Wastewater Management	N.R.	8	N.A.	200	11	N.A.	245	12	N.A.	23%	16%	N.A.
	Solid Waste Management	N.R.	64	N.A.	93	134	N.A.	N.R.	N.R.	N.A.	N.A.	N.A.	N.A.
<b>Total</b>	<b>16,128,950</b>	<b>431</b>	<b>59,223</b>	<b>15,543,261</b>	<b>565</b>	<b>160,884</b>	<b>14,535,262</b>	<b>347</b>	<b>78,209</b>	<b>-6%</b>	<b>-38%</b>	<b>-51%</b>	



- Total consumption by type of use does not include recirculated/reused water, which is considered in total consumption by type of source.
- Decreased use of water for cooling, due to lower power generation at La Sierra thermal power station.
- Decrease in water consumption in 2016 compared to 2015 for production and domestic purposes in all businesses, except for Wastewater Management, which registered a 23% increase in production consumption due to the use of new pressure washers necessary to improve the maintenance of the San Fernando WWTP's infrastructure and the increase in domestic consumption by 16% due to transfer of personnel to these installations.

<b>Volume in m<sup>3</sup> of recirculated/reused water - EPM Group</b>				
<b>Business</b>	<b>2015</b>	<b>2016</b>	<b>Variation</b>	
Power Generation	24,609,585	31,179,216	27%	
Power Transmission and Distribution	N.A.	N.A.	N.A.	
Gas	N.A.	N.A.	N.A.	
Water Supply and Sanitation	Water Supply	3,654,858	1,540,958	-58%
	Wastewater Management	104	N.R.	N.R.
	Solid Waste Management	N.A.	N.A.	N.A.
<b>Total</b>	<b>28,264,547</b>	<b>32,720,174</b>	<b>16%</b>	

- 95% of recirculated/reused water corresponds to EPM's power generation process. The percentage of recirculated water in this process increased by 27% in 2016, due to the fact that in 2015 it was not registered all year round.
- The recirculated water data of the 2015 Generate Power process was adjusted because CHEC reported, in 2015, the water used for hydraulic chain generation as reused.
- 1.5 Mm<sup>3</sup> corresponds to water recirculation for washing DWTPs' filters. The amount of recirculated water depends on the quality of the sources collected. Water is recycled as long as it does not affect the quality of the drinking water produced in the plant.



## Management indicators

- G4-EN8** Total water catchment by source. Electricity sector: Report the use of water in processes in general, refrigeration and consumption in thermal and nuclear energy plants, including the use of water in the management of ashes and carbon cleaning.
- G4-EN10** Percentage and total volume of water recycled and reused.



# Wastewater management

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The EPM Group's companies implement some measures for managing wastewater discharges (\*) resulting from their activities and processes in which water consumption is involved.

*(\*) In Colombia, Decree No. 3930 of 2010 specifies that wastewater dumping is the final discharge of elements, substances, or chemicals into a body of water, a sewerage system or the soil.*

## Management in 2016

Treatment of 40.7 Mm<sup>3</sup> of wastewater in the San Fernando wastewater treatment plant (WWTP). This prevented the discharge, into the Medellín River, of 8,732 tons of BOD5 and 14,287 tons of TSS.

Treatment of 739,586 m<sup>3</sup> of wastewater in the El Retiro WWTP, which prevented the discharge, into the Pantanillo River, of 127 tons of BOD5 and 133 tons of TSS.

Under the development of the Sanitation and Wastewater Management Plan (SWMP) in the Valle de Aburrá, we continued the operation of the San Fernando WWTP and made progress in the construction of the Aguas Claras WWTP, as well as in the works of the Northern Interceptor and the Centro Parrilla Project for the modernization of the water supply and sewerage networks in Medellín's downtown. The total investment in the development of the SWMP to 2016 is COP 1,549,860 million.

Progress was made in the phase II of the project for the construction of the Malambo WWTP, which involves its design and permit applications. The plant will be built with contributions under condition and will cost COP 18.851 billion. It is expected that the plant will start operations in 2019.

Aguas Regionales made progress in the execution of works in the SWMP and negotiated the lots for the construction of the Apartadó and Chigorodó WWTPs. It also made progress in the development of works for the modernization, replacement, and expansion of sewerage networks in all municipalities and in the construction of the El Bohío Stage II Collector Sewer in the municipality of Chigorodó that is executed through an agreement between Aguas Regionales S.A. E.S.P., Antioquia Governor's Office, and the Ministry of Housing, City and Territory, for a total value of COP 4.721 billion.



The main results and programs of the EPM Group's companies to manage wastewater discharges generated during their processes and activities are presented below:

- The total discharge by the facilities of the Group's companies in 2016 totaled 125 Mm<sup>3</sup>, representing a 40% decrease compared to the previous year.
- The total discharge by EPM in 2016 totaled 123 Mm<sup>3</sup>, which corresponds to 99% of total discharges by the Group.
- EPM's discharges in 2016 decreased by 24% compared to those in the previous year, mainly due to a decrease in water discharges from the La Sierra thermal power station due to a lower energy generation.
- 63% of the EPM Group's total discharges come from the La Sierra thermal power station, 34% from the WWTPs and 4% from the DWTPs.

The initiatives and projects developed in 2016 related to wastewater management are presented below:

**Sanitation and Wastewater Management Plan (SWMP) in the Valle de Aburrá:** We continued the operation of the San Fernando WWTP and made progress in the construction of the Aguas Claras WWTP, as well as in the works of the Northern Interceptor and the Centro Parrilla Project for the modernization of the water supply and sewerage networks in Medellín's downtown. The goal is to reduce the pollutant load discharged into Medellín River so that, in the last quarter of 2017, the Aguas Claras WWTP begins operations, with a quality of the treated effluent of 70 mg/l of BOD5 and 70 mg/l of TSS, in accordance with the maximum permissible limits defined in Resolution 00631 of 2015.

**Improvements in the efficiency of the San Fernando WWTP:** Implementation of improvement actions for the WWTP continued. Operating adjustments have been made in order to maintain the efficiency established in Metropolitan Resolution 1628 of 2015, while implementing the plant's modernization and expansion projects.

**On-line monitoring of wastewater:** The company continued its on-line monitoring of the quality of wastewater in the sewerage network of the Valle de Aburrá. For 2017, the installation of three new stations is expected.

**Sludge treatment system:** In 2016, the solutions for the La Ayurá, Manantiales, Caldas and Aguas Frías DWTPs continued to be implemented.

**Effective use of solid organic waste:** Solid organic waste is the by-product of the sewage sludge produced in the municipal wastewater treatment plants. In 2016, solid organic waste of the San Fernando WWTP was used for soil recovery, in accordance with the guidelines established in Decree 1287 of 2014. The working table along with Corantioquia and the Metropolitan Area of Valle de Aburrá to analyze important aspects related to the management of this product continued operations.

**Inspection, monitoring, and management program of septic tanks and wastewater treatment systems:** The facilities of the EPM Group's companies located in areas that are not connected to a sewerage system are provided with a wastewater and septic tank treatment system: Facilities for Power Transmission and Distribution, Power Generation camps and facilities and Water Supply and Sanitation tanks and facilities.





**SWMP in the systems operated by Aguas Regionales:** The modification of the SWMP for the municipalities served by Aguas Regionales in Urabá was requested. Moreover, this affiliate company has made progressed in the acquisition of lands for the construction of the WWTPs proposed in the SWMP of the municipalities in the Urabá region. Also, progress was made in the inspection and maintenance of the sewerage networks, with the aim of migrating from corrective to preventive maintenance of the sewerage networks. Leaks that are reaching the sewerage network in the water supply system were detected.

**WWTP, Aguas de Malambo:** The modification of the SWMP for the affiliate company, Aguas de Malambo, was requested.

Wastewater discharges linked to production processes m <sup>3</sup> /year - EPM Group							
Company	Type of Treatment	Destination	2014	2015	2016	Variation	
EPM	None	Sewerage	2,256,485	2,591,476	3,885,934	50%	
		Water flow	45,285	31,940	N.R.	0	
		Sewerage	N.R.	25,615	64,080	150%	
Aguas Regionales - Urabá	None	Surface water	N.R.	575,026	460,921	-20%	
		Sewerage	34	30	N.R.	0	
Aguas Regionales - West	DWTP*	Sewerage	1,864,702	14,376	64,504	349%	
Aguas de Oriente	None	Surface water	N.R.	43,002	106,054	147%	
Aguas de Malambo	None	Sewerage	N.R.	226,665	103,347	-54%	
EPM	WWTP**	Secondary	43,402,626	43,207,801	41,472,009	-4%	
Aguas Regionales - Urabá		None	Sewerage	256	384	N.R.	0
Aguas Regionales - West		None	Sewerage	N.R.	N.R.	N.R.	0
			Water flow	N.R.	201,952	628,300	211%
Emvarias	None	Sewerage	64,399	39,637	N.R.	0	
		Surface water	N.R.	174,844	N.R.	0	
EPM La Sierra Thermal power	None	Secondary (residual industrial)	6,698	10,391	13,262	28%	
		(cooling)	59,222,768	160,876,800	78,208,668	-51%	
<b>Total</b>			<b>104,998,551</b>	<b>208,019,939</b>	<b>125,007,079</b>	<b>-40%</b>	



- The list of registered DWTPs includes 10 EPM's plants, 10 Aguas Regionales' plants, 1 Aguas de Oriente's plant and 1 Aguas de Malambo's plant.
- The list of registered WWTPs includes 2 EPM's plants, 2 Aguas Regionales' plants and 2 Aguas Regionales' WWTPs.
- Decrease in the amount of wastewater discharges in 2016 was 40% compared to 2015.
- Decreased wastewater discharges from the La Sierra thermal power station due to a decreased power generation.

TICSA's wastewater discharges registered in 2015 were eliminated due to the fact that they are not discharges by the EPM group, but rather by the companies to which TICSA provided its services.

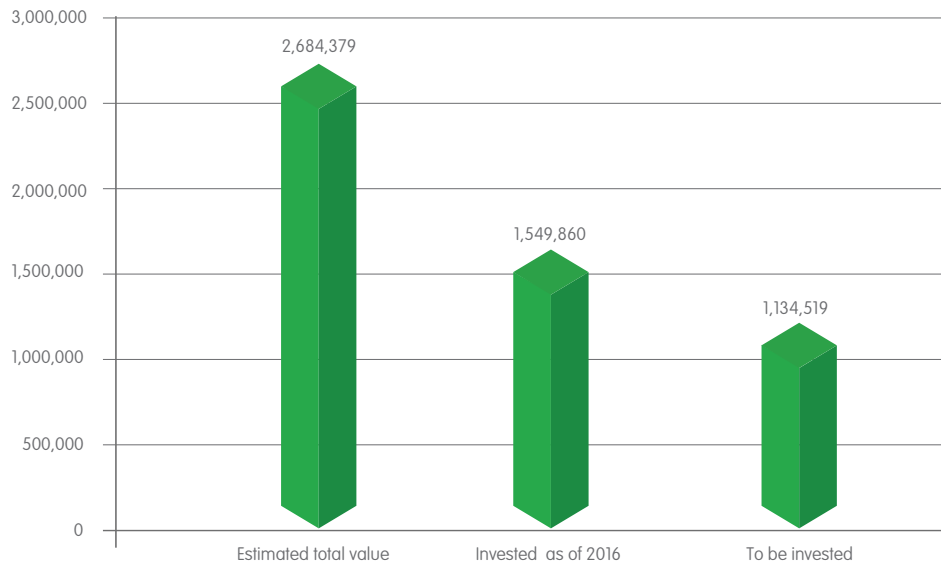
Domestic wastewater discharge into the sewerage system m <sup>3</sup> /year EPM Group				
Business	2013	2014	2015	2016
Transmission and Distribution	50,196	39,091.58	55,660.55	59,848.08
Gas	599.50	203	N.R.	N.R.
Water supply	15,863.08	19,766.34	18,114.25	13,878.50
Solid waste management	0	64,399	39,637	N.R.
Administrative and commercial offices	147,305.48	159,123.65	159,501.19	128,776.61
<b>Total</b>	<b>213,964.06</b>	<b>282,583.57</b>	<b>272,912.99</b>	<b>202,503.19</b>

- Domestic wastewater discharge includes administrative offices, operating facilities, tanks, and pumping stations.
- The total decrease in discharges into the sewerage system by 25.8% is due to the fact that there are no records for Emvarias and due to the reduction of water supply discharges and discharges in administrative and commercial offices, where water consumption was also reduced due to the implementation of programs for water efficient use and saving.



Investments defined in the Sanitation and Wastewater Management Plan (SWMP) of Valle of Aburrá.

**Investments of the SWMP of Valle de Aburrá  
2005-2019 (Million COP)**



Progress in the works of the Sanitation and Wastewater Management Plan of Valle of Aburrá

Progress in Valle de Aburrá's SWMP		
	Quantity	Unit of measurement
<b>Secondary networks and collector sewers</b>		
Total length of projected networks in the SWMP	369,673	m
Total length of networks built until the monitoring period	334,601	m
<b>Interceptors</b>		
Total length of projected interceptors in the plan	20,434	m
Total length of interceptors built until the monitoring period	7,734	m
<b>Public network discharges</b>		
Total discharges identified in diagnoses until the monitoring period	740	Un
Collected discharges until the monitoring period	531	Un
<b>Aguas Claras WWTP</b>		
Progress in the construction of the Aguas Claras WWTP	1	Un



## Management indicators

### **G4-EN22**

Total water discharge by quality and destination. Electricity sector: Report thermal discharges as part of the total volume of planned and unplanned water discharges.

# Diversification of renewable energies

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## Diversification of renewable energies

Renewable energies are alternative solutions to the traditional power generation and they will be the foundation for the economic and social development.

The use of renewable energies has increased due to the depletion of natural resources, and their promotion and incorporation within the diverse productive processes are encouraged. It is of common interest for the EPM Group and its stakeholders to ensure the full and timely power supply, maintain the competitiveness and protection of the environment, and watch over the efficient use of power and the conservation of renewable natural resources.

In Colombia, the entry and use of this type of power sources was greatly encouraged by Act 1715 signed in 2014. This regulation has been establishing itself and has motivated, even more, the companies to look for mechanisms to develop and implement technologies with energy renewable sources.

### Stakeholders' Vision

In addition to the actions of the EPM Group to venture into the use of renewable and clean energy sources—besides hydropower—, it is necessary to establish alliances to structure and execute pilot projects with other stakeholders that seek the promotion of these sources nationwide and worldwide, as well as to obtain technical and scientific cooperation resources that allow us to make their use viable in our territories.

As the organization manages to execute successful projects, new segmented lines of business can be offered to different stakeholders. This is crucial for the sustainable development of the territories.

### Importance

For the EPM Group, it is important to diversify its energy offer to ensure the full and timely energy supply, so that it remains competitive and, at the same time, it can guarantee the protection of the environment, reduce greenhouse gas emissions and generate positive social impacts in the communities of its areas of influence, including the non-interconnected areas.

Among the new energy sources which EPM has been working on are wind energy, solar photovoltaic energy, geothermal energy, biomass energy and second generation biofuels.





## Main achievements

Goals for 2016	Achievements for 2016	Compliance
Geothermics: polishing the conceptual geo-scientific model and making progress in the procedures to conduct supplementary studies with regard to the environmental impact study for the drilling stages.	Review of all the existing geo-scientific information, updating of the integrated conceptual model and definition of the points and the strategy of the drilling.	Total
Solar: developing projects and pilots that allow learning about the assembly of solar parks in interconnected and non-interconnected urban and rural areas, and configuring a comprehensive system that comprises different technologies.	Cooperation agreement with allies to develop the pilot, including training and knowledge transfer.  Discussion of the project before the environmental authority and the municipality of the area of influence.	Total
Solar: progress on the project of nanostructured solar cells.	The first experimental photovoltaic solar nanostructured-cell module was successfully developed with the University of Antioquia, Sumicol and Andercol.	Total
Waste water: biotreatment plant.	The pilot plant for water treatment with microalgae was put into operation.	Total



## Challenges

Challenge	Year of completion	Scope and coverage			Achievement indicator
		Geography	Business	Company	
As part of the project of nanostructured solar cells, developing a pilot project in rural schools of Antioquia.	2017	Colombia - Antioquia	Electrical energy	Empresas Públicas de Medellín - EPM	<p>1. Third generation solar cell with nearly-commercial efficiencies.</p> <p>2. Development of a pilot project in rural schools of Antioquia.</p>
Development of the line of business to sell electrical energy produced by a photovoltaic solar system: in 2017, demonstrational projects with customers will be developed, the concept will be tested from the commercial, financial and technical points of view, and the results that will define the business model will be evaluated.	2017	Colombia - Antioquia	Electrical energy	Empresas Públicas de Medellín - EPM	Carrying out the demonstrational projects and testing the feasibility of the possible business.
Geothermics: completing the environmental impact assessment (EIA) for deep well drilling.	2017	Colombia - Caldas	Electrical energy	Empresas Públicas de Medellín - EPM	Environmental impact assessment completed.
<p>Solar: starting the assessment for the environmental licensing of the Solar Park.</p> <p>Training and knowledge transfer to EPM on large-scale solar technology.</p> <p>Preliminary technical and financial assessment of the Solar Park.</p>	2017	Colombia	Electrical energy	Empresas Públicas de Medellín - EPM	Environmental licensing assessment in progress. Knowledge dissemination in EPM.



## Management indicators

**EPM-11** Initiatives of diversification of renewable energies.

## Sustainable development goals



# Biomass

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Biomass is biological organic matter that can be used as an energy source. Its renewable nature lies in the fact that its energy content comes ultimately from the solar energy fixed by living organisms on chemical compounds during the photosynthesis process. In such process, organisms use solar radiation for their metabolic processes, in which CO<sub>2</sub>, water and minerals are transformed into oxygen and high-energy organic compounds, such as sucrose, starch and cellulose. This energy can be transformed by breaking up the bonds of the organic compounds.

The organic matter from waste water and the mud resulting from its treatment are also considered biomass, as well as the organic fraction of the municipal solid waste (MSW).

The organization is aware of the potential of resources Colombia has and, therefore, it has been conducting assessments that allow it to determine the biofuel business potential.

## Management in 2016

The EPM Group has been working on the use of biomass to generate second generation biofuels such as alcohol fuels and hydrocarbons, obtained from non-edible biomass such as agro-industrial waste (bagasse, sweet sorghum, palm rachis, etc.), grass and timber.

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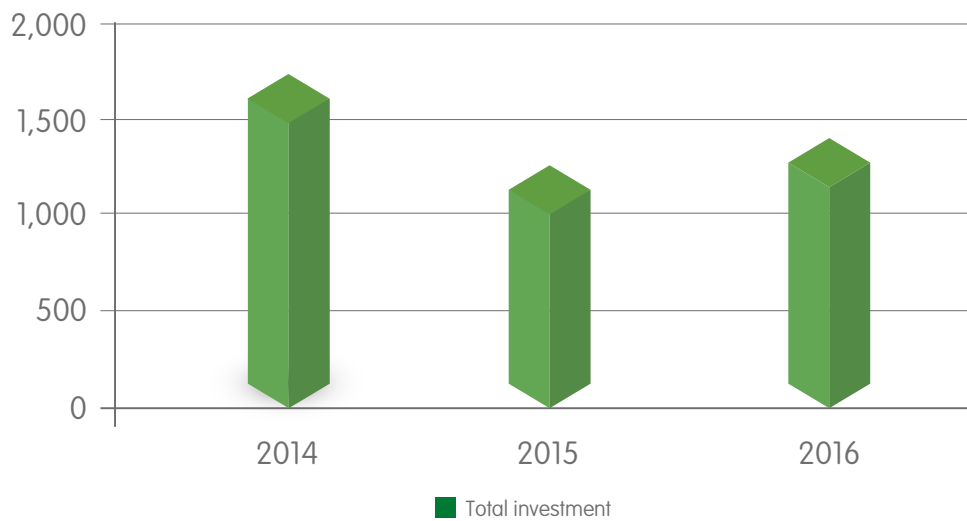


The processes to obtain green diesel, green gasoline and biojet fuel tested at laboratory scale have been under development with the execution of two research projects in EPM in partnership with the University of Antioquia. Additionally, the process to obtain second generation ethanol was optimized at laboratory scale, with favorable economic pre-feasibility.





Investment in biofuel research projects (million COP)



**Source:** Vice-Presidency of Strategy and Growth – Management of Development and Innovation.

*The chart shows the investments made in the projects to obtain biofuels and the installation of the pilot plant of bioalcohols.*

*2014 shows more investments because laboratory equipment to execute the described projects was acquired that year.*

## Management indicators

**EPM-11** Initiatives of diversification of renewable energies.



# Wind energy

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As a relevant agent in the Colombian electric sector, EPM has taken on challenges through the research and the development of different sources of alternative energies. The ground-breaking Jepírachi wind farm is located in the municipality of Uribia in the department of La Guajira, Colombia, and can generate 19.8 megawatts.

Given the learned lessons from putting the Jepírachi wind farm into operation, EPM continued developing new wind farms. That is how it put the Los Cururos wind farm into operation, located in Northern Chile, with a capacity of 109.6 megawatts. Los Cururos is aligned with the objectives of the Chilean national energy policy because it tends to ensure the supply, diversify the energy sources, reduce the dependence on fossil fuels, and produce decentralized power without producing greenhouse gases.

## Management in 2016

Technical assessments for three wind projects were completed, defining two of them as the most attractive ones from the point of view of competitiveness and ease of development. Both were included in the planned infrastructure by the Mining and Energy Planning Unit (UPME).



EPM registered the Los Cururos wind farm in the voluntary carbon market under gold standard; the farm will reduce approximately 197,000 tons of CO<sub>2</sub> per year.

EPM makes progress on the search for a strategic partner to execute a project that validates, technologically and financially, the nonconventional self-generators to use them in medium wind speed areas, potentially in Colombia thanks to its strategic location. It is expected to perform this validation and suggest possible business models with nonconventional wind energy.

Along with the El Salvador Government, the affiliated company Delsur leads the contracting process to supply 50 MW of wind energy, supported by new generation plants, for the provisioning of energy needs of 7 distributors of the country. During 2016, the bidding conditions were established, the process was promoted, and 4 offers, for a total of 170 MW, were received.

## Management indicators

**EPM-11** Initiatives of diversification of renewable energies.







# Geothermal energy

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Geothermal energy is the natural heat inside the earth which comes out in the forms of hot springs, steam emissions and mud volcanoes and is used to generate electrical energy when water vapor is carried out by pressure to the surface to a geothermal power station.

Besides being a renewable source, this energy does not require large extensions of land, has a low environmental impact, supplies high reliability energy, is environmentally friendly, and poses a low risk for the neighboring communities since its operation is very safe and clean.

In cooperation with the affiliated company CHEC, EPM has been conducting assessments to build a geothermal energy plant in Colombia, which would be located in Central Western Colombia.

## Management in 2016

The assessment to review and integrate the conceptual model was conducted. Its objective was to determine drilling points and carry out design recommendations to the geothermal project, meeting the time and budget estimations. The main results are associated with the review of all the existing geo-scientific information, the updating of the integrated conceptual model and the definition of points and strategy of drilling.



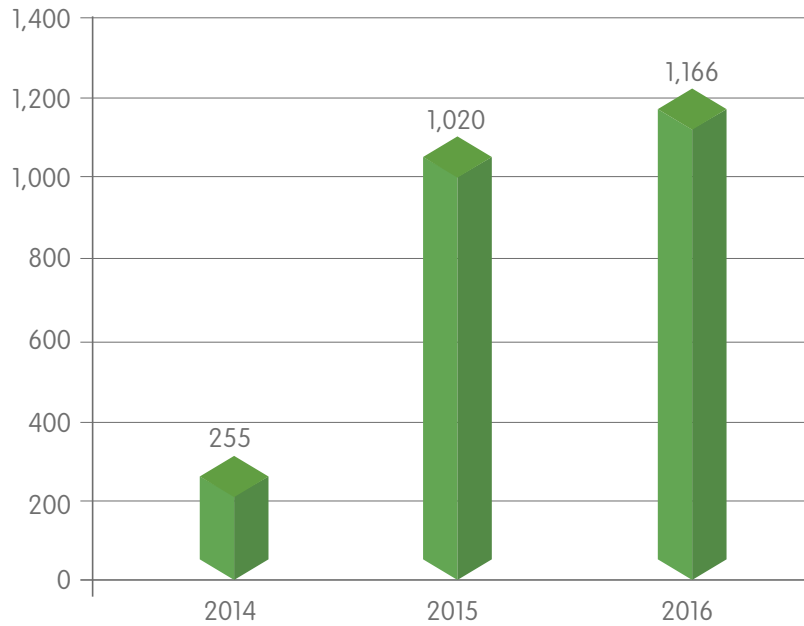
Upon completing the phase of geo-scientific assessments and going into matters of infrastructure development, licenses and environmental procedures to make progress on the phase of exploratory drillings, the Management of Development and Innovation submits the project to the Unit of Power Generation Strategy and Planning which suggests to continue with the technical and financial feasibility assessments between 2017 and 2019, as well as the construction of the plant between 2020 and 2022.

The environmental impact assessment for deep well drilling was completed.

It was decided to include new drilling points, which implies working on a civil infrastructure design delaying the kickoff of the contract. Currently, 75% of the contract is completed, and activities associated with the new location of the wells are being added.



### Investments in required assessments – Geothermal project (million COP)



**Source:** Vice-Presidency of Strategy and Growth – Management of Development and Innovation

*The chart shows the investments made by the Management of Development and Innovation for the assessments managed during these years. It does not include other environmental assessments financed by the affiliated company CHEC or contributions in kind made by the staff participating in these assessments, from both EPM parent company and the affiliated company.*

## Management indicators

**EPM-11** Initiatives of diversification of renewable energies.



## Solar photovoltaic energy

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As an important energy supplier agent in Colombia, EPM is aware that technological development has reduced the costs of generation, mainly with regard to photovoltaic solar panel technology, which turns it into one of the main options for the future energy supply. Therefore, the company is working on the implementation of this technology, not only as electrification solutions in non-interconnected and difficult-access areas, but also as a solution for users in urban areas.

### Management in 2016

In partnership with University of Antioquia, Sumicol and Andercol, EPM has been developing a project to build solar cells with new materials. During 2016, operational laboratory tests of the first perovskite solar cell minimodule were performed, obtaining efficiencies close to the ones available in commercial cells.

Additionally, EPM made progress structuring phase 1 of the new line of business to sell energy to self-generated energy customers based on this technology.



For the development of the Solar Park in Colombia, the project was discussed with the stakeholders impacted in the municipality of the area of influence, the environmental authority and the areas involved within the company. A cooperation agreement was signed.

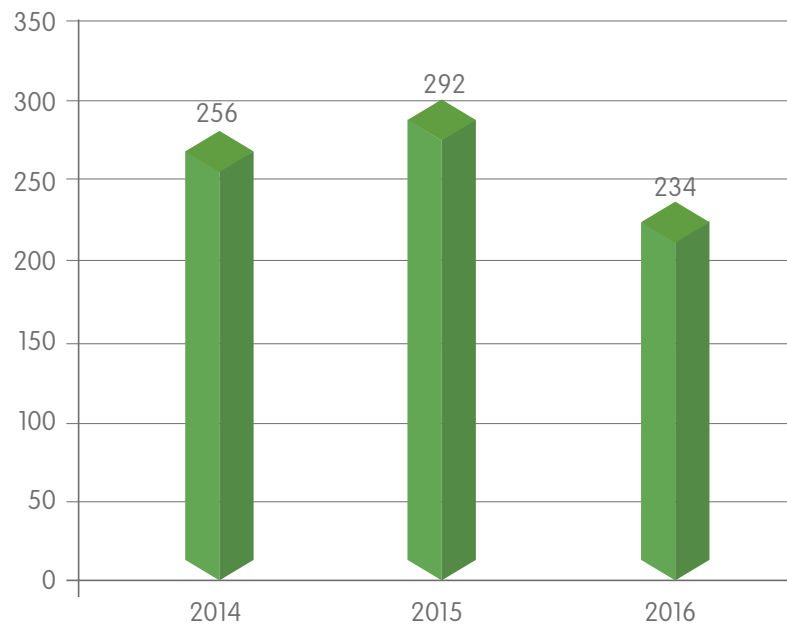
As for the development of the line of business, phase 1 was structured, which involves developing demonstrational projects with customers and testing the concept from the commercial, financial and technical points of view.

In the project of developing more efficient solar cells, the challenge is going from minicells to bigger cells without causing considerable efficiency losses. A pilot project was structured for rural schools of Antioquia in order to compare the operational performance of traditional panels to perovskite panels. The two firms hired through the executing entity started structuring the business model.

Along with the El Salvador Government, the EPM Group's affiliated company Delsur leads the contracting process to supply 150 MW of photovoltaic solar energy, supported by new generation plants, for the provisioning of energy needs of 7 distributors of the country. A call for tender was opened in 2016, and 25 offers, for a total of 890 MW, were received. These types of decisions encourage the investment in the country, since the joint efforts between the companies and the Government are an example of a clear interest in strengthening the energy sector in a trustworthy and transparent environment.



### Investments in pilot projects (million COP)



**Source:** Vice-Presidency of Strategy and Growth – Management of Development and Innovation.

*The chart shows the organization's investments for the execution of pilot projects over the last three years, which verify the solar energy business feasibility; in addition, progress in made on the project of development of more efficient cells.*

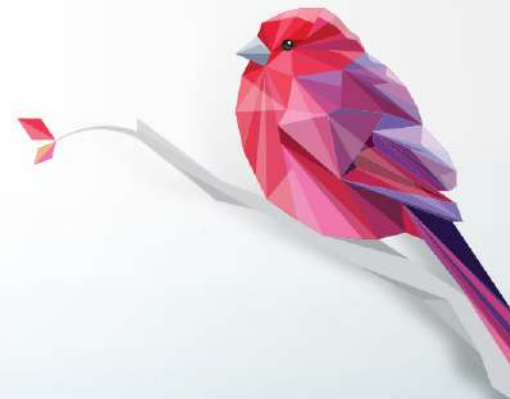
## Management indicators

**EPM-11** Initiatives of diversification of renewable energies.

# Climate strategy

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## Climate strategy

EPM has a climate change strategy that consists in a set of objectives, goals, statements, guidelines, as well as action and monitoring plans that will be carried out to achieve a comprehensive management on topics related to climate change and variability.

Vulnerability, adaptation and mitigation are its three “strategic lines,” along with the following support components: funding, technology, innovation and communication.

The higher frequency and intensity of natural disasters and climate change represent new worldwide challenges associated with population growth, urbanization increase, food shortage and demand, increase in the costs of fuels and power, health and well-being of the population, among others.

### Stakeholders’ vision

Ensuring means of livelihood, adaptation and sustainable measures to overcome the defiance of climate vulnerability and change is the ultimate challenge for the State and public institutions. Thus, the stakeholders take an interest in knowing what the company’s strategy is; how it is getting prepared to address the consequences of Climate Change in the regions where it operates; and what guidelines it has considered for acting in natural disaster cases, high temperatures, rainfall shortage or abundant rains and flooding, as well as in the consequences of all these factors over the communities and regions.

### Importance

Aware of its interdependence with the environment, the EPM Group recognizes the importance of articulating its management with a climate-compatible development, considering its environmental policy and plans, as well as its main purpose: sustainability.

Therefore, it is important to know how climate variability and change are affecting the ecosystems in the territories where the company operates and serves, as well as the availability of the natural resources it uses with the purpose of designing service provision strategies, restructuring its products, making the most of its competitive advantages, and establishing risk management schemes that enable both the company itself and its environment to adapt, favoring thus the construction of more solid economies.





## Main achievements

Goals for 2016	Achievements for 2016	Compliance
Maintaining the emission factor of EPM below the emission factor of the National Interconnected System.	The emission factor of EPM for 2016 (0.049 tCO <sub>2</sub> e/ MWh) remained below the emission factor of the National Interconnected System (0.190 CO <sub>2</sub> e/ MWh).	Total
Defining the Group's climate strategy based on EPM's current strategy.	Since the first contractual procedure to carry out this activity was declared void, it was necessary to prepare a new procedure which was awarded to the temporary joint venture MGM - Optim by the end of the year. To date, the procedure is in the stage of review and initial diagnosis.	Not met
REDD+: Continuing conducting activities on socio-environmental management (forestry promotion, construction of efficient stoves, wood gardens, productive projects and environmental education) and research on promising forestry species.	Progress was made in environmental education activities and in the contract for measurement of plots, including the monitoring of fauna and flora species.	Partial
Defining the reference terms and starting phase 2 of the study "Characterization of the water resource response through the generation of future series of precipitation, flow and temperature for the 2014-2100 time span".	During 2016, the scope, methodology and areas of interest for phase 2 of the study were agreed upon. The study will be awarded and will start in 2017. With its results, it is expected to analyze different scenarios of climate change and variability in areas of interest of EPM and at different space and time scales.	Partial
Carrying out training sessions on inventory of emissions within the Group in order to standardize the calculation methodology.	In August, 2016, the workshop on greenhouse gas emission calculation promotion and methodology, addressed to all intermediaries responsible for the activity within the companies of the EPM Group, took place. Concepts were standardized and joint management was agreed upon to calculate the emissions for 2016.	Total



Goals for 2016	Achievements for 2016	Compliance
Broadening the actions of adaptation to climate change in other areas of influence of CHEC, which have not been accessed to, by signing agreements with other institutions.	The agreement was established and implemented with Aguas de Manizales in 2016 to monitor the effects of climate change on the Chinchinā river basin. Given the lack of a conceptual and methodological framework of the system, it was necessary to cancel the agreement and start the contracting procedure of an expert. Integration with the International Research Centre on El Niño (CIIFEN) is being agreed upon.	Not met
Calculating the emission of CO <sub>2</sub> e tons due to energy losses in the distribution network of Eegsa, and managing the results.	The emissions generated by technical energy losses were measured. The results indicated there were losses of 144,551,904 kWh in the distribution network, equivalent to 46,256.4 tCO <sub>2</sub> e. A plan was structured to manage these losses.	Total
Being Neutral Carbon in EDEQ in 2022.	EDEQ acquired 1,200 carbon credits from Icontec's carbon offset program, in forestry sector activities. The company managed to accumulate 4,200 certificates over the last 3 years in order to offset its carbon footprint and contribute to the environmental BHAG of the EPM Group.	Total
Conducting natural risk analysis studies that include the risks and vulnerability attributed to climate change in Delsur's substations.	Delsur conducted studies to analyze risks attributed to natural disasters in 6 substations (San Marcos, Quezaltepeque, Masajapa, Atiocoyo, Lourdes and Ateos). With these, the study has been conducted already in 24 substations of Delsur. The results will be used to define the company's necessary measures and actions in the area where these infrastructures are located.	Total
Starting the 2016-2020 climate change analysis study in Delsur and setting out concrete adaptation actions adjusted to the climate conditions of the departments where the company operates.	Given the high climate variations occurring in El Salvador, it was necessary to buy four meteorological stations to timely respond to the emergencies and establish the first controls. The project will continue in 2017.	Not met





## Challenges

Challenge	Year of completion	Scope and coverage			Achievement indicator
		Geography	Business	Company	
Defining the climate strategy of the Group and agreeing upon the action plan until 2030.	2017	All geographies	All businesses	All companies	Strategy defined
Defining the carbon offset strategies of the EPM Group, taking 2016 as the baseline year, to meet the Neutral Carbon commitment in 2025.	2017	Colombia	All businesses	All companies	Offset Plan
Inspecting and certifying the reduction of emissions of the reduction projects registered in different standards.	2017	Colombia - Antioquia	Electricity	Empresas Públicas de Medellín - EPM	Inspection and certification
Preparing the first phase of the adaptation plan for the EPM Group.	2017	All geographies	All businesses	All companies	Phase I of the plan
Starting phase II of the U NAL study. Applied climate modeling.	2017	Colombia - Antioquia	All businesses	All companies	Construction of the modeling

## Management indicators

- G4-EC2** Financial implications and other risks and opportunities for the organization's activities due to climate change.
- G4-EN15** Direct greenhouse gas emissions (Scope 1).  
Electricity sector: Report CO<sub>2</sub>e per MWh, itemized by regulatory system for:
- Net generation of all the generation capacity.
  - Net generation of all the fossil fuel generation.
  - Estimated net delivery for all end users. This includes emissions of the organization's own generation.
- G4-EN16** Indirect greenhouse gas emissions (Scope 2). Electricity sector: Report CO<sub>2</sub>e per MWh, itemized by regulatory system for the estimated net delivered to end users, including acquired energy emissions.
- G4-EN17** Other indirect greenhouse gas emissions (Scope 3).
- G4-EN18** Greenhouse gas emissions intensity.
- G4-EN19** Reduction of greenhouse gas emissions.



- G4-EN20** Emissions of ozone-depleting substances in weight.
- G4-EN21** NOx, SOx, and other significant air emissions by type and weight.  
Electricity sector: Report emissions by MWh for: i) net emission of all the generation capacity and ii) net generation of all the combustion plants.
- G4-EN30** Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce.

## Sustainable development goals





# Adaptation to natural variability and climate change

Set of strategies, measures and projects duly identified, assessed and prioritized in time, in accordance with the scale of risk related to climate events, with the purpose of providing actions that contribute to the sustainability of the company, its services and its environment by means of the adaptation to climate conditions and changes.

## Management in 2016

During 2016, reforestation and forestry conservation actions are reported among the most relevant practices carried out by the companies and businesses of the EPM Group, in order to contribute to mitigation of and adaptation to climate change.

ESSA managed to conserve 335 hectares of forest through the BanCO2 agreement with the Regional Autonomous Corporation of Santander. Likewise, it makes progress on the protection of 220 hectares of natural forest, where five water springs are located; moreover, it implemented necessary actions to ensure 52,000 trees are planted in areas of influence of the organization.

EDEQ surpassed the 2016 annual goal by planting 3,132 trees in the department of Quindío as an offset measure and contribution to environmental improvement and climate change mitigation.

As part of its mitigation of and adaptation to climate change strategy, the Panamanian affiliated company ENSA signed an agreement with Ecofarms Corporation. This agreement aims at reforesting 3.5 hectares of native forest as part of the Mamoni River Conservation and Tropical Restoration project. In addition, ENSA started recognizing protected areas located under the power distribution lines in order to identify necessary actions to guarantee their conservation.

Delsur supported the planting of trees in its communities and signed the Delsur – MARN agreement with the purpose of contributing to the conservation of protected natural areas in El Salvador and the reduction of CO<sub>2</sub>.



As measures of analysis and monitoring of risks associated with climate events, Egsa (Guatemala) acquired four weather stations. Moreover, the Water and Sanitation business of EPM updated its risks in the strategic, business and process levels, and risks associated with scarce natural resources were identified in each level, as well as treatment plans were prepared.



While mitigation deals with the causes of climate change, adaptation focuses on its effects. In this sense, the consulting agreement that will support the EPM Group in the formulation of the comprehensive plan for climate change adaptation began in 2016. The first analysis of data related to risk management were performed, and progress was made in the diagnosis of initiatives and programs.

ESSA, for its part, through the BanCO<sub>2</sub> program, managed to offset 42,782 tons of CO<sub>2</sub> emitted by the different production processes of the company, and paid COP 247,750,000 to 36 peasant families who protect the forests. The affiliated company's purpose is to engage new families in the program in 2017.

Given the difficulties occurring in the department of Quindío regarding water scarcity, EDEQ established joint efforts with other entities of the region to guarantee the planting of trees, the conservation of wetlands and the establishment of community programs. Along with the Regional Autonomous Corporation of Quindío, it managed to engage 11 new families in the BanCO<sub>2</sub> program, for which it paid COP 39,600,000 for the conservation of 1.5 hectares of forest in each piece of land.

CHEC continued the offset payments to all families engaged in the BanCO<sub>2</sub> program in the department of Caldas; monitored the protected forests; and started paying the 17 new families. Additionally, it intervened 3,823 hectares in the basins that supply the power generation system, besides the 6,278 hectares that are the company's property. Likewise, it signed an agreement with Corpocaldas and Carder to apply the WEAP system in case of climate change scenarios in the Campo Alegre and San Francisco river basins, which are part of its power generation system and have a hydroclimatological monitoring network to support, jointly with other institutions, the consolidation of the comprehensive network of monitoring to climate change in this coffee region. The affiliated company also participates permanently in the comprehensive management of basins, the agreements and the Manizales' Basin Council with the purpose of establishing measures of mitigation of and adaptation to climate change.

ENSA continued its programs of prevention and risk management, change of community habits, and cleaning of waters sources. As part of the voluntary reforestation plan, jointly with the "State alliance for one million hectares in Panama," it reforested one hectare of forest.

Delsur conducted natural disaster risk studies in five power substations and drew risk maps considering the events of earthquakes, floods, volcanic eruptions and possible effects of climate change, with the purpose of preparing the risk action plan associated with these events.







Given the climate vulnerability presented in Guatemala, Eegsa purchased four weather stations that will be installed in strategic points of the area covered by the company, so that progress can be made in the definition of the baseline and the formulation of the adaptation plan.

The Water and Sanitation business of EPM made progress in the assessments to determine new supply sources for 2050, considering the offer of the current sources, the demand forecasts and the response capacity of the catchment infrastructure.

Aguas Regionales, for its part, started a contingency plan to supply water in dry seasons, which considers the assessment of new sources and the use of groundwater. Three wells were built and one existing well was set up. The construction of another additional well is expected with contributions of the Ministry of Housing, City and Territory.

Relevant specific actions for 2017 include:

- Surpassing the conservation goal of 95 hectares of forest, as an offset mechanism for the carbon dioxide emissions generated by ESSA.
- Consolidating a hydroclimatological monitoring network, jointly with institutions that have stations in the department of Caldas.
- Applying the WEAP model in case of climate change scenarios in the Campo Alegre and San Francisco river basins in the department of Caldas.
- Defining the climate change action plan of ENSA, taking into account the mitigation and adaptation measures, in line with the internal guidelines of the Group's parent company.
- Starting a 2016-2020 climate change analysis study in Eegsa to set out concrete adaptation actions adjusted to the climate conditions of the departments where the company operates.

## Management indicators

**G4-EC2** Financial implications and other risks and opportunities for the organization's activities due to climate change.



# Management of the climate strategy

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Added to the environmental issues, climate change generates important challenges for the human kind and the global economy. It is considered as part of the main factors that define the trend towards sustainability and it becomes a key field of study and comprehensive analysis in environmental, social, political, economic, technological, regulatory and cultural matters for defining business positions.

Fixing strategies based on the aforementioned perspectives enables the companies to face the challenge posed by their growth and development considering the climate impact.

## Management in 2016

The agreement of the EPM Group's commitment to achieve a Carbon Neutral operation in 2025, based on the definition of the environmental BHAG 2016 – 2019.

The Icontec's verification and certification of 66,998 tCO<sub>2</sub>e reduced during 2015 by the La Vuelta and La Herradura micro-power stations.

The awarding the consulting agreement to the MGM – Optim PTIM temporary joint venture and the kickoff of the contract. The objective of the contract is to prepare the climate strategy of the EPM Group for 2030 and to establish its action plan standardized to, integrated into, and focused on the needs, risks and opportunities posed by the issue for both the Group's businesses and companies and the regions where it operates.

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In 2016, the EPM Group continued the actions related to mitigation of and adaptation to climate change.

It managed the Ituango Hydroelectric Project, the REDD+ strategy, the Jepírachi wind farm and the La Vuelta and La Herradura micro-power stations, registered in different international emission reduction standards, in order to guarantee the compliance with the commitments arising from the PDP (project development plans) and to identify possible improvements and adjustments.

EPM's emission indicator remained below the emission factor of Colombia's National Interconnected System, from 0.056 tCO<sub>2</sub>e/MWh in 2015 to 0.049 tCO<sub>2</sub>e/MWh in 2016, due mainly to the increased diesel-fuel operation in the La Sierra thermal power station during 2015.





The Group made progress in the definition of an analysis methodology of vulnerability and adaptive capacity based on an exercise carried out by Colombia's Ministry of Environment, with which it aims at contributing to the analysis of specific risks associated with climate change in the process, project, business, company or territory levels, as appropriate. The Group expects to carry out a pilot exercise in 2017 that allows its validation, standardization and implementation.

It took part in regulatory and sectorial committees to analyze and define specific mechanisms that allow the organization to contribute to the compliance with national, regional, sectorial or trade commitments, related to the goals of COP 21. In this sense, the Group contributed to the agreement on the action plan with the electricity sector of Colombia, the regional node of climate change of Antioquia and the climate change committee of Medellín.

Through the consulting agreement whose purpose is to formulate the climate strategy and the adaptation plan of the Group, the preliminary diagnosis was obtained and the main findings, risks, challenges and opportunities were identified in each country where the organization is present. From this analysis and after the discussion and validation by the organization's executives, the new climate strategy will be proposed for the entire Group, as well as the main actions to comply with the public commitments.

EPM's emission factor / National Interconnected System's emission factor			
Item / Indicator tCO <sub>2</sub> e/ MWh year	2014	2015	2016
EPM's emission factor:	0.0246	0.0567	0.0498
National Interconnected System's emission factor:	0.2000	0.2210	0.1900

Source: EPM

*The emission factor of EPM for 2016 (0.0498 tCO<sub>2</sub>e/ MWh) is below the emission factor of the National Interconnected System (0.190 CO<sub>2</sub>e/ MWh). Thus, the agreement signed in the climate change statement of EPM since 2012 is met. The emission factor of the Colombian electric system went from 0.221 tCO<sub>2</sub>/MWh in 2015 to 0.190 tCO<sub>2</sub>e/MWh in 2016. That is, it decreased in 2016 due to the increased operation of the country's thermal power stations during 2015 because of El Niño.*



## EPM Group's carbon neutral initiative for 2025

Emission reduction projects				
Projects / Standard	Credit Period	Ton CO <sub>2</sub> e verified for 2014	Ton CO <sub>2</sub> e estimated for 2015	Ton CO <sub>2</sub> e verified for 2016
Jepirachi/ UNFCCC	2012 - 2018	29,956	30,366	0
La Vuelta and La Herradura/ UNFCCC	2010 - 2017	87,409	73,567	66,998
Ituango Project / VCS	2018 - 2027	0	4,383,088	0
REDD++/ CCB	2014 - 2023	0	5,461	0
Los Cururos / Gold Standard	2014 - 2020	197,424	198,650	0
<b>Total</b>		<b>314,789</b>	<b>4,691,132</b>	<b>66,998</b>

Source: EPM

The emissions reported for 2015 correspond to the amounts estimated in accordance with the operation of the projects and the emission factors, while the emissions reported for 2014 correspond to the amounts verified in 2013 and the emissions reported for 2016 to the amounts verified in 2015. Since 2004, EPM has been developing emission reduction projects based on diverse international standards; to date, the commitments to commercializing with Jepirachi are still in force up to 2017. In that sense, only the emissions verified for the La Vuelta and La Herradura micro-power stations are available.

Comprehensive progress is made on the analysis of other alternatives that offer compensation.

## Balance on emission inventory for 2016

Net balance of EPM's emissions for 2015 - 2016		
Emissions / Reductions	Ton CO <sub>2</sub> e 2015*	Ton CO <sub>2</sub> e 2016*
Scope 1	601,133	508,181
Scope 2	153,100	118,342
<b>Total emissions</b>	<b>754,233</b>	<b>626,523</b>
<b>Emission reduction</b> (including only the annual verified emissions from La Vuelta and La Herradura. Only emission reduction project in operation and without commercialization commitment).	<b>87,409</b>	<b>66,998</b>
<b>Balance</b>	<b>666,824</b>	<b>559,525</b>

Source: EPM

\* Emissions are verified in accordance with the previous year's operation.



A negative balance for EPM's carbon offset in scopes 1 and 2 remains. It is a result of the emission reduction achieved by registered and operating reduction projects. The emissions verified for 2014 and 2015 of the La Vuelta and La Herradura micro-power stations are only available in 2016. These micro-power stations accumulate 154,407 tCO<sub>2</sub>e for that time span.

The other projects are not operational yet, and Jepírachi keeps its commercialization commitment until 2017.

## Management indicators

- G4-EC2** Financial implications and other risks and opportunities for the organization's activities due to climate change.
- G4-EN19** Reduction of greenhouse gas emissions.



# Climate change mitigation

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Set of actions, initiatives, projects and programs developed by the company with the purpose of avoiding and reducing the greenhouse gas emission in its processes and operations.

## Management in 2016

During 2016, the progress of ESSA, CHEC, EDEQ, Eegsa and ENSA stands out for estimating their own carbon footprint, as well as the development of different initiatives undertaken by the different businesses and companies integrating the EPM Group contributing to the reduction of greenhouse gas emissions.

The inventory of scope 1 and 2 emissions of the EPM Group, including the international affiliated companies, was obtained for the first time. The same estimation method was used, and progress was made in the standardization and unification of technical criteria. Results indicate a total of 833,741 tCO<sub>2</sub>e were emitted during 2016, defined as the base year of approach and management to comply with the commitment to the Group's carbon neutral by 2025.

Through the energy optimization program in the San Fernando Waste Water Treatment Plant, the emission of 185.07 tCO<sub>2</sub>e was avoided by converting the 5.05 m<sup>3</sup> of biogas produced in the year into 1.5 Gwh used for the plant's internal operation.

The District Cooling in La Alpujarra sector, Medellín, started operations to improve the energy efficiency of the public buildings of the sector, replace the air conditioning systems that work with ozone-depleting substances (ODSs) and generate environmental benefits. It is expected that ODSs decrease by 100%, as well as savings of more than 37% in direct and indirect greenhouse gas emissions.







EDEQ purchased the certificates of carbon emission reduction corresponding to 1,200 tCO<sub>2</sub>e, in order to leverage its own Carbon Neutral initiative in 2022. Likewise, as part of the BanCO<sub>2</sub> program, it managed to capture 4,950 tCO<sub>2</sub>e through the conservation of 16.5 hectares.

Being aware of the implications sulfur hexafluoride (SF<sub>6</sub>) poses in greenhouse gas emissions, ESSA continues working for the reduction of energy losses and the maintenance and remodeling of substations. The emission of 560 kg of SF<sub>6</sub> was avoided; technological changes in the power substations took place; and the annual plan for maintenance and technological changes of the air conditioning systems was met, which reduced the emissions of refrigerant gases such as R-22 and R-410A.

CENS started controlling and monitoring the fuel consumed by its vehicle fleet and some external groups' fleet, with the purpose of establishing strategies of emission reduction; moreover, it acquired new technology to avoid the use of SF<sub>6</sub>.

ENSA continued the energy efficiency procedures required in the operational processes of the company to contribute to the reductions in the energy demand. That is the case, for instance, of the measurement of emissions of its vehicle fleet, the preventive maintenance of vehicles, the development of awareness-raising campaigns and the installation of applications for virtual meetings to 40% of the employees. In addition, progress was made in the development of the pilot project of remote management in the public lighting, the strengthening of projects of electronic billing among its customers, and the remote measurement, connection and disconnection, with a total report of 2,983 customers in this program by the end of the year.

Eegsa reforested approximately 8 hectares in areas covered by the company, through which it is expected to capture 27.2 tCO<sub>2</sub>e per year, considering the growth conditions of the different species. It started the telecommuting pilot program among its employees, avoiding a total of 2.04 tCO<sub>2</sub>e emissions by reducing the commuting of 15 employees during 6 months.

Due to technical losses of 144,551,904 kWh, 46,256.4 tCO<sub>2</sub>e were emitted in Eegsa during 2016; therefore, the company defined a loss reduction plan that will be subject to approval and implementation in 2017.

Delsur managed to reduce by 2.8% its energy consumption and increased the performance of its vehicle fleet through strategies of information and awareness-raising, replacement of lights and updating of technological spare parts.

EPM continued the programs to encourage electric mobility, reduce polluting emissions, and generate new behaviors in energy demands. The maintenance of equipment isolated in SF<sub>6</sub> and the preventive maintenance of leaks were carried out.

Along with the national power distribution companies, EPM continued the loss control program and met the annual indicator goal of 7.64% (0.77% below the established goal which was 8.41% for the year) and the energy recovery goal of 27.26 GWh, with a total of 6.69 GWh recovered by December, 2016.



The company started reporting the control of fossil fuel consumption in seven of the contractual processes of the water and sanitation business. For its part, through the treatment of biogas produced in the Santa Fe de Antioquia WWTP, operated by Aguas de Occidente, it was possible to control 18.76 tons/year of the methane produced during the waste water treatment process, equivalent to 32.82 tCO<sub>2</sub>e.

Thanks to the replacement of vehicles that worked with diesel technology for natural gas vehicles in the collection of urban solid waste by the affiliated company Emvarias, it was possible to reduce 10.78 tCO<sub>2</sub>e in the fleet (the company has 63 collecting vehicles, by the end of 2016). Moreover, competitive bids were collected for the provision of the operating lease of vehicles service, whose purpose is to reduce atmospheric emissions and noise and save money for the company; at the same time, progress was made in the measurements of flow and characterization of gases emitted in the La Pradera landfill to control and manage them.

To contribute to the improvement of the air quality, EPM created special rates for the natural gas supply of the Metroplús public transport. Likewise, through the construction of the La Alpujarra District Cooling, the company was able to implement new technological developments that allow the use of natural gas as an energy-efficient and clean solution in air conditioning systems, avoiding the emission of ozone-depleting substances and greenhouse gases in cooling systems of urban buildings. It is expected 30% of the district cooling is operational in 2017.

Some specific challenges for 2017 in the affiliated companies of power transmission and distribution:

- Continuing the program of maintenance of equipment isolated in SF<sub>6</sub> in EPM's power distribution substations and the SF<sub>6</sub> treatment in all power switches of ESSA's substations.
- Engaging 20 new families of Caldas and Risaralda and 5 of Quindío in the BanCO<sub>2</sub> program with the purpose of increasing the capture of carbon dioxide.
- Acquiring 1,000 certified carbon credits from the Colombian Coffee Growers Federation for the Carbon Neutral program of EDEQ and planting 2,000 more trees in Quindío, as part of the forestry offset program.
- Achieving, by 2020, the reforestation of 100% of the trees felled by ENSA due to the execution of its projects, in a one-to-one ratio.
- Reducing by 3% the emissions of CO<sub>2</sub>e in Delsur, in relation to the emissions of 2016.
- Planting at least 8 hectares of forest in areas of influence of Eegsa, as a measure to compensate the emissions of 2016, and publish the results obtained in 2016 as baseline to manage the company's emissions.



Inventory of emissions (scope 1 and 2) – EPM Group			
Scope	Ton CO <sub>2</sub> e 2014	Ton CO <sub>2</sub> e 2015*	Ton CO <sub>2</sub> e 2016**
Scope 1	349,169.87	665,972	584,627
Scope 2	210,451.79	265,592	249,113
<b>Total</b>	<b>559,621.66</b>	<b>931,564</b>	<b>833,741</b>

Source: EPM

\* Including the energy affiliated companies: ESSA, CHEC, CENS and EDEQ; and the water affiliated companies: Aguas del Oriente, Aguas de Urabá, Aguas del Atrato, Aguas de Occidente, Aguas de Malambo and EPM.

\*\* Including EPM, Colombian and international affiliated companies, except HET, Cururos and Ticsa.

Source: EPM

The EPM Group's baseline is the 2012 inventory of emissions, which, just as EPM parent company, was drawn up following the GHG Protocol Corporate Accounting and Reporting Standard (Revised Edition).

Differences in relation to 2015 are mainly because of the coverage of the international affiliated companies' activities in estimating the 2016 inventory, as well as the fossil fuel consumption for the generation of thermal energy, mainly diesel.

Inventory of emissions (scope 1 and 2) - EPM			
Scope	Toneladas CO <sub>2</sub> e 2014	Toneladas CO <sub>2</sub> e 2015	Toneladas CO <sub>2</sub> e 2016
Scope 1	217,388	601,133	508,597
Scope 2	117,083	153,100	119,452
<b>Total emissions</b>	<b>334,471</b>	<b>754,233</b>	<b>628,049</b>

Source: EPM

In EPM, the inventory of GHG emissions has been made since 2008 following the GHG Protocol: *Corporate Accounting and Reporting Standard (Revised Edition)*, based on the emissions generated at the fixed, fugitive and mobile sources that, in 2016, comprise 262 motorcycles, 291 automobiles and pick-up trucks, and 92 trucks and buses, which are used for the transportation of the company's personnel, supplies and materials.

Variations in emissions in relation to last year were mainly in scope 1, which went from 601,133 tCO<sub>2</sub>e in 2015 to 508,597 tCO<sub>2</sub>e in 2016. Differences can be explained mainly because of the fossil fuel demand for the operation of the La Sierra thermal power station, as a result of the El Niño's impact on water generation.



Emissions (scope 3) - EPM			
Category	2014	2015	2016
Goods and services	16,118	16,118	16,118
Capital assets	525	525	525
Fuel-related activities	19,232	73,943	67,355
Waste resulting from operations	34,090	36,990	42,143
Corporate trips	3,439	4,382	4,756
Transportation of employees	1,568	1,287	1,287
End use of products sold	2,675,748	2,648,158	2,230,537
<b>Total emissions</b>	<b>2,734,076</b>	<b>2,781,403</b>	<b>2,522,721</b>

Source: EPM

Using 2012 as a baseline and following the GHG Protocol and the *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* published by the WRI and the WBCSD, the emissions for 2015 and 2016 were estimated. The results of these calculations allow concluding that the larger emissions are associated with the final use of the products sold.

Other emissions - EPM Group						
SOx and NOx emissions (tons/year)	2014 <sup>(1)</sup>		2015 <sup>(2)</sup>		2016 <sup>(3)</sup>	
	Nox	Sox	Nox	Sox	Nox	Sox
La Sierra thermal power station (isokinetic sampling)	313.45	0	24.04	0	721.29	0.65
Transportation of EPM's personnel, supplies and products in vehicles of the company	22.92	0.16	43.37	0.34	66.50	0.68
<b>Total</b>	<b>336</b>	<b>0</b>	<b>67</b>	<b>0</b>	<b>787.79</b>	<b>1.33</b>

Source: EPM

(1) Including EPM, CHEC, Aguas de Urabá and Emvarias.

(2) Including EPM, CHEC, ESSA, Aguas de Urabá, Aguas de Malambo, Aguas del Oriente, Emvarias and Delsur.

(3) Including EPM, Aguas de Malambo, CHEC, ESSA, Aguas del Oriente, Delsur, Aguas Regionales EPM and ENSA.



The main sources of these polluting agents are associated with the use of the fossil fuels necessary for the generation of thermal energy in EPM and the operation of the vehicles, machinery and equipment of the Group's companies.

Values reported in the year vary in relation to 2015 because of the consumption of diesel in the La Sierra thermal power station, the variation in the number of vehicles covering the international affiliated companies in this scope and, as a result, the variation of the distances travelled.

Other emissions - EPM Group				
Year	Benzene	Particulate material	CO	VOCs
2014 <sup>(1)</sup>	0.03	0.84	21.62	4.83
2015 <sup>(2)</sup>	0.13	1.05	62.03	8.98
2016 <sup>(3)</sup>	0.14	1.49	73.30	9.79
<b>Variation 2016/2015</b>	<b>6%</b>	<b>41%</b>	<b>18%</b>	<b>9%</b>

Source: EPM

(1) Including EPM, CHEC, Aguas de Urabá and Emvarias.

(2) Including EPM, CHEC, ESSA, Aguas de Urabá, Aguas de Malambo, Aguas del Oriente, Emvarias and Delsur.

(3) Including EPM, Aguas de Malambo, CHEC, ESSA, Aguas del Oriente, Delsur, Aguas Regionales EPM and ENSA.

The emissions of benzene, particulate material smaller than 10 micrometers (MP10), carbon monoxide (CO) and volatile organic compounds (VOCs), associated with the consumption of fuel in the fleets of EPM and its affiliated companies, are calculated in tons/year.

The emissions of refrigerant gases associated with the maintenance of air conditioning units in the company's offices are the following: HCFC: R-22: 0.377 tons; HCFC: R-410 A: 0.086ton.

[1] Emission factors of the International Vehicle Emission Model (IVE), which is funded by the EPA.

Other emissions - EPM						
Year	2014 <sup>(1)</sup>		2015 <sup>(2)</sup>		2016 <sup>(3)</sup>	
SOx and NOx emissions (tons/year)	Nox	Sox	Nox	Sox	Nox	Sox
La Sierra thermal power station (isokinetic sampling)	313.45	0	24.04	0	721.29	0.65
Transportation of EPM's personnel, supplies and products in vehicles of the company	21.98	0.15	13.98	0.10	7.05	0.05
<b>Total</b>	<b>335</b>	<b>0</b>	<b>38</b>	<b>0.10</b>	<b>728.35</b>	<b>0.70</b>

Source: EPM

(1) 272 motorcycles, 273 automobiles and pick-up trucks, 106 trucks and buses

(2) 270 motorcycles, 257 automobiles and pick-up trucks, 95 trucks and buses

(3) 262 motorcycles, 291 automobiles and pick-up trucks, 92 trucks and buses



The main sources of these polluting agents are associated with the use of the fossil fuels necessary for the generation of thermal energy and the operation of vehicles, machinery and equipment.

Values reported in the year vary in relation to 2015 because of the consumption of diesel in the La Sierra thermal power station, the variation in the number of vehicles and, as a result, the variation of the distances travelled.

Other emissions - EPM				
Year	Benzene	Particulate material	CO	VOCs
2014 <sup>(1)</sup>	0.09	0.83	20.63	4.65
2015 <sup>(2)</sup>	0.02	0.44	14.00	3.20
2016 <sup>(3)</sup>	0.01	0.27	7.27	1.63
<b>Variation 2016/2015</b>	<b>-50%</b>	<b>-39%</b>	<b>-48%</b>	<b>-49%</b>

(1) 272 motorcycles, 273 automobiles and pick-up trucks, 106 trucks and buses

(2) 270 motorcycles, 257 automobiles and pick-up trucks, 95 trucks and buses

(3) 262 motorcycles, 291 automobiles and pick-up trucks, 92 trucks and buses

The following emissions are calculated based on factors established by the United States Environmental Protection Agency (EPA) [1], which include the characteristics of the vehicles and the distances travelled: benzene, particulate material smaller than 10 micrometers (MP10), carbon monoxide (CO), volatile organic compounds (COVs) associated with EPM's vehicle fleet, which comprises 262 motorcycles, 291 automobiles and pick-up trucks and 92 trucks and buses. These emissions remain in barely significant amounts.

The emissions of refrigerant gases associated with the maintenance of air conditioning units in the company's facilities are only HCFC: R-22: 0.120 tons

[1] Emission factors of the International Vehicle Emission Model (IVE), which is funded by the EPA.





## Management indicators

- G4-EN15** Direct greenhouse gas emissions (Scope 1).  
Electricity sector: Report CO<sub>2</sub>e per MWh, itemized by regulatory system for:
- Net generation of all the generation capacity.
  - Net generation of all the fossil fuel generation.
  - Estimated net delivery for all end users. This includes emissions of the organization's own generation.
- G4-EN16** Indirect greenhouse gas emissions (Scope 2). Electricity sector: Report CO<sub>2</sub>e per MWh, itemized by regulatory system for the estimated net delivered to end users, including acquired energy emissions.
- G4-EN17** Other indirect greenhouse gas emissions (Scope 3).
- G4-EN18** Greenhouse gas emissions intensity.
- G4-EN20** Emissions of ozone-depleting substances in weight.
- G4-EN21** NO<sub>x</sub>, SO<sub>x</sub>, and other significant air emissions by type and weight.  
Electricity sector: Report emissions by MWh for: i) net emission of all the generation capacity and ii) net generation of all the combustion plants.
- G4-EN30** Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce.



# Unserved population

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# Unserved population

Unserved populations are those settled down in places with technical or legal limitations for providing the service, such as those located in high-risk areas or outside the perimeters of the land use plans. The solutions often exceed the exclusive scope of the companies providing the service; therefore, the involvement of multiple actors becomes necessary.

## Stakeholders view

Given its purpose and capabilities, the EPM Group is expected to exert leadership by calling other actors with skills and capabilities to propose solutions in order to provide the service.

## Importance

Because of the high social value for the Group's companies and stakeholders and because they have a major impact on building sustainable and competitive territories, unserved populations acquire the status of independent material aspect.

Given its purpose and capabilities, the EPM Group is an actor called to convene other actors to find solutions aimed at the unserved population. Moreover, this is a defining aspect of poverty, connected directly to the businesses, which consequently affects the Group in terms of ethics, reputation and non-technical losses. It also makes the situations of the environment worse such as conflicts between neighbors or increased geological risk in the case of the water supply service.



## Main achievements

2016 Goals	2016 Achievements	Compliance
To connect 600 homes to the electrical energy service.	1,323 homes connected.	Total
To connect 2,500 homes to the gas service.	4,617 homes connected.	Total
To connect 5,350 homes to the water supply and sanitation services.	4,804 homes connected.	Partial
To connect 5,350 homes to the sewerage service.	4,611 homes connected.	Partial

## 2016 Management

The purpose of the EPM Group for 2025 is to make the public utilities we provide 100% available in the places where we operate. EPM seeks to universalize access to these services through infrastructure and other conventional solutions. In 2016, the company contributed to improving the quality of life of 15,355 homes that did not have access to public utilities, which represents a compliance of 111% over the annual goal.



In 2016 EPM managed to connect 1,323 facilities to the electrical energy service; 4,617, to the gas service; 4,804, to the water supply service and 4,611 to the sewerage service, for a total of 15,355 new connections.

We highlight the efforts to connect facilities to the water supply and sewerage services thanks to the joint work with the Municipality of Medellín, Isvimed (Social Institute for Housing and Habitat of Medellín) and EDU (Enterprise of Urban Development), among other entities. These connections were implemented under three schemes: supply to the community through public standpipes, improvement of neighborhoods through infrastructure projects in areas of coverage and surveying of buildings through the formalization of public utilities, within the framework of the “United for Water” program by the Municipality of Medellín.





Existing homes that did not have access to residential public utilities - EPM		
	2015	2016
Water Supply	1,348	4,804
Sewerage	1,348	4,611
Electrical Energy	6,272	1,323
Gas	2,969	4,617
<b>Total</b>	<b>11,937</b>	<b>15,355</b>

**Source:** Vice Presidencies of Water and Sanitation, Power Transmission and Distribution and Gas.

Connections to the electrical energy service reported in 2015 correspond to those executed in Antioquia. The 2016 connections correspond to those carried out in Medellín.

## Challenges

Challenge	Completion year	Scope and coverage			Achievement indicator
		Territory	Business	Company	
6,690 water supply connections in existing homes that do not have access to this service.	2017	Colombia - Antioquia	Water supply	Empresas Públicas de Medellín E.S.P. - EPM	Number of connections made / Number of connections budgeted.
6,690 sewerage connections in existing homes that do not have access to this service.	2017	Colombia - Antioquia	Sanitation	Empresas Públicas de Medellín E.S.P. - EPM	Number of connections made / Number of connections budgeted.
2,000 electrical energy connections in existing homes that do not have access to this service.	2017	Colombia - Antioquia	Electrical energy	Empresas Públicas de Medellín E.S.P. - EPM	Number of connections made / Number of connections budgeted.
2,100 gas connections in existing homes that do not have access to this service.	2017	Colombia - Antioquia	Gas	Empresas Públicas de Medellín E.S.P. - EPM	Number of connections made / Number of connections budgeted.



# Management indicators

**EPM-12** Solutions for unserved homes.

## Sustainable development goals

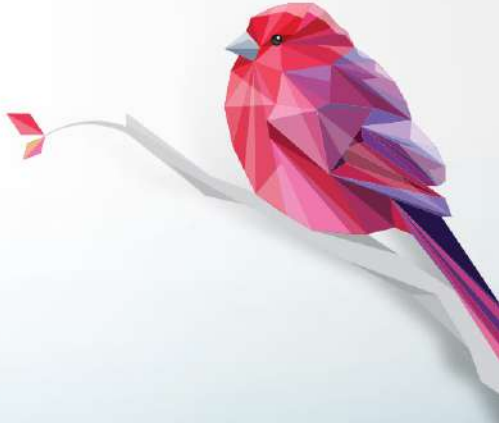




# Respect for and promotion of Human Rights

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# Respect for and promotion of Human Rights

With the proclamation of its Human Rights institutional policy, the EPM Group announces its commitment to adopt, in its own operations, and to promote, in the third parties' operations, compliance with the provisions of the Universal Declaration of Human Rights and its protocols, conventions, and binding agreements, including the International Humanitarian Law, the Colombian Political Constitution, and the Colombian legal framework. For the organization, this is a challenge in terms of its own sustainability and it assumes it with the conviction that respect for human dignity is a core commitment of the sustainable human development agenda.

The EPM Group is progressing gradually in the deployment of HR, with the aim of achieving, by 2019, the development of the due diligence procedures in all national and international companies that comprise it. To this end and based on the UN Guiding Principles, it identified the following aspects as elements of management for each affiliate company: identification and prioritization of HR risks, design and development of a management plan, internal and external training in HR and companies, adoption of the institutional policy, implementation of a mechanism of complaints and claims regarding HR, and a communication plan for stakeholders on commitment and management in this regard.

## Stakeholders Vision

A due diligence is essential for the respect and promotion of Human Rights in the Group's practices (including its supply chain), evaluating whether the company's relationships with its stakeholders can sometimes turn into an abuse of Human Rights, and identifying the effects of business activities on Human Rights based on the context.

## Importance

Viability of operations and reputation resulting from practices of respect for and promotion of Human Rights represent high values for the company and for people's dignity.

From the point of view of risk management: reputation, operation, finance, and legal aspects.



## Main achievements

Goals for 2016	Achievements for 2016	Compliance
HR risk atlas designed for national affiliated companies providing water and sanitation services and one international affiliate.	As decided by the Vice Presidency of Water Supply and Sanitation and the affiliate company ENSA in Panama, the goal is postponed for 2017.	Not met
Approach strategies drawn up for national affiliated companies providing water and sanitation services and one international affiliate.	As decided by the Vice Presidency of Water Supply and Sanitation and the affiliate company ENSA in Panama, the goal is postponed for 2017.	Not met
Adoption of the HR policy in national affiliated companies providing water and sanitation services and one international affiliate.	As decided by the Vice Presidency of Water Supply and Sanitation and the affiliate company ENSA in Panama, the goal is postponed for 2017.	Not met
Internal training program 100% implemented in EPM and the national affiliated energy companies.	EPM: 179/170 employees attended. 105% compliance. CHEC: 103/90 employees attended. 114% compliance. EDEQ: 221/100 employees attended. 221% compliance. ESSA: 295/200 employees attended. 148% compliance. CENS: 87/50 employees attended. 174% compliance.	Total



## Challenges

Challenge	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Designing HR risk atlas for national affiliated companies providing water and sanitation services and two international affiliates.	2017	Colombia	Water Supply and Sanitation	Aguas Regionales EPM	HR risk atlas.
				Aguas de Malambo	HR risk atlas.
				Empresas Varias de Medellín - Emvarias	HR risk atlas.
		El Salvador	Electricity	Distribuidora de Electricidad del Sur - Delsur	HR risk atlas.
		Guatemala	Electricity	Empresa Eléctrica de Guatemala - Eegsa	HR risk atlas.
Drawing up approach strategies for national affiliated companies providing water and sanitation services and two international affiliates.	2017	Colombia	Water Supply and Sanitation	Aguas Regionales EPM	Management plan with approach strategies.
				Aguas de Malambo	Management plan with approach strategies.
				Empresas Varias de Medellín - Emvarias	Management plan with approach strategies.
		El Salvador	Electricity	Distribuidora de Electricidad del Sur - Delsur	Management plan with approach strategies.
		Guatemala	Electricity	Empresa Eléctrica de Guatemala - Eegsa	Management plan with approach strategies.



Challenge	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Adopting the HR policy in national affiliated companies providing water and sanitation services and two international affiliates.	2017	Colombia	Water Supply and Sanitation	Aguas Regionales EPM	HR Policy adopted.
				Aguas de Malambo	HR Policy adopted.
				Empresas Varias de Medellín - Emvarias	HR Policy adopted.
		El Salvador	Electricity	Distribuidora de Electricidad del Sur - Delsur	HR Policy adopted.
		Guatemala	Electricity	Empresa Eléctrica de Guatemala - Eegsa	HR Policy adopted.

## Management indicators

- G4-HR1** Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening.
- G4-HR2** Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.
- G4-HR3** Total number of incidents of discrimination and corrective actions taken.
- G4-HR4** Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights.
- G4-HR5** Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.
- G4-HR6** Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.
- G4-HR7** Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations.
- G4-HR8** Total number of incidents of violations involving rights of indigenous peoples and actions taken.
- G4-HR9** Total number and percentage of operations that have been subject to human rights reviews or impact assessments.
- G4-HR10** Percentage of new suppliers that were screened using human rights criteria.
- G4-HR11** Significant actual and potential negative human rights impacts in the supply chain and actions taken.



- G4-HR12** Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms.
- G4-SO11** Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms.
- G4-EU22** Number of physically or economically displaced people and the compensation granted, detailed by type of project.

## Sustainable development goals







# Human Rights in the supply chain

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Since Human Rights (HR) started to be addressed institutionally in 2011, EPM has focused much of its efforts on promoting their management in its supply chain, under the premise that operations through third parties can lead to risks associated to them and because the organization also has an interest in having its entire value chain aligned with the commitment to respect and promote HR.

In line with this approach and considering that it is important to strengthen this management in the country's corporate practice, the company has been working on the conceptual approach, the insertion of practices and the adoption of instruments consistent with the respect for HR along with the contractors of the Group's affiliate companies.

Based on this framework, during 2016, part of the efforts of the EPM Group's companies in Colombia with their suppliers were focused on raising awareness and training executives, in order to bring them closer to the subject and encourage them to address it.

## Management in 2016

A termination clause was included in the contract documents in those cases in which the provisions of Code of Conduct for suppliers and contractors are not met, which includes commitments associated with Human Rights, labor standards, and fight against corruption. A total of 5,095 companies have formally committed to this initiative so far.



As part of an appropriate procedure to deal with Human Rights, EPM periodically monitors and updates the risk map in HR, in order to maintain existing management strategies. It is also done in the affiliate energy companies in Colombia (CHEC, EDEQ, CENS and ESSA) and it includes the analysis of operations carried out through third parties.

Although an individual supplier analysis has not been conducted at the EPM Group, issues to be addressed from the supply chain management such as freedom of association, discrimination due to various reasons, health and safety at work, and use of child labor have been identified in a general way.

Among the strategies of response to these findings and in order to strengthen institutional work on Human Rights, clauses establishing the obligation to embrace the HR institutional policy were kept in the contracts signed with third



parties during 2016. For instance, this policy prohibits child labor and favors decent work, i.e., without discrimination, well paid and developed in a safe and healthy environment. Moreover, the Code of Conduct is included in the contract documents and its purpose is for every supplier and contractor to ensure that their employees and representatives understand and meet all the institutional guidelines related to the subjects covered therein, including HR.

At EPM, the “Institutional Mechanism for Human Rights Incidents for Workers of Contractor Companies” is still in operation. This instrument was designed to facilitate the relationship with this group and identify actions to strengthen processes related to contractual management. It is coordinated by the Supplier Diversity and Development Unit, an area that, based on the specific features of each incident, makes up a team with representation from different areas of the company, conducts the investigation, and gives a final recommendation. During 2016, five incidents related to labor issues were reported. One of them was sent, due to responsibility, to the complaints and claims unit in the Ituango Hydroelectric Project, and the other four were addressed and solved through the Mechanism itself.

In 2016, EPM participated actively in the development of the Guideline for the Supply Chain Management, while meeting criteria of HR, promoted by *Guías Colombia*, an initiative that fosters and supports business-environment relationships under minimum standards of compliance and respect for HR and the International Humanitarian Law (IHL) in the country.

In the energy subsidiaries in Colombia, work began on awareness-raising and training of suppliers and contractors in order to formally incorporate the issue of HR in the operations.

## Management indicators

<b>G4-HR1</b>	Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening.
<b>G4-HR5</b>	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.
<b>G4-HR6</b>	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.
<b>G4-HR10</b>	Percentage of new suppliers that were screened using human rights criteria.
<b>G4-HR11</b>	Significant actual and potential negative human rights impacts in the supply chain and actions taken.
<b>G4-HR12</b>	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms.





# Human Rights management in projects under construction

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Commitment to the respect for and promotion of Human Rights is a business activity premise in the development of all the projects conducted by the organization. The institutional approach to the subject, whose framework is the Human Rights policy and the guidelines that complement it, provides a basis on which each department responsible for implementing a project defines priorities and lines of action, according to the needs identified in the environment through the relationship with stakeholders.

To this end, every time the organization starts the construction of an infrastructure project that involves an intervention with significant impacts, it carries out an assessment to define specific strategies to deal with the risks identified in the territories impacted. In the projects whose construction time is considerably extended, assessments are conducted periodically in order to keep findings up-to-date.

## Management in 2016

In the development of the Nueva Esperanza energy transmission project, a methodology was designed to assess the impact of the relocation of families located in the easement corridor, which is based on physical, social, and economic components. Its implementation was carried out in conjunction with a support plan that allowed the relocation and improvement of the living conditions of 16 families.



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## Ituango Hydroelectric Project

The Ituango Hydroelectric Project, which is being built by EPM in northern Antioquia, is currently the largest one in terms of power generation in the country. It is located 171 km from the city of Medellín, between the municipality of Santa Fe de Antioquia (south) and the Ituango River (north). The most important works are on the right bank of the Cauca River. In 2018, when its construction will be completed, the plant will have 8 generating units and a power capacity of 2,400 megawatts.

The project is a lever for the development of the region and the country, since it boosts the economy of the 12 municipalities that make up its area of influence, with particular emphasis in Ituango, San Andrés de Cuerquia and Toledo, where the major works are being constructed. This is particularly evident in the purchase of goods and services and the generation of direct and indirect employment.



The great complexities of the territory, associated with the presence of armed actors, high rates of victimization of people, and the historical absence of the Government, led to the creation of seven citizen oversight committees with the participation of municipal ombudsmen's offices in the towns of Olaya, Buriticá, Peque, Sabanalarga, Liborina, Santa Fé de Antioquia and Ituango, in order to provide guarantees for the permanent monitoring of respect for the rights of the population during the development of the project. With ombudsmen and overseers, it was agreed to start the training process to make progress in the construction of the work plan.

Concerning the integral restitution of living conditions, progress was made in 92% of the agreements with families that are subject to an integral restitution in the municipalities of Sabanalarga, Peque, Valdivia and San Andrés de Cuerquia.

As far as cultural memory is concerned, a collective construction was also started, which has also dealt with other factors such as the local cemeteries of Barbacoas, Orobajo and the old village of Fortuna on riverside lands of Buriticá, as well as the practice of burial of bodies found on the beaches of the Cauca river. With the Office of the Attorney General of Colombia, bodies buried on the beaches of the Cauca River at the sites of Nape and Quiasesco—places of influence of the community of Barbacoas in the municipality of Peque—were exhumed.

## Nueva Esperanza

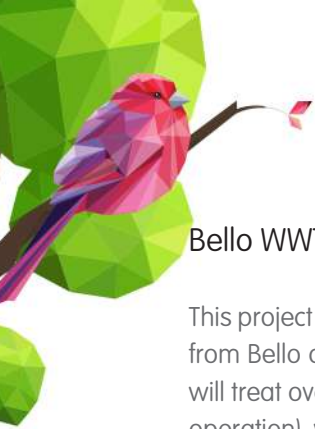
This project is part of the National Transmission System (abbreviated STN in Spanish) and aims at increasing the capacity of power transmission, as well as the reliability of the electrical system for Bogotá, Cundinamarca, northern Tolima, Meta and Guaviare. It includes the construction of a line of 500,000 volts, another of 230,000 volts, and a 500/230 kV transformer substation, which was awarded to EPM by the Mining and Energy Planning Unit (abbreviated UPME in Spanish) through public call.

Throughout the year, six offices to address complaints from different communities impacted by the project, as well as the mechanism for complaints and claims regarding Human Rights, remained operational. The indicators on both aspects are listed below.

## BGA

Bello - Guayabal - Ancón is a 230 kV (kilovolt) power transmission project that will increase the capacity of transmission of power generated in Antioquia to benefit other regions of the country and offer greater reliability to the electricity system that supplies the municipalities of the Valle de Aburrá. EPM made progress in the studies and procedures for obtaining the environmental license of the project, which was issued by the National Environmental Licensing Authority (abbreviated ANLA in Spanish), through Resolution 781 of July 29, 2016.

In response to the impacts identified in the environmental studies stage, within the framework of the project, a social intervention program for addressing RCC (requests, complaints and claims) was established, which seeks to identify the needs of communities, grassroots organizations, labor unions, and municipal administrations for managing impacts and timely addressing RCC derived from the project actions.



## Bello WWTP

This project that is part of the plan for the recovery of the Medellín River and its streams seeks to receive wastewater from Bello and northern Medellín through an interceptor, 8 kilometers long and 2.4 meters in diameter. The plant will treat over 70% of the wastewater of the Valle de Aburrá, which, added to the San Fernando WWTP (currently in operation), will mean a global coverage of 95%.

During 2016, 84 group socializations, 14 educational workshops, and 2 academic days were held with leaders in the area of influence of the project, in order to explain in detail the implications and impacts of the work.

Through the planting of 8,200 trees, progress was made on the subject of forestry compensation, and the course aimed at community leaders on issues related to the territory and the environment was completed. The project has a community service office as part of the strategy of respect for the rights of people impacted by the project.

## Ethnic Minorities

As part of the work on Human Rights and in line with its institutional policy on the subject, when the appropriate authority certifies the presence of ethnic communities in the areas where projects are developed, EPM initiates a protocol that is regulated by law to ensure respect for their customs and cultures.

In this regard, we can mention the case of a writ for protection of constitutional rights submitted by a person who claimed to represent the indigenous community Nutabe de Orobajo, in Sabanalarga and Medellín, acting as Governor of the Council of the Metropolitan Area of Medellín. This writ was filed against the Ministry of the Interior and EPM due to alleged violations of the integral survival, identity and cultural integrity, and collective ownership of the Nutabe indigenous community during the development of the Ituango Hydroelectric Project. The High Court of Antioquia, Criminal Chamber, solved the appeal denying the pretensions of this writ, which was later confirmed, in second instance, by the Criminal Cassation Chamber of the Supreme Court of Justice, in which the non-violation of the ethnic community rights, in particular the right to prior consultation, was ratified.

During the implementation of the Expansion Plan for the RTS, ESSA consulted the Ministry of the Interior, Directorate of Prior Consultations, on the presence or not of ethnic groups. This institution certified that there is no presence of indigenous communities, minorities and Rom (gypsy community) in the area of interest of the projects.

Moreover, CHEC consolidated a process of support to the indigenous reservations located in the municipalities of Supía, Riosucio and Quinchía in the departments of Caldas and Risaralda. These reservations have been areas of difficult management for the provision of the energy service, since this is where artisanal mining is developed through underground excavations at great depth, which requires electrical equipment such as engines to inject air and illuminate the interior of the mine 24 hours a day; therefore, some mines are connected irregularly to the energy network in order to avoid the costs associated with a high consumption of electricity.





The agreement reached with the leaders of these reservations allows managing the technical, commercial, and social actions of the company, through periodic meetings that make it possible to understand the intervention needs of both parties. The process of collecting primary and secondary information required to carry out the characterization of the indigenous communities of the San Lorenzo reservation and the Embera-Chamí unified reservation on the San Juan river has been implemented in a 65%. A pedagogical strategy in the Embera-Chamí unified reservation of the municipality of Pueblo Rico was developed for the translation of the information of the company to the Embera language.

Legal actions taken in the Ituango Hydroelectric Project							
Item / Indicator	2014		2015		2016		Solved in 2016 of those addressed in previous years.
	Addressed	Solved	Addressed	Solved	Addressed	Solved	
Official letters	12,212	12,212	12,496	12,496	865	865	125
Rights to petition	1,214	1,214	442	280	2,874	2,863	16
Writs for protection of constitutional rights	8	8	11	8	8	8	2
Claims addressed	10	-	-	-	7	2	2

Source: Vice Presidency of Projects and Engineering

Out of the total rights of petition, 48% of appeals are from the municipality of Sabanalarga to request inclusion in censuses..

Employment generated in the Ituango Hydroelectric Project				
Item / Indicator	2014	2015	2016	Variation
Total jobs generated	6,505	7,984	10,307	29.1%
People from the region hired	2,092	2,644	2,593	-1.9%
Percentage over total	32%	18%	25%	38.9%

Source: Vice Presidency of Projects and Engineering

For this period, the total number of people hired in the region decreased by 1.9% compared to 2015 due to the suspension of the Puerto Valdivia - Dam site road by ANLA.





Legal actions taken in the Nueva Esperanza Project						
Item / Indicator	2014		2015		2016	
	Addressed	Solved	Addressed	Solved	Addressed	Solved
Official letters			68	45	49	20
Rights to petition	4	4	21	18	22	18
Writs for protection of constitutional rights	10	10	-	-	1	1
Claims addressed	18	12	-	-	1	1

Source: Vice Presidency of Projects and Engineering

Appeals are mostly related to review of the values offered for the constitution of easement and general information about the project. Likewise, the rights of petition request the rapid response to negative effects caused during the construction process.

Official letters and rights of petition not addressed are due to the fact that they are in the process of conciliation.

Employment generated in the Nueva Esperanza Project				
Item / Indicator	2014	2015	2016	Variation
Total jobs generated	516	870	1,509	73.4%
People from the region hired	369	426	231	-45.8%
Percentage over total	70%	49%	15%	-68.8%

Source: Vice Presidency of Projects and Engineering

This variation is caused by the completion of several lines of work and the lack of availability of local labor in the area due to the lack of interest by the community because of the short duration of the contracts.

Legal actions taken in the BGA Project		
Item / Indicator	2016	
	Addressed	Solved
Official letters	6	5
Rights to petition	1	1
Writs for protection of constitutional rights	-	-
Claims addressed	-	-

Source: Vice Presidency of Projects and Engineering



## Management indicators

- G4-HR8** Total number of incidents of violations involving rights of indigenous peoples and actions taken.
- G4-HR9** Total number and percentage of operations that have been subject to human rights reviews or impact assessments.
- G4-SO11** Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms.
- G4-EU22** Number of physically or economically displaced people and the compensation granted, detailed by type of project.



# Institutional management in Human Rights

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Since 2011, EPM undertook the task of implementing an institutional working model focused on Human Rights as a fundamental step towards the strengthening of its relationships with all its stakeholders. With this endeavor, the company formally promotes the responsibility of respecting human dignity in all its business operations.

With the proclamation of its institutional Human Rights policy in 2012, the organization ratified and made public its commitment to respect for Human Rights in its business activities and laid the formal foundations for its implementation in the entire EPM Group. This decision is consistent with the company's adherence to the United Nations Global Compact in 2006, and it also includes the promotion of the aforementioned respect in the companies that are part of its supply chain.

Institutional management on this subject comprises the actions, the adoption of instruments and tools to strengthen the company's management, the promotion of respect, and the disclosure of its progress in its implementation. In this deployment, the organization makes a permanent reference of the progresses in Human Rights and companies worldwide. In particular, it embraces and applies the UN Guiding Principles as a guideline in the internal approach of this issue.

## Management in 2016

In order to generate culture within the organization on the role of companies in the respect for Human Rights, a major effort was made in training. In total, 912 employees of EPM and the national energy subsidiaries participated in the program that emphasized how the EPM Group assumes such responsibility in its own operations and in those developed through third parties. The Office of the United Nations High Commissioner for Human Rights in Colombia participated in the program.



In accordance with its concern for developing business practices that promote respect for HR, EPM maintained an active participation in different initiatives related to this subject. One of the most notable initiatives in this regard is the Energy Mining Committee (abbreviated CME in Spanish), an organization for the study, reflection and recommendation on how to improve the performance of both the industry and the Colombian official institutions regarding respect for HR with regard to public and private safety. The company is also actively involved in Guías Colombia, a multi-actor initiative consisting of companies, members of the civil population and the Government and focused on the promotion and guidance of company-environment relationships, under minimal criteria of observance and respect for Human Rights and the International Humanitarian Law in Colombia. In 2016, EPM participated in the preparation of the guidelines for institutional strengthening and supply chain management.

There is freedom of association in EPM. 99.87% of the employees are members, directly or by extension, of one or more than one of the three existing labor unions. The membership percentage in the EPM Group is 96.48%. In 2016, no discrimination claims were reported in the organization.

The plans for managing the risks identified and prioritized with regard to Human Rights in the Colombian energy subsidiaries were prepared and validated in the corresponding management committees. Moreover, conceptual standardization workshops in relation to this issue were started with the departments involved in risk management. In these companies, attention was given to internal training.

Although it was planned to begin the institutional work on HR in the affiliate company, ENSA (Panama), and in the Colombian water and sanitation affiliate companies, goals were postponed for 2017.

During the reporting period, the affiliate company, ESSA, carried out a training program for the personnel of the integral contract to cover the commercial operation activities. This, so that they are aware of customers and users who claim to be insulin-dependent, oxygen-dependent or have any other situation in which the suspension of the energy service in case of delay in payment is not appropriate.

Training on Human Rights - EPM Group		
Employees trained in HR	2016	
	People	Hours
EPM	179	116
EDEQ	221	18
ESSA	267	72
CENS	105	38
CHEC	140	6
<b>Total</b>	<b>912</b>	<b>250</b>

Source: Vice Presidencies of Power Transmission and Distribution and Human and Organizational Development

For more information, see Labor Unions



## Management indicators

- G4-HR2** Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.
- G4-HR3** Total number of incidents of discrimination and corrective actions taken.
- G4-HR4** Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights.
- G4-HR8** Total number of incidents of violations involving rights of indigenous peoples and actions taken.
- G4-HR9** Total number and percentage of operations that have been subject to human rights reviews or impact assessments.
- G4-HR10** Percentage of new suppliers that were screened using human rights criteria.
- G4-HR11** Significant actual and potential negative human rights impacts in the supply chain and actions taken.
- G4-HR12** Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms.



# Security and Human Rights

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The EPM Group is aware of the importance of carrying out a preventive approach in Human Rights as part of the development of its security strategies. Therefore and as a business principle, the management actions aimed at ensuring the protection of its operations, employees, and assets are performed carefully in this regard both, in the operations carried out by private security agencies and in those operations derived from the fulfillment of agreements with public security forces.

Based on its institutional HR policy, the organization is committed to “include, in the security service contracts and agreements signed with private firms and official security organisms, explicit commitments to respect and promote Human Rights. In no case will the company accept the provision of these services by social actors who are outside the constitutional and legal framework.”

As a member of the Energy Mining Committee—a Colombian multi-actor initiative—, EPM embraces and applies the provisions of the Voluntary Principles, an initiative that proposes a set of guiding principles for the companies regarding public security forces, private security organizations, and civil society, in the development of its security strategies. In order to extend these practices to all the companies of the EPM Group, the organization started this approach in 2016 providing guidance to affiliates operating in Colombia, in order to promote the implementation of these principles in accordance with the needs of their operations.

With the purpose of monitoring the operations in its areas of influence, the company has implemented mechanisms to address complaints and claims with regard to Human Rights. The management of security contractors’ employees is also monitored through these mechanisms.

## Management in 2016

EPM signed two agreements with the Police and one with the Army for their technical-operational assistance in strengthening the protection and security conditions required in the facilities, infrastructure, and activities related to the organization’s operation. These collaboration agreements were signed with the National Ministry of Defense and explicitly include the obligation to “have respect for the international Human Rights treaties and the International Humanitarian Law signed by the Colombian government, promoting their preservation and defense.”

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It is important to highlight that cooperation agreements with the Colombian public security force were developed and that EPM has no authority or responsibility to give operational instructions to the members of the Police or the Army. However, by embracing the recommendations of the Energy Mining Committee, the organization has placed an explicit emphasis on framing the operations derived from these agreements in the permanent respect for HR. To this end, besides including specific recommendations in the agreements, the organization fosters permanent monitoring and analysis spaces with security personnel and police district commanders and Army commanders in the areas in which the company operates.

By means of structuring the agreements established with the Army, soldiers from several brigades and their corresponding units received training and participated in face-to-face instruction courses with instructors and training specific to the organization in 2016. As part of the agreements established with the National Police, EPM constantly holds training sessions on Human Rights.

In the reporting period, no claims of incidents related to Human Rights were reported through the channels established by the company for this purpose.

With regard to private security companies, EPM is re-evaluating the use of firearms and instead proposes, as a general rule, the use of non-lethal weapons, subject to the corresponding risk assessment. Moreover, service providers are required to strictly comply with the provisions currently in force in Colombia and, specially, with the regulation issued by the Superintendency of Private Surveillance and Security, including a background check of the personnel hired by the contractor firms. In the development of this work, no information was found that would implicate personnel with accusations regarding the violation of HR.

Until August 2016, the firms Segurcol Ltda. and VISE were hired for the provision of security services in all the company's facilities, with a total of 1,345 security guards, of which 45% received training on Human Rights by EPM during the induction process. Starting on September 2016, security services were contracted with the firms Interglobal and Colviseg, with a total of 1,375 security guards, of which 62% received training in the subject. Nevertheless, in both contracting processes, the coverage in HR training is considered to be 100% because it is a requirement for the contracting process that the security company includes Human Rights training as part of the general training, with the permanent supervision of EPM.

There were no complaints related to this service during the reporting period.

Through the Energy Mining Committee, the organization worked along with other companies from the industry and representatives of the Colombian Government, including the Ministry of Defense, in the definition of criteria for the execution of agreements with public security forces in such a way that Human Rights are fully respected. A document was also prepared identifying post-conflict opportunities, impacts, and risks in Colombia, associated with the business security operation.



Security staff trained in HR		
Company	People	Hours
EPM	1,451	931
CHEC	111	330

Source: Vice Presidencies of Shared Services and Supplies and Power Transmission and Distribution

## Management indicators

- G4-HR7** Percentage of security personnel trained in the organization’s human rights policies or procedures that are relevant to operations.
- G4-HR10** Percentage of new suppliers that were screened using human rights criteria.
- G4-HR11** Significant actual and potential negative human rights impacts in the supply chain and actions taken.
- G4-HR12** Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms.
- G4-SO11** Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms.
- G4-EU22** Number of physically or economically displaced people and the compensation granted, detailed by type of project.



# Rates and prices

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## Rates and prices

The rates for the services provided by the EPM Group are regulated; therefore, a continuous management is carried out with the Government and regulatory authorities so that the pricing methodologies implemented will always be fair and efficient for users. One of the EPM Group's purposes is to have competitive rates, and it is for this reason that it also works on a business efficiency scheme regarding its costs and production processes.

In the case of large energy consumers, the EPM group offers rates to be negotiated with its customers in the commercialization margin and value of the supply components. In this case, the rest of the components are regulated (transport, distribution, and others).

### Stakeholders vision

Customers and users identify asymmetries in the pricing issue when comparing their financial situation with the results the company disseminates.

**Electricity:** It is the most expensive service, especially because its relative cost in the bill is always the highest and it increases constantly. Every month, the cost of activities such as public street lighting is included.

**Natural gas or pipeline network:** This service is inexpensive. The perception of a low price is based on the lower value of the bill.

**Water supply:** This service is inexpensive, both for its relative price in the bill and the perceived value.

**Sanitation:** Considered "expensive." This perception is based on the fact that there is no actual measurement of its use or consumption. It is "estimated" based on water consumption.

### Importance

One of the EPM Group's purposes is to have competitive rates. It is an aspect of high social and economic sensitivity, both for companies and for customers and users.



## Main achievements

Goals for 2016	Achievements in 2016	Compliance
Proposing draft standards to the Colombian government for the recognition of costs in other reference technologies in the final disposal of waste.	Comments, recommendations, and proposals were made to the draft decree issued by the Ministry of Housing, City and Territory that would regulate incentives for recycling waste.	Total
Proposing a draft standard to the Colombian government on pricing methodology for small providers of water supply and sewerage service.	Comments and recommendations were made to the draft resolution issued by the Drinking Water and Basic Sanitation Regulatory Commission (abbreviated CRA in Spanish). Within their regulatory agenda, the CRA states that the final standard will be issued in the second half of 2017.	Total
Completing internal regulatory management for the approval of electrical energy commercialization charges for the Group's companies.	Final resolution issued by the Energy and Gas Regulatory Commission (abbreviated CREG in Spanish).	Total
Adapting all EPM systems and its pricing model to respond to the implementation of Resolution 202 of 2013 by CREG.	All systems are already adapted, but there is still no approval by CREG to implement the new pricing model.	Total
Proposing draft standards to the Colombian government for the recognition of costs in other reference technologies in the final disposal of waste.	Comments, recommendations, and proposals were made to the draft decree issued by the Ministry of Housing, City and Territory that would regulate incentives for recycling waste.	Total



## Challenges

Challenge	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Getting a DEA score higher than the current one.	2017	Colombia - Antioquia	Water Supply and Sanitation	EPM	Completion of work plan.
Applying pricing gradualness in the relevant markets where new charges are approved and that, due to competitiveness, the maximum charges cannot be applied. For this action, it should be noted that its application is not possible below cost.	2017	Colombia - Antioquia	Energy - Gas	EPM	Completion of work plan.
Managing the approval of revenues for power transmission and distribution for the next five years.	2017	Colombia	Energy - T&D	EPM Group	Completion of work plan.
Starting the process of price adjustment for pruning, final disposal, and treatment of leachate in the sanitation service.	2017	Colombia - Antioquia	Water Supply and Sanitation	Emvarias	Completion of work plan.

## Management indicators

**EPM-13** Fees by type of service.

## Sustainable development goals







## Bill - Let me Know

The EPM bill, Let me Know, is the company's means of invoicing all the services it provides and communicating with all users through a modern, clear, close and easy-to-interpret format that seeks to facilitate the understanding of the values billed and keep the community updated with information on different topics of interest.

The Let me Know bill format reaches all the customers in Antioquia and consists of the public utilities bill, which is the document that contains the values invoiced and the detail of consumptions and rates of each service, and the Let me Know newsletter, a contact instrument used by the company to get close to people through contents of interest to the community.

When interpreting the bill, the company considers it important for the customer to be clear about the concepts that affect the values billed, as well as the consumption units, rates of each service, credits, consumption days, and works performed, among other factors.

The consumption of each service depends mainly on customer's use habits. Variables such as the number of people living in the house, the technical conditions of the facilities and the features of the appliances and equipment of the home, as well as the days of consumption that are taken into account, since they may change in some months of the year due to variables such as the number of days and holidays of every month.

The rates for each of the services are defined by the respective regulatory commissions through pricing formulas. Based on the application of these formulas and the different variables defined for each service, rates may increase or decrease.

Other concepts that should be taken into account when checking the bill values: interest due to accounts outstanding or paid after the due date, financing of consumption, works, new services or purchases made with the Somos credit, and charges for service cutoffs or reconnections. Additionally, EPM has agreements in some municipalities for billing the services provided by other entities, including sanitation, public lighting and other products such as Seguro Vital and Red Hogar insurances.



## Management in 2016

In 2016, there were several regulatory changes that impacted the rates of all services. Moreover, some measures taken by the National Government, aimed at counteracting the effect of El Niño phenomenon, caused variations on the users habits for the water and energy services. All these factors contributed and caused variations in the billed values during some months of the year.



Diverse subjects of interest were addressed in the different sections of the Let me Know newsletter. Some of the most important ones are listed below:

- Justification of the rate changes in the services of electric energy, water supply, sewerage and sanitation.
- Information about programs such as Somos, Gas without Borders, Antioquia Illuminated, San Nicolás Valley, Water for Education - Education for Water, among others; as well as about campaigns such as “Turning off pays”, defined by the National Government, and the campaign to raise awareness about the consequences of fraud in public utilities.
- User testimonials with tips on saving and security matters of different services and interviews with people from different regions who work with the community or have life stories worthy of recognition.
- Explanation and presentation of different offers for users, including Pay According to Your Needs, Prepaid Electricity and Water Supply, mobile application (APP) and credit in advance.
- Information on events, subjects of general interest such as hotlines, job offers, web bills, electronic payments, duties and rights of users, among others.

Thinking about the well-being derived from the enjoyment of public utilities, EPM implemented different **purchasability** and **education** actions to make payment process easier and to encourage an optimal use of public utilities through the understanding of the bill.





# Water supply and sewerage rates

Rates for services provided by the EPM Group are regulated; therefore, continuous management is done with the Government and regulatory bodies for different services so that the applied pricing methodologies may be always fair and efficient for users. Competitive rates are a purpose of the EPM Group, so it also works in a business efficiency scheme for its costs and production processes.

## Management in 2016

The EPM Group implemented the new pricing methodology defined by the CRA for those companies with more than 5,000 subscribers. Additionally, within the framework of the processes of citizen participation, advances were made regarding two relevant standards: the new pricing framework for those companies with less than 5,000 subscribers (in CRA's regulatory agenda issuing in 2017), and the differential schemes for service provision (for the rural sector, the standard was issued in November 2016; for the urban sector, it is still pending).



In compliance with the regulations established by the CRA, EPM started implementing a new pricing framework intended for companies with more than 5,000 subscribers. This new pricing phase is more demanding in terms of efficiency and quality, with a visible control over the investments. It aims at expanding the coverage, increasing continuity and improving the quality of water.

This methodology was applied in every area where EPM provides service, in Aguas Regionales and Aguas de Malambo. As for Aguas del Oriente, the abovementioned standard did not apply since it has less than 5,000 subscribers. For those companies not having this number of users, the CRA is developing a different pricing methodology, which was introduced in the process of citizen participation. EPM contributed by sending observations aimed at a stronger standard that allows the development of the companies that are in this market segment, in order to guarantee quality and efficiency in the service provision. The standard was included in the indicative agenda of the CRA and it is expected to be issued in the second quarter of 2017. EPM is always alert to keep its rates fair, competitive and efficient; therefore, participating in these scenarios is of utmost importance for the organization.

The organization also made a special effort to provide complementary arguments on the need for differential schemes of provision in areas that are difficult to access or manage. In this regard, the standard for the rural sector was already issued, while that for the urban sector is still pending. This matter is highly relevant to increase service coverage, improve the living conditions of the population and contribute to the construction of sustainable territories in Colombia.



Regular bill for Medellín corresponding to water supply (COP)				
Use	2013	2014	2015	2016
Stratum 1	8,441	8,745	9,327	11,170
Stratum 2	12,661	13,118	13,991	16,755
Stratum 3	18,464	19,130	20,403	24,434
Stratum 4	21,101	21,863	23,318	27,925
Stratum 5	31,652	32,795	34,976	41,887
Stratum 6	33,762	34,981	37,308	44,680
Commercial	31,652	32,795	34,976	41,887
Industrial	27,432	28,422	30,313	36,302
Official/Special	21,101	21,863	23,318	27,925

Source: Commercial Directorate for Water and Sanitation

Values updated to December of each year in current prices, where the evolution of the rates charged to users can be seen. For calculating the rate, the following aspects are taken into account: fixed charge plus consumption charge multiplied by 12.17. The latter rate corresponds to the average consumption of EPM users in stratum 4 in the municipalities of the metropolitan area of Medellín in 2016. Variations correspond to the rate indexation regarding the CPI in order to keep the value of money over time, thus allowing cost recovery and providing quality service.

Regular bill for Medellín corresponding to sewerage (COP)				
Use	2013	2014	2015	2016
Stratum 1	9,466	9,805	10,459	10,050
Stratum 2	14,199	14,707	15,688	15,075
Stratum 3	20,706	21,448	22,879	21,984
Stratum 4	23,664	24,512	26,147	25,124
Stratum 5	35,497	36,768	39,220	37,686
Stratum 6	37,863	39,220	41,835	40,199
Commercial	35,497	36,768	39,220	37,686
Industrial	30,764	31,866	33,991	32,662
Official/Special	23,664	24,512	26,147	25,124

Source: Commercial Directorate for Water and Sanitation

Values updated to December of each year in current prices, where the evolution of the rates charged to users can be seen. For calculating the rate, the following aspects are taken into account: fixed charge plus consumption charge multiplied by 12.14. The latter rate corresponds to the average consumption of EPM users in stratum 4 in the municipalities of the metropolitan area of Medellín in 2016. Variations correspond to the rate indexation regarding the CPI in order to keep the value of money over time, thus allowing cost recovery and providing quality service.



Unit costs for EPM water supply - Full rate (Stratum 4)				
Item / Indicator	2013	2014	2015	2016
<b>Fixed Charge (\$/User)</b>				
Metropolitan	7,753	8,032	8,564	8,303
<b>Variable Charge (\$/m<sup>3</sup>)</b>				
Interconnected	1,097	1,136	1,212	1,612
Caldas	1,163	1,205	1,286	1,414
Barbosa	969	1,004	1,071	1,178

Source: Commercial Directorate for Water and Sanitation

Rates up to December of each year in ordinary prices, where the evolution of the rates charged to users can be seen. Variations between 2013 and 2015 correspond to the rate indexation regarding the CPI rates in order to keep the value of money over time, thus allowing cost recovery and providing quality service. In 2016, a variation is shown due to the implementation of a pricing framework defined by the CRA in the Resolution CRA 688. These values correspond to the full rate, that is, they do not include the subsidies or contributions that each municipality determines.

Unit costs for EPM sewerage - Full rate (Stratum 4)				
Item / Indicator	2013	2014	2015	2016
<b>Fixed Charge (\$/User)</b>				
Metropolitan	3,544	3,672	3,915	4,458
<b>Variable Charge (\$/m<sup>3</sup>)</b>				
Interconnected	1,657	1,717	1,831	1,702
Caldas	460	476	503	554
Barbosa	709	731	775	860

Source: Commercial Directorate for Water and Sanitation

Rates up to December of each year in ordinary prices, where the evolution of the rates charged to users can be seen. Variations between 2013 and 2015 correspond to the rate indexation regarding the CPI rates in order to keep the value of money over time, thus allowing cost recovery and providing quality service. In 2016, a variation is shown due to the implementation of a pricing framework defined by the CRA in the Resolution CRA 688. These values correspond to the full rate, that is, they do not include the subsidies or contributions that each municipality determines.



## Aguas de Occidente

Unit costs for aguas de occidente water supply - Full Rate (Stratum 4)				
Item / Indicator	2013	2014	2015	2016
<b>Fixed Charge (\$/User)</b>				
Santa Fe de Antioquia	5,257	5,446	5,807	7,627
San Jerónimo, Sopetrán, Olaya	3,617	5,421	5,612	
<b>Variable Charge (\$/m<sup>3</sup>)</b>				
Olaya	454	598	619	638
San Jerónimo	1,214	1,593	1,651	1,566
Santa Fe de Antioquia	1,353	1,399	1,492	1,469
Sopetrán	666	860	892	919

Source: Commercial Directorate for Water and Sanitation

Rates up to December of each year in ordinary prices, where the evolution of the rates charged to users can be seen. Variations between 2013 and 2015 correspond to the rate indexation regarding the CPI rates in order to keep the value of money over time, thus allowing cost recovery and providing quality service. In 2016, a variation is shown due to the implementation of a pricing framework defined by the CRA in the Resolution CRA 688. These values correspond to the full rate, that is, they do not include the subsidies or contributions that each municipality determines.

Unit costs for Aguas de Occidente sewerage - Full rate (Stratum 4)				
Item / Indicator	2013	2014	2015	2016
<b>Fixed Charge (\$/User)</b>				
Santa Fe de Antioquia	3,109	3,221	3,434	4,434
San Jerónimo, Sopetrán, Olaya	1,773	3,206	3,319	
<b>Variable Charge (\$/m<sup>3</sup>)</b>				
Olaya	305	225	236	246
San Jerónimo	852	998	1,045	1,297
Santa Fe de Antioquia	874	904	961	1,135
Sopetrán	540	488	485	493

Source: Commercial Directorate for Water and Sanitation

Rates up to December of each year in ordinary prices, where the evolution of the rates charged to users can be seen. Variations correspond to the rate indexation regarding the CPI in order to keep the value of money over time, thus allowing cost recovery and providing quality service. In 2014, a variation regarding the pricing estimation for San Jerónimo, Sopetrán and Olaya is shown. In 2016, there is a variation due to the implementation of a pricing framework defined by the CRA in the Resolution CRA 688. These values correspond to the full rate, that is, they do not include the subsidies or contributions that each municipality determines.



Unit costs for Aguas de Urabá water supply - Full rate (Stratum 4)				
System	2013	2014	2015	2016
<b>Fixed Charge (\$/User)</b>				
Apartadó	6,884	7,132	7,605	6,565
Carepa, Belén de Bajirá, El Reposo	4,011	4,133	4,407	
Chigorodó	5,841	6,052	6,453	
Mutatá	6,345	6,574	7,009	
Turbo	7,277	7,539	8,039	
<b>Variable Charge (\$/m<sup>3</sup>)</b>				
Apartadó	1,118	1,158	1,235	1,351
El Reposo	1,501	1,547	1,649	
Carepa	583	601	641	666
Chigorodó	1,288	1,331	1,419	1,400
Mutatá	1,346	1,395	1,487	1,402
El Reposo	1,501	1,547	1,649	
Turbo	1,243	1,288	1,373	1,571

Source: Commercial Directorate for Water and Sanitation

Rates up to December of each year in ordinary prices, where the evolution of the rates charged to users can be seen. Variations correspond to the rate indexation regarding the CPI in order to keep the value of money over time, thus allowing cost recovery and providing quality service. In 2016, there is a variation due to the implementation of the pricing framework defined by the CRA in the Resolution CRA 688. These values correspond to the full rate, that is, they do not include the subsidies or contributions that each municipality determines.

Unit costs for Aguas de Urabá sewerage - Full rate (Stratum 4)				
System	2013	2014	2015	2016
<b>Fixed charge (\$/User)</b>				
Apartadó	1,079	1,118	1,192	3,789
Carepa, Mutatá	1,986	2,046	2,181	
Chigorodó	3,629	3,759	4,008	
Turbo	1,976	2,046	2,181	
<b>Variable charge (\$/m<sup>3</sup>)</b>				
Apartadó	1,222	1,261	1,361	1,481
Carepa	853	879	967	1,003
Chigorodó	993	1,026	1,082	1,405
Mutatá	593	611	726	1,050
Turbo	859	886	925	1,050

Source: Commercial Directorate for Water and Sanitation



Rates up to December of each year in ordinary prices, where the evolution of the rates charged to users can be seen. Variations correspond to the rate indexation regarding the CPI in order to keep the value of money over time, thus allowing cost recovery and providing quality service. In 2016, there is a variation due to the implementation of the pricing framework defined by the CRA in the Resolution CRA 688. These values correspond to the full rate, that is, they do not include the subsidies or contributions that each municipality determines.

## Aguas de Malambo

Unit costs for Aguas de Malambo water supply - Full rate (Stratum 4)				
System	2013	2014	2015	2016
<b>Fixed charge (\$/User)</b>				
Malambo	3,619	3,619	3,854	6,480
<b>Variable Charge (\$/m<sup>3</sup>)</b>				
Malambo	1,304	1,305	1,389	1,541

Source: Commercial Directorate for Water and Sanitation

Rates up to December of each year in ordinary prices, where the evolution of the rates charged to users can be seen. Variations correspond to the rate indexation regarding the CPI in order to keep the value of money over time, thus allowing cost recovery and providing quality service. In 2016, there is a variation due to the implementation of the pricing framework defined by the CRA in the Resolution CRA 688. These values correspond to the full rate, that is, they do not include the subsidies or contributions that each municipality determines.

Unit costs for Aguas de Malambo sewerage - Full rate (Stratum 4)				
System	2013	2014	2015	2016
<b>Fixed Charge (\$/User)</b>				
Malambo	1,745	1,745	1,858	3,311
<b>Variable Charge (\$/m<sup>3</sup>)</b>				
Malambo	690	628	667	758

Source: Commercial Directorate for Water and Sanitation

Rates up to December of each year in ordinary prices, where the evolution of the rates charged to users can be seen. Variations correspond to the rate indexation regarding the CPI in order to keep the value of money over time, thus allowing cost recovery and providing quality service. In 2016, there is a variation due to the implementation of the pricing framework defined by the CRA in the Resolution CRA 688. These values correspond to the full rate, that is, they do not include the subsidies or contributions that each municipality determines.

Unit costs for Aguas del Oriente water supply - Full rate (Stratum 4)				
System	2013	2014	2015	2016
<b>Fixed Charge (\$/User)</b>				
El Retiro	4,815	4,815	5,127	5,455
<b>Variable Charge (\$/m<sup>3</sup>)</b>				
El Retiro	1,425	1,425	1,518	1,615

Source: Commercial Directorate for Water and Sanitation

Rates up to December of each year in ordinary prices, where the evolution of the rates charged to users can be seen. Variations correspond to the rate indexation regarding the CPI in order to keep the value of money over time, thus allowing cost recovery and providing quality service. These values correspond to the full rate, that is, they do not include the subsidies or contributions that each municipality determines.

Unit costs for Aguas del Oriente sewerage - Full rate (Stratum 4)				
System	2013	2014	2015	2016
<b>Fixed Charge (\$/User)</b>				
El Retiro	2,123	2,123	2,261	2,405
<b>Variable Charge (\$/m<sup>3</sup>)</b>				
Los Salados	307	311	327	354
El Retiro	196	197	205	224
Santa Elena	410	414	436	470

Source: Commercial Directorate for Water and Sanitation

Rates up to December of each year in ordinary prices, where the evolution of the rates charged to users can be seen. Variations correspond to the rate indexation regarding the CPI in order to keep the value of money over time, thus allowing cost recovery and providing quality service. These values correspond to the full rate, that is, they do not include the subsidies or contributions that each municipality determines.

## Management indicators

**EPM-13**

Fees by type of service.



# Sanitation rates

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The rates for the services provided by the EPM Group are subject to regulations. Therefore, continuous management is done before the Government and the regulatory bodies of the different services in order for applied pricing methodologies to be always fair and efficient for users. Having competitive rates is a purpose of the EPM Group; that is why it also works in a business efficiency scheme for its costs and production processes.

## Management in 2016

In 2016, efforts focused on the implementation of the new sanitation pricing framework, as well as on the activities carried out within the participation processes for the regulation of the exploitation activity. The above, in order to ensure that the service is provided within a clear framework of action, allowing a technically adequate and efficient waste management that protects human health.



In 2016 there were great changes in the public sanitation service. In the cities with more than 5,000 users, a new pricing methodology defined by the CRA in Resolution 720 was implemented. Within this dynamic, new activities were included in the concept of urban cleaning: tree pruning, grass cutting, maintenance and installation of trash cans, and public areas washing. This new pricing framework gives a great boost to recycling and final disposal alternatives, seeking to recognize different technical solutions that can bring better benefits to society, since they are more environmentally friendly. The processes of citizen participation before the different entities of the Government were used to make recommendations on the regulation of the matter, as well as in relation to the incentives defined in the National Development Plan: "Together for a New Country."

In addition to the above, special efforts were made to provide complementary arguments on the need for differential provision schemes in areas difficult to access or manage. The standard for the rural sector was issued, while the one for the urban sector is still in process. This subject becomes highly important to widen the coverage of the service, improve the living conditions of the population and contribute to the construction of sustainable territories.





Rates by user of the ordinary sanitation service in Medellín				
Concept / Indicator	2013	2014	2015	2016
Stratum 1	5,828	6,006	6,337	6,934
Stratum 2	7,771	8,008	8,451	9,647
Stratum 3	11,009	11,344	11,972	13,992
Stratum 4	13,357	13,760	14,523	17,419
Stratum 5	26,056	26,833	28,324	36,120
Stratum 6	35,442	36,448	38,490	44,408
Small commercial generators	45,731	46,923	49,592	46,800
Variable rate m <sup>3</sup> - Big generators	44,842	46,306	47,537	47,275

Source: Emvarias

Rates as of December of each year in ordinary prices, where the evolution of the rates charged can be appreciated. Variations correspond to the rate value indexation with respect to indexes such as the CPI, MMW, lco (fuel oil and diesel oil) and LWI (Leveling Works Index.) This, in order to maintain the value of money over time, thus allowing cost recovery and provision of a quality service. 2016 shows variation due to the implementation of the pricing framework defined by the CRA in Resolution 720.

## Management indicators

**EPM-13**

Fees by type of service.



# Electricity rates

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Due to their nature, residential public utility rates are subject to regulations. This means that the rates EPM charges cannot be freely set, but they are subject to the conditions supported by the Law and determined by the regulatory body that, in this case, is the CREG (Energy and Gas Regulatory Commission.) This entity sets the rules of the methodologies for calculating rates, which are based on efficiency criteria so that only efficient costs and expenses are transferred to consumers. In all the regions where it provides its services, EPM seeks to maintain competitive rates, allowing cost recovery and companies' sustainability. In 2016, EPM performed proactive management before the regulatory body and the Government, in order for the rules issued for the next rate period to reflect fair and efficient prices.

The costs covered with the rate are the assets, the costs of managing, operating and maintaining them to bring electrical energy from the energy sources to the end user, and the whole support process for customer service.

## Management in 2016

Regarding the issuance of regulatory proposals for the remuneration of electricity transmission and distribution in Colombia for the next rate period, the EPM Group submitted, directly and through the sector's trade unions, observations and counterproposals aimed at achieving fair and efficient prices for users.

This year there were no regulatory changes in the distribution and transmission components affecting the rate. The representative change in cost components occurred in commercialization adjustments.

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The Group's companies in Colombia experienced, in general, rate increases above the CPI during different months of the year. This effect is explained by the cost deferral in the application of the rate option due to the high costs of generation during the El Niño season. For the last quarter of the year, rates recovered their usual trend in the EPM Group's companies, thanks to internal actions and, especially, to the coverage management that, through the purchase of energy, allowed rates to be placed among the lowest nationwide.





## Evolution of energy rates in affiliated companies in Colombia

Evolution of energy rates in EPM (COP/kWh)			
Use	2014	2015	2016
Stratum 1	167	178	199
Stratum 2	209	222	249
Stratum 3	327	371	401
Stratum 4	385	436	472
Stratum 5	462	523	566
Stratum 6	462	523	566
Commercial	462	523	566
Industrial	462	523	566

Source: Vice Presidency of Power Transmission and Distribution, Commercial Management

Evolution of energy rates in Central Hidroeléctrica de Caldas CHEC (COP/kWh)			
Use	2014	2015	2016
Stratum 1	216	205	217
Stratum 2	257	250	265
Stratum 3	347	388	434
Stratum 4	384	456	511
Stratum 5	452	547	613
Stratum 6	447	547	613
Commercial	455	547	613
Industrial	408	547	613

Source: Vice Presidency of Power Transmission and Distribution, Commercial Management

Evolution of energy rates in Empresa de Energía del Quindío EDEQ (COP/kWh)			
Use	2014	2015	2016
Stratum 1	177	192	212
Stratum 2	213	231	265
Stratum 3	324	366	451
Stratum 4	381	430	530
Stratum 5	457	517	636
Stratum 6	457	517	636
Commercial	457	517	636
Industrial	457	517	636

Source: Vice Presidency of Power Transmission and Distribution, Commercial Management



### Evolution of energy rates in Centrales Eléctricas del Norte de Santander - CENS (COP/kWh)

Use	2014	2015	2016
Stratum 1	171	182	201
Stratum 2	214	228	252
Stratum 3	329	378	411
Stratum 4	387	445	484
Stratum 5	465	534	580
Stratum 6	465	534	580
Commercial	465	534	580
Industrial	465	534	580

Source: Vice Presidency of Power Transmission and Distribution, Commercial Management

### Evolution of energy rates in Electrificadora de Santander ESSA (COP/kWh)

Use	2014	2015	2016
Stratum 1	174	185	200
Stratum 2	217	231	250
Stratum 3	348	382	416
Stratum 4	410	450	489
Stratum 5	492	540	587
Stratum 6	492	540	587
Commercial	492	540	587
Industrial	492	540	587

Source: Vice Presidency of Power Transmission and Distribution, Commercial Management

Criterion is property of assets from the operator at level 1 and applied with rate option.

## Evolution of energy rates in international affiliated companies

### Evolution of energy rates - ENSA (Dollars/kWh)

Use	2014	2015	2016
Residential	0.176	0.194	0.145
Commercial	0.217	0.236	0.174
Industrial	0.190	0.207	0.150

Source: Rates and Economic Studies Management



Evolution of energy rates - Delsur (Dollars/kWh)			
Use	2014	2015	2016
Residential	0.262	0.219	0.178
Commercial	0.242	0.198	0.158
Industrial	0.201	0.161	0.126

Source: Commercial Planning Management

Evolution of energy rates - Eegsa (Dollars/kWh)			
Use	2014	2015	2016
Simple low voltage	0.219	0.161	0.147

Source: Planning, Regulation and Control Management

The rate for simple low voltage applies for residential, commercial and industrial use.

## Management indicators

**EPM-13** Fees by type of service.



# Gas rates

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The rates of the residential public utility of natural gas through pipelines are regulated by the Energy and Gas Regulatory Commission, CREG, which, based on the definition of methodologies of specific remuneration for each activity of the natural gas value chain (production, transport, distribution and commercialization), ensures the transference of efficient costs of investment, administration, operation and maintenance to the users. It is understood that every rate is of a comprehensive nature, since it involves coverage and a level of service quality. In all regions where it provides these services, EPM seeks to maintain competitive rates, allowing cost recovery and the company's sustainability. In 2016, proactive actions were carried out before the regulatory body and the National Government, so that, during the next pricing period, the rules established for the remuneration of each activity reflect fair and efficient prices for users, to ensure always the financial soundness of the company.

The commercialization cost, collected through a fixed charge, remunerates all the customer service support process.

## Management in 2016

Considering the submission of regulatory proposals to remunerate the activities of retail distribution and commercialization of natural gas through pipelines for the next pricing period in Colombia, EPM introduced, directly and through the guilds Naturgas and Andesco, observations and counterproposals focused on achieving fair and efficient prices for users.

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During 2016, no regulatory changes took place in these components of the unit cost of the service provision, since the definitive methodologies have not been promulgated yet by the CREG.





### Evolution of gas rates of EPM in Valle de Aburrá (COP/m<sup>3</sup>)

Use	2014	2015	2016
Stratum 1	474	532	644
Stratum 2	592	664	802
Stratum 3	1,044	1,257	1,451
Stratum 4	1,032	1,246	1,439
Stratum 5	1,181	1,435	1,664
Stratum 6	1,128	1,380	1,605
Non residential	937	1,164	1,363
Commercial	939	1,166	1,365
Industrial	935	1,162	1,360
Vehicular Natural Gas	774	837	922

Source: Vice-Presidency of Gas, Commercial Management

### Evolution of gas rates of EPM in the municipalities with networks outside Valle de Aburrá (COP/m<sup>3</sup>)

Use	2014	2015	2016
Stratum 1	499	539	639
Stratum 2	626	679	809
Stratum 3	1,125	1,308	1,508
Stratum 4	1,112	1,306	1,495
Stratum 5	1,310	1,533	1,768
Stratum 6	1,348	1,568	1,808
Non residential	1,103	1,310	1,510
Commercial	1,102	1,309	1,509
Industrial	1,104	1,312	1,512

Source: Vice-Presidency of Gas, Commercial Management



Evolution of gas rates of EPM - Compressed Natural Gas CNG (COP/m <sup>3</sup> )			
Use	2014	2015	2016
Stratum 1	1,876	1,964	2,152
Stratum 2	1,600	1,718	1,934
Stratum 3	1,481	1,580	1,775
Stratum 4	1,415	1,433	1,625
Stratum 5	1,340	1,369	1,666
Stratum 6	1,380	1,414	1,718
Commercial	1,021	1,019	1,189
Industrial	1,153	1,368	1,550
Vehicular Natural Gas	1,153	1,368	1,550

Source: Vice-Presidency of Gas, Commercial Management

## Management indicators

**EPM-13** Fees by type of service.



# Transparency and disclosure of information for the stakeholders

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# Transparency and disclosure of information for the stakeholders

The EPM Group companies develop communication, education and engagement strategies, based on truthfulness, completeness, appropriateness, timeliness and clarity of the information delivered concerning the company's management, in order to guarantee the stakeholders' trust.

## Stakeholders vision

We have the **opportunity to continue making progress in this topic, especially** with three stakeholder groups:

**Customers and users:** the company should continue making efforts to increasingly impact them with clear, true and timely information (active transparency), regarding changes in the environment and safety and health. Additionally, the company should use tools that allow it to keep a clear record of the number of users or customers that had been benefitted with this type of information.

**Suppliers and Contractors:** it is important to have an appropriate tool that allows the company to keep record of the impact related to the delivery of information on its policies or programs addressed to suppliers.

**The EPM Group people:** work should be done to start using again the mechanisms to foster and get to know the suggestions of employees. It is a good practice in terms of dialogue and engagement with these stakeholders.

## Importance

Transparency and disclosure of information open spaces to strengthen the stakeholders' trust and allow them to make decisions that benefit them in the social, environmental and economic levels.

It allows minimizing corruption and extra costs, development barriers and reputational risks.

## Main achievements

Goals for 2016	Achievements in 2016	Compliance
For the EPM Group, reaching a transparency indicator at 89.75*	An indicator of 78 was reached.	Partial
For EPM, reaching a transparency indicator at 96.5*	An indicator of 88 was reached.	Partial
For national subsidiaries, achieving different rises in their transparency indicators, according to the results in 2015.*	The indicators decreased in every subsidiary.	Partial
Drawing up a Code of Ethics for the EPM Group.	Code of Ethics for EPM Group drawn up.	Total
Prepare a zero tolerance to fraud, corruption, and bribery policy in each one of the EPM Group subsidiaries in Colombia.	The zero tolerance to fraud, corruption and bribery policy was approved during the year by the Board of Directors of the energy subsidiaries of Colombia, as well as by that of the Aguas Emvarias.	Total
Implementing Transparency and Conflict of Interest statements.	An application was developed and implemented for employees to complete the Conflict of Interest statement, which includes an acceptance of the Transparency statement by all the employees of the entity.	Total
Hiring services for ML/TF Risks verification, fraud, and corruption.	Through a public tender, EPM hired Konfirma, a company that also performs the consultancies of the subsidiaries.	Total
Design and implementation of ML/TF control activities in relationship with stakeholders other than suppliers and contractors for the EPM Group in Colombia.	They were implemented for the processes of subsidiaries related to employees, large clients, leasing, sponsorships, contractors and suppliers. They are applied according to the transaction amounts, by means of simple or extended Due Diligence, manually or through the risk verification agreement signed with Konfirma.	Total
Design and implementation of ML/TF control activities in relation to suppliers and contractors in international subsidiaries.	Consultancies and joint work were performed in El Salvador, Guatemala and Mexico, taking into account Due Diligence regulations of each country. Chile carries out its own Due Diligence process based on the regulations required by the country. Panama is still pending.	Partial



Goals for 2016	Achievements in 2016	Compliance
Extending the scope of the Line 01 8000 522 955 to international subsidiaries.	There have been connection difficulties with international subsidiaries.	Partial
Implementing and giving an online course on ML/TF generalities to all partners, employees, and workers in international subsidiaries of the EPM Group.	The course was given at Eegsa (Guatemala), Delsur (El Salvador) and Ticsa (Mexico).	Partial
Obtaining registration as a “Company active in compliance with anti-corruption measures” for the companies of the EPM Group in Antioquia.	Only one out of twelve companies that were subjected to the measurement, obtained the registration. EPM voluntarily adopted this initiative led by the Secretariat of Transparency of the Presidency of the Republic, addressed to the private sector. As EPM is a 100% state-owned company, many of the responses and formats sent are legally enforced; therefore they were not taken into account. Clarifications in this regard were requested.	Not met
Incorporating Ethics Hotline “Contacto Transparente” (Transparent Contact) in Eegsa and Delsur subsidiaries.	The hotline is operating since September 2016 in Eegsa; but Delsur did not have available resources to implement it in 2016.	Partial

*\*Despite the decline in the transparency indicator reached in 2016 compared to results in 2015, compliance is reported as partial because the measurement methodology used in 2016 drastically varied compared to that used in 2015 and in previous years. Thus, results are not comparable. However, in these results, the EPM Group identifies improvement opportunities that are now being implemented.*



## Challenges

Challenge	Completion Year	Scope / Coverage			Compliance Indicator
		Geography	Business	Company	
Meeting the progress required in Open Governance, Services, Management and Safety, and Information Privacy.	2018	Colombia	All businesses	All companies	100%
Strengthening the level of impact of internal communication on the quality of engagements.	2019	Colombia	All businesses	All companies	Two additional points in the relationship indicator of the Internal Communication Effectiveness study.
Encouraging a communication that disseminates and promotes information with attributes required to build trust; as well as issues in favor of people's quality of life and development. Additionally, making conventional commercial communication go further.	2025	All geographies	All businesses	All companies	100% compliance in activities related to the Business Plan.
Making progress every year on transparency indicators of each subsidiary of the EPM Group in Colombia.	2019	Colombia	All businesses	All companies	Results suggested by the Transparencia por Colombia (Transparency for Colombia) study for the public utility sector.



## Management indicators

- G4-SO4** Communication and training on anti-corruption policies and procedures
- EPM-14** Transparencia por Colombia Indicator.
- EPM-15** External communication strategy and mechanisms.

## Sustainable development goals







## Information for stakeholders

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The EPM Group broadly shares its business management with its stakeholders directly and through mass media as one of the mechanisms to strengthen and transcend the informative purpose and strengthen the relationships with stakeholders.

To achieve this, the following are the main mechanisms:

**Press management:** Management of information and relations with mass media based on respect, equity, transparency, opportunity, truthfulness, openness, and service vocation, in accordance with EPM's Communication Policy and EPM's Manual of Relations with Mass Media.

**External media:** Own media management aimed at external audiences and stakeholders in the areas of influence of each of the companies of the EPM Group, with relevant information on the interaction with the territory, matters related to public utilities, and as a promotional mechanism of communities and customers.

**Social networks:** Permanent attention to virtual communities with conversations in the interest of stakeholders aimed at strengthening relationships and transparency, as well as building sustainability and protecting reputation.

**Sustainability Report:** Balanced report on the economic, social, and environmental management of the last year, and its positive or negative impact on society. It is a corporate sustainability management tool that allows identifying gaps, risks, and opportunities, as well as prioritizing actions and keeping track on the initiatives reported.

**Public accountability:** Carried out annually in order to disseminate the main achievements and challenges of the Group's corporate management and its articulation with stakeholders, based on the contents gathered in the Sustainability Report.



## Management in 2016

- Broad and open approach to the sensitive issues of 2016, such as the EPM Group's investments abroad and the incident at the Guatapé hydroelectric plant that took it out of operation for several months, the suspension of works on the Valdivia road of the Ituango Hydroelectric Project, and the impact of El Niño on the rates and use of services.
  - 1,730 information requirements by mass media were addressed.
    - 417 EPM Radio's productions were broadcast.
  - 10 editions of the "Estamos ahí" (We are there) and 3 of "Línea Directa" (Direct Line) e-newsletters were published.
  - 50 "Camino al Barrio" (On our way to the neighborhood) T.V. shows were produced and broadcast.



## External media

**"Estamos ahí" (We are there) e-newsletter:** Monthly publication aimed at opinion leaders and large customers and focused on innovation, social, and environmental responsibility and the overall business dynamics. We seek to address sensitive issues according to the situation, in order to communicate the official information from the company's perspective on sensitive issues. 10 editions were published between February and December.

**"Línea Directa" (Direct Line) e-newsletter:** Created in 1997 and conceived as a "bidirectional" tool through which executives, maintenance engineers, and negotiators from Large Customers and Business Customers from all over the country have an opportunity to share their best practices and contribute to the promotion of our services, care for the environment, technological developments in the industry, and rates, among other issues.

In 2016, three editions of the Línea Directa (Direct Line) e-newsletter were published, addressing topics such as electric mobility, sustainable solid waste management, achievements of EPM's Large Customers, energy efficiency, Green Energy, and the management of Ticsa, among others.

**Camino al Barrio (On our way to the neighborhood):** Open TV show, sponsored by EPM, that gives voice and visibility to the communities of Medellín. Keeping this line, EPM also finds in this TV show a way to disseminate good practices for efficient use, explain the billing process of public utilities provided by it, and provide communities with information that allows them to feel some projects and works developed by the company as theirs.





In the 44 broadcasts of the Camino al Barrio (On our way to the neighborhood) TV show in 2016, themes related to EPM were addressed such as the good use of the UVAs (Articulated Life Units)—social and meeting spaces in various sectors of the Valle de Aburrá—, the impacts of the Centro Parrilla project, the Community Risk Mitigation Brigades, and the Customer’s Day.

In 2017, the challenge of having a new format will be taken up, in order to go around and tell more stories about the city and region.

### Radio Strategy – EPM Radio

A collaborative radio model between EPM and grassroots organizations for the production and broadcast of content that guide and generate conversations with the Community and Customers regarding the services, programs, projects, and products offered by the EPM Group.

EPM coordinates the radio strategy, and its production and broadcast are the responsibility of community communicators, members of social organizations (networks, associations and corporations). Thanks to this, internal information of the company is disseminated and, above all, knowledge, experiences, and contact with the territories and culture become active through the voices of the communities themselves. In 2016, 417 radio productions were broadcast.

In 2017, EPM Radio’s main challenges will focus on training correspondents, forming groups of youth journalism, and strengthening correspondent networks composed of listeners, as well as resuming the weekly broadcast of the Aló EPM (Hello EPM) radio program for the sub-regions in the department of Antioquia.

2016 EPM Radio Broadcasts	
Production / # broadcasts	2016
Aló EPM (Hello EPM). Weekly broadcast on Saturdays in 61 radio stations of the sub-regions.	16 broadcasts between January 2 and April 16.
Aló EPM (Hello EPM). Daily broadcast in the Valle de Aburrá. Monday to Friday from 1 p.m. to 2 p.m.	245 broadcasts.
Aló EPM (Hello EPM) in the hydroelectric plant - Con Vos (With you) - In 8 radio stations in Northern and Western Antioquia on Saturdays from 9 a.m. to 10 a.m.	52 broadcasts.
	52 broadcasts.
Sobre la Mesa (On the Table) in 8 radio stations in Northern and Western Antioquia on Wednesdays from 5 p.m. to 6 p.m.	52 broadcasts.

Source: Vice Presidency of Communication and Corporate Relations

The topics that were addressed are classified as How EPM is like, Human Rights; progress on projects; EPM’s services and products, including their safe and efficient use; environment, and EPM’s programs and dynamics in its integration into the territory.



## Press management

- 1,595 requirements by the media were addressed: Interviews with corporate spokespersons, orientation on the organization, provision of documentation and multimedia material such as audios, videos, and photographs.
- 407 e-newsletters on EPM and its various businesses and projects were published.
- 17 press releases were issued to public opinion on the company's stances.
- There were 23 press conferences, addressing topics such as the sale of EPM's shares in Isagén, opening of the Articulated Life Units (UVAs), El Niño, incident at the Guatapé hydroelectric plant, progress in the construction of the Ituango Hydroelectric Project and the Aguas Claras and Nueva Esperanza Waste Water Treatment Plants, EPM's investments abroad, financial results of the EPM Group, and public accountability.
- Four pedagogical talks were held with journalists on the sale of EPM's shares in Isagén and a meeting with local media directors was held to discuss various issues of the company, overseas investments of the EPM Group, and the progress in the Centro Parrilla project.
- 24 special visits with media were made to EPM's projects and facilities.
- The Press Room, section of the company's website ([www.epm.com.co](http://www.epm.com.co)), was updated for local, national, and foreign journalists, with real-time information and material for consultation. The site is structured in News and Updates, Multimedia, a Document Center with all the historical e-newsletters and mailboxes for interaction and participation.

## Social networks

EPM communities in social networks are made up as follows: Facebook: 111,021; Twitter: 48,318; Instagram: 8,697 followers; and YouTube: 4,404 subscribers.

The topics addressed in social networks are related to sustainability, environment, innovation, education, corporate citizenship, infrastructure projects, efficient use of utilities and notices on scheduled interruptions, among others.

In 2016, these channels were key to addressing four key issues that aroused a special interest in the communities: The EPM Group's investments outside Colombia, the incident at the Guatapé hydroelectric plant, and the impact of El Niño phenomenon during the first semester.



## Sustainability report

Most of the EPM Group's companies prepare their sustainability reports using the GRI methodology. EPM uses the G4 version. It enables organizations to prepare their sustainability report regardless of their size, industry, or location. Moreover, this report is aligned with the International Integrated Reporting Council (IIRC) framework.

The Global Reporting Initiative (GRI) is an organization that promotes the use of sustainability reports so that organizations can become more sustainable and contribute to sustainable development. <https://www.globalreporting.org/information/about-gri/Pages/default.aspx>

EPM's Sustainability Report Preparation: It is a process of continuous organizational learning that evolves permanently. Content and quality principles established by GRI are applied.

Read more about the Sustainability Report in the Report Profile, in the Social and Environmental section, in the General Information chapter.

The EPM Group's reports are presented at the shareholders' meeting and to employees and the community in different spaces for dialogue, such as meetings with community action boards, the municipal Councils, among others.

See the management and sustainability reports of the affiliate companies of the EPM Group in Site Map, in "Our Group" section, in the "About Us" link.

## Public accountability

For the 2015 management, an open presentation to the citizens and EPM's employees was held on April 29, 2016 in the auditorium Himerio Pérez at the EPM Building; and around 300 people attended.

For the external audience, the event was broadcast through the local TV channel, Telemedellín, and the regional TV channel, Teleantioquia, covering the entire department of Antioquia.

For the employees of the EPM Group, there was a multicast session to which 1,810 people were connected. Viewers could interact through the chat and 22 questions were received and answered.

## Management indicators

**EPM-15** External communication strategy and mechanisms.



# Transparency practices



In order to preserve trust and credibility of its different stakeholders, the EPM Group incorporates in its management clear rules regarding organizational culture standards and principles, and its mechanisms for engagement, interaction and verification of compliance with objectives and goals.

This set of actions enables us to raise awareness among stakeholders in order for them to be responsible and participative, to know and exercise their rights and obligations, to actively promote integrity and to fight corruption.

In transparency practices, the EPM Group aims to be a corporate benchmark through the inclusion of international standards in its compliance management, as well as the active participation in collective actions that generate high impact on society, and the management of best transparency practices.

Such practices are basically the following:

**Ethics and Transparency Mechanisms:** Practices and tools implemented with the purpose of minimizing the materialization of risk situations related to fraud, corruption, bribery, money laundering, and terrorist financing, among others. They are Code of Ethics, Code of Business Conduct, Corporate Governance Manual, Code of Conduct for Suppliers and Contractors, and Policy of Zero Tolerance to Fraud, Corruption and Bribery; as well as a report channel called Ethics Hotline: “Transparent Contact”.


**Transparency Measurement:** The EPM Group’s companies participate voluntarily in the assessment of transparency practices of the public utilities providers in Colombia, in order to identify their degree of development and encourage them to implement improvement plans and actions in their activities, recognize the companies committed to ethic and transparent relationships with their stakeholders, and foster compliance with international standards.

**Online Government:** Strategy aiming at improving efficiency, promoting transparency, encouraging citizens’ collaboration and participation, strengthening management with stakeholders, and improving the conditions for enhancing competitiveness of institutions engaged with the Colombian government, using the information and communications technology (ICT) as leverage.





## Management in 2016

- Adoption of the Policy of Zero Tolerance to Fraud, Corruption and Bribery by all the national affiliated companies of the Group.
  - Acceptance of the Transparency Statement by 89% of the EPM's employees, and subsequent declaration of conflicts of interest by those employees who may have them.
  - First measurement of the internal Ethical Climate, with participation of 2,515 EPM's employees.
    - Development and implementation of the mobile application Ethics Hotline for Transparent Contact.
  - Participation of all Colombian companies of the Group in the Collective Agreement of the Electricity Sector on fight against corruption and promotion of free competition.
  - Adherence of 5,262 suppliers to the Code of Conduct for Suppliers and Contractors.
    - Significant progress in the implementation of Online Government.
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## Transparency assessment

For the ninth consecutive year, EPM participated in the measurement of Corporate Transparency for the residential public utilities industry, reaching a result of 78/100 for the EPM Group (the index was 88/100 in 2015) and 88/100 for EPM, compared to an indicator of 96 reached the previous year. EPM is at moderate risk of corruption.

One of the reasons for this decline in the indicators is a drastic change in the assessment methodology implemented in 2016; therefore, the results are not comparable. In fact, the measurement went from 250 to 570 indicators, the percentage of information sent by the company as verification material went from 90% to 75%, and greater emphasis is now placed on detection tools and penalties against corruption, as well as in active transparency, which measures the proactivity of the company to interact with stakeholders and communicate its information and actions more actively.

These changes in the methodology provide the EPM Group with a new baseline that represents improvement opportunities in which it will focus during 2017:

- Anti-corruption program extended to affiliated companies.
- Classification and supplier development.
- Ethical climate measurements.
- Ethics committee.
- Report channel.
- Peace building.

<b>Transparency assessment results of the EPM Group and its affiliated companies 2014-2016</b>			
<b>Company / Indicator</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
EPM Group	83	88	78
EPM Parent Company	93	96	88
Aguas de Oriente	79	84	64
Aguas de Occidente	73	88	68
Aguas Nacionales	78	85	81
Aguas de Urabá	63	77	57
Aguas de Malambo	47	56	51
Emvarias	71	77	71
CHEC	87	88	86
EDEQ	88	95	83
ESSA	83	90	79
CENS	86	91	80

**Source:** Vice Presidency of Corporate Auditing



Transparency assessment goals of the EPM Group and its affiliated companies 2017-2019			
Company / Indicator	2017	2018	2019
EPM Group	93.38	87.87	92.77
EPM Parent Company	90.63	93.75	96.88
Aguas de Oriente	71.75	79.5	87.25
Aguas de Occidente	74.45	81.3	88.15
Aguas Nacionales	84.73	88.15	91.58
Aguas de Urabá	66.2	75.8	85.4
Aguas Regionales	70.33	78.55	86.78
Aguas de Malambo	62	73	84
Emvarias	77.23	83.15	89.08
CHEC	89.08	92.05	95.03
EDEQ	86.53	90.35	94.18
ESSA	83.45	88.3	93.15
CENS	84.65	89.1	93.55

Source: Vice Presidency of Corporate Auditing

*In 2017, EPM will not participate in the measurement, but it keeps the improvement goals set until 2020. Since measurements are performed during the last quarter of the year, the result reported in 2018 will be compared with the goal for 2017.*

## Drafting of a code of ethics for the EPM Group

After a participatory process that started in 2015 and included workshops on “ethical dilemmas” and information processing with all national and two international affiliated companies, the EPM General Management approved in December 2016 the final version of the document prepared by a team from EPM and two of the affiliated companies.

At the beginning of 2017, the Management Committee will review the corporate or institutional values and ratify the content of the Code.

## Code of conduct for suppliers and contractors

In 2016, a total of 5,262 suppliers signed their adherence to the Code of Conduct for Suppliers and Contractors of EPM. Additionally, an early termination clause for breach of the code of conduct was included in the contract specifications.

During the year, some adjustments were made to both the Antitrust Policy and the Gift and Invitation Policy, as well as to the last paragraph to include the implementation of Ariba, the system towards which supplier management is being migrated.



The Group worked on the dissemination of this Code during the monthly meetings with suppliers and contractors, through communications that promote honesty, transparency and respect for Human Rights, and through the publication of contents related to CSR and ISO 26000 on the EPM web.

For its part, the EPM Internal Audit area made some suggestions on ethical issues in the organization and, as a result, specific actions were included in the Plan of Engagement with Suppliers and Contractors.

## Agreement for the transparency of the electricity sector in Colombia

After the adherence of EDEQ and CENS in September, all the energy companies of the EPM Group in Colombia are part of the Collective Agreement of the Electricity Sector, whose fundamental purposes are promoting the fight against corruption and bribery, free competition in the industry and transparency in the energy business.

The Agreement was promoted by the National Operation Council and XM S.A. E.S.P., along with the Transparencia por Colombia organization, with the institutional support from the United Nations, the Secretariat for Transparency of the Presidency of the Republic of Colombia, the Superintendency of Public Utilities and the Superintendency of Industry and Commerce.

## Online Government

It is an initiative of the Colombian Government in which information technology is used for the provision of information by the governmental entities, the development of online procedures and services, and the government - citizenship interaction.

The EPM Group assumes this initiative as a mechanism that contributes to increase transparency, promote citizen collaboration and participation and strengthen its work with stakeholders.

In 2014, the Ministry of Information Technology defined the Online Government components and, from these definitions, EPM and its affiliates in Colombia have been implementing the strategy.

The following specific achievements should be highlighted:

In the Services component, the Contacto Transparente (Transparent Contact) mobile application was launched for the reporting of acts of corruption. In addition, some electronic editable forms were developed for requesting services.

In the Open Government component, information updates were made on the EPM website, where a specialized section for citizen participation was also enabled. In terms of accountability, a citizen participation plan was set in motion in digital media, and some open data aligned with the Sustainability Report were published. Citizens' enquiries were also enabled on the website, from which initiatives on how to improve our customer service process and clarity of our service bill were implemented. Finally, "Innovate", an open innovation initiative, was launched.



In the Management component, the initiative was formalized within the Strategic Plan by the Vice Presidency of Information Technology of EPM, in order to have elements for monitoring compliance with the Online Government in the Group.

In the Information Security component, the EPM risk methodology was standardized with the Information Security Management System (ISMS), and was also aligned with the organizational management systems; moreover, application guidelines were issued for all the affiliated companies. On the other hand, the EPM's Information Security Policy was approved and a security and cybersecurity diagnostic consultancy was performed for EPM and its business group.

Energy affiliated companies also advanced in the different components of Online Government and have set themselves the goal of accelerating the implementation path in 2017.

EPM has the following goals for 2017: implementing 100% of the components of ICT for services and ICT for open government; and 80% of the components of ICT for management and information security and privacy.

Progress in the Implementation of the Online Government EPM Group's energy companies					
Online Government Component/ Index (%)	EPM	CHEC	ESSA	CENS	EDEQ
ICT for Services	92.5	86	90	36	86.5
ICT for Open Government	95.5	99	59	10	90
ICT for Management	68.5	47	58	73	42.24
Information Security and Privacy	50	62	64	53.3	50

Source: Department of Online Government of each company

## Management indicators

- G4-SO4**      Communication and training on anti-corruption policies and procedures
- EPM-14**     Transparencia por Colombia Indicator



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# Supplementary actions

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# Corporate Citizenship

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# Corporate Citizenship

The EPM Group's model of social responsibility promotes actions that are directly related to its role as public utility provider. Moreover, either directly or through the EPM Foundation, it takes actions that meet the needs of the communities in the areas where it operates: Social investment, programs, and contributions to public policies that are part of the concept of Corporate Citizenship. Thus, it promotes, among communities, their development, inclusion in the urban dynamics, financial activities, and access to information and cultural, educational, social, job, and financial opportunities.

## Management indicators

- G4-EC7** Development and impact of infrastructure investments and services supported.
- G4-EC8** Significant indirect impacts, including the extent of these impacts.



# Christmas lighting

For the EPM Group, the annual implementation of the Christmas Lighting is an opportunity to open spaces for citizen interaction and to boost the economy in Medellín and in other towns in the country where this is carried out through the energy affiliates.

In the city of Medellín, it is one of the greatest traditions. For almost five decades, EPM has conceived, designed, made, and assembled the Christmas Lighting of the city.

From the Christmas garlands with yellow, blue, green, red, and white bulbs that adorned Medellín in the 1960s, EPM's Christmas Lighting has evolved through the installation of large and colorful figures hand-woven by artisans, most of them single mothers.

Technology has also changed. With the aim of making a rational use of energy, LED bulbs are used nowadays, which consume less energy and, in some areas of the city, solar panel pilots are implemented.

Since 2013, the Christmas lighting initiative has broadened its horizons in order to be seen in the different regions of Antioquia. Each year, through the "Turn On the Joy" contest, the entity provides 14 municipalities with a set of pieces for their Christmas Lighting based on the proposals submitted by the community itself.

## Management in 2016

Christmas Lighting in the regions where the EPM Group operates is one of the most important activities regarding closeness with its stakeholders. It is an opportunity for recreation, culture and citizen interaction that, in turn, generates jobs and contributes to boost the local economy.



In the EPM Group, the implementation of the Christmas Lighting seeks social co-responsibility, job creation, and cultural integration.

From EPM's management, we highlight the change in the location of the Christmas Lighting: After being held, for more than 20 years, in the sector of the Medellín river boulevard, in December 2016, it was held in the sector known as Carabobo (Northern Medellín), particularly in the Parque Norte, with 75,000 daily visitors, for a total of 2,850,000 people during the 38 days it was exhibited, a dynamics that resulted in a 65% hotel occupancy in the city, for an economic income of COP 147 billion regarding foreign visitors.



With the “Turn On the Joy” contest, EPM provided pieces for their Christmas Lightings to the following 14 municipalities: Cáceres, Carolina del Príncipe, Copacabana, Fredonia, Frontino, Gómez Plata, Guarne, Montebello, Santo Domingo, Pueblorrico, Puerto Nare, Tarso, Titiribí, and Valparaíso.

The energy affiliates, ESSA (Santander), CENS (Norte de Santander), EDEQ (Quindío) and CHEC (Caldas) also carried out actions in the same direction:

ESSA: A total of 1,260,531 people enjoyed the Christmas Lighting in the 14 municipalities in the area of influence of ESSA and in the Cerro del Sanfísimo in the municipality of Floridablanca, where Christmas figures were installed.

CENS: The municipalities of Labateca, Salazar, Lourdes, La Playa de Belén, and Sardinata dressed in colors, lights, music and joy, as they were the winners of the 2016 “Turn on the Joy” contest held by this company.

CHEC: Implemented the virtual mechanism of civic participation that allowed defining, as the concept of the Christmas Lighting for the city of Manizales, the theme of lights of nature, based on the region’s flora and fauna. Moreover, the company held the “Turn on the Joy” contest in five of the municipalities in its area of coverage.

EDEQ: In the city of Armenia, the Christmas Lighting was held in the sectors of the Parque de la Vida, Plaza de Bolívar, Cielos Abiertos and the Sucre and Fundadores parks, as well as in the tourist town of Salento and in three others towns that were the winners of the “Turn On the Joy” contest: Filandia, Buenavista, and La Tebaida.

Christmas lighting - EPM Group			
Impacts	2014	2015	2016
Direct jobs	441	602	310
Indirect jobs (street peddlers)	350	350	350
Beneficiaries	1,350	1,350	1,350
Total investment (COP million)	22,000	18,500	12,000

Source: Vice Presidency of Power Transmission and Distribution

Christmas lighting - EPM’s energy affiliates			
Total Energy Affiliates	2014	2015	2016
Direct jobs	549	435	549
Indirect jobs (street peddlers)	270	161	454
Beneficiaries	1,331,978	2,744,961	2,373,169
Total investment (COP million)	7,476	5,044	7,879

Source: Vice Presidency of Power Transmission and Distribution

## Management indicators

**G4-EC8** Significant indirect impacts, including the extent of these impacts.



## Events and sponsorships

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The EPM Group develops and supports open events and advertising engagements that strategically aim at generating, supporting, and strengthening its relationships with the stakeholders, to seek the development of the regions where it operates and enhance the Group's reputation.

With a sense of social responsibility, local and regional initiatives having a positive impact on the community are supported by the organization. These initiatives address issues such as conservation of natural resources, technical issues to favor a sustainable culture, safe use of public utilities, and exploitation of recyclable materials, among others. They also contribute to the human, economic, cultural, social, and environmental development processes of the territories where the Group's companies operate.

EPM's Corporate Identity Management is in charge of working with the entities that lead events on issues relevant to the company. As a sponsor, EPM makes a significant contribution to the creation of spaces for knowledge, recreation, environmental education, and culture and sports.

### Management in 2016

The companies of the EPM Group have supported events that are important for the development of the community. Such is the case of the Book and Culture Festival and the Flowers' Festival in Medellín, axes of the cultural life of the city. Within its framework of action, EPM stands out for participating in cultural, sporting, academic, and city events.

This is also done by affiliates such as CENS, with the Cúcuta Fair and the cultural circuits of the "Fair in the Neighborhoods", while EDEQ allocated more resources and increased the impact in the events it held or supported along the year. Aguas Regionales engaged in providing water packaged in plastic bags with the "Aguas de Urabá" and "Aguas de Occidente" brands.

Emvarias, a company dedicated to solid waste management, also sponsored various events such as the Flowers' Fair, the Low-Carbon Cities forum, the Environment Days and, noteworthy, different events and programs in the communities close to the La Pradera sanitary landfill to enhance its "good neighbor" condition.





Its participation in events and sponsorships allowed the EPM Group to strengthen the relationship with its different stakeholders in 2016.

From the management carried out by EPM, advertising engagements to local and national events such as the Flowers Marathon, the Book and Culture Festival, the Christmas is a Big Family event (along with the Medellín's Mayor's Office), the Guns N 'Roses concert, and the Flowers' Festival and its classic and antique cars parade, among other events.

The Group's affiliates focused, as in the case of the energy companies, EDEQ and CENS, in joining cultural and sporting events in the municipalities in their corresponding areas of influence. The affiliate in Quindío participated in the celebration of the municipalities' traditional fairs, the Marathon of Health and Good Energy and the Block Better Illuminated event, while the affiliate in Norte de Santander supported the cultural circuits of the Cúcuta Fair, the "Singing with Energy" festival and the CENS - EPM Group Tennis tournament.

Adasa, the Chilean affiliate, participated in more than 90 regional and local events, impacting around 100,000 people and with an investment of CLP 65 million. These advertising engagements also caused the signing of agreements and the strengthening of alliances with the academic, agricultural, and cultural worlds in the area of influence of this company.

Aguas del Oriente supported cultural initiatives and participated in the school meals project in the municipality of El Retiro, Antioquia, while Aguas Nacionales delivered advertising material related to the Aguas Claras Park project in the EPM's wastewater treatment plant.

In the regions of Urabá and Western Antioquia, the Group participated in events such as the cleaning of the rivers Chigorodó and Apartadó, the sports tournament in Turbo, the Water Day in the five municipalities served in the Urabá region, the Children's Day, the cycling expedition in the Urabá region, the Neighborhood Days in Turbo and Apartadó, the "Los Diablitos" event in Santa Fé de Antioquia, the patron saint festivities in San Jerónimo, and the Environment Day in Sopetrán.

Emvarias was another of the affiliates that stood out in this aspect, mainly with actions such as the assistance in its stand at the Buen Comienzo Festival, which was attended by 40,000 people, as well as its participation in Expo-Residuos 2016 (International exhibition and seminar on integrated management of hazardous and solid waste) and in the forum regarding street cleaning and its exploitation, with the participation of recycling cooperatives. Likewise, this affiliate took part in the Low-Carbon Cities forum, where it exhibited the waste container "Mobile Punto Naranja", in addition to its participation in the Let's Clean up Colombia Day, the Flowers Marathon and the Women's Race, the Peasant Festival and the Clothing and Culture Fair in the municipality of Donmatías.





EPM events			
Number of Events	2014	2015	2016
Commercial events	197	112	145
Non-commercial events	158	127	49

Source: Vice Presidency of Communications and Corporate Relations

Investment in EPM events			
Contributions (COP million)	2014	2015	2016
Commercial events	2,005	710	1,635
Non-commercial events	1,941	2,157	1,298

Source: Vice Presidency of Communications and Corporate Relations

EPM sponsorships			
Number of sponsorships	2014	2015	2016
Local (only Medellín)	59	68	69
National	39	36	41
International	3	1	0

Source: Vice Presidency of Communications and Corporate Relations

Investment in EPM sponsorships			
Contributions (COP million)	2014	2015	2016
Local (only Medellín)	7,716	6,548	7,153
National	907	1,140	3,187
International	185	33	0

Source: Vice Presidency of Communications and Corporate Relations

Total number of events - Energy affiliates			
Total - Energy affiliates in Colombia	2014	2015	2016
Number of events held	44	92	10
Contributions to events (COP million)	2,215	1,674	561
Coverage (beneficiaries)	N.D.	709,487	17,472

Source: Vice Presidency of Power Transmission and Distribution



Total number of events - Water supply affiliates			
Total - Water supply and sanitation affiliates	2014	2015	2016
Number of events held	55	125	119
Contributions (COP million)	180	175	500
Coverage (beneficiaries)	N.D.	12,600	124,760

Source: Vice Presidency of Water Supply and Sanitation

## Management indicators

**G4-EC8** Significant indirect impacts, including the extent of these impacts.



# EPM Foundation

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The EPM Foundation was created in 2000 to contribute to the development of competitive and sustainable territories in the current and potential areas of influence of the EPM Group via programs and projects of social and environmental management that favor the conservation of natural resources and proper use of public utilities in these territories.

Since 2011, the EPM Foundation operates the EPM Library to promote initiatives related to access to knowledge and culture. Based on the experience acquired by the Foundation through the Library Network, the operation of this space is closely articulated with the other initiatives developed by EPM and the Foundation itself.

In 2015, 487,000 people visited the EPM Library. Some of the programs and spaces developed by the Foundation include: Water for Education, Education for Water; the Water Museum, and the Promotion of Higher Education.

## Management in 2016

With a Group scope, during 2016, EPM and the EPM Foundation made a social investment of COP 18.767 billion to operate in 12 departments of the country through programs and projects such as Water for Education, Education for Water; Social ICT Appropriation, and Malambo Source of Life Fund.

Thanks to the development of the plan of action and to the fulfillment of the objectives, the number of beneficiaries of the Foundation's programs and projects exceeded 5 million.



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During 2016, the EPM Foundation expanded its horizons with the Water for Education, Education for Water program, through which it managed to be present in four departments of Colombia. This entity installed 525 plants in 128 municipalities, for a total of 71,806 beneficiaries throughout the country. It represents a contribution to the improvement of the living conditions of rural populations, especially in terms of access to drinking water. During this period, 103 water purification solutions were installed, benefiting 14,341 people.

With the Antioquia-Medellín Alliance program, the goal of benefiting 10,000 students was exceeded, for a total of 10,232 youths from the department of Antioquia who received a scholarship covering tuition fees and maintenance expenses in order to carry out studies of higher education, at a technical, technological, and university level. Moreover, the Foundation continued its dynamics of promoting competitiveness and capacity building in the different regions of the department with the support of the higher education institutions that joined the program.



Likewise, with the institutional support of EPM, the EPM Foundation put into operation five UVAs (Articulated Life Units), having a total of 12 UVAs in operation during 2016 and reaching more than one million people in the Valle de Aburrá with the promotion of education, culture, protection of natural resources, and efficient use of public utilities. These spaces, where citizen interaction is encouraged, contributed to improve the indicator of closeness with the communities and to position the institutional message of the EPM Group.

Beneficiaries of the EPM Foundation's programs			
Beneficiaries by program	2014	2015	2016
Water Museum	96,413	96,439	106,711
Deseos Park and House of Music	1,926,338	1,973,094	2,342,565
Library Network	886,816	916,074	1,045,901
EPM Library	500,629	487,190	537,903
Water for Education, Education for Water	14,493	17,891	14,341
EPM Fund for Regional Higher Education *	156	97	1
Medellín-Antioquia Alliance for Higher Education**	3,328	3,239	937
Articulated Life Units - UVAs (12)***	202,319	446,890	1,390,803
Social ICT Appropriation	147,231	106,383	69,441

**Source:** EPM Foundation - Vice Presidency of Communications and Corporate Relations

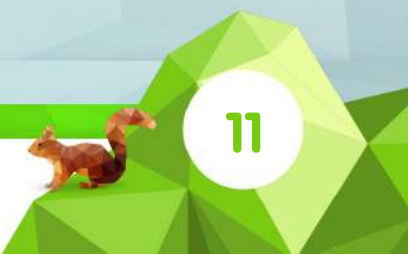
\* In 2009, we helped 261 youths have access to higher education through forgivable loans. The reported recipients of the loans correspond to students that were active during the reporting year. Of the 261 beneficiaries of the EPM Fund for Regional Higher Education, 158 have graduated.

\*\* Figures from the Medellín-Antioquia Alliance for Higher Education correspond to contributions by the EPM Foundation and the Antioquia Governor's Office. Figures corresponding to the Municipality of Medellín were not reported in order to avoid duplications on the report. The 2014 figure is adjusted, since the projection of investment for students entering the program in the corresponding years was previously being reported. The Alliance receives an investment of COP 118.532 billion, of which COP 22 billion correspond to contributions by the EPM Foundation.

\*\*\*The information provided on resources invested corresponds only to the educational and cultural aspects the Foundation works on.

## Management indicators

- G4-EC7** Development and impact of infrastructure investments and services supported.
- G4-EC8** Significant indirect impacts, including the extent of these impacts.





## City projects

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The EPM Group, aware of its role in the construction of a fair, educated, and sustainable society, defines projects with a visible impact on the quality of life of the inhabitants of the territories where it operates.

### Management in 2016

The Articulated Life Units (UVAs) are a unifying project of the urban fabric, through the articulation of programs and projects for social and cultural transformation of communities. They will also be in charge of developing urban balance. The UVAs basically involve the use of some EPM's water supply tanks to create spaces for social transformation.

The affiliate CENS made progress in its "Art and Energy at the Park" strategy, with four recreational centers, while Delsur, in El Salvador, built three infrastructure projects for communities with a high risk of delinquency.

Also noteworthy are the actions of Aguas Antofagasta, in Chile, with the recovery of the Parque Japonés in this northern city of Chile, and Emvarias with the installation of underground waste containers, ensuring citizens disposal of waste 24 hours a day.



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The UVAs (Articulated Life Units), which started operations during 2016, benefit 35 sectors and neighborhoods in the city of Medellín, such as Pedregal Alto, San Cristóbal Central Part, El Uvito rural district, Pedregal Alto rural district, Travesías rural district, La Cumbre and El Llano, Santo Domingo Savio No. 1, Popular and Granizal, El Cucaracho, Monteclaro, Pajarito, and Palenque.

Outside of the capital of Antioquia, EPM developed two other projects with a format similar to the UVAs: The Aguas Claras park in the wastewater treatment plant that is under construction in the northern part of the metropolitan area, and the San Fernando boulevard in the San Fernando wastewater treatment plant in the southern part of the Valle de Aburrá.

The affiliate companies of the EPM Group also joined this initiative. In Norte de Santander, CENS fully met the goal of the "Art and Energy at the Park" strategy through 30 events of storytelling, theater, painting, musical settings, and Christmas novenas in the Pamplonita Eco-park, which were attended by 9,150 people.

Delsur, along with the U.S. agency, USAID, started a project to prevent violence that involves the provision of electrical infrastructure for initiatives aimed at strengthening citizen coexistence, through sports and cultural events in public spaces. Moreover, this Salvadoran affiliate provided 57 concrete posts for the construction of observation towers and viewpoints in protected natural areas.





Aguas Antofagasta installed three hydration points in the towns of Tocopilla and Taltal, for use by those who practice sports, while the Colombian company, Aguas Nacionales, participated in the construction of the Aguas Claras UVA in the vicinity of the wastewater treatment plant that is being built by it in the northern part of the Valle de Aburrá, a space with forest conservation trees, an exhibition of archaeological finds, a monument to the Soldier, an auditorium for 207 people, and a pedestrian bridge.

<b>Articulated life units (UVAs) implemented by EPM</b>			
<b>Impact</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Number of UVAs in operation	2	5	5
Sectors of the city that benefit from the UVAs *	2	25	35
Number of new UVAs awarded	4	8	0
Investment (COP million) **	14,843	100,097	50,690

**Source:** Vice Presidency of Communications and Corporate Relations, External Relationships Management, and Vice Presidency of Water Supply and Sanitation

\*Neighborhoods in the area of influence of the UVAs delivered for operation.

\*\*Including the Aguas Claras park.

<b>Management of urban spaces owned by EPM</b>			
<b>Impact</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Number of visitors to Pies Descalzos park and Puerta Urbana	599,964	634,140	335,544
Investment in Pies Descalzos park and Puerta Urbana *	316	144	90
Investment in visitor assistance service – guides (COP million)	419	367	386
Cost of toilet units for community use (COP million)	238	288	290

**Source:** Vice Presidency of Shared Services and Supplies, EPM's Administrative Support Management

\*Figures associated with maintenance activities.





### Management of urban areas - Water affiliates

Water affiliates	Investment in urban areas (COP Million)	Direct jobs created	Beneficiaries
Emvarias	959	28	22,350
Adasa (Aguas Antofagasta)	103	20	537,000
Aguas Nacionales	20,328	12	31,869
<b>Total - Affiliates</b>	<b>21,390</b>	<b>60</b>	<b>559,350</b>

Source: Vice Presidency of Water Supply and Sanitation

## Management indicators

**G4-EC8** Significant indirect impacts, including the extent of these impacts.



# Development and innovation

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# Development and innovation

There is an area at EPM in charge of managing the innovation process and aligned with the highest purpose of contributing to the development of competitive and sustainable territories. To achieve this, it conceptualizes and builds up new business development options and then makes them emerge together with other areas of the EPM Group, contributing thus to the organization's growth. From this area, new technologies are also identified and transferred in a timely manner to enhance current and new business, as well as to optimize existing processes.

The portfolio of development and innovation initiatives is aligned with the following areas or axes of innovation opportunity that allow organizing and balancing efforts so that the business group continues moving forward, stays up-to-date on competitive dynamics, and is in line with the trends in technological development, customer expectations, and opportunities of the environment. In this way, the company seeks to innovate at the service of people, creating new products and services that meet the needs of its customers and generating added value for our stakeholders and for the EPM Group.



- Optimize and make profitable.
- Renewable energy, energy efficiency, storage, valorization, and use of solid waste, among others.
- Network and measurement intelligence, incorporation of digital technologies, and applications.
- Non-conventional treatments of water, reuse, and distributed solutions.
- Efficient, comprehensive, and sustainable solutions, the internet of things, relationships with stakeholders.
- Infrastructure for electric mobility, new gas applications, and incorporation of technologies to offer new solutions to current and new markets.



## Main achievements

Goals for 2016	Achievements in 2016	Compliance
Open innovation management: To strengthen and develop new lines of action to improve the relationship with the young audience.	<p>The Science, Technology and Innovation Fair was held, where projects related to thematic lines defined by EPM were presented: renewable energies, water and life, solid waste, and sustainable mobility.</p> <p>In the 2016 Central Fair, the goal was to disseminate 34 research projects related to the thematic lines. 138 projects were presented, including 75 from 21 municipalities other than Medellín.</p> <p>22 municipalities of Antioquia, 75 teachers, and 220 students participated.</p>	Total
Electric mobility program.	<p>The commercial offer was structured after validating the operational conditions in the eco-stations (pilot project during 2016).</p> <p>Signing of an agreement with the Municipality of Medellín, Metro de Medellín, Metroplús and Metropolitan Area of Valle de Aburrá to implement activities of technological validation in electric buses: articulated and a standard.</p>	Total
Green Energy Certification.	EPM managed to register the energy of the La Vuelta and La Herradura, Jepírachi, and Porce III plants as "Green Energy" to be initially marketed to its large customers.	Total



## Challenges

Challenge	Year of completion	Scope and coverage			Achievement indicator
		Territory	Business	Company	
Implementing the Innovate Yourself program in the areas of influence of Medellín and Manizales.	2017	Colombia – Antioquia	All businesses	Empresas Públicas de Medellín - EPM	<ol style="list-style-type: none"> <li>1. Detailed work plans, local and municipal fairs, activities specific to the three projects.</li> <li>2. Local and municipal fairs.</li> <li>3. EPM Solar Circuit competition and Central Fair.</li> <li>4. Final report of the Central Fair, Final stage “Innovate Yourself.”</li> </ol>
Expanding the commercialization of EPM Green Energy to large regulated customers and customers in the residential sector.	2017	Colombia - Antioquia	Electricity	Empresas Públicas de Medellín - EPM	Commercializing 600,000 RECs in large customers.
Structuring efficient, comprehensive, and sustainable solutions with the aim of consolidating the service offer for the society of the future. The objective is to leverage economic and social transformations in the territories in which we operate, to offer customers the comprehensive management of their energy, water, and solid waste needs, integrating solutions such as renewable energy, water reuse, and solid waste recycling.	2017	Colombia – Antioquia	All businesses	Empresas Públicas de Medellín - EPM	Starting structuring an integrated service offer.





# Technological developments

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In order to optimize the infrastructure performance in the different operating processes and be at the forefront of technological advances, EPM develops research projects aimed at the production of new materials, products and devices, and at the establishment of new processes, systems and services.

Through these developments, the abilities of the operative staff, as well as those of the research groups from the universities involved, are enhanced. In many cases, important results are also obtained for the protection of intellectual property.

## Management in 2016

Advances were made in the commercial validation of the Rotor Diagnostic System (RDS), which allows monitoring and diagnosing the condition of the power generators' rotors. The technology is patented and was developed by EPM and the National University of Colombia. The second stage of the project seeks to make improvements to the RDS, and perform the commercial validation and technology negotiation, in order for the system to be commercialized and implemented in production processes (innovation).

Commercialization is expected to be directed by a company from the generator monitoring industry. This is a clear example of technology development, transfer and commercialization among EPM, the university, Colciencias and the private sector.



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During 2016, EPM worked in the following research projects:

1. Commercial validation of the rotor diagnostic system (RDS) technology: In collaboration with the National University of Colombia, progress was made with the technological development of a patentable diagnosis system of operating rotors to be replicated in hydraulic power plants.
2. Development of diagnostic procedures, thermal recovery of substrates and application of thermal barrier coating (TBC) in La Sierra thermal power station: In alliance with the National University of Colombia, EPM has advanced in the application of coatings, which is expected to reduce maintenance costs associated with components' repair.
3. Development of a smart device to detect non-technical losses in distribution networks: This solution is being developed in partnership with a company in California, United States. It was implemented in approximately 150 energy customers, successfully completed stage 2, and started stage 3 to be used with about 2,000 customers.



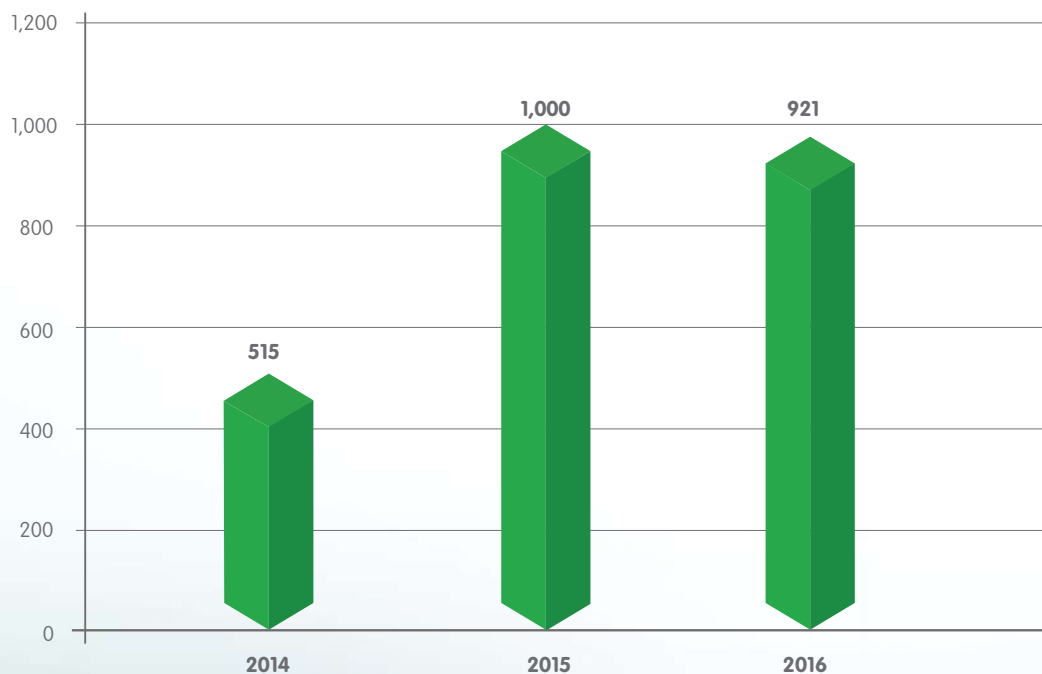


The efficiency of poles in power distribution networks of the EPM Group was evaluated. When comparing materials, it was found that glass-fiber reinforced polymer poles have longer service life and better electric insulation. This represents economic efficiencies for the following reasons: the replacement time is longer, there is better behavior in areas of high (saline) contamination and its low weight allows easier transportation and handling, thus avoiding accidents.

The affiliated company ENSA is working on the remote control of LED-type streetlights; 5 systems were installed and performance is monitored for the energy efficiency of the lighting system (power regulation and programming of on/off hours), reducing operating and maintenance costs, which improves the speed and effectiveness in the response to failures and the quality in the provision of the service in areas where lighting is an important factor for the security of the community.

Likewise, ENSA officially receives the Interactive Energy Platform (IEP) that optimizes the use of the network and improves energy demand at the highest peaks of large customers.

### Investment in development and innovation projects (million COP)



Source: Executive Vice Presidency of Strategy and Growth – Development and Innovation Management



# Energy efficiency

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Energy efficiency (EE) is the best source of energy for the immediate future, both in economic and environmental terms. It includes the optimal exploitation of the different energy sources, as well as the processes of transmission, transformation, use and disposal of energy.

For the EPM Group, it is essential to implement EE both in its internal processes and in its offers to customers. The EE is part of the sustainability, competitiveness and corporate social responsibility (RSE) actions developed by the organization.

Major government and business actors, such as EPM, must promote the development of a self-sustaining and widespread ecosystem, understanding that any system for the production, transmission and consumption of energy is likely to be more efficient.

## Management in 2016

In 2016, the company EV Alianza Energética and its branch in Colombia were established in order to provide companies with an energy diagnosis and management service that allows them to improve their productivity. Four contracts were signed for the diagnosis of energy efficiency.

During 2016, the service to be offered was determined, the commercial and financial process was structured, the staff was trained, and the contact was established with more than 80 potential clients. The service is being structured to be provided in Colombia and, subsequently, in the target countries of the Group, through the creation of two companies and the incubation of one of them within EPM.

EPM conducted customer education programs in the rational use of public utilities, and explained the financing process for replacing electrical appliances with more efficient ones, using the “Somos Card”. The company also took part in projects developed by its customers for the substitution of energy resources in high-consumption applications, including La Alpujarra District Cooling.

From the Power Transmission and Distribution business, and as a result of a feasibility study, 66 LED-type streetlights were installed and the authorization of different brands and models was achieved.

The use of vegetable oil-based dielectric fluids in distribution and power transformers was evaluated, in technological and environmental terms, during 2016. This oil is more efficient thanks to its higher thermal conductivity and moisture absorption, which means greater load capacity and less deterioration of the transformers’ active part, extending their service life.





In the Water and Sanitation business, energy management was performed for the technical and operational optimization of processes, through the maintenance and prioritization of the use of the most efficient equipment, which reduces energy consumption in the water supply system.

Delsur, affiliated company based in El Salvador, promotes the efficient use of energy by participating in the program “El Salvador Saves Energy” (Pesae). In 2016, the company held the third edition of the National Award for Energy Efficiency, and published two editions of the magazine “El Salvador Saves Energy.” Additionally, at its facilities, it is implementing the rational and efficient use of energy to reduce consumption without affecting operations and comfort of the staff.



# Green energy

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An increasing number of companies in which electricity is a key resource in their supply chain have set the goal of reaching 100% consumption of electricity from renewable sources. Since it is impossible to determine whether such energy was obtained from renewable or fossil sources, world certification systems have been established. These include: Guarantees of Origin (GOs), which are certificates issued for each megawatt-hour (MWh) of energy produced by an electric plant; Or Renewable Energy Certificates (RECs), which are GOs originated in 100% renewable energy generation plants.

In the countries where REC systems do not exist yet, the International REC Standard operates to enable the issuance, redemption and commercialization of RECs. The I-REC's task is for buyers to acquire renewable energy in any country in the world. I-REC is managed by the International REC Standard, a non-profit association based in the Netherlands.

## Management in 2016

During 2016, EPM achieved the certification and registration in the I-REC Standard for four of its renewable energy plants: Porce III, La Vuelta, La Herradura and Jepirachi.

Renewable Energy Certificates (RECs) are classified as intangible assets that can be commercialized nationally and internationally, and can also be reported in the company's annual GHG inventory or carbon footprint.

EPM managed and fulfilled the requirements of the proper international entities to obtain the certification of the four renewable generation plants. With the Green Energy certification, the company launches in 2017 the EPM Green Energy offer, consisting in the issuance and sale of RECs to the national market, in order to generate additional revenues that will be allocated to the expansion and consolidation of its renewable energy portfolio.

**Investment in 2016:** COP 80 million.





# Innovation management

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EPM has come a long way in the management of innovation, understanding it as the whole process required from the conception of innovative ideas, following with the execution of pilot projects and the validation of prototypes, until arriving at solutions, upgrades, or new products or services that contribute to the improvement of the services provided by the EPM Group.

We recognize the importance of strengthening innovation processes, keeping a continuous learning and having a network of allies that allows identification of people, entrepreneurs, entities and companies, in order to create alliances for a collaborative work and a win-win relationship that enables the construction of the solutions that the community requires.

Among our stakeholders, we emphasize the importance of innovation and encourage the implementation of new developments from the school environment; an initiative that is materialized in the ST+i Fairs program, through spaces that stimulate the educational and scientific activity in young people.

## Management in 2016

During 2016, the program was successfully carried out, including the execution of the Science, Technology and Innovation Fair (ST+i Fair.) Under the leadership of EPM, the Mayor's Office of Medellín and the Explora Park, this program promotes the development of scientific and civic competencies among students, teachers, directors and parents. Scientific and business communities also contribute from their experience and knowledge to the training and school research processes.

At the ST+i Fair, four thematic lines were addressed: water and life, nonconventional forms of energy, urban solid waste management and sustainable mobility.



During 2016, EPM interacted with the academic community participating in different spaces such as the Tecnova Fair, the University-Industry-Government Committee and diverse meetings with academic leaders, seeking to strengthen relationships and work on projects that fit with the defined axes. In the University-Industry-Government Committee (UIG), innovation initiatives and research projects of its different companies are shared.





EPM conducted the ST+i Fair with the purpose of contributing to the construction of a culture in which science, technology and innovation are fundamental components for social development, through the participation of children and young people in school research processes. This event is carried out based on three strategies: support to educational institutions, activities triggering questions to companies, laboratories or universities, or visits of scientists and professionals to schools, and participation of students in dissemination spaces (institutional, municipal, regional and international fairs).

138 research projects, from 44 educational institutions of Medellín and the subregions of the department, participated in the central fair that took place in October and reached coverage of 22 municipalities in Antioquia and 550 students.

This program has consolidated the voluntary service of science and technology, the network of former members of the program, the Innovation Award, in addition to the installed capacity and the development of contents.

In order to get closer to the young public, the company designed the Innovate Yourself program, which is aimed at university students from the metropolitan area of Medellín and the city of Manizales, and will take place in 2017.

EPM was present in the Tecnova business networking meeting, interacting with more than 20 research groups from different universities in Colombia. This allowed the company to learn firsthand the topics in which they are strong, in order to identify possible initiatives that leverage its innovation axes.

Investment during 2016: COP 808 million.





# Urban solid waste management

Solid waste in Medellín and its metropolitan area requires a planned management that enables to design solutions fitting the characteristics and conditions of the region; moreover, they must be socially inclusive and sustainable from the health, environmental and economic perspectives.

This is how the EPM Group has defined a long-term strategic vision and a prioritization of the projects that should be developed in the different horizons of time, in order to achieve an integral and efficient management of waste and be able to offer integral solutions for the management of ordinary, special and hazardous (short-term) solid waste, thus taking its business model to a level that encourages minimization from the source and promotes the reuse, recycling and recovery of materials and energy from waste. The purpose of this comprehensive and differentiated management is to maximize the use of by-products and achieve an efficient management of them for the benefit of the whole region.

## Management in 2016

The EPM Group has been defining the strategic planning for the waste business and the way the company and its affiliates will participate in the industry. The efforts made to date have been aimed at making the current operation of Emvarias profitable and evaluating alternatives for growth in different lines of waste management. Likewise, the company has actively participated in the construction of the public policy and the regulatory development that will make possible to provide the service at a higher level.



EPM is making progress on the evaluation of different waste valorization options for Medellín and Valle de Aburrá.

Emvarias acquired 12 underground waste container systems, of which 2 were installed in the park of San Antonio de Prado, a small town of Medellín. These containers are buried hydraulic systems that guarantee the disposal of waste 24 hours a day during the 7 days of the week, while allowing the separation of different types of waste and preventing citizens from living with them (prevention of odors and better appearance of the place where they are installed.) The rest of the underground containers are expected to be installed in 2017.

This same company advanced in the construction of a Punto Naranja with several containers in its headquarters in the downtown. Puntos Naranja are spaces that, thanks to their design, provide the citizen with an alternative to dispose of special wastes that are not collected in the usual waste collection route. It has no cost and wastes are given the appropriate treatment according to their type.



There are barriers that hamper the development of integrated waste management solutions. The main obstacle is a series of regulations that does not allow large-scale valorization projects to be viable. However, the Government has been giving signals of incentives and schemes that will make these projects viable and, therefore, it is necessary to permanently monitor their evolution.

The EPM Group invested COP 960 million during 2016.





# Sustainable mobility

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The planning of means of transport has become one of the priority subjects in world urban planning, since they have a direct impact on the quality of life of human beings and the environment.

In Medellín, cars and motorcycles are the main cause of air pollution. Currently, there are critical problems of accumulation of particulate matter such as PM 2.5 (one of the most dangerous pollutants because, due to its size, it directly enters the lungs and blood), which has led the WHO to declare the city as the most contaminated in Colombia and the ninth in Latin America.

With the purpose of making mobility in the city more sustainable, EPM manages the integration of public and private sectors to take steps that contribute to the development of electric mobility which, along with natural gas, are intended to replace fuel with clean energy, thus reducing emissions of noise, greenhouse gases and other polluting gases.

The success of this program not only depends on the work of EPM, but also on the commitment of the actors of this ecosystem: suppliers of electric vehicles and chargers, government institutions, transport companies and other public utility businesses.

## Management in 2016

The first two eco-stations for charging electric vehicles were put into operation in 2015. Subsequently, in 2016, the fast charging offer was launched for private vehicles and to meet the needs of the electric car fleet of the company, which represents a milestone for the community and the city.



In 2016, EPM proclaimed itself as the leader of sustainable mobility in Valle de Aburrá and, to this aim, it has worked on several fronts that generated commitments among key actors. That is why technical, economic, legal and commercial foundations of the electric mobility project have been built since 2010. The company has been working along with universities, transport companies, parking lot administrators, shopping malls and the municipal offices of Mobility and Environment, in order to define the best places for installing more fast-charging stations and slow-charging points, with the purpose of offering a reliable and secure platform that ensures sustainable urban mobility.



In the EPM Gas business, about 53,000 vehicular natural gas (VNG) systems have been installed since 2001. Likewise, the company has granted vouchers to facilitate access to the product and has worked on the exemption of driving restrictions (pico y placa).

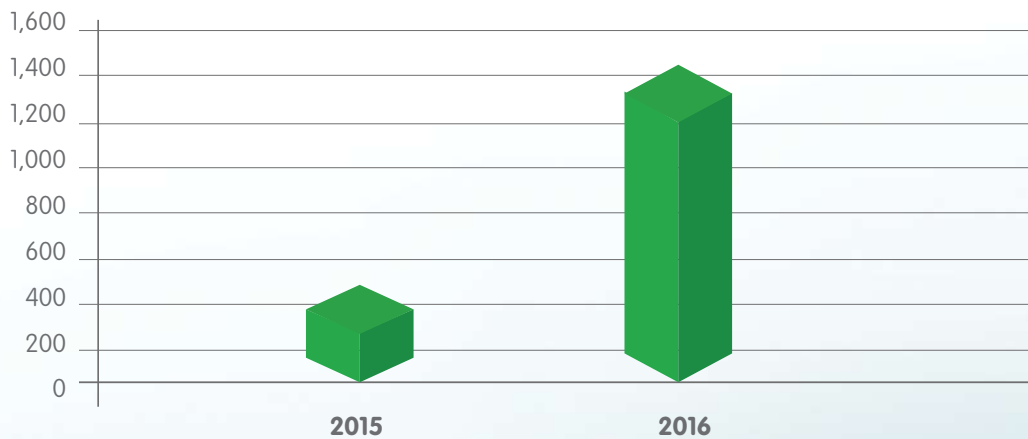
Management and support to enable the use of natural gas in 391 buses of the mass transit system and 63 garbage compactors. 15 natural gas service stations were opened to the public in Valle de Aburrá, and one in Apartadó, the only one available in Urabá.

Emvarias has been working on the replacement of diesel with vehicular natural gas (GNV) for 40 of its vehicles.

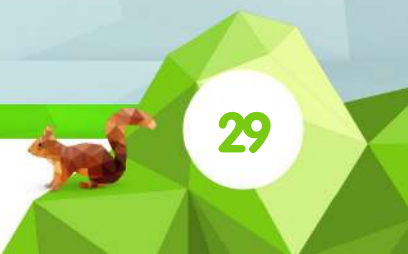
Eegsa, a power distribution company, in association with Volta E Motor Company S. A., launched the “Green Zone Electromobility GT” initiative, as a project of the Clean Development Mechanism (CDM) to mitigate greenhouse gases (GHGs) and combat Climate Change.

The Group aims to mitigate GHG in transportation, introduce electric vehicles and foster a culture of behavior change. There are also some economic advantages that include the reduction of transport costs, thanks to the use of new technologies in the electric vehicles; moreover, problems of mobility will be solved and more jobs will be created, which will mean a better income and a greater empowerment.

### Investments made in development and innovation (million COP)



*The graph shows the investments made by the Development and Innovation Management for the infrastructure of the eco-stations and to execute the agreements with actors involved.*



# Work environment

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## Work environment

In the EPM Group, the working environment is based on the objective and subjective conditions that form the environment for work performance, seeking to enable the human being to have a satisfactory experience when developing his/her activities in the company. This concept includes factors such as health and safety.

**Training and development:** in the EPM Group, the learning management process focuses on ensuring a smart organization, capable of learning through the training of its people. Training and development seek to enhance employability of people through education.

**Employment and equality:** aspects related to the company-employee relationship, including remuneration, gender equality and equal employment opportunities, as well as the exercise of trade union and association rights.

Today, companies focus their strategies and efforts toward improving the quality of life of its employees, motivating them and building a sense of belonging to the organization. A suitable working environment helps people do their work under optimal conditions, a situation that makes them more productive and happier, with a balance between personal and professional development.



## Main achievements

Goals for 2016	Achievements in 2016	Compliance
Supporting the development of the EPM leaders as the main characters of development of their people, with the execution of programs to strengthen the control over their relationships as part of the leadership school program.	As part of the leadership school, 17 groups and 4 modules scheduled were organized, in which 310 managers and leaders took part. Managers and leaders were trained on opening and closing conversations of performance commitments, covering 100% of the population. The executive coaching contract kicked off: 6 group workshops with leaders and coaches assigned, applying the "social polygraphy" approach. The executive coaching sessions started with 87 of the 145 executives favored to participate in this development and support practice.	Total
Contributing to the development of collective organizational capabilities by implementing learning strategies that will mobilize the new strategic planning.	Through specific training programs, the business needs were addressed prioritizing the needs and capacities of project management and innovation. 187 people enrolled in innovation and 84 have completed it. To support the capacity of Project Management, online courses on the applications Project Bank and Project Management (11 and 269 users respectively) were taught.	Total
Getting the new administration's approval of the retirement guideline.	Definition of the retirement guideline and its business rules to assist employees in the grievance process regarding old age and disability. For the adaptability plan, 13 workshops were carried out with 480 attendees.	Total
Supporting the management for the diagnosis and standardization of retirement processes in the affiliated companies.	Diagnosis for the retirement process standardization and support to affiliated companies as operational stakeholders.	Total
Supporting the management to comprehensively advice the EPM Group's staff.	3 events were held with retirement plan administrators to advice and orient employees in their retirement plan choice.	Total
Concluding the collective bargaining process with Sintraseric (union).	The period for a direct arrangement ran out and the arbitration tribunal was summoned.	Total



Goals for 2016	Achievements in 2016	Compliance
Preparation of the process of collective bargaining agreements with Sinpro and Sintraemsdes labor unions.	A work plan was prepared for the bargaining, and all its phases were timely executed.	Total
Analysis of collective bargaining agreements concluded in the country in 2014 - 2015 (analyzing trends).	A report defining wage and benefit trends was prepared in order to find good practices as input for the Group strategy in collective bargaining.	Total
Having the Occupational Health and Safety Management System for EPM established and documented on September 30, 2016, which will be enforceable from and after January 1, 2017.	Implementation of 96% of the Occupational Health and Safety Management System. Voluntary external auditing was carried out (the regulation obliges from January 31, 2017), from which the Improvement Programs 2017 resulted.	Total
The recruitment process must be operating and supported in the HCM software.	The implementation of the HCM system for the EPM's recruitment processes started in September.	Total
The recruitment process of the Colombian affiliated companies of the EPM Group should be governed by common rules, except in those issues agreed by their respective collective bargaining agreements.	Implementation of the RCC model for the recruitment process. Contracting the assessment service by adhering to a contract of the CHEC affiliated company.	Partial
The shared services center must provide the recruitment and preselection services for all the affiliated companies of the EPM Group.	Updating of posts that carry out the process to distribute activities given the new work plan. Modifying the recruitment process to include a verification of requirements stage and reduce the number of void processes. Optimization of the aptitude test implementation in the assessment stage without affecting the quality of the process. Modification of the recruitment team's work plan, given the need to hire new resources for temporary jobs: Associate degree holders: 3 Bachelor degree holders: 2	Partial
The disabling injury frequency rate is $\geq 0.42$ and $\leq 0.47$ .	The frequency rate reached 0.37.	Total





Goals for 2016	Achievements in 2016	Compliance
<p>CHEC: including the Group's values in the work and family welfare programs and initiatives that engage the worker and its family group.</p>	<ul style="list-style-type: none"> <li>• Corporate values were included in the development of each activity; the values were selected as themes depending on the event</li> <li>• Sporting activities emphasized the spreading and discussion of corporate values; as a communication strategy, uniforms for sporting and recreational activities were identified with each value.</li> <li>• CHEC is part of the Education and Culture Working Group of the "I'm with Manizales" project, which seeks to strengthen the civic values of openness, respect, trust and solidarity. Both initiatives complement each other and are included in the Family School program.</li> </ul>	<p>Total</p>
<p>CHEC: consolidating, in line with the businesses, the schedule of welfare programs and activities with the purpose of achieving greater participation of employees without affecting the business operation.</p>	<p>The schedule of programs and actions was consolidated with the businesses.</p>	<p>Total</p>
<p>CHEC: ensuring the appropriate implementation of the Collective Bargaining Agreement and the treaty clauses that represent welfare and economic benefits for employees and their families.</p>	<p>Verifications were carried out with the beneficiaries of the employees to validate the rights to the benefits, given their condition of economic dependence on the employees.</p>	<p>Partial</p>
<p>ESSA: strengthening healthy lifestyle activities with employees and their families through training workshops and recreational activities.</p>	<p>Employees' families were engaged in healthy food training workshops and different recreational activities in which they participate voluntarily.</p>	<p>Total</p>
<p>ESSA: expanding the coverage of the cardiovascular risk program in the regions.</p>	<p>Employees who have cardiovascular risks were identified. They were invited to the gym program which is 100% subsidized by ESSA and to healthy food workshops.</p>	<p>Total</p>
<p>EDEQ: increasing by 8% the coverage of the Housing Fund, so that at least 83% of employees have their own house.</p>	<p>80% (210) of 261 employees hired through indefinite duration contracts have their own house. Coverage increased by 4%.</p>	<p>Partial</p>



Goals for 2016	Achievements in 2016	Compliance
Eegsa: promoting the employees' sports, social and cultural participations.	The employees' participation was achieved in: Sports competition: 45% Cultural activities: 25% Institutional festivals: 75%	Total
Eegsa: administering and managing the benefits that the company offers to its employees to improve their quality of life and that of their family group.	It was possible to offer benefits to 100% of employees and their family groups in accordance with their position within the organization.	Total
Aguas de Malambo: achieving the participation of all the staff.	Both operating and administrative staff took part in different activities, such as the Health Day and the Integration Day.	Total
Aguas de Urabá: offering the same benefits to the staff of Western and Eastern Antioquia's affiliated companies.	Progress was made in the process of Collective Bargaining Agreement with Sintraemsdes, Urabá's and San Jerónimo's sub-executives, to unify benefits for employees that are part of the CBA.	Partial
Aguas de Urabá: implementation of the welfare plan extending to all regions (West, Urabá and East).	The employee welfare plan was unified for the 3 regions that make up Aguas Regionales. Implementation was partial.	Partial
Aguas Nacionales: putting into operation the social welfare plan.	98% of the welfare plan was achieved in 2016.	Total
Emvarias: supporting all the employees who have a permanent contract in Emvarias in the welfare, training and treaty processes.	In 2016, our work was based on respect, legality and equity, providing and fostering recreation, fun and knowledge so that employees and their families were able to integrate and feel that they belong and, in that way, find a balance between work and personal life. 100% of the employees who have a permanent contract, trainees and assigned employees were covered.	Total
CHEC: increasing to 80% the execution of the learning plan for the year.	89% of the needs defined in the learning plan for the year were executed. To achieve the suggested execution result, the methodology was adjusted for the learning plan survey, which involved a work team from each department and a vision of need aligned with the organizational context.	Total

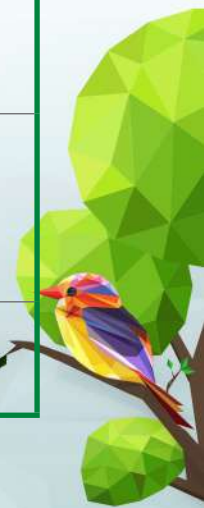
## Challenges

Challenge	Year of completion	Scope and coverage			Achievement indicator
		Geography	Business	Company	
Meeting the schedule of the training, cultural, social, recreational and sports programs, which contribute to the improvement of the quality of life of the EPM Group People.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	Activities completed/ Activities planned.
Achievement of milestones to implement the HCM project for benefits.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	Milestones achieved/ Milestones planned.
Applying and spreading the segmentation of benefits carried out for EPM, orienting them to the quality of life of our people.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	Segmentation of benefits
Customer satisfaction through the periodic inspection of processes, service improvement and preparation of the satisfaction survey.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	Satisfaction assessment report 2017.
Low-/nonexistent-risk population in the total risk indicator.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	57.80%
Implementation of the performance management cycle.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	Implementation of the performance management cycle to all positions of the organization.
Human resource mapping.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	Human resource mapping to all positions of the organization.





Challenge	Year of completion	Scope and coverage			Achievement indicator
		Geography	Business	Company	
Development of leadership.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	The contract is for 150 executives and will be entirely executed in 2017.
Design of curricula for the development of skills.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	Curricula of customer service and asset management and 8 more that will be prioritized in accordance with the 2017 learning plan.
Training to develop actions required in the achievement of performance goals.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	Number of people trained / Number of people to be trained in the adaptability action = 1000.
Compliance with the old age and disability retirement guideline, regarding the request procedure before the pension plan administrator to acknowledge the right to the benefit.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	100%
Signing the collective bargaining agreement with Sinpro and Sintraemsdes labor unions.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	100%
Training the negotiators of the Colombian affiliated companies of the Group in addressing negotiation processes.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	100%
Review of the internal work rules of the affiliated companies of the Group.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	100%

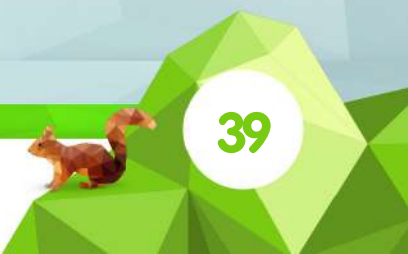
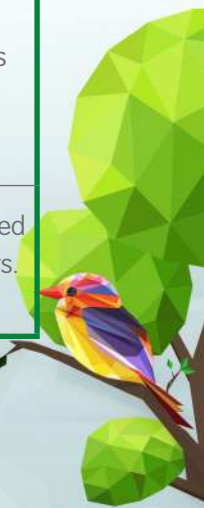




Challenge	Year of completion	Scope and coverage			Achievement indicator
		Geography	Business	Company	
Disabling injury frequency rate (DIFR)	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	0.34
Implementing an action plan that covers approximately 1,400 vacancies in 2017.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	(Vacancies covered/ Vacancies launched.)
Definition of an SLA (service-level agreement) for the recruitment process of 32 days per process.	2017	Colombia - Antioquia	All businesses	Empresas Públicas de Medellín - EPM	Duration of the recruitment process/ Expected duration.
CHEC: implementation of a basic system of innovation management.	2017	Colombia - Caldas	Electrical energy	Central Hidroeléctrica de Caldas - CHEC	Definition of innovation strategy, innovation portfolio and innovation ecosystem, and evidence of project under execution.
CHEC: development of training simulators for maintenance activities.	2017	Colombia - Caldas	Electrical energy	Central Hidroeléctrica de Caldas - CHEC	14 training maneuvers in underground network maintenance activities and voltage works.



Challenge	Year of completion	Scope and coverage			Achievement indicator
		Geography	Business	Company	
CHEC: implementation of the new methodological design of the company's orientation program.	2017	Colombia - Caldas	Electrical energy	Central Hidroeléctrica de Caldas - CHEC	Documented methodological guide in the management system, available educational material and program records based on the new design of orientation to employees, interns, trainees and temporary employees/ contractors.
CHEC: obtaining tax deductions for investments in research, development and innovation.	2017	Colombia - Caldas	Electrical energy	Central Hidroeléctrica de Caldas - CHEC	Registration and rating of research, technological development and innovation projects for an estimated income tax deduction of COP 300,000,000.
CHEC: individual development.	2017	Colombia - Caldas	Electrical energy	Central Hidroeléctrica de Caldas - CHEC	Defining the performance indicator to assess the actions of the population in general.
CHEC: equipment development.	2017	Colombia - Caldas	Electrical energy	Central Hidroeléctrica de Caldas - CHEC	Review of integrated assessment results. Defining indicator.

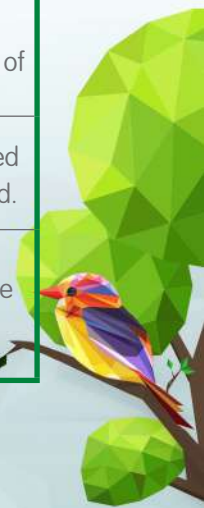




Challenge	Year of completion	Scope and coverage			Achievement indicator
		Geography	Business	Company	
CHEC: leadership development.	2017	Colombia - Caldas	Electrical energy	Central Hidroeléctrica de Caldas - CHEC	Estimating (in March, 2017) the leadership performance indicator, for which it is suggested to increase points in the assessment of actions of our leaders.
HET: formulation of the human resource management plan.	2017	Panama	Electrical energy	Hidroecológica del Teribe - HET	Document approved by the president and validated by the parent company.
HET: implementation of strategies of the human resource program.	2018	Panama	Electrical energy	Hidroecológica del Teribe - HET	Achievement of annual and biannual program.
CENS: execution of the 85% of the learning plan defined for the year.	2017	Colombia - Norte de Santander	Electrical energy	Centrales Eléctricas del Norte de Santander - CENS	Percentage of achievement of the learning plan.
EDEQ: expanding the coverage of the road safety training plan in accordance with Resolution 1565 of 2014.	2017	Colombia – Quindío	Electrical energy	Empresa de Energía del Quindío - EDEQ	Assistance to scheduled training sessions / Total of target population to be trained.
EDEQ: achievement of 90% of the learning plan 2017.	2017	Colombia – Quindío	Electrical energy	Empresa de Energía del Quindío - EDEQ	Activities completed / Activities planned and approved.
Eegsa: execution of the training plan.	2017	Guatemala	Electrical energy	Empresa Eléctrica de Guatemala - Eegsa	Percentage of achievement of the plan.



Challenge	Year of completion	Scope and coverage			Achievement indicator
		Geography	Business	Company	
ESSA: implementation of the knowledge boosters program. Extending the generative leadership program to managers. Training employees in subjects dealing with the alignment of competencies, behaviors and skills with the organization's strategic plan.	2017	Colombia - Santander	Electrical energy	Electrificadora de Santander - ESSA	Achievement in the implementation of the knowledge boosters program. Achievement in the generative leadership program. Achievement of 90% of the training plan.
Aguas del Oriente: keeping approach meetings with the Management.	2017		Water		Two meetings per year.
Aguas de Oriente: strengthening the occupational and organizational climate by developing an action plan that impacts more critical conditions.	2017		Water		Completing 100% of the program.
Aguas Nacionales: putting into operation the social welfare plan.	2017		Water	Aguas Nacionales EPM	Achievement of 98% of the welfare plan.
Aguas Nacionales: strengthening of the occupational and organizational climate.	2017		Water	Aguas Nacionales EPM	Achievement of 90% of the intervention plan to the quality of life survey.
Aguas Regionales EPM: executing the employee welfare plan.	2017		Water	Aguas Regionales EPM	Activities completed / Activities planned.
Aguas Regionales EPM: attendance of the target audience to each one of the activities scheduled.	2017		Water	Aguas Regionales EPM	Attendees / People expected.



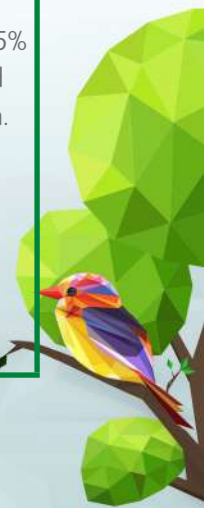


Challenge	Year of completion	Scope and coverage			Achievement indicator
		Geography	Business	Company	
Aguas Regionales EPM: perception of appropriateness of the welfare activities executed.	2017		Water	Aguas Regionales EPM	Assessment of appropriateness carried out based on sample of attendees to the activities.
Aguas Regionales EPM: unifying the collective bargaining agreement benefits.	2017		Water	Aguas Regionales EPM	Collective bargaining agreement unified.
Aguas de Oriente: developing an action plan to improve the risk indicator at work, in accordance with the expansion of the quality of life surveys.	2017		Water	Empresa de Aguas del Oriente Antioqueño	Achieving 100% of the actions.
Aguas Nacionales: Achievement of the intervention plan depending on the results of the 2016 assessment.	2017		Water	Aguas Nacionales EPM	Achievement of 95% of the intervention plan.
Aguas Regionales EPM: preparing and executing an improvement plan based on the results of the quality of life survey carried out with the support of EPM.	2017		Water	Aguas Regionales EPM	Effective actions / Actions planned.
Aguas Regionales EPM: Execution of welfare activities intended to strengthen competences of the being that impact the perception of improvement of the occupational environment.	2017		Water	Aguas Regionales EPM	Activities completed/ Activities planned.
Emvarias: implementing a performance assessment model for official positions.	2017	Colombia - Antioquia	Sanitation	Empresas Varias de Medellín - Emvarias	Based on the performance model of the EPM Group.





Challenge	Year of completion	Scope and coverage			Achievement indicator
		Geography	Business	Company	
Aguas Nacionales: generating basic elements for the definition of the Individual Performance and Development Plans, from the goals and planning actions set by the organization to the individual scale.	2017		Water	Aguas Nacionales EPM	Achievement of 100% in the assessment of IPDPs.
Aguas Regionales EPM: meeting the schedule of performance assessment 2017.	2017		Water	Aguas Regionales EPM	Number of people assessed / Number of people to be assessed.
Emvarias: preparing a training plan to update employees in their duties.	2017	Colombia - Antioquia	Sanitation	Empresas Varias de Medellín - Emvarias	Number of people trained.
Ticsa: certification of technician posts in the operation of the plants.	2018		Water	Tecnología Intercontinental -Ticsa	80% certified in the first level.
Aguas Nacionales: solutions for specific learning needs and development of the organization's human resources through the integration of actions that allow expanding the knowledge basis, strengthening the skills and modifying the attitudes in the interest of improving the employees' performance and contributing to their integral development following the corporate goals.	2017		Water	Aguas Nacionales EPM	Achievement of 95% of the training and development plan.





Challenge	Year of completion	Scope and coverage			Achievement indicator
		Geography	Business	Company	
Aguas Regionales EPM: training operating and administrative staff in technical and technological programs with the support of SENA.	2017		Water	Aguas Regionales EPM	Number of people certified / Number of people enrolled.
Aguas Regionales EPM: unifying the collective bargaining agreement benefits.	2017		Water	Aguas Regionales EPM	Collective bargaining agreement unified.
Aguas Regionales EPM: updating the organizational structure in the light of the merger carried out in 2016 and the business rules defined to evaluate the staff required in each area.	2017		Water	Aguas Regionales EPM	Organizational structure updated.



## Management indicators

<b>G4-10</b>	Total number of employees. Electricity sector: include contractors.
<b>G4-11</b>	Percentage of employees covered by collective bargaining agreements. Include contractors covered by collective bargaining agreements.
<b>G4-EU14</b>	Programs and processes to guarantee the availability of qualified workforce.
<b>G4-EU15</b>	Percentage of employees eligible to retire in the next 5 and 10 years, broken down by category and region.
<b>G4-EU16</b>	Policies and requirements concerning health and safety of employees, contractors and subcontractors.
<b>G4-EU17</b>	Work days of contractors' and subcontractors' employees who work in construction, operation and maintenance activities.
<b>G4-EU18</b>	Percentage of contractors and subcontractors that have been trained in subjects such as health and safety.
<b>G4-LA1</b>	Total number and rates of new employee hires and employee turnover by age group, gender and region. Electricity sector: for employees who quit during the reporting year, report the average duration of employment, broken down by gender and age group.
<b>G4-LA2</b>	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation.
<b>G4-LA6</b>	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender. Electricity sector: report health and safety performance of contractors and subcontractors who work at the organization's offices or on behalf of the organization but outside of it.
<b>G4-LA7</b>	Workers with high incidence or high risk of diseases related to their occupation.
<b>G4-LA8</b>	Health and safety topics covered in formal agreements with trade unions.
<b>G4-LA9</b>	Average hours of training per year per employee by gender, and by employee category.
<b>G4-LA10</b>	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.
<b>G4-LA11</b>	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category.
<b>G4-LA12</b>	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.
<b>EPM-16</b>	Percentage of employees surveyed in quality of life and psychosocial risk.





## Employee welfare and benefits

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The EPM Group develops educational, cultural, sports and recreational events and programs that contribute to the welfare, the integral development and the quality of life of its employees and their families, in order to promote opportunities for recognition, support, recreation, sport and social and cultural projection, in a dynamic that favors motivation in its contribution to meeting the organizational goals.

For the EPM Group, the aim of the employee benefit program is to plan, coordinate, manage and provide conventional and nonconventional benefits, in order to contribute to the welfare, the integral development and the quality of life of the employees and their families. In this way, the Group motivates employees and builds their loyalty, fosters harmony, consolidates the sense of belonging and strengthens the corporate culture, all of which constitute basic elements for promotion, development and formation of values and personal and social principles, having a positive impact on the organizational climate and the strategic vision of the Group.

### Management in 2016

During 2016, educational, cultural, sports and recreational programs were conducted to contribute to improving the quality of life and the use of leisure time of the EPM Group People (employees, retirees, pensioners and beneficiaries.) EPM counted on the participation of 204,038 people, which represents an increase of 14% regarding the previous year. EDEQ, for its part, achieved the attendance of 86% of its employees in the sports, recreational, cultural and healthy recreation program.



The following corporate events were held in EPM: Family Day (metropolitan area) with 15,073 attendees, Family Day (regions) with 1,529 attendees, Secretary's Day, EPM Classic Day, Tribute to Retirees and Pensioners, Children's Day (event open to the public), Christmas novenas and art exhibition with 8,700 attendees.

The following programs were also carried out during the year: psychological counseling, spiritual counseling, Good Adulthood for pre-retirees, retirees and pensioners, Entrepreneurship, Youth Gathering, music groups, Services Fair, Banking Fair (with the participation of 10 banks) and recreational activities (gyms, festivals, sporting events, competitions among stations, activities in regions and stations, tournaments, teams, recreational groups) with approximately 170,000 attendees.

As of December 31, 2016, 44,239 benefits were granted with a contribution of COP 21.12 billion by EPM, which represents an increase of 11.06% over the previous year. Likewise, COP 1.08 billion were loaned to meet the request made by 5,721 employees (91.06% of the whole company.)



The company approved 617 housing loans for COP 69.39 billion, with 285 disbursements to the value of COP 29.33 billion.

CENS, for its part, invested COP 606 million in benefits for employees through the provision of occupational medical services, sports and healthy lifestyles.

EDEQ reopened its housing fund with the approval of 53 of the 54 applications submitted by employees, for a total of COP 3.16 billion.

Several companies of the EPM Group participated in the National Games of the Electric Sector in the city of Tunja, with an attendance of more than 300 athletes.

Employee welfare programs - EPM					
Program	2015		2016		Beneficiaries variation
	Beneficiaries	Value (Million COP)	Beneficiaries	Value (Million COP)	
Social projection*	6,054	638	8,259	1,105	36.4%
Cultural events	31,155	2,197	29,047	2,182	-6.8%
Sports and recreation	11,462	2,567	13,750	2,586	20%
<b>Total</b>	<b>48,671</b>	<b>5,402</b>	<b>51,056</b>	<b>5,874</b>	<b>4.9%</b>

Source: Vice Presidency of Human Development and Organizational Capabilities

\*Social projection includes psychological counseling, spiritual counseling, Good Adulthood (program for pre-retirees, retirees and pensioners), entrepreneurship and youth gathering. Moreover, Services Fair, Banking Fair, Civica card procedure, and talks on quality of life were also included in 2016.

Implementation of welfare programs - EPM Group				
Program	2015		2016	
	Beneficiaries	Value (Million COP)	Beneficiaries	Value (Million COP)
Welfare programs	78,174	75,782	82,767	62,962

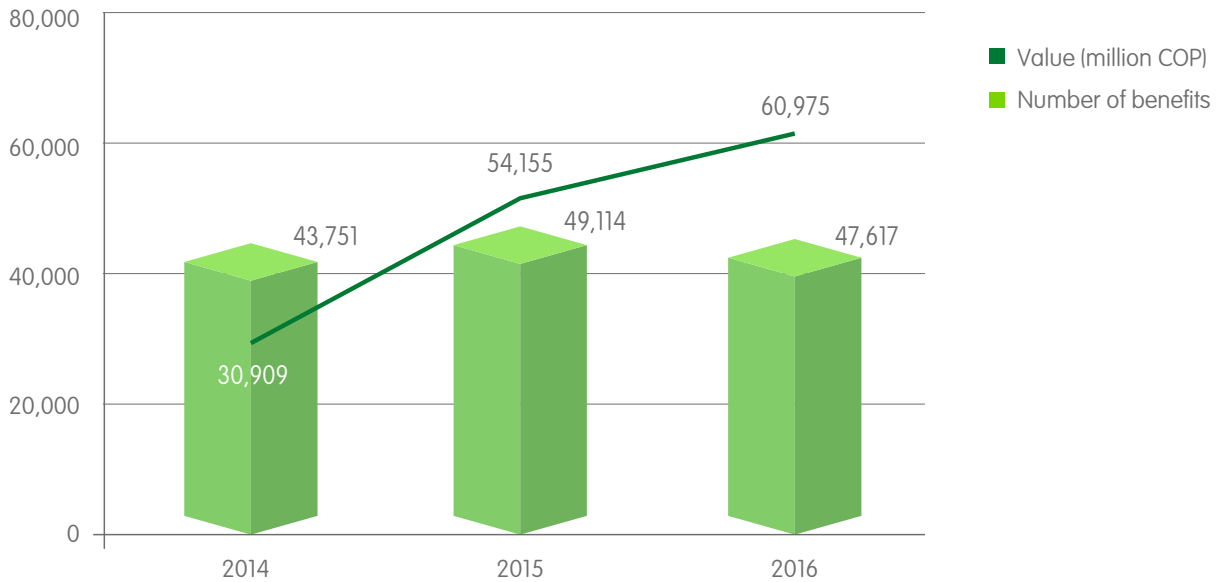
Source: EPM Group's affiliated companies

Benefits granted - EPM Group			
Indicator	2014	2015	2016
Number of benefits	43,751	49,114	47,617
Value (Million COP)	30,909	54,155	60,975
% of employees using benefits	89%	91%	84%

Source: EPM Group's affiliated companies



### Benefits granted – EPM Group



Source: Vice Presidency of Human and Organizational Development

Loans disbursed - EPM Group			
Total EPM Group	2014	2015	2016
Number of home loans	457	476	425
Number of loans for other items	3,419	2,603	2,949
<b>Total loans disbursed</b>	<b>3,876</b>	<b>3,079</b>	<b>3,374</b>
Loans value (million COP)	30,277	41,693	40,989

Source: EPM Group's affiliated companies

## Management indicators

### G4-LA12

Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.





# Quality of life

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The Quality of Life program is based on the identification, the assessment, the prevention, the intervention, and the ongoing monitoring of exposure of employees to psychosocial risk factors, at work and outside work, in order to determine the origin of diseases caused by occupational stress.

## Management in 2016

For the Group, there is an increase in the level of response to the quality of life-psychosocial risk survey implemented to employees who have a permanent contract.

In EPM, a response level of 81.26% (4,920 employees) was reported, evidencing an increase in the response level of 8.93%.

In the framework of the 2016 Health and Safety at Work Week, the affiliate CENS carried out activities under the motto "The commitment is with myself", focused on self-care and commitment to health and personal and family welfare.



EPM continues to take actions to reduce or mitigate the level of risk and improve the quality of life of employees. In 2016, a stress level of 26% was obtained, decreasing by one point compared to that in 2015 (27%). The level of total risk/low risk for EPM was 56.72%, with a 1.75% improvement in the level of risk compared to 2015.

**CHEC:** Carried out the implementation of the quality of life survey to the personnel, with a participation of 75.22% of the employees.

**CENS:** Focused the activities of the psychosocial risk program in the strengthening of domains of risk at work by dimension of demand (quantitative demands, demands in the work day, environmental demands, and of physical effort and rewards); stress level, level of risk at work by control dimension (clarity of role - control and autonomy over work), and level of risk at work by dimension of leadership and social relations. In total, 37 activities were carried out with the company's staff.

**EDEQ:** Modified work schedules, conducted individual psychological support in the cases that required it, strengthened performance feedback and carried out workshops on leadership with the Management Committee and team managers and training on time management, self-esteem and self-care, work stress management, life projects, conflict resolution and teamwork. The company increased its investment in technical training required by the staff and made some improvements to the facilities for safer and more comfortable work environments.



**Aguas de Oriente:** Measured occupational risk, with a 40% response obtained.

**Aguas Nacionales:** Implemented an intervention plan for the results of the quality of life survey and carried out a new assessment.

Quality of life survey - EPM			
Indicator	2014	2015	2016
Quality of life surveys completed	4,779	4,055	4,920
% of quality of life surveys completed	83%	72%	81%

Source: Vice Presidency of Human and Organizational Development

% of employees who completed the quality of life- psychosocial risk survey in the national affiliates of the EPM Group		
Company	2015	2016
EPM	72%	81%
CHEC	66%	75.22%
CENS	76%	100%
ESSA	52%	48.54%
EDEQ	71%	77%
Aguas de Malambo	89%	92%
Aguas Regionales - West	100%	N.A.
Aguas Regionales	N.A.	69%
Aguas de Oriente Antioqueño	N.A.	91%
Aguas Nacionales	80%	79%
Emvarias	N.A.	77%
Adasa	N.A.	80%

Source: Vice Presidency of Human and Organizational Development

## Management indicators

**EPM-16** Percentage of employees surveyed in quality of life and psychosocial risk.





## Quality of the organizational climate

Collective perception of employees regarding the company's practices, policies, structure, processes, and systems that has an impact on the human environment in which daily work takes place.

Organizational climate directly influences employees' satisfaction, commitment, and productivity, which allows for the achievement of the company's goals.

### Stakeholders Vision

Transparent communication expectations, creation of spaces of trust to express the feelings regarding organizational dynamics, coherence between strategic speeches and decisions, employees' emotional well-being, balance between work and family life, and balance between professional contribution and recognition.

### Importance

The quality of the organizational climate directly influences employees' satisfaction, commitment, and productivity, and therefore, the achievement of the company's goals. It creates social value among EPM Group's people and EPM Group's companies and extends it to the other stakeholders in terms of trust and legitimacy.



## Main achievements

Goals for 2016	Achievements for 2016	Compliance
<p><b>EPM:</b> Definition and implementation of an action plan based on the organizational climate survey results.</p>	<p>Actions led by the organization:</p> <p><b>Head's Support - Leadership Features:</b></p> <ul style="list-style-type: none"> <li>• Twenty-two "Coffee with the Manager" conversations were held, where EPM managers talked about what was expected from the leader EPM and the organization climate and risk improvement plans.</li> <li>• Executive coaching support to 87 out of the 145 prioritized executives.</li> </ul> <p><b>Organizational Clarity - Role Clarity:</b></p> <ul style="list-style-type: none"> <li>• The 2016 - 2019 challenges and the statement of EPM People Closeness were socialized.</li> <li>• All EPM executives participated in the meetings with the CEO regarding the Balanced Scorecard and its progress.</li> <li>• Interpersonal Relationships – Social relationships at work: Support to 40 work teams for their development.</li> </ul> <p><b>Perceived organizational support:</b></p> <ul style="list-style-type: none"> <li>• The overtime notice was adjusted, which benefited 480 employees with the inclusion of the following positions: integrated operations leader and maintenance and service operations technologist.</li> <li>• The promotion process was developed as a tool for the promotion and development of talent.</li> <li>• The skills of 2,407 technicians and technologists were evaluated, and 1,148 employees started to be evaluated on the sustainability curve, in order to identify their capacities and continue with their comprehensive development.</li> </ul>	<p>Total</p>
<p><b>CHEC:</b> Analysis of the results obtained in the survey, and delivery of these results to the entire company.</p>	<p>The results of the measurement were socialized with the members of the work teams and individual contributors of the areas, and Nominal Groups were created to identify the shared perceptions in relation to some strategic variables.</p>	<p>Total</p>



Goals for 2016	Achievements for 2016	Compliance
<p><b>CHEC:</b> Definition and implementation of an action plan based on the organizational climate survey results.</p>	<p>The preparation of action plans with the different work teams, integrating the results of the organizational climate and quality of life measurements, was supported. Improvement actions were identified for Organizational Development, Communications, Learning, Quality of Life and IT. Based on the concerns identified in Organizational Clarity, a presentation of frequently asked questions and answers was prepared and it was then shared with heads and managers and published in a blog for consultation by all employees.</p>	<p>Total</p>
<p><b>CENS:</b> Definition and implementation of an action plan based on the organizational climate survey results.</p>	<p>The 2015 measurement report was received and the results of the assessment were delivered and disseminated to CENS steering group and its work teams.</p> <ul style="list-style-type: none"> <li>• The action plans defined under the Nominal Group methodology were formally delivered.</li> <li>• The action plan documents were created in the management system module.</li> <li>• The Human and Organizational Development Team monitored every three months the follow-up of the actions defined in the plans of the work teams intervened.</li> </ul>	<p>Total</p>
<p><b>EDEQ:</b> Definition and implementation of an action plan based on the organizational climate survey results.</p>	<ul style="list-style-type: none"> <li>• Delivery of results to the steering group and to the entire organization through the Business Forum, where EDEQ's organizational climate profile was announced (100%).</li> <li>• Delivery of results to the planned teams, which allowed each one to contribute from their role and relationship to the improvement of the variables with a poor score in their work team (86%).</li> <li>• Strengthening of the leaders' competences to manage organizational climate in their work teams (83%).</li> <li>• Implementation of the training spaces planned, which were voluntarily attended by employees from different work teams. This allowed clarifying and strengthening concepts and practices related to relationships, work environment and role clarity, among others (100%).</li> </ul>	<p>Partial</p>
<p><b>ESSA:</b> Definition and implementation of an action plan based on the organizational climate survey results.</p>	<p>100% progress in monitoring the development of the plan to close the gaps in organizational climate.</p>	<p>Total</p>
<p><b>Aguas del Oriente:</b> Definition and implementation of an action plan based on the organizational climate survey results.</p>	<ul style="list-style-type: none"> <li>• To improve the results, two meetings to strengthen relationships with employees were held.</li> <li>• To avoid stress due to availability, work shifts were not modified.</li> </ul>	<p>Partial</p>





Goals for 2016	Achievements for 2016	Compliance
<b>Aguas Nacionales:</b> Definition and implementation of an action plan based on the organizational climate survey results.	Implementation of the activities scheduled to achieve the goal.	Total
<b>Emvarias:</b> Definition and implementation of an action plan based on the organizational climate survey results.	No organizational climate survey was conducted in 2015 and 2016.	Not met
<b>Aguas Regionales:</b> Definition and implementation of an action plan based on the organizational climate survey results.	The action plan was not defined because no quality of life survey was conducted in 2015.	Not met
<b>Aguas de Malambo:</b> Definition and implementation of an action plan for the organizational climate survey results.	The organizational climate survey was not conducted. In October, the quality of life survey was conducted.	Not met
<b>HET:</b> Consolidation of a human team for management per areas in the organization.	Structuring of processes and procedures per area of work, specialization of roles and horizontal integration of the organization.	Total
<b>Aguas Antofagasta:</b> Definition and implementation of an action plan for the organizational climate survey results.	An organizational climate improvement action plan, approved by the executive team, was defined and implemented in accordance with the results obtained at the end of 2015 in the Great Place to Work assessment. In the measurement, an average of 85.6 was achieved.	Total





## Challenges

Challenge	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Delivering the 2016 organizational climate measurement, with nominal groups and action plan.	2017	Caldas	Power Generation and Transmission	Central Hidroeléctrica de Caldas - CHEC	100%
Measuring organizational climate for the October-November 2017 period.	2017	Santander	Power Generation and Transmission	Electrificadora de Santander - ESSA	100%
Increasing the indicator in the aspects approved by the Steering Committee on January 30, 2017.	2017	Santander	Power Generation and Transmission	Electrificadora de Santander - ESSA	100%
Monitoring the departments and work teams so that they will implement the proposed plan.	2017	Santander	Power Generation and Transmission	Electrificadora de Santander - ESSA	100%
Measuring organizational climate in 2017, as defined by the Corporate Core.	2017	Caldas	Power Generation and Transmission	Central Hidroeléctrica de Caldas - CHEC	Report submitted by the provider of the results of the 2017 organizational climate measurement.
Defining action plans based on the results of the organizational climate survey.	2017	Rionegro	Water Supply	Empresa de Aguas del Oriente Antioqueño	100% compliance with plan.
Defining the human resource management plan.	2017	Panama	Power Generation	Hidroecológica del Teribe - HET	Document approved by the president and validated by EPM parent company.
Implementing the strategies of the human resource program.	2018	Panama	Power Generation	Hidroecológica del Teribe - HET	Compliance with the program per year and semester.





Challenge	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Achieving a score equivalent to or greater than 71.6 in the 2017 organizational climate survey.	2017	Chile	Water Supply	Aguas de Antofagasta - Adasa	Percentage obtained in the organizational climate survey.
Establishing and implementing strategies (spaces for integration, learning and professional, family and social development) to face situations that may alter welfare and generate negative changes in professional and non-professional conditions, or levels of stress in the employees of the company.	2017	Antioquia	Water Supply	Aguas Nacionales EPM	Activities implemented/ Activities planned.
Disclosure to all levels of the organization.	2017	El Salvador	Power Distribution	Distribuidora de Electricidad del Sur - Delsur	Number of areas where disclosure took place / Number of areas of the company.
Defining and implementing, in each management, an action plan based on the results of the organizational climate survey.	2017	El Salvador	Power Distribution	Distribuidora de Electricidad del Sur - Delsur	Number of plans authorized per management/ Number of managements.
Implementing the permanent organizational climate management plan.	2017	Guatemala	Power Distribution	Empresa Eléctrica de Guatemala - Eegsa	100% compliance with plan.
Measuring 2017 organizational climate.	2017	Norte de Santander	Power Transmission	Centrales Eléctricas del Norte de Santander - CENS	Percentage of progress regarding timetable.
Delivering the results to the remaining 10 work teams, so that leaders can include activities for improving or sustaining variables in their work plans.	2017	Quindío	Power Transmission	Empresa de Energía del Quindío - EDEQ	Reports submitted / Planned report submissions.



Challenge	Completion year	Scope and coverage			Compliance indicator
		Territory	Business	Company	
Measuring organizational climate in 100% of the EDEQ plant operating on the implementation date defined by the business group.	2017	Quindío	Power Transmission	Empresa de Energía del Quindío - EDEQ	Organizational climate profile of 54% within the average high level of the reference.
Defining and implementing an action plan for the quality of life survey results.	2017	Antioquia	Water Supply	Aguas Regionales EPM	Action plan defined.
Implementing actions defined in the action plan.	2017	Antioquia	Water Supply	Aguas Regionales EPM	Actions implemented/ Actions proposed.

## Management indicators

**EPM-02** Results of the organizational climate assessment.

## Sustainable Development Goals





# Work performance



Performance management in the EPM Group helps align individual and collective contributions of employees with the objectives of the organization, through continuous improvement of those capabilities that enable fulfillment of the business purpose.

## Management in 2016

Three-point increase in the performance feedback variable for EPM, in measuring quality of life and occupational hazards, as a result of the participation of leaders in implementing performance discussions.

The performance management model was implemented in CENS, defined by the business group and reaching up to the professional level of the organization. 197 employees participated.

In EDEQ, the actions were shared with all the personnel.

In Eegsa, the HCM, performance module, was implemented in order to automate the process of monitoring and measuring performance.



EPM assessed the potential of technicians and technologists, while enabling heads and managers deliver the results and hold conversations. In addition, it started assessing the potential of the level of support and conducted the first analysis of the talent of technicians and technologists, in which the evaluation of potential and actions was considered. Of 4,061 employees whose potential hadn't been assessed, 3,843 (95%) were evaluated.

CHEC implemented the methodology of performance commitments in 100% of the work teams, as well as supported the implementation of indicators and conversation spaces.

As a source of information for performance commitments, the affiliate CENS used the BSC, the 2016 initiatives of the meeting with executives and managers (CENS High Rank), the CEO's Goals, the 2016 Operational Plans, the 2016-2019 Business Plan, and the performance indicators and commitments for the CEO and executives (cascading).



In Eegsa, performance management was carried out as follows: Arrangements on performance and development goals, description of the goals using the Smart methodology, monitoring of goals and analysis, and evaluation of results. Two evaluations were conducted in the year: A first semester of follow-up and a second semester of annual final assessment. In the assessment, objectives have a weighting of 60%; competences, 20%; values, 10%, and organizational climate, 10%.

EDEQ worked on the support and assistance to the different leaders and teams.

Aguas de Oriente conducted the performance assessment to 100% of employees.

Aguas Nacionales was able to implement the assessment to all staff, and Aguas Regionales EPM designed the methodology for assessing job performance and thus, defined the indicators up to the professional level.

Coverage of the performance management process in the energy affiliates			
Company	2014	2015	2016
EPM	92%	97%	90%
CHEC	97%	7%	97%
CENS	27%	27%	18%
ESSA <sup>(1)</sup>	N.R.	N.R.	100%
Aguas de Oriente Antioqueño	100%	100%	100%
Aguas Nacionales	100%	100%	100%
Emvarias	90%		77.5%
Adasa <sup>(2)</sup>	100%	100%	100%

Source: Vice Presidency of Human and Organizational Development

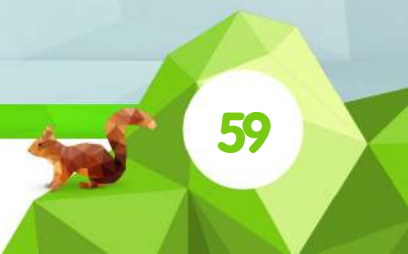
Coverage corresponds to % of employees with performance assessment.

(1) Performance assessments were conducted to the entire professional level.

(2) Employees with an indefinite duration contract.

## Management indicators

**G4-LA11** Percentage of employees receiving regular performance and career development reviews, by gender and by employee category.





# Training and development

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In the EPM Group, the processes of Learning Management and Development Management focus on ensuring a smart business group, able to learn from the training of its people and facilitate the creation, transfer, retention, and application of knowledge to enable the transformation of individual learning into collective knowledge.

Development strategies to enhance the capabilities of each individual and align knowledge, behavior, and skills of the human resources with the strategic plan of the organization are constantly sought.

## Management in 2016

Based on the new services model of the Vice Presidency of Human and Organizational Development, support was given in the consolidation and articulation of organizational capacities (people, processes, organization, and tools) that enabled the development of integral solutions to support the achievement of the strategy in conditions of welfare for EPM People.



Through the new relationship scheme, we foster the creation of a service-oriented culture, as well as the identification and support in the development of the priority capacities. We provide support in the integration and optimization of services, as well as the prioritization and management of demand. By understanding the needs of our customers, we translate them into solutions that met expectations, with effectiveness, quality, and opportunity.

In CHEC, the implementation of the learning plan increased. For 2016, it was 89% (45% in 2015). We highlight the creation of a learning environment called “Network training camp” for the training of linemen through an agreement with SENA (Caldas campus) and the progress made in the development of leadership through individual and group support processes for knowledge, the project of collaborative networks, and the Leadership School.

In CENS, 120 training events were held, with 1,339 participants in the learning activities and a 94% compliance with the learning plan defined for the year.

EDEQ carried out a training session in “Innovation as a value-for-business strategy”, addressed to the management group, team managers, and process leaders. The focus of this session was to raise awareness in the construction and start-up of a business innovation system, how it is managed, and the management commitments and responsibilities that it entails.

In Eegsa, the entire management team participated in the Leadership School, and the training plan was implemented at 162% of what was planned.





In Aguas de Oriente and Aguas Nacionales, the training plan for 2016 was designed to include courses that will favorably impact each of the company's areas.

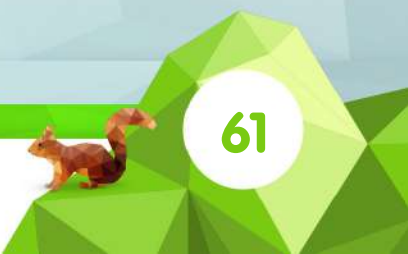
In Aguas Regionales EPM, certifications of labor competencies were given to 52 employees in the operational area.

Training and development in EPM			
Indicator	2014	2015	2016
Training hours / Average employee.	30	33	20
Training hours for executives / Total training hours per average employee.	28	71	30
Training hours for professionals / total training hours per average employee.	28	35	26
Training hours for assistants, technicians, and technologists / Total training hours per average employee.	27	16	12
Training hours for support staff / Total training hours per average employee.	32	19	21
Number of learning events held.	2,858	814	666
Number of graduate programs applications approved for the year.	80	20	0
Scholarships awarded by the "Merit Scholarships" program.	3	4	0
Trips abroad approved by training.	126	45	50
Investment in the Organizational Learning Plan (COP million).	4,857	3,632	2,184
Implementation of the Organizational Learning Plan.	80%	N.D.	90%
Budget execution (%).	99%	91%	89%

Source: Vice Presidency of Human and Organizational Development

## Management indicators

- G4-LA9** Average hours of training per year per employee by gender, and by employee category.
- G4-LA10** Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.





## Retirees and pensioners

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In order to maintain its relationship with retirees and pensioners, the business group develops various strategies that enable close relations with this subgroup.

### Management in 2016

In the EPM Group, special emphasis has been placed on compliance with legal requirements with all retirees and pensioners.

We highlight the standardization of the pension process for members of the Individual Savings Regime with Solidarity (RAIS), authorization by Colpensiones for the return of pension contributions for EPM, and entry into operation of the application for the automatic issuance of employment certificates valid for pension bonds of EPM, EADE, and any affiliate willing to adopt it.



During 2016, EPM continued to develop programs designed to maintain and strengthen relationships with its retirees and pensioners who had a positive response to the calls made and participated in scheduled activities that contributed to improve their quality of life. 58 employees included in the list of their corresponding pension fund stopped working in the company through a voluntary resignation. 29 were dismissed with just cause. Moreover, 41 retirement substitutions were recognized.

The “Good Adulthood” program and the annual tribute to pensioners and retirees were carried out. Special classes in EPM gym to contribute to their physical and mental health and entertainment opportunities such as pool and ping pong tables located in the EPM building were offered to them, plus a fishing trip.

In 2017, 2018 and 2019, a total of 95, 137 and 155 employees, respectively, will meet the requirements to access to their old age pension and be part of the country's current pension system.

CHEC: There is a division between retirees, pensioners with shareability, substitutes, and bond holders. The company conducts its own procedures within each group. Likewise, every year a meeting with the company's pensioners and retirees is held.

EDEQ: Carries out a constant review of the fulfillment of requirements by the group of retirees (14), in order to request them the timely filing of the old-age pension application with the pension fund.



Retirees and pensioners - EPM Group			
Indicators	2014	2015	2016
Pension plan coverage (%)	100%	100%	100%
Contributions from the company (COP million)	2,783	2,807	3,054
Contributions from employee (COP million)	1,095	1,024	950.8
Solidarity Fund (COP million)	2	17	19.8
Retirees and pensioners in the year	357	125	59
Direct retirees (cumulative)	2,355	2,313	2
Value of the actuarial calculation of "pension bonds" to December 31, 2008 (COP million)	392,829	455,122	515,794
Stand-alone trust fund for payment of "pension bonds" (COP million)	303,107	311,759	364,395

Source: Vice Presidency of Human and Organizational Development

Retirees and pensioners - Energy affiliates			
Indicators	2014	2015	2016
Pension plan coverage (%)	41%	41%	30%
Contributions from the company (COP million)	14,064	14,169	14,469
Contributions from employee (COP million)	457	452	517
Solidarity Fund (COP million)	189	204	201
Retirees and pensioners in the year	908	894	889
Direct retirees (cumulative)	1,459	1,426	1,080
Value of the actuarial calculation of "pension bonds" to December 31, 2008 (COP million)	5,805	7,532	7,510
Stand-alone trust fund for payment of "pension bonds" (COP million)	0	0	0

Source: Energy affiliates of the EPM Group

Information regarding pensioners and retirees in the energy affiliates corresponds to the following companies: CHEC, CENS, ESSA, EDEQ and Eegsa.





Projection of employees close to retirement			
Energy affiliates in Colombia	2017	2018	2019
Executive staff	1	3	2
Professional staff	7	10	10
Technologists, technicians, and assistants	27	29	18
Support	8	6	3
<b>Total</b>	<b>43</b>	<b>48</b>	<b>33</b>

Source: Vice Presidency of Human and Organizational Development

Information regarding projection of employees close to retirement corresponds to EPM and energy affiliates in Colombia.

## Management indicators

**G4-EU15** Percentage of employees eligible to retire in the next 5 and 10 years, broken down by category and region.



# Labor unions

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Set of activities carried out to ensure an optimal relationship with labor unions and a proper compliance with the treaty commitments, generating welfare for both, the organization and its personnel.

## Management in 2016

EPM is characterized by its respect and protection of the constitutional rights of freedom of association and collective bargaining; therefore, the company complies with the international treaties, the internal regulations, and the provisions of the collective bargaining agreements, understanding that those arrangements aim at a sustainable and lasting relationship among the parties.

EPM managed to coordinate meetings with three labor unions in order to create spaces for dialogue and negotiation.



EPM was prepared to deal with the collective bargaining processes with the labor unions, Sintraemsdes and Sinpro. Likewise, acting as operative involved, four collective bargaining processes were supported in the Colombian affiliates of the Group, simultaneously supporting the critical cases of interpretation and implementation of treaty-based rules. Also, the organization normalized the authorizations, before the Ministry of Labor, to work overtime.

An agreement was signed between Aguas de Malambo and Sintraguas for a period of 4 years.

In the affiliate Aguas Nacionales, the stage of direct arrangement expired and, on the recommendation of EPM parent company, the formation of the arbitration tribunal by the company has not been organized. In Aguas Regionales, the stage of direct arrangement expired and it is now before the arbitration tribunal.

At present, seven of the Group's affiliates in Colombia have permission from the Ministry of Labor to work overtime (EDEQ, CENS, ESSA, Aguas Regionales, Aguas del Oriente, Aguas Nacionales and EPM Foundation.)

In CHEC, the 2016 management in this issue focused on the relationship with labor unions, for which formal spaces were established (claims commission and treaty-based committees, among others), which allowed a continuous communication between the parties.

In EDEQ, there is the principle of freedom of association and, therefore, all employees have the right to join a labor union to promote and defend their own collective interests. 69% of the employees are unionized (248), which implies an increase of 3% compared to the previous year.





### Unionized people in EPM Group

Unions	2014	2015	2016
Sintraemsdes	3,054	3,121	2,961
By extension Sintraemsdes	79	153	122
Sinpro	1,860	2,094	2,873
By extension Sinpro	474	462	124
Sinpro and Sintraemsdes	68	58	56
Unigeep - Sintraemsdes	66	5	51
Sintrasertic-Sintraemsdes	0	0	5
Sintrasertic-Sinpro	0	0	6
Sintreua-Sintraemsdes	0	0	57
Unigeep - Sinpro	5	6	18
Not treaty-based	21	22	8
<b>Total</b>	<b>5,627</b>	<b>5,921</b>	<b>6,281</b>

Source: Vice Presidency of Human and Organizational Development

### Unionized people in energy affiliates in Colombia

Unions	2014	2015	2016
Sintraelecol	1,905	2,102	2,166
By extension Sintraelecol	119	161	170
Sintraemsdes	0	0	0
Siproessa	93	157	118
Sinrachec	30	30	30
Sinemchec	57	57	55
Not treaty-based	288	291	364
Other Unions	359	361	507
<b>Total</b>	<b>2,851</b>	<b>3,159</b>	<b>3,410</b>

Source: Energy affiliates of the Group





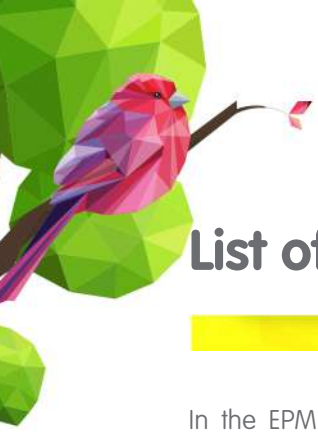
Unionized people in water and sanitation affiliates			
Unions	2014	2015	2016
Sintraemsdes	197	203	181
By extension Sintraemsdes	98	114	79
Not treaty-based	23	20	30
Emvarias' Workers Union	245	244	246
Other Unions	563	581	536
<b>Total</b>	<b>1,126</b>	<b>1,162</b>	<b>1,072</b>

Source: Water and sanitation affiliates of the EPM Group

Includes Aguas Nacionales, Aguas Regionales (Urabá and West), Malambo, Emvarias and Adasa (Chile.)

## Management indicators

- G4-11** Percentage of employees covered by collective bargaining agreements. Include contractors covered by collective bargaining agreements.



# List of employees

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In the EPM Group, the wage scale is defined by structured occupational groups: executives, professionals, technologists, technicians, and assistants and the support curve. The report of assigned employees includes levels, categories, and classes of positions, as well as wages existing in each affiliate.

Some of the affiliates in Colombia offer a fixed compensation and certain benefits, most of them included in the CBA. Other companies offer a comprehensive wage to people who meet the requirements to earn it.

## Management in 2016

In compliance with Act 789 of 2002, the EPM Group's companies adhere to the apprenticeship program that admitted over 150 interns and whose purpose is to provide students of technical, technological, and university programs with an opportunity to complete the internship required by educational institutions.

In 2015, EPM adopted a new structure of positions for professionals, technologists, technicians, and assistants. Additionally, some departments were created and removed, as a result of the analysis of the organizational structure.



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Through the management of the list of employees, it was possible to address the new needs, responsibilities, and projects undertaken by the company.

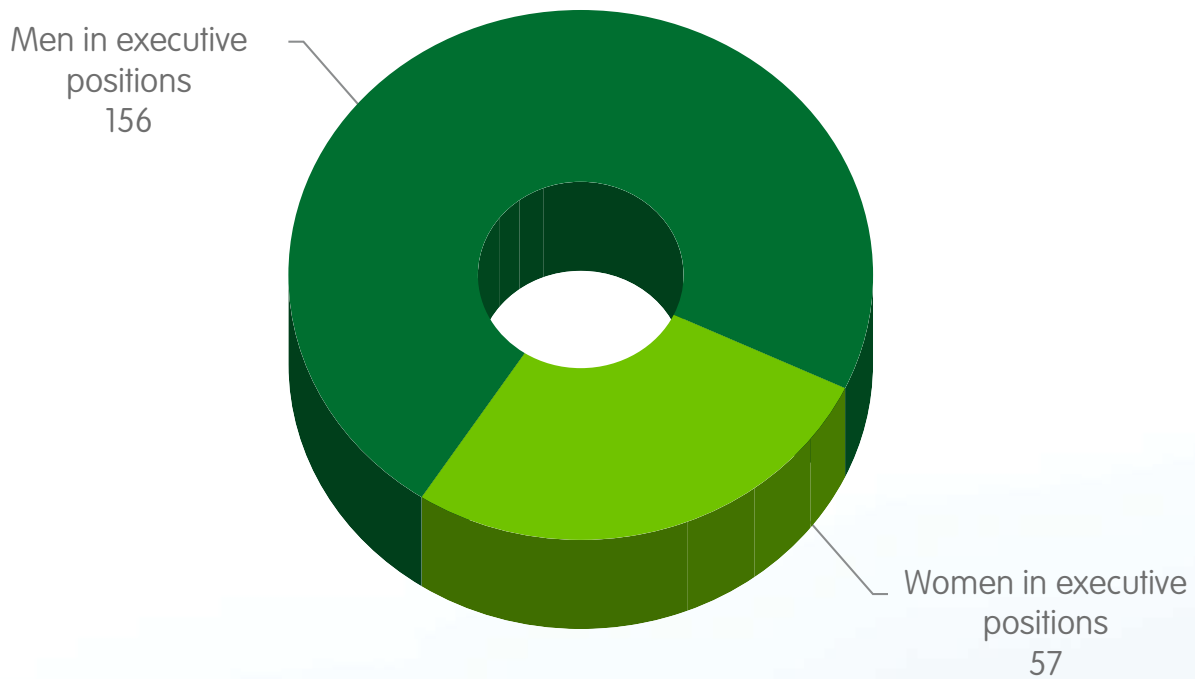
In CHEC, the wage structure has a fixed amount and certain benefits, and it is defined by occupational groups: executives, professionals, technologists, technicians, and support. The list of employees, the apprenticeship contracts and the gender equity comprise the occupational groups described above, either with fixed term, indefinite, or apprenticeship contracts (SENA apprentices and university interns), in compliance with current regulations (Act 789 of 2002).

As part of the management of the list of employees, there is an increase in the number of CHEC employees in 2016, which is explained by the incorporation of new capacities within the standardization of processes with the EPM Group: Some activities that were, at first, addressed temporarily became permanent, with an additional demand for new knowledge and execution of projects, which implied the creation of new posts.



EDEQ: The classification of employees was revised and updated, removing the “administrative” rank and only keeping the following categories: executives, professionals, technicians, and technologists, in order to standardize this information with the structure for an HCM implementation. Likewise, the company’s positions and posts were codified, to have a unique code for each position (junction between the position and the corresponding area) and to allow a better control.

### Composition of executives by gender - 2016



Distribution of EPM employees			
Curve	2014	2015	2016
Executives	227	231	213
Professionals	2,051	2,296	2,486
Technologists, technicians, and assistants	2,347	2,339	2,435
Support	1,002	1,125	1,147
<b>Total</b>	<b>5,627</b>	<b>5,991</b>	<b>6,281</b>

Source: Vice Presidency of Human and Organizational Development

The number of employees of the Group tended to increase over the past three years, largely due to the incorporation of new affiliates to the EPM Group. (In 2016, there were no reports from Aguas de Malambo and Ticsa.)



Employee turnover - EPM			
Indicator	2014	2015	2016
Turnover	4.7%	6.9%	4.5%

Source: Vice Presidency of Human and Organizational Development

The formula used for calculating the turnover rate was as follows:  $(\text{New employees} + \text{employees who have left the company}) / 2 / \text{Total number of employees at the end of the year}$ .

The 2014 turnover rate is replaced by 4.68%, due to an adjustment in the calculation formula.

Composition of executives by gender in EPM			
Indicators	2014	2015	2016
Men in executive positions	162	160	156
Women in executive positions	65	71	57
Men in first-level executive positions	9	10	6
Women in first-level executive positions	7	8	1

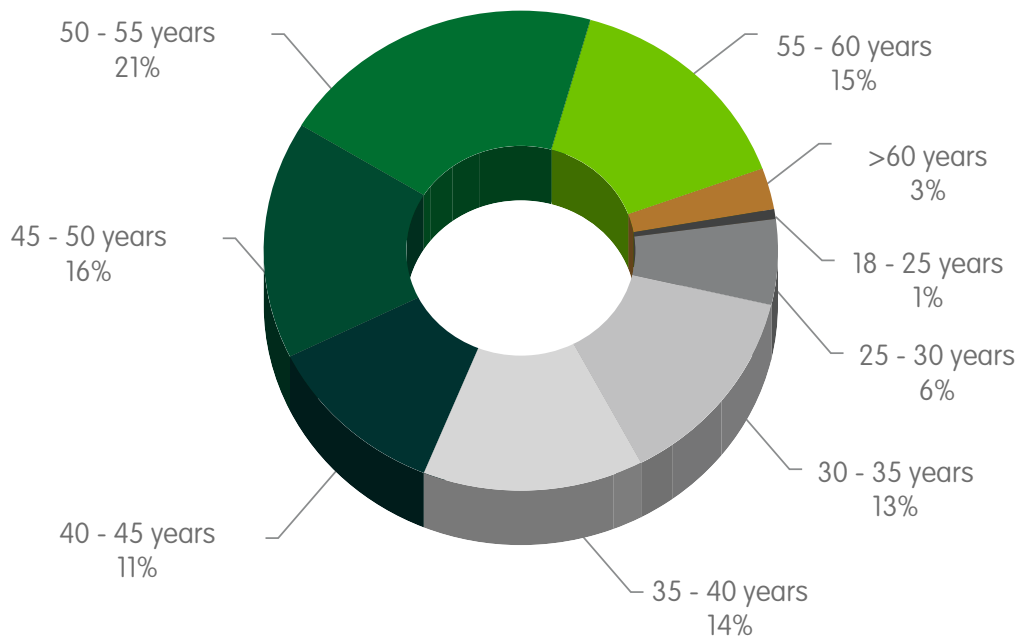
Source: Vice Presidency of Human and Organizational Development

On December 13, 2016, the levels of the administrative structure were modified. As of December 31, 2016, two women were commissioned to hold the following positions: Head of the Disciplinary Control Office and Vice President of Communications and Corporate Relations, which were not included in the total of women in first-level executive positions.

Compared to 2014, the gender distribution in the EPM payroll remains stable in 2015. On December 13, 2016, the levels of the administrative structure were modified. As of December 31, 2016, two women were commissioned to hold two positions (Head of the Disciplinary Control Office and Vice President of Communications and Corporate Relations), which were not included in the total of women in executive positions.

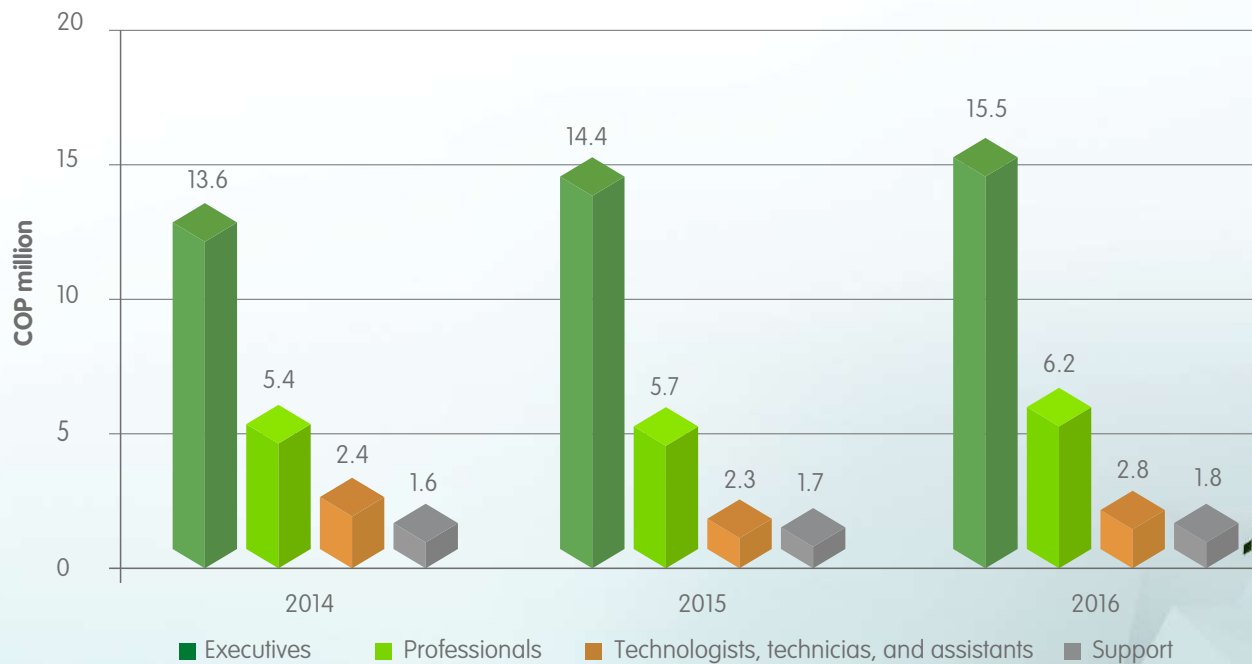


### Distribution of EPM employees by age - 2016



Source: Vice Presidency of Human and Organizational Development

### Average basic wage per month in EPM



Source: Vice Presidency of Human and Organizational Development



## Management indicators

- G4-10** Total number of employees. Electricity sector: include contractors.
- G4-11** Percentage of employees covered by collective bargaining agreements. Include contractors covered by collective bargaining agreements.
- G4-LA1** Total number and rates of new employee hires and employee turnover by age group, gender and region. Electricity sector: for employees who quit during the reporting year, report the average duration of employment, broken down by gender and age group.
- G4-LA12** Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.





# Occupational health and safety

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Understood as health and safety at work, it refers to the protection and promotion of employees' health through the control of occupational hazards causing injuries and occupational diseases. It seeks to improve the working conditions and environment, as well as to ensure the physical, mental, and social welfare of employees in all their tasks.

## Management in 2016

The EPM Group conducts activities to promote healthy lifestyles, prevent diseases, and reduce occupational injuries.

Regulatory compliance continues being the main aspect in the prevention of occupational injuries due to falls from heights, covering the different businesses through certification in training or re-training for a safe and secure working at heights according to exposure levels.



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In 2016, the Occupational Safety and Health Management System was 96% implemented. A voluntary external audit (mandatory as from January 31, 2017) was carried out, which resulted in the structuring of the 2017 improvement plans.

In the energy affiliates, the following actions are highlighted:

**CHEC:** Continuity in the implementation of the Occupational Safety and Health Management System (OHSMS), as a tool to develop a policy and the objectives, and therefore, the corresponding actions based on the needs of the organization.

**CENS:** No fatal accidents were reported. The sixth version of the "Occupational Safety and Health Week" was held in Cúcuta, Aguachica, Ocaña, Pamplona, and Tibú, and a 40-hour course was held to train occupational health and safety auditors. Moreover, the updating of the legal requirements related to this matter was announced, with the participation of 99 people representing 54 contractor firms and 44 people acting as internal auditors and members of the Joint Committee on Occupational Safety and Health (abbreviated COPASST in Spanish) of the five company's headquarters.

**EDEQ:** Ended the year achieving the DIFR (Disabling Injury Frequency Rate) target defined for the EPM Group, which is 0.26, and also showed a decrease in the DIFR compared to the past three years. There were no fatal or serious accidents due to works at heights, activities with electrical risk, or in confined spaces.





Aguas Nacionales: With the support of EPM and Colmena, worked to strengthen the actions aimed at maintaining and preserving the safety and health of its employees.

Occupational safety in EPM			
Indicators	2014	2015	2016
Disabling injury frequency rate (DIFR)	0.40	0.73	0.37
Injury severity rate (ISR)	95.14	174.44	80.45
Injury frequency rate (IFR)	4.19	4.20	4.65
Employees represented in safety committees (%)	100%	100%	100%
Absentee rate - in hours worked (%)	0.30%	0.56%	0.26%
Number of occupational injuries reported	362	346	403
Number of fatalities due to occupational injury or disease	0	0	0
Employees' health coverage	100%	100%	100%
Investments in occupational health (COP million)	4,388	4,947	5,685

Source: Vice Presidency of Human and Organizational Development

Increase in the value obtained from the DIFR indicator in 2015 is due to the occurrence of a serious electrical injury..

Training in health and safety in the EPM Group			
Indicators	2014	2015	2016
Training hours	3,324	3,053	5,312
<b>Total hours / Trained person</b>	<b>31,306</b>	<b>37,858</b>	<b>72,432</b>
<b>Total people trained</b>	<b>8,456</b>	<b>6,405</b>	<b>13,010</b>

Source: Vice Presidency of Human and Organizational Development

## Management indicators

- G4-LA6** Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender. Electricity sector: report health and safety performance of contractors and subcontractors who work at the organization's offices or on behalf of the organization but outside of it.
- G4-LA7** Workers with high incidence or high risk of diseases related to their occupation.
- G4-LA8** Health and safety topics covered in formal agreements with trade unions.
- G4-EU16** Policies and requirements concerning health and safety of employees, contractors and subcontractors.
- G4-EU17** Work days of contractors' and subcontractors' employees who work in construction, operation and maintenance activities.
- G4-EU18** Percentage of contractors and subcontractors that have been trained in subjects such as health and safety.



# Personnel selection

The EPM Group develops the activities necessary for the selection of people who meet the positions' requirements and adapt to the cultural characteristics of the entities. In addition, other services are provided such as management of professionals in training, management of apprentices and interns, admission of assigned employees, review and analysis of requirements, and assessment, for purposes different to personnel selection.

## Management in 2016

Business rules were modified and subsequently proposed for planning the selection process in the affiliate companies of the EPM Group.

The recruitment and screening stages were transferred to the Group's Shared Services Center, in order to extend it to the affiliates of the business group.



In EPM, 780 people were hired during 2016, of which 2 are public employees and 778 official employees (691 through selection process and 89 through promotion, 242 women and 538 men.)

With the implementation of the HCM system for EPM's selection processes, the company started the implementation of the RCC model for this activity. The assessment service was contracted through an adhesion to the contract of the affiliate CHEC, and the positions that execute the process were updated to distribute activities due to the new work plan. Also, the recruitment stage was modified to verify the requirements in this stage and to reduce the number of deserted processes, in addition to achieving optimization in the application of aptitude tests in the evaluation stage without affecting the quality of the process.

Personnel selection in EPM			
Indicators	2014	2015	2016
Selection processes	77	736	780
Contract adjustments	45	290	344
Women hired	34	176	242
Men hired	29	425	538

Source: Vice Presidency of Human and Organizational Development





Personnel selection in the EPM Group			
Indicators	2014	2015	2016
Selection processes	272	1,338	1,305
Contract adjustments	471	419	736
Women hired	91	343	496
Men hired	146	692	1,040

Source: Vice Presidency of Human and Organizational Development

## Management indicators

**G4-EU14** Programs and processes to guarantee the availability of qualified workforce.



# Social and environmental management in projects

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## Social and environmental management in projects

A set of environmental and social activities carried out by the EPM Group as a developer of projects that transform the regions in which it operates. The purpose is to contribute to the construction of competitive and sustainable territories, by mitigating negative impacts and enhancing positive ones, as well as to avoid the materialization of risks in the construction phase. This largely depends on the capacities to manage the socio-political dimension, the understanding of social and environmental forces, and the construction of trust in the territories.

Today, infrastructure projects for expansion and growth are being built, such as the Ituango Hydroelectric Project in the department of Antioquia, with an installed capacity of 2,400 MW, to meet 17% of power demand in Colombia from 2022 onwards. Moreover, projects for the expansion of the National Transmission System are being developed, such as Nueva Esperanza with 500 and 230 kV lines and substations, which will increase the reliability of the Bogotá and Cundinamarca electricity systems, and the 230 kV Bello-Guayabal-Ancón line in the metropolitan area of the Valle de Aburrá. Likewise, substations and lines of the Regional Transmission System are being built and repowered to ensure an energy demand response in Antioquia, Santander, and Norte de Santander, while progress is made in the Sanitation Plan of the Medellín River and its affluent streams, the Articulated Life Units (UVAs), and the Aldeas program.





## Main achievements

Goals for 2016	Achievements in 2016	Compliance
Management of environmental and social impacts in the EPM Group's projects.	Compliance with all the environmental and social management plans.	Total
Management of procedures and environmental licensing required for the construction of the EPM Group's projects.	Management of procedures for obtaining environmental licenses and permits for the use and compensation of forests, scientific research, ending closed seasons, subtraction of reserve areas and landfills, among others.	Total
Meeting 100% of environmental and social milestones in EPM's projects.	73, out of a total of 79 environmental and social milestones of the projects—responsibility of the Vice Presidency of Projects and Engineering—, were met.	Partial
Developing and implementing guidelines, methodologies, and best practices for the EPM Group's projects.	Identification, formulation, standardization, and documentation of 11 environmental and social issues relevant for the development of projects and their feasibility in the territories.	Total
Continuing structuring the integration model in the territory to strengthen the comprehensive management of biodiversity, territorial integration, and sustainable development in the area of influence of the Ituango Hydroelectric Project.	Delivery of the documents as part of the agreement to strengthen the comprehensive management of biodiversity, territorial integration, and sustainable development in the area of influence of the Ituango Hydroelectric Project.	Total
Completing the implementation of additional social investment in the Ituango Hydroelectric Project.	Implementation of an investment of COP 16.113 billion. The accumulated total to 2016 is COP 169.341 billion, for a 87% cumulative implementation.	Partial
Completing the technical cooperation agreement with the IDB of contingent recovery to support the structuring of the Ituango Hydroelectric Project.	Completion of the technical cooperation agreement and obtaining notification, by IDB, of the approval in its directory of the loan application.	Total
Signing of the contract for the management measure with 100% of the people from the communities of Orobajo in Sabanalarga and Barbacoas in Peque.	A contract was signed with 100% of the families subject to a comprehensive restoration of living conditions, 32 from Orobajo and 36 from Barbacoas.	Total



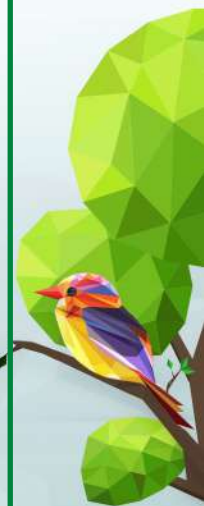


Goals for 2016	Achievements in 2016	Compliance
Compliance with and closure of commitments of the environmental and social management plan of the Nueva Esperanza project.	The date of operation of the project was postponed to the second half of 2017. Therefore, the closure of the programs is postponed to the same date. During 2016, all management measures of the environmental management plan were complied with.	Partial
Transfers of families located in the easement corridor of the Nueva Esperanza project.	Transfer of 16 families located in the easement corridor. These families' living conditions were restored and improved.	Total
Contributing to the local development of the municipalities in the area of influence of the Nueva Esperanza project.	Investment of COP 3.083 billion to join development projects in 18 municipalities of the area of influence, within the framework of the EPM's voluntary participation in local development.	Total
Obtaining the environmental license for the Bello-Guayabal-Ancón project.	Environmental license obtained and disseminated.	Total
Execution of the works of the Aguas Claras Waste Water Treatment Plant Park-EPM, which is part of the Medellín River's Sanitation and Waste Water Management Plan (SWMP).	Progress in the works that contribute to the cleaning of the Medellín River and its streams. Among the main works are: completion of the northern interceptor and Aguas Claras UVA, beginning of the Pipe Branches project, and progress in the Aguas Claras EPMwaste water treatment plant park, Centro Parrilla project, and other watersheds. The plant is still under construction.	Partial
Construction of 362 new houses within the Aldeas Program.	Delivery of 351 houses in the municipalities of Yarumal, Ituango, Valdivia, Peque, Toledo, Amalfi, Alejandría and San Vicente Ferrer.	Partial
Inauguration of the infrastructure for the provision of public utilities to those who live in the territories where the EPM Group operates (Articulated Life Units - UVAs.)	Delivery of five Articulated Life Units (UVAs) for the citizens' interaction: Mirador de San Cristóbal, La Cordialidad, Los Guayacanes, San Fernando and Aguas Claras.	Total



## Challenges

Challenge	Year of completion	Scope and coverage			Achievement indicator
		Territory	Business	Company	
Management of environmental and social impacts in the EPM Group's projects.	2017	All territories	Water Supply, Sanitation, Electricity, and Gas	Empresas Públicas de Medellín - EPM	Compliance with all the actions defined in the environmental and social management plans.
Management of procedures and environmental licensing required for the construction of the EPM Group's projects.	2017	Colombia - Antioquia	Water Supply, Sanitation, Electricity, and Gas	Empresas Públicas de Medellín - EPM	Follow-up of the matrix of environmental procedures required vs. procedures obtained during 2017.
Adapting the reservoir and restoring conservation areas in the Ituango Hydroelectric Project.	2017	Colombia - Antioquia	Electricity	Empresas Públicas de Medellín - EPM	<p>Adaptation of 168 hectares in the tail end and in the area of oscillation of the reservoir in the municipalities of Buriticá, Liborina, and Sabanalarga.</p> <p>Beginning of the restoration of 200 hectares of TDF and 100 hectares of TMF within the framework of the conservation portfolio. Implementation of the "Social Biodiversity Centers" strategy in at least one of the three priority areas.</p>
Restoring living conditions focusing on populations of the reservoir of the Ituango Hydroelectric Project.	2017	Colombia - Antioquia	Electricity	Empresas Públicas de Medellín - EPM	<p>Negotiation with 507 miners in the reservoir area, 8 gold buyers, 35 muleteers, and 11 river transporters. Negotiation of management measure with 7 families dispersed in the reservoir area.</p> <p>Beginning of the construction of the centralized re-settlement for 15 families from Barbacoas in Peque.</p> <p>Relocation of 19 families from Barbacoas in the modality of suggested land.</p> <p>Relocation of 8 families from Orobajo in the modality of suggested land.</p> <p>Start of the measure of connectivity restoration of the La Angelina community.</p> <p>Definitive design of the management measure for the restoration of living conditions of the La Angelina and Mogotes communities.</p> <p>Design of the management measure for the restoration of connectivity in the Bocas de Niquía bridge sector.</p> <p>Design of the management measure for the cultural impact due to the flooding of the Pescadero Bridge</p>





Challenge	Year of completion	Scope and coverage			Achievement indicator
		Territory	Business	Company	
Compliance with and closure of commitments of the environmental and social management plan of the Nueva Esperanza project.	2017	Colombia	Electricity	Empresas Públicas de Medellín - EPM	Implementation and compliance with the environmental and social management plans in the first half of the year.
Start of activities of the forestry offset plan of the Nueva Esperanza project.	2017	Colombia	Electricity	Empresas Públicas de Medellín - EPM	Compliance with the activities of the forestry offset plan for 2017.
Implementation of the plan of dissemination of public archaeology of the Nueva Esperanza substation.	2017	Colombia	Electricity	Empresas Públicas de Medellín - EPM	Compliance with the activities of the plan of dissemination of public archaeology.
Relocation of six (6) families located along the the Bello-Guayabal-Ancón project line.	2017	Colombia - Antioquia	Electricity	Empresas Públicas de Medellín - EPM	Number of relocated families.
Beginning of operations of the Bello-Guayabal-Ancón project.	2017	Colombia - Antioquia	Electricity	Empresas Públicas de Medellín - EPM	Implementation and compliance with the environmental and social management plans.
Progress in the works of the Medellín River's Sanitation and Waste Water Management Plan (SWMP.)	2017	Colombia - Antioquia	Sanitation	Empresas Públicas de Medellín - EPM	Completion of the works of the Aguas Claras waste water treatment plant park and the Pipe Branches and Centro Parrilla projects. Progress in the other projects of the SWMP.
Construction of 48 new houses within the Aldeas Program.	2017	Colombia - Antioquia	Electricity	Empresas Públicas de Medellín - EPM	Number of houses constructed.
Construction and delivery of 2 Articulated Life Units (UVAs.)	2017	Colombia - Antioquia	Water Supply	Empresas Públicas de Medellín - EPM	Construction and delivery of the Articulated Life Units (UVAs) in El Poblado and Pedregal.



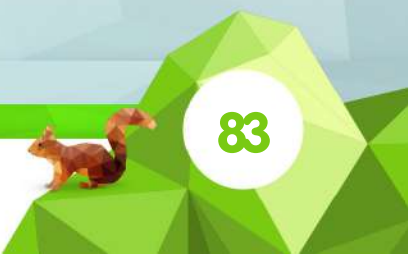
## Environmental investment, cost, and expenditure

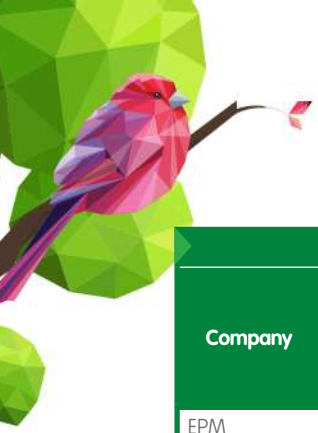
Environmental investments in 2016 - EPM Group (COP million)								
Companies	Social management	Forestry offsets	Environmental management	Environmental and social studies	Physical environment	Biotic environment	Other	Total
EPM	32,201	18,077	11,017	6,662	3,194	3,377	630	75,158
Aguas Nacionales	13,586	0	58	0	0	0	0	13,644
CENS	24	5	0	339	53	34	427	883
CHEC	0	0	0	312	0	0	222	535
ESSA	0	0	0	252	0	0	240	491
EDEQ	0	60	0	0	0	0	259	319
Delsur	0	0	0	0	0	0	0	0
Adasa	0	0	0	0	0	0	0	0
<b>Total Environmental Investment</b>	<b>45,811</b>	<b>18,142</b>	<b>11,075</b>	<b>7,565</b>	<b>3,247</b>	<b>3,412</b>	<b>1,778</b>	<b>91,030</b>

**Source:** Vice Presidency of Corporate Finance and Investment Management

Information of the affiliate Aguas Regionales is not included.

Other includes: Technical management of environmental procedures, management of environmental and social impacts, archeology program, management for the relationship and communication, and contribution to the construction of sustainable territories.





Environmental costs and expenditures in 2016 - EPM Group (COP million)								
Company	Management for the protection and improvement of the environment	Environmental impact management	Comprehensive environmental management of equipment and waste	Water and weather management	Technical management of environmental procedures	Environmental studies (*)	Other environmental activities	Total
EPM	39,513	13,116	8,013	7,619	4,018	823	1,077	74,180
CHEC	1,890	1,435	0	442	310	344	0	4,421
ESSA	188	1,719	0	0	287	104	0	2,299
Aguas Regionales	401	1,720	0	1	1	0	33	2,156
Emvarias	0	1,529	0	0	0	0	305	1,834
CENS	121	542	0	0	293	224	0	1,180
Adasa	338	572	88	0	11	101	0	1,109
Eegsa	219	0	310	0	0	70	0	599
EDEQ	165	346	0	1	16	49	0	577
Aguas de Malambo	96	97	0	108	97	0	0	398
Delsur	12	0	290	0	0	27	0	328
ENSA	54	38	17	0	0	160	0	269
Ticsa	27	1	0	0	0	0	0	28
<b>Total environmental costs and expenditures</b>	<b>43,024</b>	<b>21,115</b>	<b>8,717</b>	<b>8,172</b>	<b>5,032</b>	<b>1,901</b>	<b>1,416</b>	<b>89,377</b>

Source: Vice Presidency of Corporate Finance and Investment Management

(\*) Other environmental activities includes: Environmental management follow-up, environmental process plan, and design and implementation of commercial management actions.

## Management indicators

- G4-EC7** Development and impact of infrastructure investments and services supported.
- G4-EC8** Significant indirect impacts, including the extent of impacts.
- G4-SO1** Percentage of operations with implemented local community engagement, impact assessments, and development programs.
- G4-SO2** Operations with significant actual and potential negative impacts on local communities.
- G4-EN27** Extent of impact mitigation of environmental impacts of products and services.
- G4-EN31** Total environmental protection expenditures and investments by type.





# Ituango Hydroelectric Project

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It is the construction of a hydroelectric power station with an installed capacity of 2,400 MW. It is located in northern Antioquia, 171 km from the city of Medellín, between the municipality of Santa Fe de Antioquia to the south and the Ituango river to the north.

This is the largest and most important project of the country. From 2022, it will serve 17% of Colombia's power demand.

- Start date: September, 2010.
- End date: September, 2022.
- Put into operation date: Stage 1 in November, 2018; Stage 2 in March, 2022.

## Management in 2016

### **Ituango Hydroelectric Project: New Integration Model of a Project in the Territory**

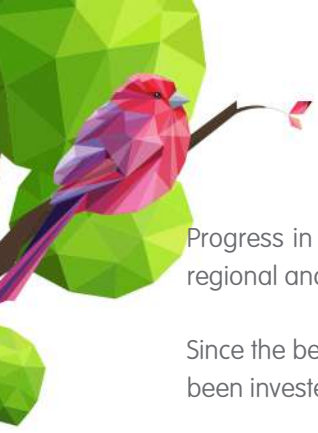
One of the great challenges that is being met in the project is achieving that, more than an infrastructure work, it becomes a development initiative that contributes to energize a territory historically weak in institutional presence, with a low level of socioeconomic opportunities and with presence of actors that, outside the law, have regulated relations among citizens.

This has been achieved through the structuration of an integration model in the territory, which consists in building the project and, simultaneously, making the territory where it is built viable. It is the first of its nature in the country and has become a national and international reference. It is an example of how an infrastructure project can transform a territory by energizing its economy, recovering institutionality and engaging its citizens.

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Through an agreement with the Alexander Von Humboldt Institute and the HTM Foundation, the following was achieved:

- Final document of baseline on biodiversity and ecosystem services.
- Document of progress of the Plan of Integrated Management of Biodiversity and Ecosystem Services (abbreviated PGIBSE in Spanish).
- Document with the construction of the conceptual approach for the analysis and synthesis of the regional ecological structure.
- Document of progress of the model of status and trends of biodiversity.
- Document with the final assessment report of the regional urban system's components in the area of influence of the project.



Progress in the execution of the project integration model in the territory, with participation of different national, regional and local actors.

Since the beginning of the project, approximately COP 230 billion from the Environmental Management Plan have been invested:

- Restitution contracts have been signed with 275 miners of the 4,408 registered in the census.
- Comprehensive restitution contracts have been signed with 252 families of 262.
- To date there is no family in temporary transfer in the construction of the Puerto Valdivia – Presa road.
- Revitalization of the regional economy with the acquisition of goods and services for COP 45.54 billion.
- Management of migratory pressure impacts in agreements with municipal administrations. Projects agreed upon for COP 15.98 billion.
- 11 synthetic-grass fields completed.

Approximately COP 150.42 billion have been invested from the Additional Social Investment:

#### **Infrastructure (Housing and Education):**

Accumulated investment: COP 33.24 billion (8%)

Investment in 2016: COP 6.04 billion (8%)

- 80 new houses and 659 home improvements
- 7 new educational institutions and 71 improvements

#### **Connectivity:**

Accumulated investment: COP 56 billion

Investment in 2016: COP 3 million

- Kilometers restored: 1,226

#### **Productive Projects:**

Accumulated investment: COP 19.48 billion

Investment in 2016: COP 4.12 billion

- 3,785 beneficiaries
- 378 rural settlements benefited from productive projects

#### **Maná – Food Program:**

Accumulated investment: COP 4.45 billion (invested by the end of 2015)

- Families benefited: 2,300
- Rural settlements intervened: 194



## Health:

Accumulated investment: COP 5.93 billion (invested by the end of 2015)

- Health-related interventions (families): 12,463
- Health-related support in education centers: 136

## Public Utilities: Water Supply and Sewage Disposal

Accumulated investment: COP 7.51 billion

Investment in 2016: COP 3.78 billion

- Water supply and sewage disposal: collectors, headraces, DWTPs and WWTPs.

## Gas

Accumulated investment: COP 20.15 billion

Investment in 2016: COP 808 million

- Families benefited with the gas service: 5,489

## Social Development – Participatory Budget

Accumulated investment: COP 4.53 billion

Investment in 2016: COP 1.27 billion

- Projects prioritized by the community: 70
- Projects executed to December 31, 2016: 68

## Institutionality

Accumulated investment: COP 14.79 billion (invested by the end of 2015)

- Protective environments: (845 participating young people). Ituango, Toledo, Briceño, San Andrés de Cuerquia, Yarumal, Valdivia, Peque and Buriticá.
- Adaptation and provisioning of prisons: (3 interventions). Ituango, Santa Fe de Antioquia and Yarumal.
- Furniture, technological equipment and vehicles for inspections, family support units and juvenile detention centers: (12 municipalities).
- Education on Human Rights: (188 employees of the municipal administration and community leaders). Ituango, Toledo, Briceño, San Andrés de Cuerquia, Yarumal, Valdivia, Liborina, Peque, Sabanalarga, Santa Fe de Antioquia, Buriticá and Olaya.
- Plan of comprehensive assistance to victims: (2,702 people assisted). Ituango, Peque, Sabanalarga and Buriticá.
- Mine risk education: (1,553 people). Ituango, Toledo, Briceño, San Andrés de Cuerquia, Yarumal and Valdivia.
- Plan of comprehensive assistance to victims: (2,702 people assisted). Ituango, Peque, Sabanalarga and Buriticá.
- Rehabilitation of victims: (44 people). Ituango, San Andrés de Cuerquia, Yarumal and Valdivia.



- Psychosocial support to victims: (6,338 people). (12 municipalities).
- Support in cases of enforced disappearance: (220 people). Ituango, Toledo, Briceño, San Andrés de Cuerquia and Yarumal.

## Management indicators

<b>G4-EC7</b>	Development and impact of infrastructure investments and services supported.
<b>G4-EC8</b>	Significant indirect impacts, including the extent of impacts.
<b>G4-SO1</b>	Percentage of operations with implemented local community engagement, impact assessments, and development programs.
<b>G4-SO2</b>	Operations with significant actual and potential negative impacts on local communities.
<b>G4-EN27</b>	Extent of impact mitigation of environmental impacts of products and services.



# Aguas Claras – EPM’s Waste Water Treatment Plant Park

Bello’s WWTP (EPM’s Aguas Claras Waste Water Treatment Plant Park) and the North Interceptor are part of the works that make up the Sanitation and Wastewater Management Plan of the Medellín River (SWMP).

- Treatment capacity:  
5 m<sup>3</sup>/sec BOD<sub>5</sub>: 123 t/day
- Suspended solids:  
120 t/day removal % BOD<sub>5</sub> and  
TSS: 80%
- North interceptor:  
Diameter: 2.2 and 2.4 m  
Length: 7.7 km

This plant, which will receive the residential, industrial and commercial waste water from Medellín and Bello, the largest municipalities of Valle de Aburrá, will be the largest and most modern plant of Colombia, and one of the most advanced plants of its kind in Latin America.

## Management in 2016

**Aguas Claras UVA:** Park located close to EPM’s wastewater treatment plant; it was delivered to the community and, without a doubt, will help recognize the river and its water quality as everyone’s responsibility.

Within the strategic goal of building competitive and sustainable territories, EPM has gone beyond its sanitation vision of the Medellín river, recognizing the river as a development mediator of Valle de Aburrá. The Aguas Claras Articulated Life Unit (abbreviated UVA in Spanish) more than an infrastructure work is a space that enables the community’s active participation.

- Compliance with the environmental license responsibilities.
- Delivery of the Aguas Claras UVA to the community.
- Awareness-raising on the environmental and social benefits of the project and its adoption by the community (around 3,291 people).



- Employment generation and revitalization of the economy of the project's area of influence.
- Completion of the closure of the 987 neighborhood agreements with the community and the environment agreements that were initially surveyed in the municipalities of Medellín and Bello.
- Progress in the forest offset program. 8,213 trees were planted this year, of a total of 12,336 in 10 micro-basins and the Piamonte reserve in the municipality of Bello.
- Completion of the environmental educational process with the participation of 1,935 people from community action boards (CABs), local administration boards (LABs), educational institutions and environmental organizations.
- Completion of the diploma in environmental planning and management of the territory, with the graduation of approximately 90 leaders of the project's area of influence.

## Management indicators

<b>G4-EC7</b>	Development and impact of infrastructure investments and services supported.
<b>G4-EC8</b>	Significant indirect impacts, including the extent of impacts.
<b>G4-SO1</b>	Percentage of operations with implemented local community engagement, impact assessments, and development programs.
<b>G4-SO2</b>	Operations with significant actual and potential negative impacts on local communities.
<b>G4-EN27</b>	Extent of impact mitigation of environmental impacts of products and services.





# Aldeas Program

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Aldeas is one of the social innovation programs at the service of the people developed by EPM. The program is a comprehensive housing solution that aims at dignifying and improving the quality of life of the most vulnerable families in Antioquia, taking advantage of the crop trees that complete their maturation cycle in the 4,000 hectare forest and that were planted by EPM around its reservoirs.

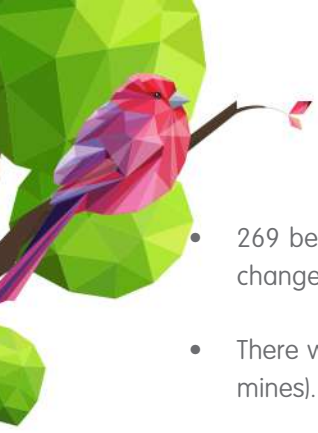
## Management in 2016

### The Aldeas Program contributes to:

- The strengthening of public and private alliances for the promotion of social and environmental development of the communities.
- The construction of safe habitats in the rural environment where families can continue driving the farming development of the country.
- The promotion of forestry governance through the sustainable use of crop trees that complete their maturation cycle in the forests owned by EPM.
- The feasibility of projects and the validation of EPM's presence in the territories.
- The forestry management plan of EPM's plantations.
- The linking together of the forestry sector, the wood industry and the construction industry, which has allowed the generation of a great number of direct and indirect jobs, contributing to the revitalization of the local and regional economy.

- 
- Through this program, commitments of the environmental management plans of the EPM projects were addressed and part was taken in the local development through alliances, in line with the municipal development plans.
  - Around 1,755 people benefited from the installation of 351 houses in 8 municipalities of Antioquia.
  - EPM invested COP 10.67 billion for the Aldeas Program in 2016.
  - The life conditions and the technical specifications of the land plots for 362 (55%) families that applied for the Aldeas Program were validated in situ.
  - Discussion meetings for the start of the works were held in 66 rural settlements or small towns.





- 269 beneficiaries were trained through theoretical and practical workshops to facilitate their adjustment to change and the adoption of their new houses.
- There were some difficulties in the construction of homes in high sociopolitical risk territories (antipersonnel mines).
- There were some difficulties to access the rural settlements of the municipalities of Peque due to dispersion and isolation conditions (7 hours or more far from the urban area).
- There were some public order difficulties caused by the truck drivers' strike, the armed conflict and social protests in complicated territories where the project is executed.

## Management indicators

<b>G4-EC7</b>	Development and impact of infrastructure investments and services supported.
<b>G4-EC8</b>	Significant indirect impacts, including the extent of impacts.
<b>G4-SO1</b>	Percentage of operations with implemented local community engagement, impact assessments, and development programs.
<b>G4-SO2</b>	Operations with significant actual and potential negative impacts on local communities.
<b>G4-EN27</b>	Extent of impact mitigation of environmental impacts of products and services.



# Bello – Guayabal – Ancón Project

It consists in the construction, operation and maintenance of the Bello-Guayabal-Ancón Sur 230-kV transmission line. It also includes the construction of a new 230-kV substation in the Guayabal sector (in Medellín).

The project is located in the municipalities of Copacabana, Bello, Medellín, Envigado, Sabaneta and La Estrella, in the department of Antioquia.

- Start date: August, 2014.
- Capacity: 180 MVA
- Lines: 230 kV (44 km)
- Start of operation: August, 2017

## Management in 2016

The construction of the Bello–Guayabal–Ancón project will increase reliability and coverage of the electrical energy demand in the metropolitan area of Valle de Aburrá and northern Antioquia.



- Obtaining of the environmental license of the project and start of construction.
- Implementation of the environmental management plan and start of the program to relocate the families located in the line easement.
- Progress in the execution of the environmental offset plan due to loss of biodiversity and banned species.

## Management indicators

<b>G4-EC7</b>	Development and impact of infrastructure investments and services supported.
<b>G4-EC8</b>	Significant indirect impacts, including the extent of impacts.
<b>G4-SO1</b>	Percentage of operations with implemented local community engagement, impact assessments, and development programs.
<b>G4-SO2</b>	Operations with significant actual and potential negative impacts on local communities.
<b>G4-EN27</b>	Extent of impact mitigation of environmental impacts of products and services.





# Nueva Esperanza Project

It consists in the construction of the Nueva Esperanza substation and its interconnection with the Bacatá (500 kV), Guavio (230 kV), Paraíso (230 kV) and Circo (230 kV) substations. It is an expansion project for the reliability of the National Electrical System that benefits more than 12 million people from Cundinamarca, Meta, Guaviare and northern Tolima.

It is of great importance for Colombia and, therefore, it is marked as National Project of Strategic Interest (NPSI).

- Location: department of Cundinamarca
- Capacity: 450 MV
- Lines: 500 Kv (48.5 Km) – 230 Kv (159 Km)
- Start of operations: line 230 kV in February, 2017, and line 500 kV in March, 2017.

## Management in 2016

- Transfer of 16 family houses located in the easement corridors of the line, which were returned to these families, and their life conditions were improved.
- Acquisition of 364 hectares located in protected areas, which will be used for the implementation of the forest offset plans, intended to carry out restoration and conservation activities.



- Start of the construction of line 500 kV with the implementation of all the commitments derived from the environmental and social management plan.
- Approval of four modification of the environmental license, required for the development of the project.
- Implementation of the criteria to economically assess the impact caused by the transfer on the 16 families located in the easement corridors of the line, as well as the improvement of their life conditions.
- Signing of the agreement between Codensa, the municipality of Soacha and EPM for the adjustment of the room-museum to exhibit the archeological findings of the Nueva Esperanza substation.
- Design of the forest offset strategy of the project, which fosters connectivity, restoration and conservation of ecosystems.
- Sociopolitical analysis of the environment, which allowed polishing the engagement strategy with local actors and which showed signs of complex situations regarding public order and social conflicts that demanded high-profile strategies to properly handle them.
- Investment close to COP 3.08 billion to participate in development projects in 18 municipalities of the area of influence, as part of EPM's voluntary participation in local development.

Despite having the easements established, there were some difficulties with some owners to enter the plots.



# Management indicators

- G4-EC7** Development and impact of infrastructure investments and services supported.
- G4-EC8** Significant indirect impacts, including the extent of impacts.
- G4-SO1** Percentage of operations with implemented local community engagement, impact assessments, and development programs.
- G4-SO2** Operations with significant actual and potential negative impacts on local communities.
- G4-EN27** Extent of impact mitigation of environmental impacts of products and services.





## Intermediate projects

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They are expansion, modernization and growth projects in the energy, gas and water sectors that the EPM Group currently develops, and which promote the sustainable growth of the organization and the territories where it operates.

The most relevant projects are:

In energy generation: the construction of the Playas power plant modernization project in eastern Antioquia and the design of the Dolores power plant restoration. Additionally, progress is made in the optimization of the Caracolí power plant, the modernization of the Ayurá power plant and the civil works in the Guadalupe-Troneras generation system.

In transmission and distribution: works for expansion and relocation of the system, improvement of the quality of service, electrification of homes with the Antioquia Illuminated program, customer connection, and repowering, reconfiguration and modernization of regional substations of projects in EPM and the affiliated companies CENS and ESSA, among other projects such as: Middle Magdalena, San Lorenzo-Sonsón, Yarumal Reliability, Caucasia Reliability, La Ceja-Sonsón, El Salto-Amalfi-La Cruzada and Remar (project for reconfiguration, modernization and automation of regional substations).

In gas: La Alpujarra District Cooling, new service stations of vehicular natural gas (VNG), pipe branches for customer connections and the Caldas-Amagá Gas Interconnection Branch project.

In water services and sanitation: the projects in drinking water supply are Valle de San Nicolás and Habitable Homes, and the projects in the Sanitation and Wastewater Management Plan (SWMP) are Centro Parrilla, Other Basins and Rodas-Piedras Blancas-El Salado. With the affiliated companies of Aguas de Malambo and Aguas Regionales, progress is made in projects regarding basic sanitation of the communities.

### Management in 2016

Improvement of the quality of life of the communities where the EPM Group operates.

Construction of works to ensure the supply of electrical energy, the provision of drinking water and the management of waste water, increase the coverage to improve the continuity and quality of service for customers, as well as modernize and replace networks and, in general, the infrastructure associated with public utilities.





- Compliance with the environmental and social management plans of the public utilities infrastructure projects.
- Management of the environmental procedures and permits required to build the works: modification of environmental licenses and forest exploitation and offset permits, effluents and occupation of riverbeds.
- Programs of information to and participation of the community with the different regional and local stakeholders.
- Definition and implementation of a comprehensive environmental management model.
- Design and implementation of communication and engagement strategies with the different local, regional and national stakeholders that allowed establishing and strengthening a two-way communication and relationships of trust for the feasibility and sustainability of the projects.
- Implementation of strategies with authorities, public and private entities and communities with the purpose of influencing the prioritization and obtaining of licenses and the feasibility of each project.
- Social assistance in the establishment of easements and property management.
- Environmental and social committees with advisors, contractors, auditors and EPM.

## Management indicators

<b>G4-EC7</b>	Development and impact of infrastructure investments and services supported.
<b>G4-EC8</b>	Significant indirect impacts, including the extent of impacts.
<b>G4-SO1</b>	Percentage of operations with implemented local community engagement, impact assessments, and development programs.
<b>G4-SO2</b>	Operations with significant actual and potential negative impacts on local communities.
<b>G4-EN27</b>	Extent of impact mitigation of environmental impacts of products and services.



# Sustainable production and consumption

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## Sustainable production and consumption

The core aspect of the 2016 - 2019 strategic environmental planning of the EPM Group, aimed at defining, coordinating, implementing and monitoring initiatives focused on efficient use and saving of energy and water (see Water Conservation), waste management, rational consumption and material and supply saving, sustainable public procurement and best environmental practices.

The EPM Group understands production and sustainable consumption as a determinant opportunity to optimize the use of resources in the activities required for the provision of public services by the EPM Group People; to influence the production practices of goods and services performed by its suppliers and contractors; and to guide habit changes in customers and users, so that the group contributes to business competitiveness and, as corporate citizen, encourages a responsible use of resources and the reduction of environmental pollution.

Information from Emvarias, EPM Chile, Ticsa or Adasa is not included because it was not available in the support application.

### Main achievements

Goals for 2016	Achievements in 2016	Compliance
Making progress in the implementation of the comprehensive management plan of PCB in the energy distribution companies of the EPM Group, to get rid of this compound and standardize its appropriate handling and disposal.	<ul style="list-style-type: none"> <li>Identification and labelling of distribution equipment.</li> <li>Sampling of dielectric oils.</li> <li>Formulation of the plan in the Colombian companies and distribution to the staff.</li> <li>Obtaining an environmental license for the regeneration of dielectric oils.</li> </ul>	Total
Making progress in the implementation of the comprehensive management plan of PCB in the energy distribution companies of the EPM Group, to get rid of this compound and standardize its appropriate handling and disposal.	<ul style="list-style-type: none"> <li>Installation of equipment for online monitoring in 22 facilities and local monitoring in 25.</li> <li>Fixing of a pumping equipment and identification of compressed air leaks in the DWTPs.</li> <li>Saving of 1.5 GWh of energy and COP 432 million.</li> </ul>	Total

## Challenges

Challenge	Year in which it was achieved	Scope and coverage			Achievement indicator
		Geography	Business	Company	
Establishing the actual energy and water consumption and waste generation in the different processes and facilities.	2017	Colombia	All businesses	All companies	Base line 2016 of actual consumption per company of the EPM Group in Colombia.
Defining the indicator and quantitative targets for energy and water consumption and waste recycling.	2017	Colombia	All businesses	All companies	Defined indicators and associated targets for the 2017-2019 period.
Keeping the energy generation using biogas in the San Fernando WWTP to self-supply at least 30% of the plant's internal demand.	2017	Colombia - Antioquia	Sanitation	Empresas Públicas de Medellín - EPM	$[(\text{kWh generated} / \text{kWh demanded}) \times 100] \geq 30\%$
Developing a sustainable procurement manual.	2017	Panama	Electrical energy	Elektra Noreste - ENSA	Manual
Expanding the coverage of electronic billing for customers.	2017	Guatemala	Electrical energy	Empresa Eléctrica de Guatemala - Eegsa	Annual report of the project.



## Management indicators

<b>G4-EN1</b>	Materials used by weight or volume. Electricity sector: report the inventory in use of low- and high-level solid and liquid PCBs in the equipment.
<b>G4-EN2</b>	Percentage of materials used that are recycled input materials.
<b>G4-EN3</b>	Energy consumption within the organization.
<b>G4-EN4</b>	Energy consumption outside the organization.
<b>G4-EN5</b>	Energy intensity.
<b>G4-EN6</b>	Reduction of energy consumption.
<b>G4-EN7</b>	Reduction in energy requirements of products and services.
<b>G4-EN23</b>	Total weight of waste by type and disposal method. Electricity sector: include PCB waste as part of the total weight of hazardous and non-hazardous waste, as well as nuclear waste.
<b>G4-EN25</b>	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel convention.

## Sustainable development goals





# Energy consumption, energy intensity and improvements in energy efficiency

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The purpose is to optimize the consumption of energy in all forms (electricity, gasoline, fuel oil, diesel, gas and other fuels) for different uses based on the monthly report of data regarding consumption, the regular comparative analysis using historical data, and the search for strategies to stabilize consumption.

The companies of the EPM Group have made progress in actions such as the installation of meters, the technical measurements of lighting and energy balances, the installation of saving devices, the replacement of lighting devices for other more efficient technologies, the modernization and updating of the airflow system, the regulation of air conditioning systems and programming of thermostats, the implementation of different practices (adjustment of on and off times of some technological systems such as lighting, escalators and air conditioning in offices) and the execution of awareness-raising sessions, with the purpose of optimizing the consumption of energy in their facilities. The power distribution and water supply companies have a plan to reduce losses in their networks.

## Management in 2016

CHEC designed a project on energy efficiency addressed to micro, small, and medium enterprises from its area of coverage, with the purpose of sharing knowledge for the formulation and execution of improvement plans related to efficient use of energy, which improve the environment and energy of the region and the participating organizations.

Eegsa and CENS installed solar panels for the generation of self-consumption energy. One of Eegsa's facilities generates 57.20% of the demanded energy.



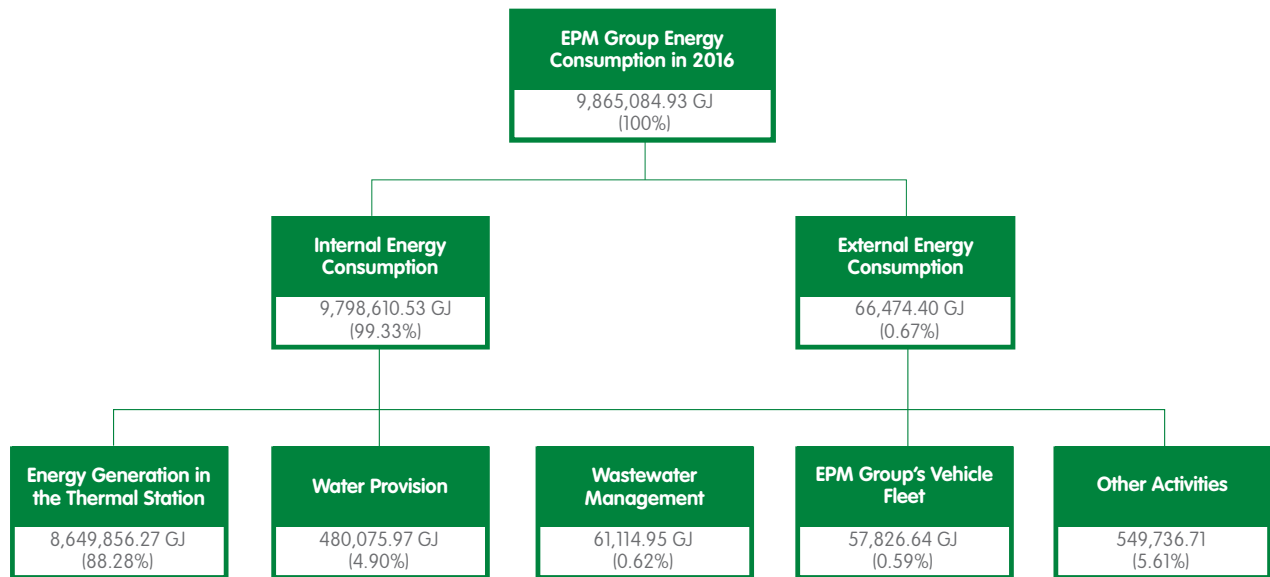
The EPM Group requires energy for the development of operations related to the provision of drinking water, waste water management and power generation, among others. Depending on its operational management, it also uses a vehicle fleet of its own and hired.

87.68% of the total energy demand (8,649,856.27 GJ) corresponds to the fuel required for power generation in thermal power stations.

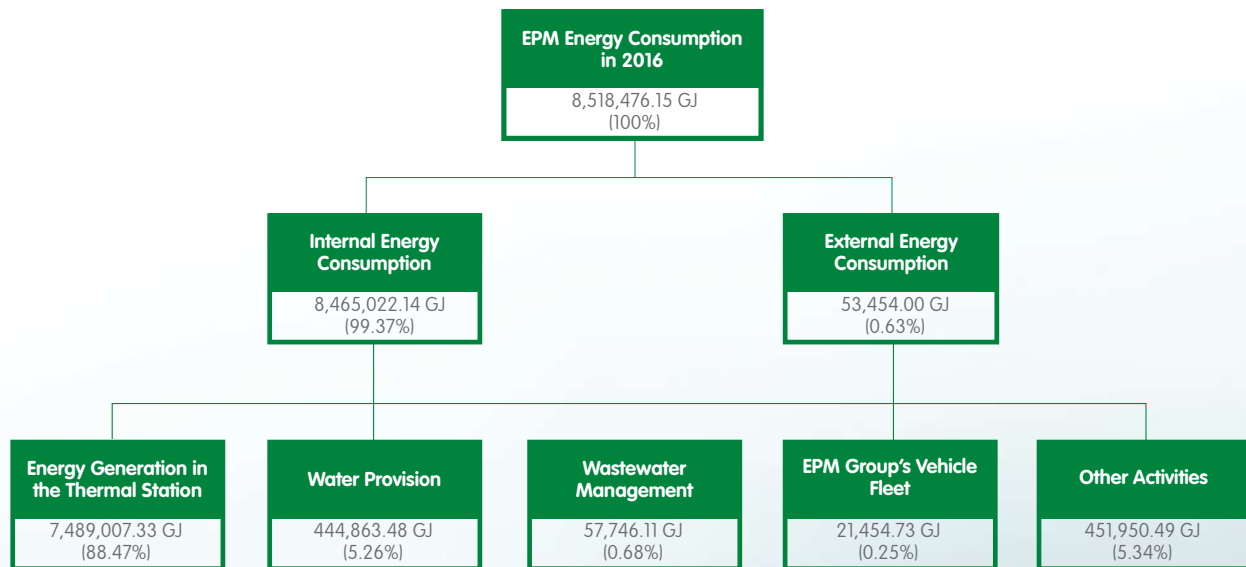
Although the number of companies, facilities and processes that report information associated with the consumption of energy have increased, figures of companies such as Emvarias, Ticsa and EPM Chile, among others, were not included in 2016; therefore, the information corresponding to the EPM Group is not strictly comparable with each other.



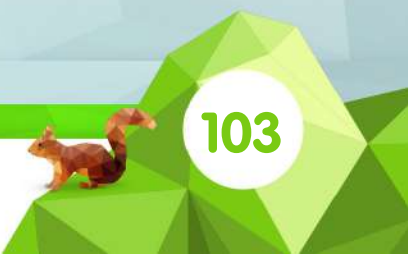




Source: Idsos Application



Source: Idsos Application





### Internal energy consumption - EPM Group (GJ)

Source of Energy	2014	2015	2016
Natural gas	3,538,003	5,221,413	4,953,261
Fuel oil	18,905	3,604,592	3,700,421
Electrical energy	623,314	872,556	832,566
Biogas	126,624	137,336	117,755
Self-supplied electrical energy	139,161	145,162	108,528
Diesel	213,320	262,031	73,240
Regular gasoline	19,606	31,123	10,983
Premium gasoline	3,573	2,546	1,526
Liquefied petroleum gas	1,413	1,743	331
Biodiesel	8,332	N.A.	N.A.
<b>Total</b>	<b>4,692,252</b>	<b>10,278,503</b>	<b>9,798,611</b>

Source: Idsos Application

Fuels used by Emvarias's waste collection vehicles were not included in 2016; therefore, figures are not strictly comparable.

The internal energy consumption in the EPM Group decreased by 4.67%.

Natural gas (50.55%), followed by fuel oil (37.76%) and electrical energy (8.50%) had the highest energy consumption rates, similar to 2015. The self-supplied electrical energy supplies 1.11% of internal energy demand.

### Internal energy consumption - EPM (GJ)

Source of Energy	2014	2015	2016
Natural gas	3,102,999	4,949,269	4,118,167
Fuel oil	18,905	3,076,150	3,372,739
Electrical energy	539,582	743,853	720,254
Biogas	126,624	137,336	117,755
Self-supplied electrical energy	127,051	143,437	108,528
Diesel	52,341	48,931	18,478
Regular gasoline	18,572	21,386	8,674
Liquefied petroleum gas	1,413	1,261	331
Premium gasoline	3,573	1,131	95
<b>Total</b>	<b>3,991,061</b>	<b>9,122,753</b>	<b>8,465,022</b>

Source: Idsos Application



The internal energy consumption in EPM decreased by 7.21% compared to 2015. Natural gas (48.65%) and fuel oil (39.84%) had the highest consumption rates in the operation of the La Sierra thermal power station. Electrical energy represents 8.51% of the energy consumption, while self-supplied electrical energy supplies 1.28% of the internal energy demand. EPM consumes 86.39% of the Group's energy.

Energy consumption in water supply (Energy intensity) - EPM Group										
Company	Energy consumption (GWh)			Treated water (Mm <sup>3</sup> )			GWh consumed / Mm <sup>3</sup> of treated water			Variation 2015 - 2016 (%)
	2014	2015	2016	2014	2015	2016	2014	2015	2016	
EPM	86.01	145.86	123.57	283.61	288.25	280.04	0.30	0.51	0.44	-12.80%
Aguas Regionales	6.13	5.40	4.95	25.76	24.07	24.34	0.24	0.22	0.20	-9.35%
Aguas de Malambo	3.93	5.22	4.61	7.80	10.51	8.60	0.50	0.50	0.54	7.87%
Aguas del Oriente	N.A.	0.17	0.22	N.A.	0.96	0.80	N.A.	0.18	0.28	55.95%
<b>Total</b>	<b>96.07</b>	<b>156.66</b>	<b>133.35</b>	<b>317.17</b>	<b>323.79</b>	<b>313.77</b>	<b>0.30</b>	<b>0.48</b>	<b>0.43</b>	<b>-12.16%</b>

Source: Idsos Application

Consumption of electrical energy in the DWTP, tanks, pumps, wells and collection stations is included. The total of GWh/Mm<sup>3</sup> is adjusted for previous years because there was a calculation error; likewise, due to the Aguas de Urabá and Aguas de Occidente merger, figures presented for 2014 and 2015 are included in Aguas Regionales.

The annual energy consumption for water supply in the EPM Group was 480,075.97 GJ (4.87% of the total energy demand), of which 444,863.48 GJ (92.67%) were used by EPM.

The energy demand for this process decreased 14.88% in relation to 2015 because in 2016 it was not necessary to permanently operate the raw water pumping stations. The quantity of treated water was reduced to 3.09% and the energy intensity was lower.

In EPM, the consumption of energy for water provision decreased by 15.28% and the quantity of treated water was reduced by 2.85%; this caused a reduction of 12.80% in the energy intensity in relation to 2015.

The consumption of energy in pumping stations and tanks represents 98.01% of the demand for the provision of drinking water.

The increase of 29.72% in the consumption of energy in Aguas del Oriente corresponds mainly to an increase of non-revenue water, which caused, in turn, an increase in the energy demand for pumping.

An operational scheme that reduces energy consumption associated with water production and distribution during times of low consumption by the population was implemented in Aguas Regionales and Aguas de Malambo.



Energy consumption in wastewater management (Optimal level of renewable energy) EPM Group				
Company	Energy consumption (GWh)			Variation 2015 - 2016 (%)
	2014	2015	2016	
EPM	19.99	19.26	16.04	-16.71%
Aguas Regionales	0.75	0.99	0.86	-12.81%
Aguas de Malambo	0.05	0.07	0.07	8.10%
Ticsa	N.A.	0.01	N.A.	N.A.
<b>Total</b>	<b>20.78</b>	<b>20.33</b>	<b>16.98</b>	<b>-16.49%</b>

Source: Idsos Application

Consumption of energy in the WWTPs and the wastewater pumping stations is included. Due to the Aguas de Urabá and Aguas de Occidente merger, figures presented for 2014 and 2015 are adjusted in Aguas Regionales.

The annual energy consumption for wastewater management in the EPM Group was 61,114.95 GJ (0.62% of the total energy demand), which represents a reduction of 16.49% in relation to 2015, thanks to the operation of two new dehydrators and only one blower in the San Fernando WWTP.

Energy consumption in wastewater management (Optimal level of renewable energy) - EPM				
Aspect	2014	2015	2016	Variation 2015 - 2016 (%)
Energy Consumption (GWh)	19.99	19.26	16.04	-16.71%
Volume of wastewater treated (Mm <sup>3</sup> )	43.40	43.21	41.47	-4.02%
Renewable energy generated (GWh)	8	8.06	6.45	-19.94%
Amount of renewable energy (GWh) compared to energy consumed	40.03%	41.84%	40.23%	-3.87%
<b>GWh consumed / Mm<sup>3</sup> of treated wastewater</b>	<b>0.46</b>	<b>0.45</b>	<b>0.39</b>	<b>-13.23%</b>

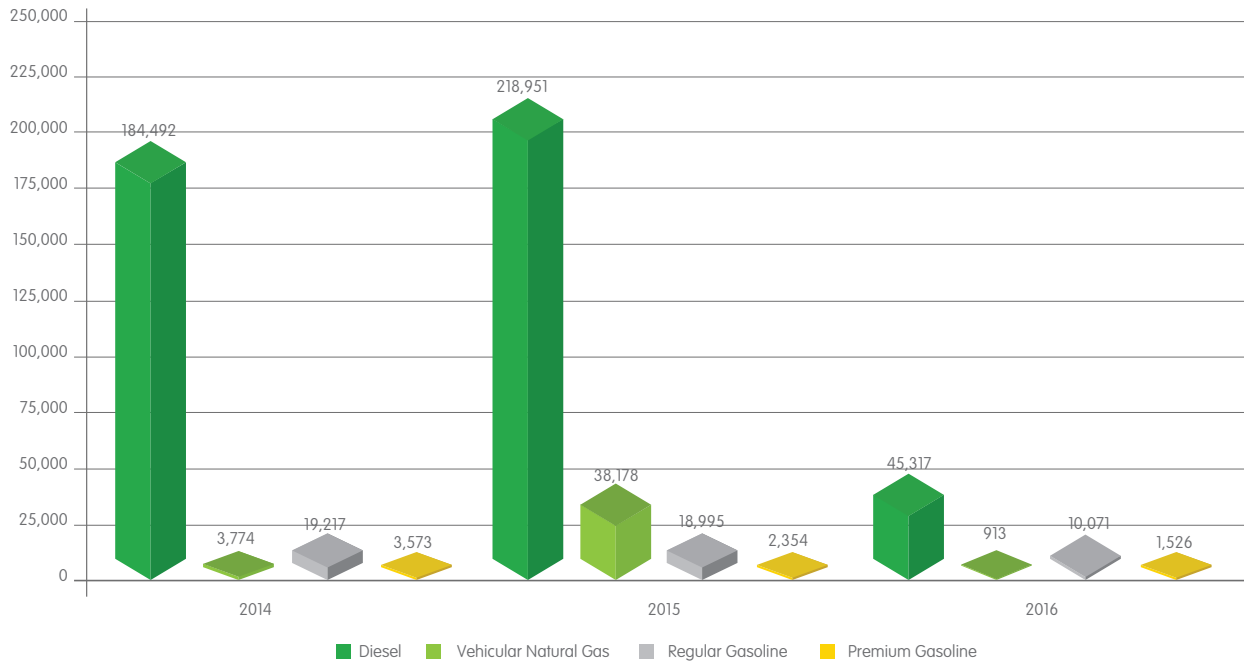
Source: Idsos Application

Data on energy consumption and wastewater treated correspond to two WWTPs; renewable energy generation occurs only in one of them from the capture of biogas.

The annual energy consumption for wastewater management in EPM was 57,746.11 GJ (0.68% of total energy demand), 16.71% less than in 2015. With the methane produced in anaerobic digestion of sludge, 40.23% of the electrical energy required in wastewater



## Energy consumption in the EPM Group's vehicle fleet (GJ)

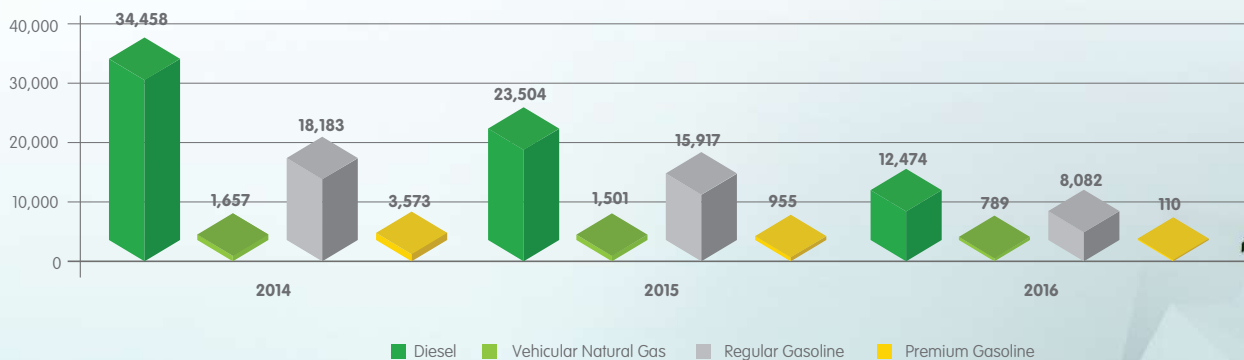


Source: Idsos Application

Fuels used by Emvarias's waste collection vehicles were not included in 2016; in 2015, the company consumed 60.06% of the Group's diesel. This is one of the main reasons why the demand of its own fleet decreased by 79.23% in relation to last year.

Energy consumption by the vehicle fleet of the EPM Group was 57,826.64 GJ; diesel represents 78.37%, followed by regular gasoline (17.42%); vehicular natural gas represents 1.58%.

## Energy consumption in the EPM's vehicle fleet (GJ)



Source: Idsos Application



Energy consumption by the vehicle fleet of EPM decreased 48.77% in relation to 2015; it was 21,454.73 GJ (0.25% of total energy demand). Diesel accounts for 58.14%, followed by regular gasoline (37.67%). Vehicular natural gas consumption accounts for 3.68% of fuel consumption in EPM's vehicle fleet.

Energy consumption of the vehicle fleet hired - EPM Group (GJ)			
Fuel	2014	2015	2016
Diesel	24,842	41,985	61,962
Vehicular natural gas	3,470	509	194
Regular gasoline	3,665	8,411	4,319
Premium gasoline	9	4	0
<b>Total</b>	<b>31,986</b>	<b>50,909</b>	<b>66,474</b>

Source: *Idsos Application*

The external energy demand is calculated based on fuel consumption by the vehicle fleet hired by the EPM Group. In 2016, this consumption was 66,474.40 GJ (30.58% more than last year), equivalent to 0.68% of the total energy demand. Diesel accounts for 93.21% of fuel consumption.

The increase in diesel in relation to last year is accounted for the inclusion of this information for the first time by companies such as CENS and Delsur.

Energy consumption of the vehicle fleet hired - EPM (GJ)			
Fuel	2014	2015	2016
Diesel	24,842	37,100	49,986
Vehicular natural gas	3,470	509	105
Regular gasoline	3,665	8,411	3,363
Premium gasoline	9	4	0
<b>Total</b>	<b>31,986</b>	<b>46,024</b>	<b>53,454</b>

Source: *Idsos Application*

Energy consumption by the vehicle fleet hired by EPM increased 16.14% in relation to 2015. Diesel accounts for 93.21% of fuel consumption, mainly because the bid specifications for personal transport contracts for projects of infrastructure under construction require that vehicles work with diesel.





# Management indicators

- G4-EN3** Energy consumption within the organization.
- G4-EN4** Energy consumption outside the organization.
- G4-EN5** Energy intensity.
- G4-EN6** Reduction of energy consumption.
- G4-EN7** Reduction in energy requirements of products and services.





## Integrated solid waste management

Integrated solid waste management includes deliberate actions for prevention in their generation, minimization, valorization, utilization, treatment and disposal. The EPM Group has classified waste into recyclable, biodegradable, inert and ordinary, special and hazardous.

The companies of the EPM Group design and implement integrated waste management plans that comprise the application of strategies such as the reduction in generation, the increase in reclamation and the processes of education and training, to contribute to the appropriate management of waste in their facilities. In turn, they participate in activities led by other institutions of each country to collect certain waste.

One of the types of hazardous waste generated in almost every company of the EPM Group is dielectric oils containing PCB, possible more than 50 ppm. This has encouraged the formulation of integrated management plans for this type of compounds.

### Management in 2016

Considering the Stockholm Convention, EPM made progress in the integrated management of PCB. The goal was to identify and mark 30% of the equipment reported in the inventory. In 2016, samples were taken and 29,787 transformers were replaced, 22,886 units were analyzed, 25,645 transformers were marked with a "PCB Free" certificate and 48,531 units in total were marked and identified, surpassing the set goal.

The transmission and distribution affiliated companies updated their inventory of the equipment with potential PCB.



In 2016, waste generation in the EPM Group was 21,922.74 t (the 191.32 t that had been stored from the previous year are not included in this value). Only 293.77 t (1.34%) are hazardous waste. Additionally, the Group took on the management of 5,791.92 t not generated by its operation that correspond to timber and water plants removed from reservoirs, nonhazardous sludge and ordinary and inert waste removed from grids and clarifiers of treatment plants and account for 20.76% of the waste managed.

Although training workshops were carried out to standardize information that ensures the implementation of the same criteria and technical rigor for the entry of data in the computer application that supports environmental management, difficulties took place in some companies. As a consequence, not all entities that reported information for 2015 did it for 2016. For this reason, the figures presented are not strictly comparable. The goal is to capture the actual information, removing the margins of error and uncertainty as much as possible, so that year by year the figures set a trend associated with their operation.

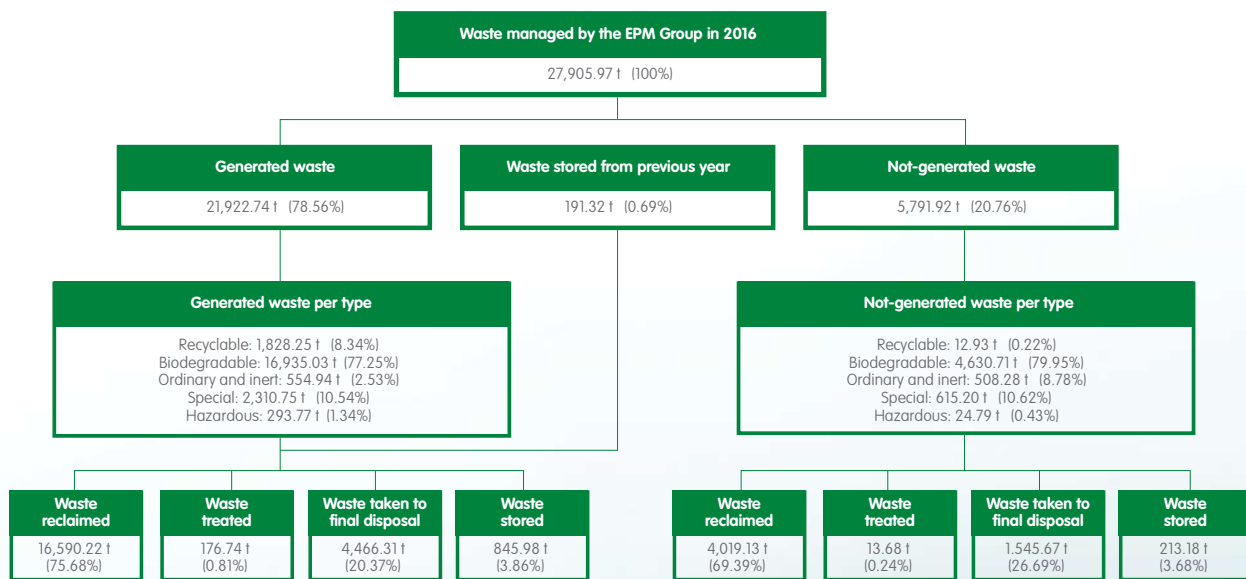


In the construction of the Ituango Hydroelectric Project, 190.94 t of waste were produced, of which 49.42% are biodegradable; 43.72%, ordinary and inert; 6.35%, nonhazardous recyclable; and 0.51%, hazardous. These figures are not included in the total amount of waste because they respond to construction processes.

Electrical energy distribution companies continued sampling dielectric oils in equipment in use and disuse with potential presence of PCB to identify which should be removed. For instance, ESSA sampled 7,858 equipment units to determine the values of PCB existing in dielectric oil; 462 of these samples were analyzed in the laboratory and, as a result, 103 transformers were replaced.

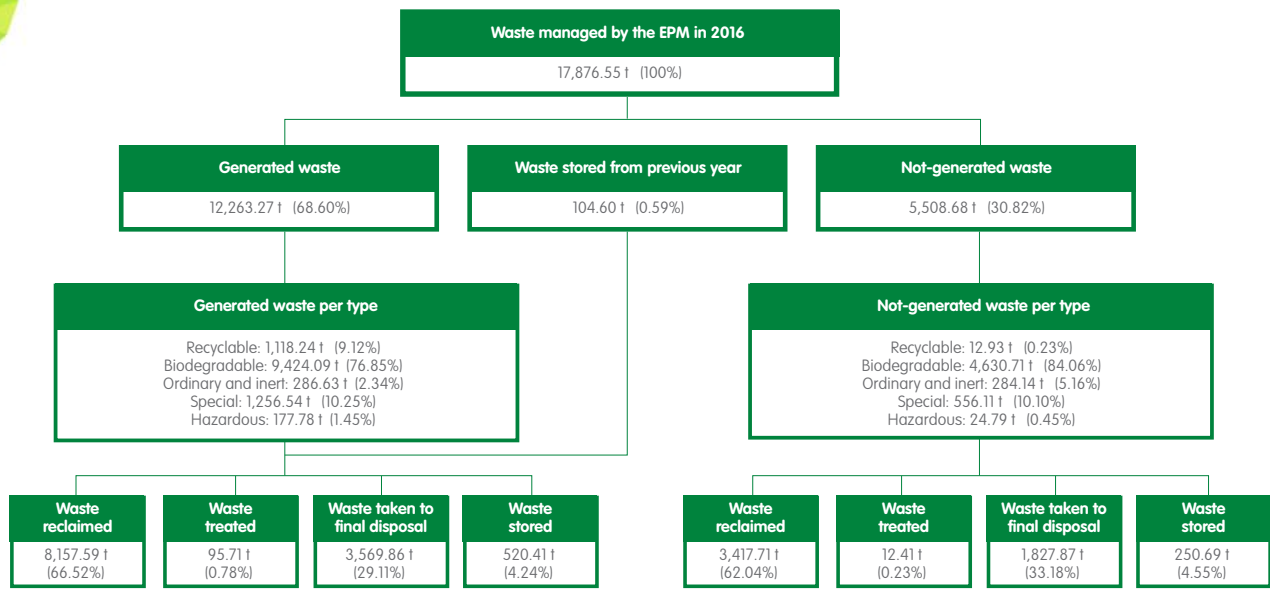
By the end of 2016, EPM had the following equipment (transformers) grouped according to their status: 111,912 in use, 6,990 in disuse, 6,723 discarded equipment and 8 containers with contaminated items.

The national water affiliated companies make progress in weighing the waste. In Aguas Regionales, the internal initiative "Environmental Summons" stands out, which consists in providing symbolic incentives or summons to the employees according to the separation in situ.



Source: *Idsos Application*





Source: Idsos Application

Waste generated - EPM Group (t)				
Type of waste	2014	2015	2016	
Recyclable	1,450	2,814	1,828	
Biodegradable	7,392	12,631	16,935	
Ordinary and inert	584	1,171	555	
Special	1,658	1,413	2,311	
Hazardous	855	1,159	294	
<b>Total</b>	<b>11,939</b>	<b>19,188</b>	<b>21,923</b>	

Source: Idsos Application

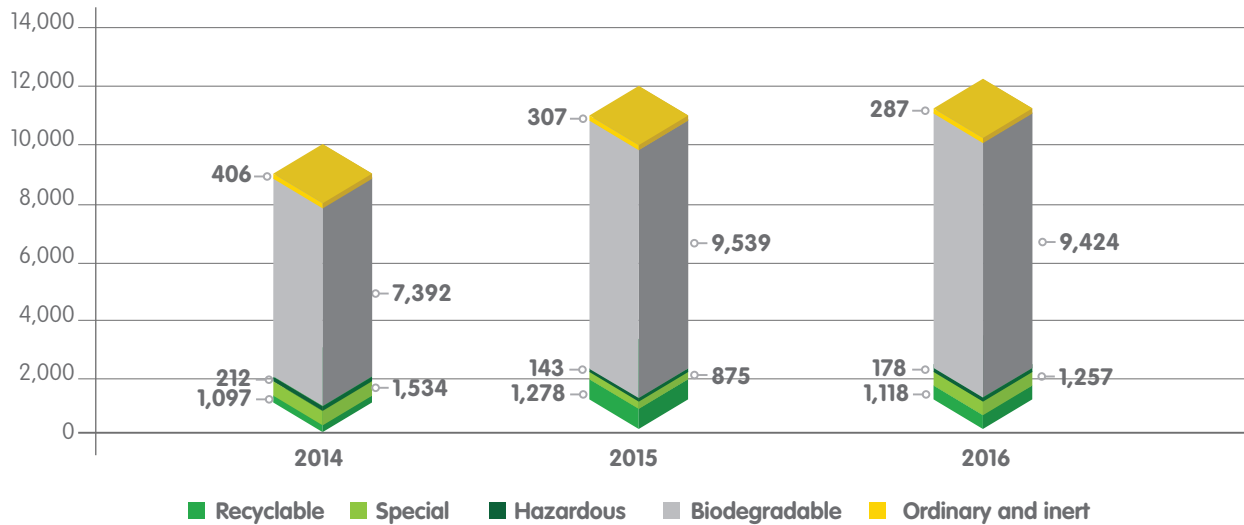
Of the 21,922.74 t of waste generated by the Group, 55.94% is produced by EPM.

77.25% of the waste generated by the EPM Group corresponds to biodegradable waste; 10.54%, special (electrical and electronic equipment, debris, tires and nonhazardous sludge); 8.34%, nonhazardous recyclable; 2.53%, ordinary and inert; and only 1.34% is hazardous.

Waste generation in the EPM Group increased by 14.25% compared to 2015.



### Waste generated by EPM (t)



Source: Idsos Application

EPM generated 12,263.27 t of waste, 1.00% more than the previous year. Special waste increased by 43.60% and nonhazardous waste increased by 24.32%. Biodegradable waste represents 76.85% of the waste generated, while hazardous waste only represents 1.45% of the waste generated.

Management of waste generated by the EPM Group (T)					
Management	Type of waste	2014	2015	2016	Waste by type of management 2016
Reclamation	Recyclable	1,425.30	2,755.13	1,782.21	16,590.22
	Biodegradable	3,769.28	11,215.43	13,535.92	
	Ordinary and inert	0.66	32.49	0.53	
	Special	274.10	640.20	1,181.94	
	Hazardous	696.85	502.50	89.62	



Management of waste generated by the EPM Group (T)					
Management	Type of waste	2014	2015	2016	Waste by type of management 2016
Treatment	Recyclable	0.50	0.16	0.38	176.74
	Biodegradable	5.68	6.13	0.01	
	Ordinary and inert	0.22	0.03	0.01	
	Special	39.16	1.52	11.14	
	Hazardous	134.54	514.57	165.20	
Final disposal	Recyclable	11.17	41.20	20.07	4,466.31
	Biodegradable	3,624.77	1,376.53	2,914.13	
	Ordinary and inert	584.45	1,138.61	550.72	
	Special	1,307.20	944.22	941.29	
	Hazardous	11.42	48.01	40.09	
Storage for later management	Recyclable	28.60	17.77	5.78	845.98
	Biodegradable	4.78	42.81	534.60	
	Ordinary and inert	0.58	2.46	6.76	
	Special	147.11	39.21	211.96	
	Hazardous	11.85	88.82	86.87	

Source: *Idsos Application*

The EPM Group managed 22,114.06 t of waste generated in 2016, including 191.32 t that had been stored the previous year. 75.14% of waste was reclaimed, and 20.23% was submitted to final disposal.

There was an increase of 20.69% in the amount of biodegradable waste that was reclaimed. The 86.87 t of hazardous waste stored to be managed in a later period include mostly equipment contaminated with PCB in a concentration greater than or equal to 50 ppm.





Management of waste generated by the EPM (T)					
Management	Type of waste	2014	2015	2016	Waste by type of management 2016
Reclamation	Recyclable	1,092.90	1,251.10	1,088.25	8,157.59
	Biodegradable	3,766.16	8,205.52	6,540.96	
	Ordinary and inert	0.49	20.64	0.51	
	Special	223.98	232.62	460.52	
	Hazardous	137.81	68.63	67.35	
Treatment	Recyclable	0.13	0.12	0.06	95.71
	Biodegradable	5.67	1.04	0	
	Ordinary and inert	0.16	0.02	0.01	
	Special	0.01	0.01	0.06	
	Hazardous	61.13	53.58	95.58	
Final disposal	Recyclable	11.10	18.19	7.67	3,569.86
	Biodegradable	3,615.86	1,301.40	2,475.78	
	Ordinary and inert	405.99	286.95	282.67	
	Special	1,276.48	821.66	784.57	
	Hazardous	1.13	7.93	19.17	
Storage for later management	Recyclable	8.70	4.71	5.76	520.41
	Biodegradable	4.78	40.98	456.98	
	Ordinary and inert	0.43	1.57	6.53	
	Special	143.34	34.17	47.15	
	Hazardous	11.73	12.76	4	

Source: *Idsos Application*

EPM managed 12,367.88 t of waste generated in 2016, including 104.60 t that had been stored the previous year. 66.09% of waste was reclaimed, and 28.92% was submitted to final disposal.

There was an increase of 97.97% in the amount of special waste that was reclaimed. The 4.00 t of hazardous waste stored to be managed in 2017 include mineral oils and elements contaminated with them, lead batteries, fluorescent lamps and containers with hazardous waste substances.





### Management of hazardous waste generated by the EPM Group (t)

Type of management	2014	2015	2016
Reclamation	696.85	502.50	89.62
Treatment	134.54	514.57	165.20
Final disposal	11.42	48.01	40.09
Storage for later management	11.85	88.82	86.87
<b>Total</b>	<b>854.66</b>	<b>1,153.90</b>	<b>381.78</b>

Source: Idsos Application

43.27% of hazardous waste was treated, and 23.47% was reclaimed. Only 40 t were disposed of. The main generating companies were EPM (49.51%), Delsur (26.01%) and Ensa (10.23%).

The generation of hazardous waste was reduced by 66.91%. Mineral oils (49.16%) and substances with PCB (34.27%) are the waste that was generated in larger quantities. With the exception of EPM, the Group did not export hazardous waste; waste not exported by the end of 2016 remains in custody.

### Management of hazardous waste generated by EPM (t)

Type of management	2014	2015	2016
Reclamation	137.81	68.63	67.35
Treatment	61.13	53.58	95.58
Final disposal	1.13	7.93	19.17
Storage for later management	11.73	12.76	4.00
<b>Total</b>	<b>211.80</b>	<b>142.90</b>	<b>186.10</b>

Source: Idsos Application

Of the 186 t of hazardous waste, 51.36% was treated and 36.19% was reclaimed. 19 t were submitted to final disposal. The largest amount of waste generated came from mineral oils (71.08%) and elements contaminated with PCB (6.49%).

EPM exported 6.45 t of hazardous waste, of which 53.46% accounts for substances with PCB and the remaining percentage accounts for minerals and a mix of water and oils contaminated with this same compound. Waste was delivered to an authorized agent.



Management of waste not generated by the EPM Group (t)			
Type of management	2014	2015	2016
Reclamation	4,059.62	2,084.35	4,019.13
Treatment	25.44	8.69	13.68
Final disposal	6,707.04	910.63	1,545.67
Storage for later management	75.95	25.33	213.18
<b>Total</b>	<b>10,868.06</b>	<b>3,029</b>	<b>5,791.66</b>

Source: *Idsos Application*

The information reported corresponds only to EPM, CHEC, CENS, ENSA and Aguas del Oriente. Of the 5,792 t of waste that is not generated by the EPM Group, but that in any case it manages, 2,683 t are timber and 1,947 t are extracted aquatic plants (macrophytes), 555 t are nonhazardous sludge and 508 t correspond to ordinary and inert waste removed from reservoirs, grids and clarifiers of the treatment plants. The remaining amount corresponds to miscellaneous waste. 95.11% of this waste is reported by EPM.

## Management indicators

- G4-EN23** Total weight of waste by type and disposal method. Electricity sector: include PCB waste as part of the total weight of hazardous and non-hazardous waste, as well as nuclear waste.
- G4-EN25** Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel convention.





## Other consumptions and efficient practices

---

It includes actions focused on the optimization of consumption, the efficient use of materials and supplies, and the minimization of environmental effects caused by their use within the EPM Group.

The most representative elements of consumption within the EPM Group are the water purification supplies, the dielectric oil used in energy generation, transmission, and distribution, and the paper used for administrative purposes.

These actions seek to raise awareness on the EPM Group's people about reducing, reusing, and recycling different supplies, when feasible, without having an impact on the quality of public utilities provided. It also aims at achieving an optimal dosage of chemicals used in water purification processes.

### Management in 2016

EPM obtained environmental license for the regeneration of dielectric oils and dechlorination, which allowed a self-supply of 100% of the dielectric oil in substations and lines.

Eegsa reduced more than 230 reams of paper thanks to electronic billing. ENSA implemented this practice in 16% of its customers and users, and structured the manual of sustainable purchasing for office supplies. Delsur co-processed 10.25 t of dielectric oil (with a concentration greater than 50 ppm of PCB) in cement kilns.



The EPM Group is taking steps to reduce the amount of paper used for administrative purposes, as well as to raise awareness among its employees to make a proper separation of this waste from the moment of its generation. This initiative has caused, for example, Delsur to recycle 1.88 t, and Eegsa over 19 t of paper.

EPM has installed in-situ disinfectant generation systems in drinking water treatment plants, minimizing the probability of occupational hazards caused by the storage of chlorine.

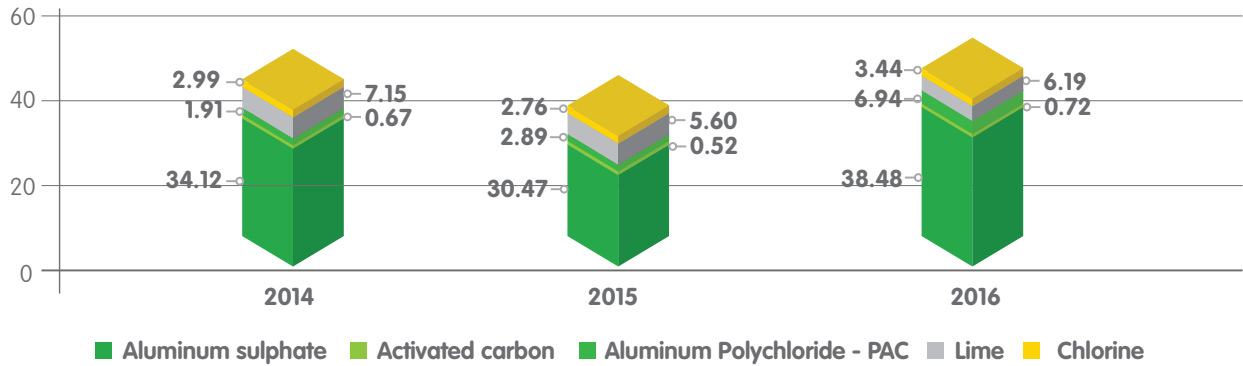
Several power distribution companies of the EPM Group undertook actions to optimize the use of dielectric oils, thus minimizing the amount of waste.

Delsur developed different projects for the reuse of waste, among which we can highlight the elaboration of terrariums using the glass covers of electric energy meters, the creation of flowerpots and tables with wooden spools of electric conductors, the elaboration of sculptures and furniture by students of a university using hardware removed from the electrical network, as well as the manufacture of different products woven with the coils of electric power meters.



Although the different companies of the EPM Group are working on various initiatives aimed at optimizing the use of raw materials and resources in their operations, the quantitative assessment of the environmental, social and economic effects is still incipient.

**Supplies used for water purification – EPM (t/Mm<sup>3</sup>)**



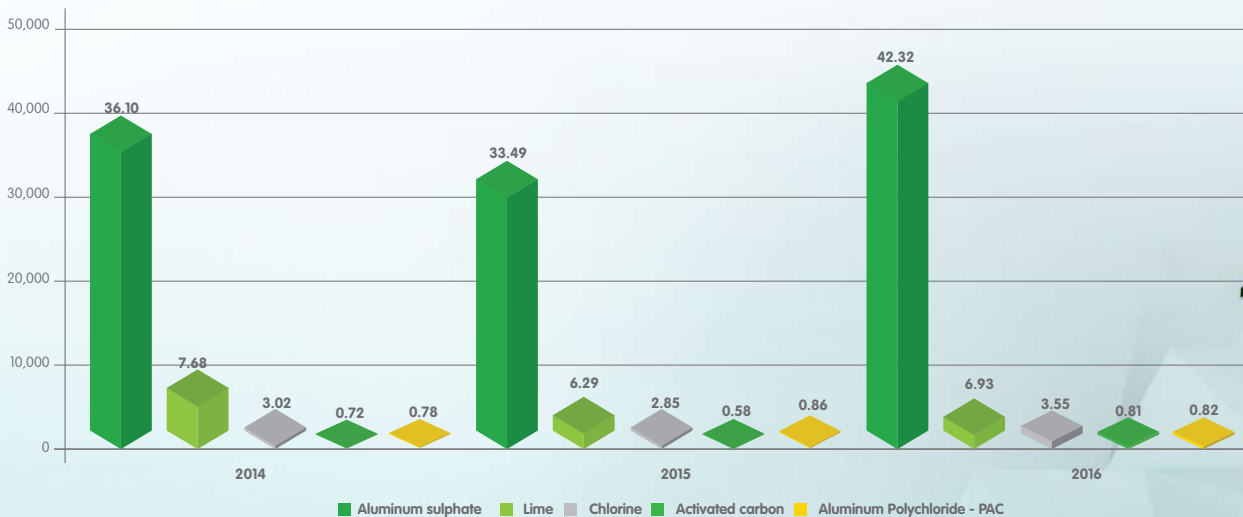
Source: *Idsos Application*

It includes for the first time information on Aguas Regionales EPM (Western operations.)

The amount of water purification supplies depends on the quality of the sources. The activated carbon removes compounds that give odor, color and taste to the water; the lime stabilizes the pH; and both polychloride and aluminum sulphate act as coagulants.

Supplies increased by 27.93% in 2016. Aluminum sulphate accounts for 69%, followed by aluminum polychloride (12.45%).

**Supplies used for water purification – EPM (t/Mm<sup>3</sup>)**



Source: *Idsos Application*



The amount of supplies used for water purification in EPM increased by 19.99% in 2016, except for aluminum polychloride that decreased by 7.05% compared to 2015.

Aluminum sulfate represents 77.75% of the consumption of the different water purification supplies; it is followed by the lime with 12.73%, which shows a behavior similar to that of the previous year.

Dielectric oil consumption at the EPM Group (t)				
Item		2014	2015	2016
Fresh oil required in	Existing infrastructure	181.09	203.11	52.73
	New projects or equipment	369.92	0	0
<b>Total</b>		<b>551.01</b>	<b>203.11</b>	<b>52.73</b>
Reused filtered oil		64.06	86.96	51.86
Percentage of reuse		11.63%	42.81%	98.35%

Source: Idsos Application

It includes consumption at EPM, CHEC and Delsur. Information from other power distribution affiliated companies was not available by the time this document was prepared.

Fresh dielectric oil consumption decreased by 74.04% in the EPM Group. All the fresh oil was used in existing infrastructure. Although the amount of reused filtered oil decreased by 40.37%, the reuse rate was almost 100% compared to 42.81% in 2015.

Dielectric oil consumption - EPM (t)				
Item		2014	2015	2016
Fresh oil required in	Existing infrastructure	173.57	198.96	49.26
	New projects or equipment	369.92	0	0
<b>Total</b>		<b>543.49</b>	<b>198.96</b>	<b>49.26</b>
Reused filtered oil		64.06	86.96	44.50
Percentage of reuse		11.79%	43.71%	90.33%

Source: Idsos Application

EPM reduced the consumption of fresh dielectric oil by 75.24% compared to 2015, thanks to the program for oil treatment and reuse in power plants, and to the oil regeneration internal process that allowed to recover 46.62% more oil than the required for operations.

EPM uses 93.42% of the dielectric oil required in the Group.





## Management indicators

- G4-EN1** Materials used by weight or volume. Electricity sector: report the inventory in use of low- and high-level solid and liquid PCBs in the equipment.
- G4-EN2** Percentage of materials used that are recycled input materials.

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# EPM Financial Report



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Empresas Públicas de Medellín E.S.P.

**Separate Financial Statements and Notes**  
December 31, 2016 and 2015

**EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P.**  
**SEPARATE STATEMENT OF FINANCIAL POSITION**

Years ended as of December 31, 2016 and 2015  
 Figures expressed in millions of Colombian pesos

	Notes	December 2016	December 2015 Restated	January 1, 2015 Restated
<b>Assets</b>				
<b>Non-current assets</b>				
Properties, plant and equipment, net	4	20,729,952	18,472,539	16,611,956
Investment properties	5	116,628	157,213	138,212
Goodwill	6	260,950	260,950	260,950
Other intangible assets	6	277,110	244,767	234,576
Investments in subsidiaries *	8	6,043,104	6,200,633	4,682,660
Investments in associates	9	2,434,417	2,431,939	2,431,939
Investments in a joint ventures	10	99	99	-
Trade and other accounts receivable	11	1,961,386	2,123,296	1,105,973
Other financial assets	12	1,522,810	2,391,070	2,437,551
Other assets	14	87,717	82,020	77,059
<b>Total non-current assets</b>		<b>33,434,173</b>	<b>32,364,525</b>	<b>27,980,877</b>
<b>Current assets</b>				
Inventories	15	115,080	97,402	107,518
Trade and other accounts receivable	11	1,365,826	1,667,161	1,105,098
Current tax assets	35	-	122,558	-
Other financial assets	12	379,000	55,599	1,793,824
Other assets	14	86,953	190,944	133,095
Cash and cash equivalents	16	519,078	487,182	284,923
<b>Total Current assets</b>		<b>2,465,937</b>	<b>2,620,846</b>	<b>3,424,458</b>
<b>Total assets</b>		<b>35,900,110</b>	<b>34,985,371</b>	<b>31,405,335</b>
<b>Liabilities and Equity</b>				
<b>Equity</b>				
Capital	17	67	67	67
Reserves	17	3,087,207	3,452,499	3,093,359
Other comprehensive income *	18	2,378,296	2,650,575	2,236,701
Retained earnings *	17	12,932,194	11,687,030	9,629,888
Profit for the year *	17	1,834,792	1,369,673	2,472,421
Other components of equity *		51,626	58,312	58,312
<b>Total equity</b>		<b>20,284,182</b>	<b>19,218,154</b>	<b>17,490,747</b>

**EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P.**  
**SEPARATE STATEMENT OF FINANCIAL POSITION**

Years ended as of December 31, 2016 and 2015  
 Figures expressed in millions of Colombian pesos

	Notes	December 2016	December 2015 Restated	January 1, 2015 Restated
<b>Liabilities</b>				
<b>Non-current liabilities</b>				
Credits and loans	19	9,532,101	7,012,001	7,711,595
Trade and other payables	20	30,275	31,574	15,102
Other financial liabilities	21 y 22	480,593	499,690	447,238
Employee benefits	23	254,884	203,880	193,206
Deferred tax liabilities	35	1,987,819	2,065,045	1,951,336
Provisions	25	209,296	375,265	372,724
Other liabilities	26	33,041	33,314	22,538
<b>Non-current liabilities</b>		<b>12,528,009</b>	<b>10,220,769</b>	<b>10,713,739</b>
<b>Current liabilities</b>				
Credits and loans	19	1,288,588	3,940,357	976,854
Trade and other payables	20	863,575	1,018,265	1,545,280
Other financial liabilities	21 y 22	304,518	181,661	235,788
Employee benefits	23	116,625	101,179	89,637
Income tax payable	35	55,665	-	154,359
Taxes contributions and rates payable	24	97,472	88,044	83,444
Provisions	25	220,762	50,613	37,011
Other liabilities	26	140,714	166,328	78,476
<b>Total current liabilities</b>		<b>3,087,919</b>	<b>5,546,447</b>	<b>3,200,849</b>
<b>Total liabilities</b>		<b>15,615,928</b>	<b>15,767,216</b>	<b>13,914,588</b>
<b>Total liabilities and equity</b>		<b>35,900,110</b>	<b>34,985,371</b>	<b>31,405,335</b>

\* The financial statements from January 1 through December 31, 2015 have been restated as described in note 2.25.2.  
 The accompanying notes are an integral part of the financial statements

**Jorge Londoño De la Cuesta**  
 Chief Executive Officer

**Jorge Andrés Tabares Ángel**  
 Chief Financial Officer

**John Jaime Rodríguez Sosa**  
 Accountant  
 T.P. 144842-T



**EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P.**  
**SEPARATE STATEMENT OF COMPREHENSIVE INCOME**

For the period from January 1 to December 31, 2016 and 2015  
 Figures expressed in millions of Colombian pesos

	Notes	2016	2015 Restated
<b>Continued operations</b>			
Rendering of services	27	7,000,077	6,649,461
Leases	27	35,907	32,435
Other income	28	1,388,223	146,533
		<b>8,424,207</b>	<b>6,828,429</b>
<b>Income from ordinary activities</b>			
Profit in sale of assets	27	38,750	17,902
		<b>8,462,957</b>	<b>6,846,331</b>
<b>Total income</b>			
Costs for rendering services	29	(5,316,727)	(4,223,433)
Administration expenses	30	(910,811)	(856,316)
Impairment loss recognised on trade receivables	11	(63,196)	(7,009)
Other expenses	31	(82,333)	(43,695)
Financial income	32	267,457	248,630
Financial expenses	32	(680,980)	(588,958)
Net exchange difference	33	227,779	(230,458)
Participation in the profit or loss of subsidiaries *		299,737	120,386
Equity method in associates and joint business *	34	32,457	325,686
		<b>2,236,340</b>	<b>1,591,163</b>
<b>Profit before tax</b>			
Income tax	35	(401,548)	(221,490)
		<b>1,834,792</b>	<b>1,369,673</b>
<b>Profit for the year after taxes of continued operations</b>			
		<b>1,834,792</b>	<b>1,369,673</b>
<b>Profit for the year</b>			
		<b>1,834,792</b>	<b>1,369,673</b>
<b>Other comprehensive income</b>			
<b>Items that will not be reclassified subsequently to the result of the year:</b>			
New measurements of defined benefit plans	18 y 35	(36,268)	247
Equity investments measured at fair value through equity	18 y 35	554,390	15,058
Reclassification of properties, plant and equipment to investment properties	18 y 35	9,700	3,731
Income tax related to components that will not be reclassified	18 y 35	(91,167)	(97,706)
Equity method in subsidiaries *	18 y 35	(93,153)	8,153
		<b>343,502</b>	<b>(70,517)</b>
<b>Items that may be reclassified subsequently to the result of the year:</b>			
<b>Cash flow hedging</b>			
Result recognized of the year	18 y 35	(23,738)	(7,790)
Reclassification adjustment		(70,669)	31,434
		46,931	(39,224)
<b>Income tax related to the components that can be reclassified</b>			
Result recognized of the period	18 y 35	11,834	18,785
		11,834	18,785
<b>Equity method insubsidiaries *</b>			
Result recognized of the period	18 y 35	(137,331)	473,396
Reclassification adjustment		(137,437)	478,816
		106	(5,420)
		<b>(149,235)</b>	<b>484,392</b>
		<b>194,267</b>	<b>413,874</b>
<b>Other comprehensive income, net of taxes</b>			
		<b>194,267</b>	<b>413,874</b>
<b>Total comprehensive income for the year</b>			
		<b>2,029,059</b>	<b>1,783,547</b>

\* The financial statements ended as of December 31, 2015 have been restated as described in note 2.25.2.  
 The accompanying notes are an integral part of the financial statements

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 T.P. 144842-T

EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P.  
**SEPARATE STATEMENTS OF CHANGES IN THE EQUITY**  
 Years ended on December 31, 2016 and 2015  
 Figures expressed in millions of Colombian pesos

	Capital issued (Note 17)	Reserves (Note 17)	Retained earnings * (Note 17)	Other components of equity *	Equity Investment (Note 18)	Defined benefit plans (Note 18)	Cash flow hedging (Note 18)	Other comprehensive income	Reclassification of properties, plant and equipment to investment properties (Note 18)	Result of the year in other comprehensive income of subsidiaries (Note 18) *	Total
<b>Balance as of January 1, 2015</b>	67	3,093,359	12,646,413	-	1,840,662	25,087	(10,995)	-	5	-	17,594,597
Retroactive application of changes in accounting policies	-	-	(544,104)	58,312	-	-	-	-	-	381,942	(103,850)
<b>Balance as of January 1, 2015 Restated</b>	67	3,093,359	12,102,309	58,312	1,840,662	25,087	(10,995)	-	5	381,942	17,490,747
Profit for the year	-	-	1,369,673	-	-	-	-	-	-	-	1,369,673
Other comprehensive income of the year net of income tax	-	-	-	-	(78,146)	(3,854)	10,995	3,330	-	481,549	413,874
<b>Comprehensive income for the year</b>	-	-	1,369,673	-	(78,146)	(3,854)	10,995	3,330	-	481,549	1,783,547
Surpluses and dividends declared	-	-	(56,139)	-	-	-	-	-	-	-	(56,139)
Movement of reserves	-	359,140	(359,140)	-	-	-	-	-	-	-	-
<b>Balance as of December 31, 2015</b>	67	3,452,499	13,056,702	58,312	1,762,516	21,233	-	3,335	-	863,491	19,218,155
<b>Balance as of January 1, 2016</b>	67	3,452,499	13,056,702	58,312	1,762,516	21,233	-	3,335	-	863,491	19,218,155
Impact of adoption IFRS 9 as of January 1, 2016 (Note 11)	-	-	(69,278)	-	-	-	-	-	-	-	(69,278)
<b>Balance as of January 1, 2016 Restated</b>	67	3,452,499	12,987,424	58,312	1,762,516	21,233	-	3,335	-	863,491	19,148,877
Profit for the year	-	-	1,834,792	-	-	-	-	-	-	-	1,834,792
Other comprehensive income of the year net of income tax	-	-	-	-	446,408	(18,497)	(11,904)	8,744	-	(230,485)	194,266
<b>Comprehensive income for the year</b>	-	-	1,834,792	-	446,408	(18,497)	(11,904)	8,744	-	(230,485)	2,029,058
Surpluses and dividends declared	-	-	(816,521)	-	-	-	-	-	-	-	(816,521)
Movement of reserves	-	(365,292)	365,292	-	-	-	-	-	-	-	-
Transfers to accumulated results	-	-	466,447	-	(466,447)	-	-	-	-	-	-
Participation in other components of equity of subsidiaries	-	-	(70,448)	(6,686)	-	-	-	-	-	(98)	(77,232)
<b>Balance as of December 31, 2016</b>	67	3,087,207	14,766,986	51,626	1,742,477	2,736	(11,904)	12,079	-	632,908	20,284,182

\* The financial statements from January 1 through December 31, 2015 have been restated as described in note 2.25.2.  
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EMPRESAS PÚBLICAS DE MEDELLÍN E. S. P.  
SEPARATE STATEMENTS OF CASH FLOWS

For the period from January 1 to December 31, 2016 and 2015  
Figures expressed in millions of Colombian pesos

	Notes	2016	2015 Restated
<b>Cash flows for operating activities:</b>			
<b>Profit of the year *</b>		<b>1,834,792</b>	<b>1,369,673</b>
<b>Adjustments to reconcile the net profit for the year to the net cash flows used in operating activities: *</b>		<b>1,141,376</b>	<b>1,396,471</b>
Depreciation and amortization of properties, plant and equipment and intangible assets	29 y 30	466,975	448,845
Impairment of property, plant and equipment and intangibles	29	628,519	-
Impairment of financial instruments	11	63,196	7,009
Impairment of investments in subsidiaries, associates and joint business	7	-	1,641
Reversal of loss of impairment of property, plant and equipment and intangible assets	28	(711,214)	-
Reversal of loss for impairment of financial instruments	11	(4,681)	(17,642)
(Profit) loss for exchange difference		(118,034)	608,193
(Profit) loss for valuation of investment properties	5	12,484	(8,652)
(Profit) loss for valuation of financial instruments and hedge accounting		694,598	350,365
Provisions, post-employment and long term defined benefit plans		118,596	55,728
Deferred income tax	35	(4,956)	34,788
Current income tax	35	406,504	186,702
(Income) or interest expense		-	137,080
(Profit) loss for disposal of properties, plant and equipment, intangibles and investment properties	27 y 31	(23,493)	-
Dividends from investments *	12	(32,433)	(327,327)
(Profit) loss for equity method *		(299,737)	(120,386)
Other income and expenses not effective		(54,948)	40,127
		<b>2,976,168</b>	<b>2,766,145</b>
<b>Movements in working capital:</b>			
(Increase)/decrease in inventories		(17,678)	9,087
(Increase)/decrease in debtors and other accounts receivable		(221,520)	1,378,269
(Increase)/decrease in other assets		(151,631)	(199,818)
Increase/(decrease) in creditors and other accounts payable		135,619	378,590
Increase/(decrease) in labor obligations		39,017	2,910
Increase/(decrease) in provisions		(63,400)	(32,554)
Increase/(decrease) in other liabilities		3,783	106,522
		<b>(275,810)</b>	<b>1,643,006</b>
Interest paid		(853,292)	(647,855)
Income taxes paid		(301,063)	(341,061)
<b>Net cash flows originated by operating activities</b>		<b>1,546,003</b>	<b>3,420,234</b>
<b>Cash flows for investment activities:</b>			
Acquisition of subsidiaries or business, net of cash acquired	8	(101,743)	(1,159,056)
Restitution of capital and premium on placement of shares		168,195	-
Acquisition of property, plant and equipment		(2,505,905)	(2,165,887)
Disposal of property, plant and equipment		36,737	-
Acquisition of intangible assets		(47,599)	(26,906)
Acquisition of investments in financial instruments		(417,417)	(18,308)
Disposal of investments in financial instruments		1,479,911	1,791,909
Dividends received from subsidiaries, associates and joint business		331,851	351,778
Other dividends received		32,433	93,457
Loans to related parties		55,829	(2,422,236)
Other cash flows from investment activities		48,606	10,448
<b>Net cash flows used by investment activities</b>		<b>(919,102)</b>	<b>(3,544,801)</b>
<b>Cash flows for financing activities:</b>			
Obtaining of public credit and treasury		2,158,104	2,111,637
Payments of public credit and treasury		(1,916,059)	(860,599)
Payments of liabilities for financial leasing		(831)	(762)
Dividends or surpluses paid	17	(816,521)	(991,139)
Other cash flows from financial activities		(20,175)	-
<b>Net cash flows (used) / originated by financial activities</b>		<b>(595,482)</b>	<b>259,137</b>
<b>Net cash and cash equivalents increase</b>		<b>31,419</b>	<b>134,571</b>
Effects of variations in exchange rates in the cash and cash equivalents		477	67,688
Cash and cash equivalent at the beginning of year		487,182	284,923
<b>Cash and cash equivalent at the end of the year</b>	16	<b>519,078</b>	<b>487,182</b>
Restricted resources	16	130,059	145,323

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Chief Executive Officer

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Chief Financial Officer

John Jaime Rodríguez Sosa  
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T.P. 144842-T

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# Notes to the separate financial statements of the Empresas Públicas de Medellín E.S.P. for the periods ended on December 31, 2016 and 2015.

(In millions of Colombian pesos, except when otherwise indicated)

## Note 1. Reporting entity

Empresas Públicas de Medellín E.S.P. (hereinafter, "EPM") is the holding company of a multi-Latin enterprise group that according to the International Financial Reporting Standards has as of December 31, 2016 a consolidation perimeter consisting of 45 companies and one structured entity, that have presence in the provision of public utilities in Colombia, Chile, El Salvador, Guatemala, Mexico and Panama.

EPM is a municipal decentralized entity created in Colombia through Decision 58 dated August 6, 1955 issued by the Administrative Council of Medellín, as an autonomous public institution. It was transformed into an industrial and commercial government company through Decision 069 of December 10, 1997 of the Medellín Council. Due to its juridical nature, EPM has administrative, and financial autonomy and its own equity according to Article 85 of Law 489 of 1998. The capital stock with which the company was constituted and operates with, as well as its equity, is of a public nature, and it's only owner is the Municipality of Medellín. Its main corporate domicile is located at Carrera 58 No. 42-125 in Medellín, Colombia. It has not established a term of duration.

EPM provides domiciliary public services of aqueduct, sewage and gas distribution. It also can provide the domiciliary public utilities of cleaning, waste treatment and utilization, as well as the supplementary activities that are related to abovementioned public utility services. Also, the Company participates in the telecommunications business, a segment in which since August 2014 the Company has significant influence, through UNE EPM Telecomunicaciones S.A. and its affiliates: Edatel S.A. E.S.P., Orbitel Servicios Internacionales S.A. - OSI, Cinco Telecom Corporation CTC y Colombia Móvil S.A.; Inversiones Telco S.A.S. And its affiliate Emtelco S.A.; provides voice, data, Internet, professional services, and data center services, among others. As of December 31, 2016 Empresa de Telecomunicaciones de Pereira S.A. - ETP was merged with UNE EPM Telecomunicaciones S.A. (absorbing entity) and Orbitel Comunicaciones Latinoamericanas S.A. - OCL was liquidated.

The consolidated financial statements of EPM corresponding to the year ended as of December 31, 2016 and 2015, were authorized by the Board of Directors to be published on March 14, 2017.

### 1.1 Translation of financial statements

These financial statements have been translated into English for the convenience of English-speaking readers. The financial statements are the English translation of those originally prepared by the Company in Spanish and presented in accordance with International Financial Reporting Standards.

### 1.2 Legal and regulatory framework

The activity that EPM carries out, i.e., domiciliary public utility services, is regulated in Colombia mainly by Law 142, Public Utilities Act, and Law 143 of 1994, the Electricity Act.

The functions of control, inspection and supervision of the entities that provide domiciliary public utilities are exercised by the Office of the Superintendent of Domiciliary Public Utilities (SSPD, for its Spanish initials).

Because of being a municipal decentralized entity, EPM is subject to the political control of the Council of Medellín, to the fiscal control of the Office of the General Comptroller of Medellín, and to the disciplinary control of the Attorney General's Office of the Nation.

### 1.3 Regulation commissions



Decree 1524 of 1994 delegates in the regulation commissions the presidential function of stating general policies of administration and control of efficiencies in domiciliary public utilities.

These entities are:

- The Energy and Gas Regulatory Commission (CREG, for its Spanish initials), a technical body attached to the Ministry of Mines and Energy (MME), that regulates the rates for energy sales and the aspects related to the operation of the Wholesale Energy Market (MEM, for its Spanish initials) and to the provision of electric power and gas services.  
Regulatory Commission of Drinking Water and Basic Sanitation (CRA, for its Spanish initials), regulates the rates of aqueduct, sewage and waste management, a technical body attached to the Ministry of Housing, City and Territory.

### 1.3.1 Regulation by sector

#### 1.3.1.1 Activities of the aqueduct, sewage and waste management sector

Law 142, Public Utilities Act, defined the aqueduct, sewage and cleaning services:

**Aqueduct:** Also called drinking water domiciliary public utility. Activity consisting of the municipal distribution of water, which is fit for human consumption, including its connection and measurement. It includes supplementary activities such as water catchment and its processing, treatment, storage, conduction and transportation.

**Sewage:** Activity that consists of the municipal collection of waste, mainly liquid, through piping and conduits. It includes the supplementary activities of transportation, treatment, and final disposal of such waste.

**Waste Management:** Activity that consists of the municipal collection of waste, mainly solid waste. It includes the supplementary activities of transportation, treatment, utilization, and final disposal of such waste.

#### 1.3.1.2 Electric sector activities

Law 143 of 1994 segmented the electric power service into four activities: generation, transmission, distribution, and commercialization, which may be developed by independent companies. The purpose of the legal framework is to supply the demand of electricity under economic and financial feasibility criteria and to tend to an efficient, secure and reliable operation of the sector.

**Generation:** It consists of the production of electric power from different sources (conventional or non-conventional), developing this activity either exclusively or combined with another or other activities of the electric sector, regardless of which of them is the main activity.

**Transmission:** The national transmission activity is the transportation of energy in the National Transmission System (STN, for its Spanish initials). It encompasses the set of lines, with its corresponding connection equipment that operate in tensions that are greater than or equal to 220 kV. The National Transmitter is the legal entity that operates and transports electric power in the STN or has incorporated a company the purpose of which is the development of such activity.

**Distribution:** It consists of transporting electric power through a set of lines and substations, with the associated equipment, that operate at tensions that are lower than 220 KV.

**Commercialization:** An activity that consists of the purchase of electric energy in the wholesale market and its sale to other market participants or to the final regulated and non-regulated users, developing this activity either exclusively or combined with other activities of the electric sector, regardless of which of them is the main activity.

Law 143 of 1994 prohibits the vertical integration between generators and distributors, but allows both agents to be able to carry out the commercialization activity. For transmission, it defined that companies that carry out this activity must have it as their exclusive object. However, the companies that as of the passing of Law 143 of 1994 were vertically integrated could continue doing it, provided that they have separate accountings for the different activities.

### 1.3.1.3 Activities of the natural gas sector

Law 142 of 1994 defined the legal framework for the provision of domiciliary public utilities, an environment in which natural gas is defined as a public service (utility).

**Gas:** It is the set of activities targeted to the distribution of gas fuel, through pipes or another mean, from a place of collection of large volumes or from a central gas pipeline to the facilities of a final consumer, including their connection and measurement. This Law will also be applied to the supplementary activities of commercialization from the production and transportation of gas through a main gas pipeline, or through other means, from the generation site and to that where it connects to a secondary network.

### 1.4 External Audit

As included in the Code of Good Corporate Governance, the external audit is established as a control mechanism with the purpose of auditing the financial statements and the accounting policies in accordance with International Financial Reporting Standards, as well as the provision of an independent opinion with respect to the reasonableness with which those financial statements indicate the company's financial position as of the report date of each accounting exercise.

## Note 2. Significant accounting policies

### 2.1 Bases for preparation of the financial statements

The separate financial statements of EPM are prepared in conformity with the International Financial Reporting Standards (hereinafter, IFRS) and the International Accounting Standards (hereinafter, IAS) issued by the International Accounting Standards Board (hereinafter, IASB), as well as the interpretations issued by the Interpretations Committee (hereinafter, IFRIC). Said financial statements are harmonized with the accounting principles generally accepted in Colombia set forth in the Annex to decree 2784 and its subsequent modifications adopted by the General Accounting Office of the Nation by means of Resolution 743 of 2013 and its modifications.

The presentation of financial statements in conformity with IFRS require making estimates and assumptions that affect the amounts reported and disclosed in the financial statements, without undermining the reliability of the financial information. Actual results may differ from those estimates. The estimates and assumptions are constantly revised. The review of accounting estimates is recognized in the period where the estimates are revised if the review affects such period or in the review period and future periods, if it affects both the current and the future periods. The estimates made by Management, in applying the IFRS, that have a material effect on the financial statements, and those that imply significant judgments for the annual financial statements, are described in greater detail on Note 3 - Significant accounting judgments, estimates, and causes for uncertainty in the preparation of the financial statements.

EPM and each subsidiary present separate financial statements for compliance before the controlling entities and for internal administrative follow-up purposes and provide information to the investors. Likewise, EPM as main parent company, presents consolidated financial statements under IFRS.

Assets and liabilities are measured at cost or amortized cost, with the exception of certain financial assets and liabilities and the investment properties that are measured at fair value. The financial assets and liabilities measured at fair value correspond to those that are classified in the category of fair value assets and liabilities through profit and loss, and for some equity investments at fair value through equity, all the financial

derivatives, assets and liabilities recognized that are designated as hedged items in a fair value hedging through other comprehensive income and those that do not comply with hedging accounting through profit or loss, the carrying value of which is adjusted with the changes in fair value attributed to the risks subject matter of the hedging. The separate financial statements are presented in its functional currency Colombian pesos and their figures are stated in millions of Colombian pesos.

## 2.2 Classification of assets and liabilities into current and non-current

An asset is classified as current asset when it is mainly maintained for negotiation purposes or it is expected to be realized over a term not to exceed one year after the period being reported, or it is cash and cash equivalents that is not subject to restrictions for exchange or for being used in the cancellation of a liability over a term not to exceed one year after the period being reported. All other assets are classified as non-current assets.

A liability is classified as current liability when it is mainly kept for negotiation purposes or it is expected to be liquidated over a term not to exceed one year after the period being reported or when EPM does not have an unconditional right to postpone its liquidation for at least one year after the period being reported. All other liabilities are classified as non-current liabilities. Derivative instruments for which the hedging accounting does not apply are classified as current or non-current, or they are separated into current and non-current portions, based upon the evaluation of the facts and circumstances (i.e., the underlying contractual cash flows):

- When EPM keeps a derivative, for which the hedging accounting is not applied, during a term exceeding twelve (12) months as from the presentation date, the derivative is classified as non-current (or divided into current and non-current portions) so that it corresponds with the classification of the underlying item.
- Implicit derivatives that are not closely related to the host contract are classified coherently with the cash flows of the host contract.
- Derivative instruments that are designated as hedging instruments and that are effective, are classified coherently with the classification of the underlying hedged item. The derivative instrument is divided into a current portion and another non-current only if such assignment can be made reliably.

## 2.3 Cash and cash equivalents

The cash and cash equivalents in the statement of financial position and in the statement of cash flows include the money in cash and banks and the high-liquidity investments, easily convertible in a determined amount of cash and subject to a non-significant risk of changes in their value, with maturity of three (3) months or less from their acquisition date. Callable bank overdrafts that are an integral part of the cash management of EPM represent a cash and cash equivalents component in the statement of cash flows.

## 2.4 Investments in subsidiaries, associates and joint ventures

A subsidiary is an entity controlled by EPM. The control is achieved when EPM controls the relevant activities of the subsidiary, which are generally the operating and financial activities, is exposed to or has a right to the variable returns of the subsidiary and has capacity to influence in those returns.

An associate is an entity on which EPM has significant influence over the financial and operation policy decisions, without getting to have their control or joint control.

A joint venture is a joint agreement that EPM controls jointly with other participants, where the latter keep a contractual agreement that establishes the joint control and are entitled to the net assets of the agreement. On the acquisition date, EPM recognizes as goodwill the excess of the acquisition cost over the share of the net fair value of the identifiable assets, liabilities and contingent liabilities assumed of the associate or joint venture, is recognized as goodwill. Goodwill is included in the carrying value of the investment, and is neither amortized nor individually subject to impairment tests of its value.

Investments in subsidiaries are measured in the separate financial statements by equity method, except if the investment or a portion thereof is classified as held for sale, in which case it is accounted for in accordance

with IFRS 5 Non-current Assets Held For Sale and Discontinued Operations. Through this accounting methodology, the investment is recorded initially at cost and is subsequently adjusted in terms of the changes experienced by it, after the acquisition, the portion of the net assets of the entity that corresponds to the investor. EPM's income statement includes its participation in the income statement of the participated entity and the other comprehensive income includes its participation in the other comprehensive income of the participated entity. When any variations take place in the percentages of participation in the subsidiary that do not imply a loss of control, the effect of these changes is recognized directly in equity. When the participation of the company in the losses of a subsidiary exceeds the participation of the company therein (which includes any long term participation that, in substance, forms part of the net investment of the company in the subsidiary), the company ceases to recognize its participation in future losses. The additional losses are recognized provided that the company has acquired any legal or implied obligation or had made payments in the name of the subsidiary. When the subsidiary subsequently has profits, the company resumes the recognition of its participation therein only after its participation in such profits is equal to the participation in the losses not recognized.

The investments in subsidiaries are accounted for using equity method from the date on which the participated entity becomes a subsidiary.

Investments in associates and joint businesses are maintained at cost in the separated financial statements.

The dividends received from the subsidiary, are recognized as lower value of the investment, and those received from the associate or joint ventures are recognized directly in the profit and loss of the period when the right by EPM to receive the payment is established.

The Company analyzes periodically the existence of impairment indicators and if necessary, recognizes losses for impairment in the investment of the subsidiary, associate or joint venture. Impairment losses are recognized in the Profit and Loss for the period and are calculated as the difference between the recoverable value of the subsidiary, associate or joint venture, the latter being the higher between the value in use and its fair value less the costs necessary for its sale and its carrying value.

When the control of the subsidiary is lost, or the significant influence on the associate or the joint control on the joint ventures is lost, EPM measures and recognizes any residual investment that it maintains in it at its fair value. The difference between the carrying value of the subsidiary, associated or joint ventures and the fair value of the residual investment retained, with the applicable sale value, is recognized in profit and loss for the period.

## **2. 5 Joint Operations**

A joint operation is a joint agreement whereby the parties that have joint control of the agreement, have the right to the assets and obligations with respect to the liabilities, related to the agreement.

In joint operations, EPM, recognizes its share as follows: its assets, including its share in the assets jointly held; its liabilities, including its share in the liabilities jointly incurred in; its revenues from ordinary activities coming from the sale of its share in the product that arises from the joint operation; its share in the revenues from ordinary activities coming from the sale of the product that is made by the joint operation; and its expenses, including its share in the jointly incurred in expenses. EPM records the assets, liabilities, revenues from ordinary activities, and expenses related to its participation in a joint operation according to the guidelines applicable in particular to the assets, liabilities, revenues from ordinary activities, and expenses.

## **2. 6 Functional Currency and Foreign Currency**

The functional currency of EPM, is the Colombian peso, because it is the currency of the main economic environment where it operates, i.e., in the one that it generates and uses cash.

The operations denominated in foreign currency are initially recorded at the exchange rates of the functional currency in force and effect on the transaction date. Subsequently, the foreign-currency denominated

monetary assets and liabilities are translated using the exchange rate of the functional currency, in force and effect as of the period's closing date; the non-monetary items that are measured at their fair value are translated using the exchange rates as of the date when their fair value is determined, and the non-monetary items that are measured at historic cost are translated using the exchange rates in force and effect as of the date of the original transactions.

All exchange differences are recognized in the statement of comprehensive income in the section "statement of income" except for the monetary items that provide an effective hedging for a net investment in a foreign business. These items and their tax effects are recognized in the other comprehensive income until the disposal of the net investment, at which moment they are recognized in the result for the period, as well as the exchange differences coming from foreign-currency loans to the extent that they are considered as adjustments of interest costs.

## 2.7 Ordinary Income

Ordinary income corresponds basically to the result of the company's main activity that is the rendering of domiciliary public utilities of waterworks, sewerage, electric power and distribution of fuel gas; these are recognized when the service is provided or at the time of the delivery of the goods, to the extent that it is probable that the economic benefits enter the company and that the income may be reliably measured. The income is measured at the fair value of the consideration received or to be received, excluding taxes or other obligations. Discounts granted are recorded as adjustment of the income.

The company assesses its income agreements based on specific criteria to determine when it acts in a capacity of principal or of agent. The Group acts in a capacity of agent in some contracts.

The most representative revenues of the energy business are the following:

**Reliability charge:** remuneration that is paid to a generating agent for the availability of generation assets with the characteristics and parameters declared for the calculation of the firm energy for the reliability charge - ENFICC (Firm Energy for Reliability Charge, for its initials in Spanish), that guarantees the fulfillment of the Firm Energy Obligation - OEF (for its initials in Spanish) that was assigned to it in an auction for the assignment of firm energy obligations or in the mechanism that may replace this.

**Long term agreements:** power purchase and sale agreements entered into between commercialization agents and generators that is settled in the power exchange, under this modality of energy contract the generators and the commercialization agents freely agree quantities and prices for the purchase and sale of electric power at terms in excess of 1 day.

For the case of the long term power purchase agreements that have prices lower than those of the market and which intention is not using the power purchased in the operation but reselling it in a market to obtain benefits, it is considered that it does not meet the exception of own use.

**Secondary market of firm energy or secondary market:** bilateral market in which generators negotiate among themselves a backup agreement to guarantee, during a determined period of time, the partial or total fulfillment of the obligations of firm energy acquired by one of them.

**Sale of energy non regulated market:** It is the energy that is sold in the market to customers which maximum demand is higher than a value in MW (megawatts) or than a minimum monthly consumption of energy in MWh (megawatts per hour), defined by the regulating entity, by legalized installation, for which the customers does not use public power transportation networks and use it in the same property or in adjacent properties. Their purchases of electricity are made at prices freely agreed between buyer and seller.

**Sale of energy regulated market:** It is the energy that is sold to customers whose monthly consumption is lower than a predetermined value and do not have the power to negotiate the price paid for it, given that both items are established by the regulations; usually the customer uses the energy for its own consumption or as input for its manufacturing processes and not to carry out commercialization activities thereof.

**Automatic generation control - AGC:** it is a system for the control of secondary generation, used to accompany the changes in the load through the generation, controlling the frequency within a range of operation and the scheduled interchanges. The AGC may be programmed in a centralized, decentralized or hierarchical manner.



Firm energy: it is the incremental contribution by generation plants of a company to the interconnected system, which is made with a 95% reliability and is calculated based on the methodology approved by the Commission and in the operating planning models used in the national interconnected system.

The gas revenues result from the distribution and sale of natural gas to the regulated and non-regulated markets.

In the water business the revenues come from the provision of water and sewage services.

At the time of the revenue recognition the company assesses, based on specific criteria, when it acts as principal or as commission agent, and thus be able to determine if the revenues should be recognized gross or net for the commercialization activities.

The revenues and costs from contracts are recognized as a function of the stage of completion, which is measured as a function of the costs incurred to date as a percentage of total estimated costs for each contract. When the result of a contract cannot be reliably measured, the revenues are recognized only up to the point where the expense incurred in meets all the conditions to be recovered; expected losses are immediately recognized. For the financial instruments measured at amortized cost, the interest gained or lost is recorded using the effective interest rate method, which is the interest rate that accurately discounts the future flows of cash payments and collections throughout the financial instrument's expected life, or a lower duration period, as applicable, with respect to the net carrying value of the financial asset or liability. Interest earned is included in financial revenues in the statement of comprehensive income within the result-for-the-period section. Dividend revenues are recognized when the right of the company to receive such payment is established.

Revenues coming from operating leases over investment properties are recorded on a linear fashion throughout the lease term.

## 2. 8 Construction Contracts

When contract results can be reliably measured, EPM recognizes the revenues and expenses associated to construction contracts using the advance-level method, as a function of the proportion represented by the costs earned by the work conducted to that date and the estimated total costs up to its completion.

The cost incurred in includes the costs, including borrowing costs directly related to the contract, until the work has been completed. Administrative costs are recognized in the result for the period.

When the result of a contract under course cannot be reasonably estimated, the revenues thereof are recognized to the extent that it is probable to recover the costs incurred in. In those projects where it is probable that costs are greater than revenues, the expected losses are immediately recognized.

The payments received from the customer before the corresponding work has been carried out, are recognized as a liability in the Statement of Financial Position as other financial liabilities.

The difference between the revenues recognized in the income statement and the billing is presented as asset in the statement of financial position denominated "Trade Debtors and other receivables", or as liability denominated "Other financial liabilities".

## 2. 9 Government grants

Government's subsidies are recognized at fair value when there is reasonable assurance that the subsidies will be received and that all conditions connected to them will be met. The grants that pretend to offset costs and expenses already incurred in, without subsequent related costs, are recognized in the income statement when they become enforceable. When the grants related to an asset, it is recorded as deferred income and is recognized in the result for the period on a systematic basis throughout the estimated useful life of the corresponding asset. The benefit of a government loan at an interest rate below market is treated as a government subsidy, measured as the difference between the amounts received and the fair value of the loan based upon the market interest rate.



## 2.10 Taxes

In the country's fiscal structure, the regulatory framework and the plurality of operations make the company to be taxpayer of taxes, rates and contributions of the national and territorial levels. These are obligations that are originated by the central government, the departments, the municipal entities and other tax collector entities, once the conditions provided in the corresponding regulations issued are fulfilled.

Amongst the most relevant taxes, we detail the income tax and the Value Added Tax:

### Income tax

**Current income tax:** The current income tax assets and liabilities for the period are measured by the amounts that are expected to be recovered or paid to the fiscal authorities. The income tax expense is recognized in the current tax according to the cleaning made between the fiscal income and the book profit or loss affected by the income tax rate of the current year and pursuant to the provisions of the tax norms in each country. The tax rates and norms used for computing those values are those that are approved at the end of the period being reported, in the countries where EPM operates and generates taxable profits.

The fiscal profit differs from the profit reported in the statement of income for the period due to the revenue and expense items that are imposable or deductible in other years and items that shall not be taxable or deductible in the future.

Current Income tax assets and liabilities are also offset if they relate to the same fiscal authority and there is the intention to liquidate them for the net value or to realize the asset and liquidate the liability simultaneously.

### Deferred income tax

The deferred income tax is recognized using the liability method calculated on the temporary differences between the fiscal bases of the assets and liabilities and their carrying values. The deferred tax liability is generally recognized for all imposable temporary differences and the deferred tax asset is recognized for all deductible temporary differences and for the future offsetting of fiscal credits and unused fiscal losses to the extent that it is probable the availability of future tax gains against which they can be imputed. Deferred taxes are not discounted.

The deferred tax assets and liabilities are not recognized if the temporary difference arises from the initial recognition of an asset or a liability in a transaction that is not a business combination and that, at the moment of the transaction, affected neither the book gain nor the fiscal gain or loss; and for the deferred tax liability case, whenever it arises the initial recognition of goodwill.

The deferred tax liabilities related to investments made in subsidiaries, associates and participations in joint ventures, are not recognized if the timing of the reversal of temporary differences can be controlled and it is probable that those differences will not be reversed in the near future and the deferred tax assets related to investments made in subsidiaries, associates and participations in joint ventures shall revert in the near future and it is probable the availability of future taxable profits against which these deductible differences will be imputed.

The carrying value of the deferred tax assets is reviewed in each presentation date and they are reduced to the extent that it is no longer probable that there is enough taxable profits to use for the entire or one part of the deferred tax asset. The deferred tax assets that are not recognized are reassessed on each report date and are recognized to the extent that it is probable that future taxable profits allow their recovery.

Deferred tax assets and liabilities are measured at the fiscal rates expected to be applied in the period when the asset is realized or the liability is cancelled, based upon the fiscal rates and norms that were approved on the presentation date, or the approval procedure of which is about to be completed for such date. The measurement of the assets and liabilities for deferred taxes will reflect the tax consequences that would derive

from the manner in which the company expects, at the end of the reporting period, to recover or settle the carrying value of its assets and liabilities.

The deferred tax assets and liabilities must be presented as non-current.

The deferred tax assets and liabilities are offset if there is a legally enforceable right for that and are related to the same tax authority.

The deferred tax is recognized in the result for the period, except that related to items that are recognized outside the results; in this latter case, it will be presented in the other comprehensive income or directly in equity.

In order to measure the liabilities for deferred taxes and the assets for deferred taxes for investment properties that are measured using the fair value model, the book value of those properties is presumed that will be recovered entirely through the sale, unless the presumption is refuted. The presumption is refuted when the investment property is depreciable and is maintained within a business model which objective is to consume substantially all economic benefits generated by the investment property in the time, and not through the sale. The management reviewed the company's investment properties portfolio and concluded that none of the investment properties of the company is maintained under a business model which objective is to consume substantially all the economic benefits generated by the investment properties in time and not through the sale. Therefore, the management has determined that the presumption of "sale" established in the modifications to IAS 12 Income tax, is not refuted.

When the current tax or deferred tax arises from the initial accounting of the business combination, the tax effect is considered within the accounting of the business combination.

#### **Value Added Tax - VAT**

The company belongs to the common regime because it sells goods and renders services that are taxed and obtains exempt income for exports. Currently in Colombia the power, waterworks, sewerage and domiciliary gas are excluded from this tax.

In Colombia the general rate of this tax is 16% existing special rates in accordance with the corresponding good or service, which range from 1.6% to 10% and for sumptuary consumptions, differential rates range from 20 to 35 percent.

In Colombia, in the generation of income excluded in the particular case of domiciliary public utilities, the VAT paid in the purchases forms part of a higher value of the cost. In addition, when taxed income is generated, that is when goods or services taxed are sold, the VAT paid in the purchase of acquisition of inputs for these sales will be discountable from the value payable of the tax. When the company generates income that are excluded from the VAT, but at the same time generates income that are exempt and/or taxed, it is necessary to make a pro rata adjustment of the VAT paid in order to determine what is the percentage of VAT to be discounted.

#### **Wealth tax**

The wealth tax is calculated in accordance with the legal tax regulations in effect. The calculation is made for each year while said tax is in effect and is recorded in the comprehensive income statement as expense.

#### **2.11 Non-current assets held for sale and discontinued operations**

Non-current assets and the groups of assets for disposal purposes are classified as held for sale if their carrying value will be recovered through a sales transaction, instead of by their continued use; these assets or groups of assets are presented separately in the statement of financial position as current assets and liabilities at their carrying value or their fair value less costs of sale, whichever is lower, and are neither depreciated nor amortized as from the date of their classification.

This condition is met if the asset or group of assets is available, in their current conditions, for immediate sale, the sales transaction is highly probable and is expected to be done within the year subsequent to the classification date.

Income, costs and expenses from a discontinued operation are presented separately from those from continued operations, in a single item after the income tax, in the comprehensive income statement of the current period and of the comparative period of the previous year, even though EPM retains an interest that does not grant control over the subsidiary after the sale.

## 2.12 Property, plant and equipment

Property, plant and equipment are measured at cost, net of accrued depreciation and accrued impairment losses, if any. The cost includes the acquisition price; the costs directly related to putting the asset at the place and condition necessary to operate in the way foreseen by EPM; the costs corresponding to loans of the construction projects that take a substantial period to be completed, if the requirements of recognition are complied with; and the present value of the expected cost for the dismantlement of the asset after its use, if the criteria for recognition for a provision are met.

Constructions in progress are measured at cost less any loss for impairment recognized and includes those disbursements that are indispensable and that are directly related to the construction of the asset, such as professional fees, work supervision, civil works and, in the case of those assets qualified, the borrowing costs are capitalized. Those constructions in progress are classified in the proper categories of properties, plant and equipment at the time of their completion and when they are ready to use. The depreciation of these assets starts when they are ready to use in accordance with the same basis as in the case of other elements of property, plant and equipment.

In EPM, all additions or improvements made on the assets are capitalized as a greater value thereof, provided that any of the following conditions is met: a) They increase their useful life; b) They increase their productive capacity and operating efficiency thereof; and c) They reduce costs to the Company. All other repair and maintenance costs are recognized in the statement of comprehensive income as incurred.

Inventories of spare parts for specific projects, which it is expected that will not have rotation in one year and that meet the criteria to be capitalized, known as replacement assets, are presented in properties, plant and equipment.

The depreciation initiates when the asset is available to be used and is calculated linearly through the estimated useful life of the asset as follows:

Plants, ducts and tunnels	50 to 100 years
Construction	10 to 100 years
Equipment	
Networks, lines and cables	
Electrical transmission network	30 to 40 years
Electrical distribution network	30 to 40 years
Aqueduct network	40 to 80 years
Residual waters network	30 to 80 years
Gas network	60 to 80 years
Buildings	50 to 100 years
Communications and computing equipment	5 to 40 years
Machinery and equipment	7 to 40 years
Furniture, fixtures and office equipment	10 to 15 years
Land	Not depreciate

These are determined considering, among others, the manufacturer's technical specifications, and the knowledge of the technicians that operate and maintain the assets, the geographical location and the conditions to which it is exposed.

EPM calculates the depreciation by components, which implies depreciating individually the parts of the asset that should have useful lives different from that of the asset. The depreciation of assets is calculated for all asset classes (except for land); the depreciation method used is the straight line and it is calculated taking into account the residual value for the assets (vehicles), which is not part of the depreciable amount.

A component of property, plant and equipment and any significant part initially recognized, is written-off once disposed of or when it is not expected to obtain future economic benefits from its use or disposal. The gain or loss at the moment of writing the asset off, calculated as the difference between the net value of the disposal and the carrying value of the asset, is included in the statement of comprehensive income.

Any residual values, useful lives, and depreciation methods for the assets are revised and adjusted prospectively every exercise closing, if required.

### **2.13 Leases**

The determination of whether an agreement constitutes or contains a lease is based upon the essence of the agreement at its initial date, if compliance with the agreement depends upon the use of a specific asset(s), or if the agreement grants a right of use of the asset.

Leases are classified into financial and operating leases. A lease is classified as financial lease whenever it substantially transfers all the risks and benefits inherent to the ownership of the asset leased to the lessee; otherwise, it is classified as an operating lease.

#### **EPM as a lessee**

The assets leased under financial leases are recognized and presented as assets in the statement of financial position at the beginning of the lease, for the fair value of the asset leased or the present value of the minimum lease payments, whichever is lower. The corresponding liability is included in the statement of financial position as a financial lease liability. These assets are not legally owned by the company, and for this reason, until it exercises the purchase option, it cannot freely dispose of them. They are presented in each kind of assets to which they belong.

The assets leased under financial leases are depreciated throughout the useful life of the asset using the straight-line method. However, if there were no reasonable certainty that EPM shall get the ownership upon the lease term termination, the asset is depreciated throughout its estimated useful life or over the lease term, whichever is lower. Lease payments are divided between financial expenses, and debt reduction. The financial cost is recognized in the statement of comprehensive income of the period, unless they could be directly attributable to qualifying assets, in which case they are capitalized in conformity with the entity's policy for borrowing costs. Contingent lease installments are recognized as expenses in the period where incurred.

All payments for operating leases, including the incentives received, are recognized as expenses in the statement of comprehensive income, on a linear basis throughout the lease term, except when another systematic basis for distribution results being more representative because it reflects more adequately the timing pattern of the benefits of the lease for the user.

#### **EPM as a lessor**

Assets rented under financial leases are not presented as property, plant and equipment given that the risks associated to the ownership have been transferred to the lessee; rather, a financial asset is recognized.

Land and buildings rented under operating leases are presented as investment properties, and the other assets given under operating lease are presented as property, plant and equipment. Initial direct costs incurred in the negotiation of an operating lease are added to the carrying value of the asset leased, and are recognized as expenses throughout the lease term on the same basis as the revenues from the lease. Financial lease revenues are distributed during the lease term in order to reflect a constant yield rate in the net investment. Contingent leases are recognized in the period when obtained.

#### **2.14 Borrowing costs**

Borrowing costs that are directly attributable to the acquisition, construction or production of an asset that necessarily takes substantial time to be prepared for their destined use or sale, are capitalized as part of the cost of the respective asset until the asset is ready for their intended use. The revenue from the temporary investment in specific loans pending to be consumed in qualified assets is deducted from the borrowing costs that qualify for their capitalization. All other borrowing costs are recorded as expenses in the period when incurred. Borrowing costs consists of interest and other costs incurred in by EPM with respect to the loan of funds. To the extent that the funds derive from generic loans and are used to obtain a qualified asset, the value of the costs susceptible of capitalization is determined by applying a capitalization rate to the disbursements made in that asset.

The capitalization of borrowing costs is initiated on the date on which the following conditions are met:

- Disbursements are incurred in respect to the asset.
- Costs are incurred for loans, and
- The necessary activities to prepare the asset for the use to which it is intended or for its sale are carried out.

The capitalization of the borrowing costs is suspended during the periods in which the performance of activities of a qualified asset is interrupted for periods in excess of one year. However, the capitalization of the borrowing costs is not interrupted during a period if important technical or administrative actions are being carried out. The capitalization of borrowing costs is not suspended either when a temporary delay is necessary as part of the process of preparation of a qualified asset for its use or its sale.

The capitalization of borrowing costs is ended when all activities necessary to prepare the qualified asset for its use or sale have been substantially completed. When the asset has component that can be used separately while the construction is in progress, the capitalization of the borrowing costs is suspended on such components.

#### **2.15 Investment properties**

Investment properties are those held to obtain rentals and/or capital revaluations (including the investment properties under construction for those purposes). Investment properties are initially measured at cost, including transaction costs. The carrying value includes de replacement or substitution cost of one part of an existing investment property at the moment when the cost is incurred in, if all criteria for recognition are met; and they exclude the daily maintenance costs of the investment property.

After the initial recognition, investment properties are measured at the fair value reflected by market conditions on the presentation date. All gains and losses arising from changes in the fair values of the investment properties are included in the statement of comprehensive income in the section “result for the period” in the period when they arise.

Investment properties are derecognized, either at the moment they are disposed, or when they are retired from use on a permanent basis, and no future economic benefit is expected. The difference between the net value of disposal and the carrying value of the asset is recognized in the statement of comprehensive income in the section “result for the period” in the period when it was written-off.

Transfers to or from investment properties are conducted only when there is a change in their use. In the case of a transfer from an investment property to a property, plant and equipment, the cost taken into account for its subsequent posting is the fair value on the date of the change in use. If a property, plant and equipment become an investment property, it shall be recorded at its fair value; the difference between the fair value and the carrying value shall be recorded as revaluation surplus applying the International Accounting Standard (IAS) 16.

## 2.16 Intangible assets

Intangible assets acquired separately are measured initially at their cost. The cost of the intangible assets acquired in business combinations is their fair value at the acquisition date. After their initial recognition, the intangible assets are accounted for at cost less any accumulated amortization and any accumulated loss for impairment. Intangible assets generated internally are capitalized provided that they meet the criteria for their recognition as asset and the generation of the asset must be classified as: research phase and development phase; if it is not possible to distinguish the research phase from the development phase, the disbursements must be reflected in the Comprehensive income statement in the period in which they incur. The useful lives of intangible assets are determined as finite or undefined.

Intangible assets with finite useful lives are amortized throughout their economic useful life on a linear basis and are evaluated to determine whether they had any impairment in carrying amount, provided that there are indications that the intangible asset could have suffered such impairment. The amortization period and the amortization method for an intangible asset with a finite useful life are revised at least at every period's closing. Any changes in the expected useful life or the expected consumption pattern of the future economic beneficiaries of the asset are recorded when changing the amortization period or method, as the case may be, and are treated as changes in the accounting estimates. The amortization expense of intangible assets with finite useful lives is recognized in the statement of comprehensive income in the section "result for the period" in the category of expenses that shall result being coherent with the intangible asset's function.

Intangibles assets with undefined useful lives are not amortized, but they are subject to annual tests to determine whether they suffer a value impairment, either individually or at the cash-generating unit level. The evaluation of the undefined useful life is revised on an annual basis to determine whether such undefined life continues to be valid. If that is not the case, the change of useful life from undefined to finite is made prospectively.

An intangible asset is written-off upon disposal, or whenever future economic benefits are not expected from their use or disposal. The gains or losses arising when an intangible asset is written-off are measured as the difference between the value obtained in the disposal and the carrying value of the asset, and it is recognized in the statement of comprehensive income in the "result for the period" section.

- **Research and Development Costs**

Research costs are recorded as expenses as incurred. Development outlays in an individual project are recognized as intangible assets whenever EPM can demonstrate:

- The technical feasibility of finalizing the intangible asset so that it is available for use or sale;
- Their intention of finalizing the asset and its capacity to use or sell the asset;
- How the asset will generate future economic benefits, considering, among others, the existence of a market for the production that generates an intangible asset for the asset itself, or the profit of the asset for the entity.
- The availability of resources to finalize the asset; and
- The capacity of reliably measuring the disbursement during the development.

In the statement of financial position the development disbursements asset is recognized from the moment the element meets the aforementioned conditions for its recognition, and it is recorded at cost less accrued amortization and the value impairment accrued losses.



When the development of an intangible asset related to a power generation project is initiated, the costs are accumulated as constructions in progress.

Amortization of the asset starts when the development has been completed and the asset is available to be used. It is amortized throughout the period of the expected future economic benefit. During the development period, the asset is subject to annual tests to determine whether or not there is impairment of its value.

- Research costs and development costs that do not qualify to capitalization are recorded as expenses in results for the period. **Other intangible assets**

Other intangible assets such as concession of services, licenses, software, exploitation rights, trademarks and similar rights acquired by EPM are measured at cost less the accumulated amortization and any loss for impairment.

## 2.17 Financial instruments

Financial assets and liabilities are recognized in the statement of financial position when EPM becomes a party according to the contractual conditions of the instrument.

Financial assets and liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issuance of financial assets and liabilities (other than the financial assets and liabilities designated at fair value with change in operations) are added to or deducted from the fair value of the financial assets or liabilities, whenever appropriate, at the moment of the initial recognition. All transaction costs directly attributable to the acquisition of financial assets or liabilities designated at fair value with change in operations are immediately recognized in the results for the period. Section result of the period.

- **Financial assets**

At the moment of initial recognition, EPM classifies its financial assets for subsequent measurement at amortized cost or fair value (through other comprehensive income or through profit and loss) depending upon the business model of EPM to manage financial assets and the characteristics of the contractual cash flows of the instrument.

A financial asset is subsequently measured at amortized cost or at fair value with changes in other comprehensive income, using the effective interest rate if the asset is maintained within a business model the objective of which is to keep them to obtain contractual cash flows and the contractual terms thereof grant, in specific dates, cash flows that are only payments of the principal and interest on the pending principal amount. Without detriment to the foregoing, EPM can designate a financial asset as measured at fair value with changes in operations irrevocably.

All other financial assets different from those at amortized cost are subsequently measured at fair value with changes recognized in the results for the period. However, for the investments made on capital instruments that are not maintained for negotiation purposes, EPM may elect in the initial recognition and irrevocably to present the gains or losses for the measurement at fair value in other comprehensive income. In the disposal of investments at fair value through the other comprehensive income, the accrued value of the gains or losses is directly transferred to the withheld gains; they are not reclassified to results for the period. The dividends received from these investments are recognized in the statement of comprehensive income, in the “result for the period” section. EPM has selected to measure some of its investments in capital instruments at fair value through the other comprehensive income.

The fair value through results category includes the investments that are made to optimize liquidity surpluses, i.e., all those resources that are not immediately devoted to the development of the activities that form the company’s corporate purpose. The investment of the liquidity surpluses is made under the criteria of transparency, security, liquidity and profitability, under the guidelines of an adequate control and in market conditions without speculative purposes. (Decree from the General Manager of EPM N° 2015-DECGGL-2059 of February 6, 2015).

- **Impairment of financial assets**

On each date of presentation the company recognizes correction of value for expected credit losses on the financial assets that are measured at amortized cost or at fair value with changes in other comprehensive income, including the accounts receivables for leasing, assets of contracts or loan commitments and financial guarantee contracts to which the requirements of impairment are applied during the life of the asset.

The expected credit losses are estimated considering the probability that a loss for uncollectibility may or may not occur and are recognized as a profit or loss in the comprehensive income statement, section of profit and loss of the period against a lower value of the financial asset.

The company evaluates collectively the expected losses for financial assets that are not individually significant. When the collective evaluation of expected losses is done, the accounts receivable are grouped by similar credit risks characteristics that permit to identify the debtor's payment capacity, in accordance with the contractual terms of negotiation of the account receivable.

The company considers the following as an event of default for the internal management of the credit risk, since the historic experience shows that the credits that meet any of the following criteria generally are not recoverable: when there is a default of the financial agreements by the counterparty; or the information developed internally from external sources indicates that it is improbable that the debtor will pay his creditors, in their entirety, without taking into account the guarantees maintained.

The company writes off a financial asset when there is information that indicates that the counterparty is having severe financial difficulties and there is not realistic expectations of recovery, for example, when the counterparty has been placed in liquidation or has initiated a bankruptcy process or, in the case of accounts receivable, when the amounts are over two years past due, whichever first occurs. Amortized financial assets may continue being subject to enforcement activities under the company's recovery procedures, taking into account the legal collection whenever applicable. Recoveries made are recognized in the profit and loss.

- **Classification as debt or equity**

Debt and equity instruments are classified as financial liabilities or equity in conformity with the substance of the contractual agreement and the definitions of financial liability and equity instrument.

- **Financial liabilities**

At the moment of the initial recognition, EPM classifies financial liabilities for a subsequent measurement at amortized cost or at fair value with changes in results.

The financial liabilities at fair value with changes in results include those liabilities held to negotiate, the financial liabilities designated at the moment of their initial recognition like at fair value with changes in results and the derivatives. The gains or losses for liabilities held to negotiate are recognized in the statement of comprehensive income in the "statement of income" section. In the initial recognition, EPM designated financial liabilities as at fair value with changes in results.

Liabilities at amortized cost are measured using the effective interest rate. All gains and losses are recognized in the statement of comprehensive income in the "Statement of income" section whenever the liabilities are written-off, as well as through the amortization process under the effective interest rate method, that is included as financial cost in the Statement of comprehensive income in the "statement of income" section.

- **Financial guarantee contracts**

The financial guarantee contracts issued by EPM are those contracts that require the making of a specific payment to reimburse the holder of the loss incurred in when a specified debtor does not meet their payment obligation, according to the conditions of a debt instrument. The financial guarantee contracts are initially recognized as a liability at fair value, adjusted by the transaction costs that are directly attributable to the issuance of the collateral. Subsequently, the liability is measured at: (i) the best estimate of the disbursement

required to settle the current obligation as of the presentation date; and (ii) the amount initially recognized less the accrued amortization, whichever is greater.

- **Write-off of financial assets and liabilities**

A financial asset, or part of it, is derecognized from the statement of financial position whenever it is sold, transferred, expires or EPM loses control on the contractual rights or on the cash flows of the instrument.

If the entity does not transfer or retains substantially all risks and advantages inherent to the property and continues retaining the control of the transferred asset, the entity will recognize its participation in the asset and the associated obligation by the amounts that it would have to pay. If the company retains substantially all the risks and advantages inherent to the property of a financial asset transferred, the entity will continue recognizing the financial asset and it will also recognize a loan guarantee collaterally by the income received.

In the total derecognition in the accounts of a financial asset measured at fair value with changes in profit and loss, the difference between carrying amount of the asset and the sum of the consideration received and to be received, is recognized in the comprehensive income statement, section of profit and loss of the period. In case of financial assets measured at fair value with changes in equity, the difference between the carrying value of the asset and the sum of the consideration received or to be received is recognized in the comprehensive income statement, profit and loss of the period section, and the profit or loss that had been recognized in other comprehensive income will be reclassified to accumulated profit and loss.

A financial liability or part of it is written-off from the statement of financial position when the contractual obligation has been settled or has expired. If the entity does not transfer or substantially retains all risks and advantages inherent to the ownership and continues to retain the control of the asset transferred, the entity shall recognize its participation in the asset and the associated obligation for the amounts that it would have to pay. If EPM substantially retains all the risks and advantages inherent to the ownership of a financial asset transferred, the entity shall continue to recognize the financial asset and also recognize a guaranteed loan on a collateral way for the revenues received.

Whenever an existing financial liability is replaced by another coming from the same lender under substantially different conditions, or if the conditions of an existing liability are substantially modified, such exchange or modification is treated as a decrease of the original liability and the recognition of a new liability, and the difference in the respective carrying values is recognized in the statement of comprehensive income in the “statement of income” section.

- **Compensation of financial instruments**

Financial assets and financial liabilities are subject to offset in such a way as to report the net value in the separate statement of financial position, only if (i) at the current moment, there is a legally enforceable right of compensating the amounts recognized; and (ii) there is the intention of settling them at their net value, or of realizing the assets and cancelling the liabilities simultaneously.

- **Derivative financial instruments**

EPM used derivative financial instruments, like term contracts (“Forward”), futures, financial barter (“Swaps”) and options to hedge several financial risks, mainly the interest rate, exchange rate and commodities price risks. Such derivative financial instruments are initially recognized at their fair values on the date when the derivative contract is entered into, and subsequently they are measured again at their fair value. Derivatives are recorded as financial assets in the statement of financial position when their fair value is positive, and as financial liabilities when their fair value is negative.

The fair value of the commodity contracts that meet the definition of a derivative, but that are entered into in conformity with the expected purchase requirements of EPM, are recognized in the statement of comprehensive income as cost of sales.

Any gain or loss that arises from the changes in derivatives' fair value is directly recognized in the statement of comprehensive income in the "profit and loss of the period" section, except for those that are under hedge accounting. The derivatives implicit in main contracts are treated as separate derivatives whenever they meet the definition of a derivative and when their risks and characteristics are not closely related to those main contracts and the contracts are not measured at fair value with change in results."

- **Hedge accounting**

At the beginning of a hedging transaction, EPM designates and formally documents the hedging transaction to which they want to apply the hedging accounting and the objective of the risk management and the strategy to carry out the hedging. The documentation includes the identification of the hedging instrument, the item or transaction hedged, the nature of the risk being hedged and how EPM shall evaluate the effectiveness of the changes in fair value of the hedging instrument when offsetting the exposure before changes in the fair value of the hedged item or in the cash flows, attributable to the risk hedged. It is expected that the hedging is expected to be highly efficient in achieving the offsetting of changes in the fair value or in the cash flows, and they are permanently evaluated to determine whether that was actually so throughout the information periods for which they were designated.

For hedging accounting purposes, the hedging is classified and recorded as follows, once the stringent criteria for their recording are complied with: **Fair value hedging**, when they hedge the exposure to fair value changes of assets or liabilities recognized or non-recognized firm commitments. A change in the fair value of a derivative that is a hedging instrument is recognized in the statement of comprehensive income, in the "statement of income" section as financial cost or revenue. A change in the fair value of the item hedged attributable to the risk hedged is recorded as part of the carrying value of the hedged item, and also is recognized in the statement of comprehensive income in the "statement of income" section as financial cost or revenue. For the fair value hedging that related to items recorded at amortized cost, the adjustments to the carrying value are amortized through the statement of comprehensive income in the "statement of income" section during the remaining term until their expiration. Amortization of the effective interest rate may begin as soon as there is an adjustment to the carrying value of the hedged item, but it must start at the latest when the hedged item is no longer adjusted for their fair value changes attributable to the risk being hedged. Amortization of carrying value adjustments is based upon the effective interest rate recalculated on the amortization's start date. If the hedged item is written-off, the non-amortized fair value is immediately recognized in the statement of comprehensive income in the "statement of income" section.

When a non-recognized firm commitment is designated as a hedged item, the subsequent accrued change in the fair value of the firm commitment attributable to the hedged risk shall be recognized as an asset or liability with their corresponding gain or loss recognized in the statement of comprehensive income in the "statement of income" section.

**Cash flow hedging**, when they cover the hedging to the attributed cash flow variations exposure, either to a particular risk associated to a recognized asset or liability or to a highly probable foreseen transaction, or to the exchange rate risk in a non-recognized firm commitment. The purpose of cash flows hedging accounting is to recognize in the other comprehensive income the fair value variations of the hedging instrument to apply them to the income statement accounts when, and the rhythm that, the hedged item affects the same. Only the derivative inefficiencies shall be recognized in the income statement as they are produced.

The effective portion of the gain or loss for the measurement of the hedging instrument is immediately recognized in the other comprehensive income, whereas the ineffective portion is immediately recognized in the statement of comprehensive income in the "statement of income" section as financial expense.

The values recognized in the other comprehensive income are classified into the statement of comprehensive income in the "statement of income" section when the hedged transaction affects the result, as well as when the financial revenue or financial expense hedged is recognized, or when the

transaction foreseen takes place. When the hedged item constitutes the cost of a non-financial asset or liability, the values recognized in the other comprehensive income are reclassified at the initial carrying value of the non-financial asset or liability. If the foreseen transaction or the firm commitment is no longer expected to happen, the accrued gain or loss previously recognized in the other comprehensive income is reclassified into the statement of comprehensive income in the “statement of income” section.

If the hedging instrument expires or is sold, it is resolved, or is exercised without a replacement or successive renovation of a hedging instrument for another hedging instrument, or if its designation as hedging is revoked, any accrued gain or loss previously recognized in the other comprehensive income remains in the other comprehensive income until the operation foreseen or the firm commitment affects the result.

- **Hedging of a net investment abroad**, when they hedge the exposure to the variations in the translation of foreign businesses into the presentation currency of EPM, associated to the exchange rate risk.

The objective of the foreign-currency net investment hedging is to hedge the exchange rate risks that a Principal or Intermediate Parent Company having businesses abroad may have on the impact of the translation of financial statements from functional currency to presentation currency. The hedging of net investment in foreign currency is a hedging to the exposure in foreign currency, not a hedging of the fair value due to changes in the investment value.

The gains or losses of the hedging instrument related to the effective portion of the hedging are recognized in other comprehensive income, whereas any other gain or loss related to the ineffective portion is recognized in the statement of comprehensive income in the “statement of income” section. Before the disposal of the business abroad, the accrued value of the gains or losses recorded in the other comprehensive income are reclassified in the statement of comprehensive income in the “statement of income” section.

- **Equity instruments**

An equity instrument consists of any contract showing a residual interest on an entity’s assets after deducting all its liabilities. Equity instruments issued by EPM are recognized at the revenues received, net of direct issuance costs.

The repurchase of the Company’s own equity instruments is recognized and directly deducted in equity. No gain or loss is recognized in operations, coming from the purchase, sale, issuance, or cancellation of the Company’s own equity instruments.

### **2.18 Inventories**

The goods acquired with the intention of selling them during the ordinary course of business or of consuming them in the service rendering process are classified as inventories.

Inventories are valued at cost or net realizable value, whichever is lower. The net realizable value is the sales price estimated in the normal course of business, less the estimated finalization costs and the estimated costs necessary to make the sale.

Inventories include merchandise in stock that do not require transformation, such as energy, gas and water meters, communication equipment, telephone sets, and procurement goods. They include materials such as minor spare parts and accessories for the rendering of services and the goods in transit and held by third parties.

Inventories are valued by using the weighted average method and their cost includes the costs directly related to the acquisition and those incurred in to give them their current conditions and location.

### **2.19 Impairment value of non-financial assets**



As of every presentation date, EPM evaluates whether they have any indication that a tangible or intangible asset may be impaired. EPM estimates the recoverable value of the asset or cash-generating unit at the moment it detects an indication of impairment, or annually (as of November 30 and a review is made if there are any relevant or significant events that have occurred in the month of December that are worth analyzing and including in the calculation of impairment) intangible assets with undefined useful life and those that are still being used.

The recoverable value of an asset is the fair value less costs of sale, either of an asset or a cash-generating unit, and its value in use, whichever is greater, and it is determined for an individual asset, except that the asset does not generate cash flows that are substantially independent from the other assets or group of assets; in this case, the asset should be grouped into a Cash Generating Unit (“Unidad Generadora de Efectivo - UGE”). When a reasonable and consistent base of distribution is identified, common/corporate assets are also assigned to the individual Unidades Generadoras de Efectivo - UGE, when a reasonable and consistent distribution base is identified, the common/corporate assets are also assigned to the individual cash generating units, or distributed to the smallest group of cash generating units for which it is possible to identify a reasonable and consistent distribution base. When the carrying value of an asset or of a cash-generating unit exceeds its recoverable value, the asset is considered impaired and the value is reduced to its recoverable amount.

When calculating the value of use, either for an asset or a cash-generating unit, the estimated cash flows are discounted at their present value through a discount rate before taxes that reflects the market considerations of the temporary value of money and the specific risks of the asset. An adequate valuation model is used for determining the reasonable value less the costs of sale.

Losses for impairment of continued operations are recognized in the comprehensive income statement in the section income statement in those expense categories that correspond to the function of the impaired asset. Losses for impairment attributable to a Cash Generating Unit are assigned proportionately based in the book value of each asset to the non-current assets of the Cash Generating Unit after extinguishing the goodwill. The CGU is the smallest group of identifiable assets that generates cash inflows in favor of the company, which to a good extent, regardless of the cash flows derived from other assets or groups of assets. In the Company the CGU were defined considering: 1) the existence of income and costs for each group of assets, 2) the existence of an active market for the generation of cash flows, and 3) the manner how operations are administered and monitored.

The impairment value for goodwill is determined by evaluating the recoverable value of each cash-generating unit (or group of cash-generating units) to which the goodwill relates. The value impairment losses related to goodwill may not be reverted in future periods.

For assets in general, excluding the goodwill, on each presentation date an evaluation is conducted about whether there is any indication that the impairment losses previously recognized no longer exist or have decreased. If such indication exists, EPM makes an estimate of the asset's or the cash-generating unit's recoverable value. An impairment loss previously recognized only can be reverted if there was a change in the assumptions used for determining the recoverable value of an asset since the last time when it was recognized the last impairment loss. The reversal is limited in such a way that the carrying value of the asset neither exceeds its recoverable amount, nor exceeds the carrying value that would have been determined, net of depreciation, if no impairment loss had been recognized for the asset in the previous years. Such reversal is recognized in the comprehensive income statement in the section profit and loss of the period.

## **2.20 Provisions**

Provisions are recorded when EPM has a present, legal or implicit obligation, as a result of a past event; it is probable that EPM have to give off resources that incorporate economic benefit to cancel out the obligation, and a reliable estimate can be made of the value of the obligation. In those cases in which EPM expects that the provision be reimbursed in whole or in part, the reimbursement is recognized as a separate asset, but only in the cases when such reimbursement is practically certain and the asset amount can be reliably measured.

Provisions are measured with the best estimate from Management of the disbursements necessary to cancel the present obligation, at the end of the period being reported, taking into account the risks and the



corresponding uncertainties. When a provision is measured using the estimated cash flow to cancel the current obligation, its carrying value corresponds to the present value of such cash flow, using for the discount a rate calculated with reference to market yields for the bonds issued by the National Government. In Colombia, it must be used the yield of TES Bonds (Public Debt Securities issued by the General treasury of the Nation) at the end of the period being reported. The expense corresponding to any provision is reported net of every reimbursement in the comprehensive income statement in the section other expenses. The increase in the provisions due to the passing of time is recognized as a financial expense.

The expense corresponding to any provision is presented in the comprehensive income statement in the section of profit and loss of the period, net of every reimbursement. The increase of the provision due to the passing of time is recognized as a financial expense.

- **Dismantlement reserve**

To the extent that there is a legal or implicit obligation of dismantling or restoring, EPM recognizes as part of the cost of a fixed asset in particular, the estimation of the future costs EPM expects to incur in to perform the dismantlement or restoring and its balancing entry is recognized as a provision for dismantling and restoring costs. The dismantling cost is depreciated over the estimated useful life of the fixed asset.

Dismantlement or restoring costs are recognized at the present value of the expected costs of cancelling out the obligation using estimated cash flows. Cash flows are discounted at a particular rate before taxes, which should be determined by taking as a reference the market yields of the bonds issued by the National Government. In Colombia, regarding risk-free rate, it must be used the yield of TES Bonds (Public Debt Securities issued by the General Treasury of the Nation).

Future estimated dismantlement or restoration costs are annually revised. Changes in the future estimated costs, in the dates estimated for the disbursements, or in the discount rate applied are added or deducted from the asset cost, without exceeding the carrying value of the asset; any surpluses are immediately recognized in results for the period. The change in the provision value associated to the time elapsed is recognized as financial expense in the statement of comprehensive income in the “result for the period” section.

- **Onerous Contracts**

The company recognizes present obligations that derive from onerous contracts, as provisions and their offsetting entry is in the comprehensive income statement. An onerous contract is the one in which the unavoidable costs of complying with the obligations it implies, exceed the economic benefits that are expected to receive therefrom.

- **Contingent liabilities**

The possible obligations that arise from past events and the existence of which shall only be confirmed by the occurrence or non-occurrence of one or more uncertain future events that are not entirely under EPM’s control or the current obligations that arise from past events, but that it is not probable, but possible, that on outlay of resources including economic benefits be required to liquidate the obligation or the amount of the obligation cannot be measured with enough reliability, are not recognized in the statement of financial position, they are rather disclosed as contingent liabilities. Contingent liabilities generated in a business combination are recognized at fair value on the acquisition date; subsequently they are measured at the value that should be recognized according to IAS 37 Provisions, Contingent Liabilities and Contingent Assets, or the value initially recognized less, the accrued amortization recognized according to IAS 18 Revenues from Ordinary Activities, whichever is greater.

- **Contingent assets**

Assets of a possible nature, that arise from past successes, the existence of which has to be confirmed only by the occurrence, or the non-occurrence, of one or more uncertain events in the future, that are not entirely under EPM control, are not recognized in the statement of financial position; rather, they are disclosed as

contingent assets when their occurrence is probable. Whenever the contingent fact is true, the asset and the revenue associated are recognized in operations. Contingent liabilities acquired in a business combination are initially measured at their fair values, on the acquisition date. At the end of subsequent periods being reported, those contingent liabilities are measured at the amount it would have been recognized and the amount initially recognized less the accrued amortization recognized, whichever is greater.

## 2.21 Employee benefits

### 2.21.1. *Post-employment benefits*

#### *Defined contribution plans*

The contributions to the defined contribution plans are recognized as expenses in the statement of comprehensive income in the “result for the period” section at the moment when the employee has rendered the service that grants them the right to make the contributions.

#### *Defined benefit plans:*

Post-employment benefit plans are those in which EPM has the legal or implicit obligation to respond for the payments of the benefits that were left to their charge.

For the defined benefit plans, the difference between the fair value of the plan assets and the present value of the plan obligation is recognized as asset or liability in the statement of financial position. The cost of giving benefits under the defined benefit plans is determined separately for each plan, through the actuarial valuation method of the projected credit unit, using actuarial assumptions on the date of the period being reported. Plan assets are measured at fair value, which is based upon the market price information and, in the case of quoted securities, it constitutes the published purchase price.

The actuarial gains or losses, the yield of plan assets and the changes in the asset ceiling effect, excluding the securities included in the net interest on the net defined benefits liabilities (assets), are recognized in the other comprehensive income, in the case of post-employment benefits; and if it is long-term benefits they are recognized in the statement of comprehensive income in the “statement of income” section in the period where they arise. The actuarial gains or losses include the effects of changes in the actuarial assumptions as well as adjustments due to experience.

The net interest on the liabilities (assets) for net defined benefits includes the interest revenue for the plan assets, interest cost for the obligation for defined benefits and interests for the asset ceiling effect.

The current service cost, the past service cost, any settlement or reduction of the plan are immediately recognized in the statement of comprehensive income in the “statement of income” section in the period when they arise.

### 2.21.2. *Short-term employee benefits*

EPM classifies as short-term employee benefits those obligations with the employees that it expects to liquidate during the twelve (12) month period following the closing of the accounting period where the obligation has been generated or the service has been rendered. Some of these benefits are generated from the current labor legislation, from collective bargaining agreements, or from non-formalized practices that generate implicit obligations.

EPM recognizes the short-term benefits at the moment the employee has rendered their services, as the following:

A liability for an amount that shall be repaid to the employee, deducting the amounts already paid before, and its balancing entry as expense for the period, unless another chapter obliges or allows including the payments

in the cost of an asset or inventory, for instance, if the payment corresponds to employees the services of whom are directly related to the construction of a work, they shall be capitalized to that asset.

The amounts values already paid before correspond, for instance, to advanced payments of salaries, advanced payments of per diems, among others. If they exceed the corresponding liability, the Company will have to recognize the difference as an asset in the prepaid expenses account, to the extent that the advanced payment gives place to a reduction in the payments to be made in the future or to a cash reimbursement.

According to the foregoing, the accounting recognition of short-term benefits is made upon occurrence of the transactions, regardless of when they are paid to the employee or to the third parties to which the Company has entrusted the provision of certain services.

### **2.21.3. Long-term employee benefits**

EPM classifies as long-term employee benefits those obligations that it expects to settle after the twelve (12) months following the closing of the accounting exercise or the period where employees provide the related services, i.e., from the month thirteen forward; they are different from the short-term benefits, post-employment benefits, and contract termination benefits.

EPM measures long-term benefits in the same fashion as post-employment defined benefit plans. Although their measurement is not subject to the same uncertainty level, the same following methodology will be applied for its measurement:

- The Company should measure the surplus or deficit in a long-term employee benefit plan using the technique applied for post-employment benefits both for estimating the obligation as well as for the plan assets.
- The Company should determine the value of net long-term employee benefits (assets or liabilities) finding the deficit or surplus of the obligation and comparing the asset ceiling.

The benefits that employees receive year after year throughout their labor life should not be considered “long term” if at the accounting exercise closing each year, the Company has fully delivered them.

### **2.21.4. Benefits for termination**

The company recognizes as benefits for termination, the considerations granted to the employees, payable as result of the decision of the company to terminate the employment agreement to an employee before the normal retirement date or the decision of an employee to accept the voluntary resignation in exchange for those benefits.

## **2.22 Service concession agreements**

EPM recognizes the service concession agreements pursuant to the interpretation requirements of the IFRIC 12 Service Concession Agreements.

This interpretation is applicable to those concessions where:

- The grantor controls or regulates which services the operator with the infrastructure should provide, to whom and at what price; and
- The grantor controls, through the ownership, the right of use, or otherwise, any significant residual participation in the infrastructure at the end of the term of the agreement.

EPM does not recognize these infrastructures as property, plant and equipment; it recognizes the consideration received in the contracts that meet the above conditions at its fair value, as an intangible asset to the extent

that EPM receives a right to make charges to users of the service, provided that these rights are conditioned to the service use level, or as a financial asset, to the extent that there is an unconditional contractual right to receive cash or other financial asset, either directly from the assignor or from a third party. In those cases where EPM receives payment for the construction services, partly through a financial asset and partly through an intangible asset, each component of the consideration is recorded separately.

Financial assets of service concession agreements are recognized in the separate statement of financial position as financial assets and are measured later at amortized cost, using the effective interest rate. The evaluation of impairment of these financial assets is made pursuant to the value impairment policy of the financial assets.

Intangible assets of service concession agreements are recognized in the consolidated statement of financial position as intangible assets denominated “intangible assets for service concession agreements” and are amortized on a linear basis within the term of duration thereof.

Revenues from ordinary activities and costs related to the operating services are recognized according to the accounting policy of ordinary revenues and the services related to construction or improvement services according to the accounting policy of construction contracts. Contractual obligations assumed by EPM for maintenance of the infrastructure during its operation, or for its return to the assignor at the end of the concession agreement in the conditions specified therein, to the extent that it does not assume a revenue-generating activity, it is recognized following the provisions accounting policy.

## **2.23 Fair value**

The fair value is the price that would be received when selling an asset or that would be paid when transferring a liability in an orderly transaction between market participants on the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or liability, EPM takes into account the characteristics of the asset or liability if the market participants take into account these characteristics when valuing the asset or liability on the measurement date. Fair value for measurement and/or disclosure purposes in these financial statements is determined on that basis, except for the transactions of stock-based payments, lease transactions, and the measurements that have certain similarities with the fair value but that are not fair value, such as the realizable value or the value at use. The fair value of all financial assets and liabilities is determined on the date of presentation of the financial statements, for recognition or disclosure in the notes to the financial statements.

The fair value is determined:

Based upon prices quoted in active or passive markets identical to those the Company can access on the measurement date (level 1). Level 2 inputs are inputs different of quoted prices included in Level 1, that are observable for the assets or liabilities, directly or indirectly.

Based upon internal valuation techniques of cash flow discounts or other valuation models, using variables estimated by EPM non-observable for the asset or liability, in the absence of variables observed in the market (level 3). Note 39 Measurement of Fair Value provides an analysis of the fair values of the financial instruments and non-financial assets and liabilities and greater details of their measurement.

## **2.24 Cash dividends distributed to the owner of the company**

The company recognizes a liability to make the distributions to the owner of the company in cash when the distribution is authorized and it is no longer at the discretion of the company. The corresponding amount is recognized directly in the net equity.

## **2.25 Changes in estimates, accounting policies and errors**

### **2.25.1 Changes in accounting**

As of December 31 2016, there are no significant changes in accounting estimates, except for the following changes:

- Changes in the discount rate used for the impairment of assets. The company has established the methodology to estimate the cost of capital of its different businesses (CAPM -Capital Asset Pricing Model-methodology adjusted for country risk), variable that when observing the results of 2016 in respect to those obtained in 2015, in average had a rising behavior as a result of a higher devaluation implied (for change in the estimates of the macroeconomic variables), for a higher estimated debt cost for the company and for a higher perception of country risk, measured by the EMBI+ (JP Morgan Emerging Markets Bond Index), parameters that form a part of the estimated of this variable.
- Changes in the estimates of the estimated values to be paid for litigations. Some of the claims were adjusted by the legal area of the company to the maximum amount ordered by Law in respect to moral damages. Additionally, the model of valuation of litigation was adjusted using a CPI projected for each year, according to the estimated payment date of the obligation.

### 2.25.2 Changes in accounting policies:

The new standards and modifications to the IFRS, as well as the interpretations (IFRIC), that have been implemented by the company are detailed next:

IAS 27 Separate financial statements, modification issued in August 2014. As of December 31, 2015, the Group made the change in the subsequent measurement of investments in subsidiaries by passing from the cost method to equity method for the separate financial statements of the Group companies that have investments in subsidiaries, given that this policy reflects more faithfully the financial information and is more consistent with the practice of the industry in which the company operates.

The following adjustments were made to the separate financial statements as result of the restatement:

Effect of changes	2016	2015			January 1, 2015 Restated
		Issue	Adjustment	Restated	
<b>Statement of financial position</b>					
Investments in subsidiaries	6,043,104	5,937,844	262,789	6,200,633	4,682,660
Other accumulated comprehensive income	2,378,296	1,787,083	863,492	2,650,575	2,236,701
Accumulated results	12,932,194	12,231,134	(544,104)	11,687,030	9,629,888
Net result of the period *	1,834,792	1,484,584	(114,911)	1,369,673	2,472,421
Other components of equity	51,626	-	58,312	58,312	58,312

- Figures expressed in millions of Colombian pesos -

Effect of changes	2016	2015		
		Issue	Adjustment	Restated
<b>Statement of comprehensive income</b>				
Equity method in associates and joint business	32,457	626,300	(300,614)	325,686
Participation in the profit or loss of subsidiaries	299,737	-	120,386	120,386
Net exchange difference	227,779	(295,775)	65,317	(230,458)
Other comprehensive income - Items that will not be reclassified subsequently to the result of the period - Participation in the profit or loss of subsidiaries	(93,153)	-	8,153	8,153
Other comprehensive income - Items that may be reclassified subsequently to the result of the period - Participation in the profit or loss of subsidiaries	(137,331)	-	473,396	473,396

- Figures expressed in millions of Colombian pesos -

Effect of changes	2016	2015		
		Issue	Adjustment	Restated
<b>Statement of changes in the equity</b>				
Accumulated results	14,766,986	13,715,718	(659,016)	13,056,702
Other accumulated comprehensive income	2,378,296	1,787,084	863,492	2,650,575
Other components of equity	51,626	-	58,312	58,312

- Figures expressed in millions of Colombian pesos -

Effect of changes	2016	2015		
		Issue	Adjustment	Restated
<b>Statements of cash flow</b>				
Results of the period	1,834,792	1,484,584	(114,911)	1,369,673
Adjustments to reconcile the net result of the period to the net cash flows used in operating activities	1,141,376	1,281,560	114,911	1,396,471
Dividends from investments	(32,433)	(641,523)	314,196	(327,327)
(Profit) loss for equity method	(299,737)	-	(120,386)	(120,386)
Impairment of investments in subsidiaries, associates and joint business	-	15,223	(13,583)	1,640
(Profit) loss for exchange difference	(118,034)	673,510	(65,317)	608,193

- Figures expressed in millions of Colombian pesos -

- Except for the above change of policies, the company did not make other voluntary changes in accounting policies that required retroactive adjustments to the separate financial statements in accordance with the provisions of IAS 8 Accounting policies, changes in the accounting estimates and errors. However, it applied new and modified standards, as follows: IFRS 9 Financial Instrument (revised in July 2014) and the corresponding amendments to other IFRS before their effective date. In 2016 the company has applied IFRS 9 that introduces new requirements for the classification and measurement of financial assets, impairment of financial assets and hedge accounting. The detail of this new requirements, as well as their impact on the financial statements are described below:

- Classification and measurement of financial assets: the standard introduces a measurement category for debt instruments denominated “Fair value with changes in other comprehensive income”. The debt instruments that are maintained within a business model, which object is to collect contractual cash flows and sell debt instruments and that have contractual cash flows that are only payment of principal and interest on the outstanding principal, are measured at their fair value through other comprehensive income. This measurement category recognizes the information in the income statement as if the financial asset were measured at the amortized cost, at the same time that it is measured in the statement of financial position at fair value. The profits or losses, different from those recognized in the income statement are recognized in the other comprehensive income except the profits or losses for impairment and the profits or losses for exchange difference, until the financial asset is deregistered or reclassified. When these financial assets are deregistered, the profits or losses previously accumulated recognized in the other comprehensive income are reclassified from equity to the result of the period. This reflects the profit or loss that would have been recognized in the result of the period at the moment of the derecognition if the financial asset had been measured at amortized cost. The company reviewed and evaluated the financial assets existing as of January 1, 2015 on the



basis of the facts and circumstances that existed on that date and concluded that the initial application of the IFRS 9 does not have any impact.

- **Impairment of financial assets:** In respect to the impairment of financial assets, the IFRS 9 requires a model of expected credit loss as opposed to the model of credit loss incurred according to IAS 39. The model of expected credit loss requires that the company will quantify the credit losses expected on each reporting date to reflect the changes in the credit risk from the initial recognition of the financial assets. In other words, it is no longer necessary that a credit event had occurred before the recognition of the credit losses.

Specifically, IFRS 9 requires that the company will recognize a provision for expected credit losses in: debt investments subsequently valued at amortized cost or at fair value with change in the other comprehensive income; lease debtors, contract assets, loan commitments and financial guarantee contracts to which the impairment requirements are applied.

In particular, the IFRS 9 requires that the company will measure the impairment for the financial instruments during the life of the asset for which significant increases take place in the credit risk from the initial recognition or if the financial instrument is acquired with credit impairment. On the other hand, if the credit risk of a financial instrument has not been significantly increased since the initial recognition, the company measures the provision of the financial instrument taking as a basis the 12 months following their acquisition. The IFRS 9 also provides a simplified approach to measure the profit for losses for an amount equivalent to the life of the asset under certain circumstances.

The changes of accounting policies resulting from the adoption of IFRS 9 have not been restated, in which case the accumulated difference in the provision for losses that are recognized in application of the standard is charged against accumulated results as of January 1, 2016. Consequently, the information presented for 2015 does not reflect the requirements of IFRS 9 and, therefore, is not comparable to the information presented for 2016.

The provision for additional provision for credit losses of \$108,932 as of January 1, 2016 has been recognized against retained earnings on the respective dates, net of their related deferred tax impact of \$39,654, resulting in a net decrease in the retained earnings of \$69,278 as of January 1<sup>st</sup>. The application of the impairment requirements of IFRS 9 has given as result a provision for losses of \$58,540 to be recognized in the current year. (See Note 11 Trade Debtors and other accounts receivables for more financial details of the adjustments). The consequent modifications to IFRS 7 have also given rise to more extensive disclosures on the credit risk exposure (see Note 38. Objectives and management policies of financial risks).

- **Hedge accounting:** the standard introduces a substantially reform approach for the hedge accounting that is more closely aligned with the risk management. The Company did not have impacts for this new approach.
- According to the modification to IAS 1 Presentation of financial statements, issued in December 2014, in the section of other comprehensive income, of the comprehensive income statement, the following items are presented in separate lines:
- The proportion of other comprehensive income of subsidiaries accounted for using equity method that will not be reclassified subsequently to the income statement.
  - The proportion of other comprehensive income of subsidiaries accounted for using equity method that is subsequently reclassified to the income statement.
- IAS 19 Employee benefits, modification issued in September 2014. The returns to be used as discount rate are no longer referred to a country market, but to a currency market, which “overflows” local borders. The discount rate is determined under two alternatives, the first one under high quality business bonds (if any in the market) or government bonds by default (as second option). The focus is to look if in that currency it exists in the first option, even if not found in the local market. No impact in this respect is generated for the company because it applies the second option (resorting to government funds in local currency).

### 2.25.3 Application of new and revised standards

The new standards and modifications to the IFRS, as well as the interpretations (IFRIC) that have been published in the period, but that have not been yet implemented by the company and those that will be adopted as of the date of the mandatory application, are detailed below:

Standard	Date of mandatory application	Type of change
IFRS 16 - Leases	January 1, 2019	New
IFRS 15 - Revenue from contracts with customers	January 1, 2018	New
IFRIC 22 - Foreign currency transactions and advance consideration	January 1, 2018	New
IFRS 4 - Insurance contracts	January 1, 2018	Modification
IAS 28 - Investments in associates and joint ventures	January 1, 2018	Modification
IAS 40 - Investment property	January 1, 2017	Modification
IFRS 12 - Disclosure of interests in other entities	January 1, 2017	Modification
IAS 7 - Cash Flow Statements	January 1, 2017	Modification
IAS 12 - Income taxes	January 1, 2017	Modification
IFRS 10 - Consolidated financial statements	Postponed	Modification

**IFRS 15 Revenue from contracts with customers:** issued in May 2014, is a new standard applicable to all contracts with customers, except leases, financial instruments and insurance contracts. This is a joint project with the Financial Accounting Standards Board - FASB to eliminate differences in the recognition of income between IFRS and US GAAP.

The modifications made in April 2016 to IFRS 15 includes the following aspects:

#### A. Identification of condition as principal or as agent

When a third party is involved in providing goods or services to a customer, the company will determine if the nature of its commitment is either a performance obligation consisting in providing specified goods or services by itself (that is, it acts as principal) or organizing for the third party the supply of those goods or services (that is, acts as agent).

The company acts as principal if it controls a good or service committed before it is transferred to a customer. However, the company is not necessarily acting as principal if it obtains the legal right on a product only momentarily before the right is transferred to the customer. The company, acting as principal in a contract may fulfill a performance obligation by itself or it may contract a third party (for example, a subcontractor) to fulfill all or part of a performance obligation on its behalf. When the company, acting as principal, fulfills a performance obligations, it recognizes the revenues from ordinary activities for the gross value of the consideration to which it expects to be entitled in exchange for the goods or services transferred.

The Company acts as agent if the performance obligation consists in the organization of the supply of goods or services on behalf of another company. When the Company, acting as an agent, fulfills a performance obligation, it recognizes revenues of ordinary activities for the value of any payment or commission to which it expects to be entitled in exchange for organizing for the other party the provision of its goods or services. The payment or commission may be the net value of the consideration that the entity keeps after paying to the other party the consideration received in exchange for the goods or services to be provided by that party.

#### b. Variable consideration

It is any amount that is variable according to the contract. The variable consideration will only be included in the price of the transaction when the entity expects that it will be 'highly probable' that the resolution of the associated uncertainty would not result in a major reversal of ordinary income. This valuation takes into account both the probability of a change in the estimate and the extension of any reversal of ordinary income that would result. If the Company is not capable of including its complete estimate of the variable consideration, given that it could give rise to a major reversal of ordinary income, it must recognize the amount of the variable consideration that would be highly probable of not resulting in a major reversal of ordinary income. There is one exception to this when the entity earns sales or use based on ordinary income for royalties resulting from licenses of its intellectual property. Under these circumstances, the entity would typically include only the ordinary income from those licenses when the subsequent sale or use occurs.

Likewise, the standard also introduces a specific restriction for the payment of royalties related to intellectual property licenses. If the payment of royalties is based on the subsequent use or sale, the entities are restricted to recognizing the associated ordinary income until the subsequent use or sale has occurred, even if based on historic evidence it is possible to make a reliable estimate of this amount.

### c. Application Methods

The standard allows the utilization of two methods for the initial application of the standard as follows:

#### Full retrospective approach

It is possible to apply the standard retrospectively to all comparative periods presented. According to this option, the comparatives of the previous year are restated, with the resulting adjustment to equity opening balance in the first comparative period. When this option is selected, the standard provides a series of optional practical expedients. These include the following:

- For completed contracts, entities are not required to restate the contracts that begin and end within the same annual reporting period.
- For contracts completed that have variable consideration, the entity may use the transaction price at the date on which the contract was completed rather than estimate the amounts of the variable consideration in the comparative reporting periods.
- For all the periods presented before the initial application date, the entity does not need to disclose the amount of the transaction price allocated to the remaining performance obligations and any explanation of when the entity expects to recognize those amounts as ordinary income.

#### Modified approach

According to the modified approach it is possible to apply the standard only as of the date of the initial application. If this option is chosen, it will be necessary to adjust equity opening balance at the date of initial application (i.e. January 1, 2017) but the entity is not required to adjust the comparatives of the previous year. This means that it does not need to consider the contracts that have been completed before the initial application date. Broadly, the figures reported from the initial application date will be the same as if the standard had always been applied, but the figures for the comparative periods will remain with the previous base.

If this option is used, disclosure is required of the amount by which each item of the line of the financial statement is affected in the current period as result of the application of the guidance and an explanation should be given of the important changes between the results reported according to IFRS 15 and the previous guidance on ordinary income.

The amendments have an effective date of January 1, 2018, which is the effective date of IFRS 15. Entities have the obligation to apply these amendments retroactively. The amendments are intended to clarify the requirements of IFRS 15, not to change the standard.

This new standard intends to improve the inconsistencies and weaknesses of IAS 18 and provide a model that will facilitate the comparability of companies of different industries and regions. It provides a new model for revenue recognition and more detailed requirements for contracts with multiple elements. In addition it requires more detailed disclosures.

The basic principle of IFRS 15 is that an entity recognizes the revenues from ordinary activities in a way that they represent the transfer of goods or services committed with the customers in exchange for an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. An entity recognizes the revenues from ordinary activities in accordance with this basic principle through the application of the following phases:

- Phase 1: Identifying the contract (or contracts) with the customer
- Phase 2: Identifying the performance obligations in the contract
- Phase 3: Determining the transaction price
- Phase 4: Assigning the transaction price among the performance obligations of the contract
- Phase 5: Recognizing the revenues from ordinary activities when (or as) the entity fulfills a performance obligation.

Under IFRS 15, an entity recognizes the revenues when an obligation is fulfilled, for example, when the “control” of the goods or services underlying the performance of the obligation in particular is transferred to the customer. More specific guidance have been added to the standard to manage specific scenarios. Additionally, more disclosures are required.

It would replace the standards IAS 18, Revenues and IAS 11 Construction Contracts, IFRIC 13 Customer loyalty programs, IFRIC 15 Agreements for the Construction of Real Estate, IFRIC 18 Transfers of assets from customers and SIC 31 Barter Transactions Involving Advertising Services. The company assessed the impacts generated by the application of this new standard, and concluded that there are no material impacts on the financial statements.

The modifications will be of mandatory application for the annual periods that start from January 1, 2018. Their advance application is permitted.

**IFRIC 22 Foreign currency operations and advance consideration:** issued in December 2016, this interpretation deals with how to determine the transaction date, in order to define the exchange rate to be used in the initial recognition of the asset, expense or revenue (or part thereof), in the derecognition of a non-monetary asset or non-monetary liability resulting from the payment or receipt of advance consideration in foreign currency. In this respect the Interpretation Committee reached the following conclusion: the date of the transaction, for the purposes of determining the exchange rate, is the date of initial recognition of the non-monetary prepayment asset or deferred income liability. If there are multiple payments or receipts in advance, a date of transaction is established for each payment or receipt. Not applied when an entity measures the related asset, expense or revenue in the initial recognition at its fair value or at the fair value of the consideration paid or received on a date different from the initial recognition date of the non-monetary asset or non-monetary liability derived from the advance consideration (for example, the measurement of the goodwill according to IFRS 3 Business Combinations). It is not applied either for the income tax and insurance contracts.

The Company is assessing the impacts that the new application of this interpretation could generate. The modifications will be of mandatory application for the annual periods beginning on or after January 1, 2018. Its earlier application is permitted.

**IFRS 16 Leases:** issued in January 2016, this new standards introduce an integral model for the identification of leases and accounting treatment for lessors and lessees. It will replace the current standards for the accounting treatment of leases included in IAS 17 Leases and the related interpretations.

The distinction between leases and service agreements is based on the control by customers on the asset identified. For the lessee the distinction of operating leases (off balance sheet) and financial leases (in the balance sheet) is eliminated and is substituted by a model in which it is required to recognize an asset (right of use) and its corresponding liability for all leases (that is, everything in the balance sheet), except the short term leases and the leases of low value assets.

The asset (right of use) is initially measured at cost and subsequently it is measured at cost (with certain exceptions) less accumulated depreciation and impairment losses, adjusted for any reassessment of the lease liability. The lease liability is initially measured for the present value of future lease payments. Subsequently, the lease liability is adjusted to the payments of interest and leases, as well as the impact of lease modifications, among others. In addition, the classification of the cash flows will also be affected since the operating lease payments according to IAS 17 are presented as operating cash flows; while in the IFRS 16 model the lease payment will be divided into capital amortization and a portion of interest that will be presented as cash flow of financing and operation, respectively.

In contrast with the lessee accounting, IFRS 16 includes as accounting requirements for the lessor the same ones provided by IAS 17, that is, it continues to require the lessor to classify a lease as operating or financial lease.

This new standard requires further detail in the disclosures.

The company is assessing the impacts that the application of this new standard could generate, given that it has been planned that in 2017 technical guidelines and definitions will be prepared in this respect and to identify the impacts for the implementation in 2018.

The modifications will be of mandatory application for the annual periods commencing on January 1, 2019. The advance anticipation is permitted if IFRS 15 - Revenues from contracts with customers.

**IFRS 10 consolidated financial statements and IAS 28 Investments in associates and joint ventures.** IFRS 10 has been modified to reflect the following: profits or losses resulting from the loss of control of a subsidiary that does not contain a business in a transaction with an associate or a joint venture that are accounted for using equity method are recognized in the parent's profit and loss to the extent of the participation of the non-related investors in that associate or joint venture. Similarly, the profits and losses resulting from the appreciation of accumulated investment in a previous subsidiary (that has become an associate or a joint venture that is accounted for using equity method) at fair value, are recognized in the profit and loss of the previous controlling entity only to the extent of the participation of the unrelated investors in the new associate or joint venture. Additionally, the amendment to IFRS 10 and IAS 18 address the accounting requirements in conflict on the sale or contribution of assets between an investor and its associate or joint venture. To this effect it establishes that in order to determine if the assets that are sold or contribute constitute a business, it is necessary to consider if the sale or contribution of those assets is part of multiple agreement that must be accounted for as a sole transaction.

Modifications are applied prospectively to the transactions that take place in the annual periods that start as of January 1, 2016 with early application permitted. In the meeting of June 2015 the IASB decided tentatively to postpone the mandatory effective date of these amendments. No draft has been issued at the time of preparation of this document.

These modifications do not have any impact on the financial statements.

**Note:** In respect to “*IFRS 10, IFRS 12 IAS 28 Investment Entities: Applying the Consolidation Exception - Amendments to IFRS 10, IFRS 12 and IAS 28*”, the change in the standard does not apply in any of the companies of the EPM Group, since the exemption applies to investment entities; however, this modification was included in the technical definitions.

**IFRS 12 - Disclosure of interests in other entities:** the modification to IFRS 12 that forms part of the annual improvements to IFRS Standards Cycle 2014-2016 issued in December 2016, clarifies the scope of the standard, adding the indication that the requirements of this IFRS are applied to the interests of the subsidiaries, joint



arrangements, associates and unconsolidated structured entities, that are classified (or to be classified) as held for sale or discontinued operations in accordance with IFRS 5 Noncurrent assets held for sale and discontinued operations, but the exception of disclosing information on them is maintained according to paragraph B17 of the standard.

The modifications will be mandatorily applied for the annual periods that start on or after January 1, 2016. Their early application is allowed.

These modifications do not have any material impact on the financial statements.

### IAS 7 Cash flows

The modification to IAS 7 issued in January 2016 defines the liabilities derives from financing activities as liabilities “for which the cash flows were or will be classified in the Statement of cash flows as cash flows for financing activities”. It also make emphasis on the fact that the new disclosure requirements also related to the changes in the financial assets if they meet the same definition.

It requests new information to be disclosed on the changes in the liabilities derived from the financing activities, such as: changes in cash flows from financing activities, changes derived from the obtaining or loss of control of subsidiaries or other business, the effect of the changes in the foreign exchange rates, the changes in the fair value and other changes. It also establishes that the changes in the liabilities derived from financing activities must be disclosed separately from the changes in other assets and liabilities, and includes a reconciliation between the beginning and ending balances in the statement of financial position, for the liabilities derived from financing activities. Early adoption is permitted.

The company assessed the impacts that will be generated by the modification of the standard, concluding that it will have no material impact on the financial statements.

**IAS 12 Income Taxes:** the modification to IAS 12, issued in January 2016, does not change the underlying principles for the recognition of assets for deferred taxes, it presents the following clarifications:

- The clarifies that unrealized losses in debt instruments measured at fair value in the financial instruments but at cost for tax purposes may give rise to deductible temporary differences.
- When an entity assesses if the taxable profits against which a deductible temporary difference can be used will be available, it will consider if the tax legislation restricts the sources of the taxable profits against which the deductions can be made at the time of the reversal of that deductible temporary difference. If the tax legislation does not impose these restrictions, an entity will assess a deductible temporary difference in combination with all others. However, if the tax legislation restricts the use of losses to be deducted against income of a specific type, a difference.
- The entity must confirm if it has sufficient taxable profits in the future periods, comparing the deductible temporary differences to future taxable profits that exclude the tax deductions resulting from the reversal of those deductible temporary differences. This comparison shows the extent to which the taxable profit will be sufficient in order for the entity to deduct amounts resulting from the reversal of deductible temporary differences.
- The possible future taxable profits could include the recovery of some assets of the entity for an amount higher than its carrying value if there is sufficient evidence that it is probable that the entity will be able to comply with it. That is, in the case of an asset when it is measured at fair value, the entity must verify if it has the certainty that the recovery of the asset for a figure higher than the carrying value is probable, such as it could be the case of maintaining a debt instrument at a fixed rate and collect the contractual cash flows.

The modifications will be of mandatory application for the annual periods that start on or after January 1, 2017.



**IFRS 4 Insurance contracts:** issued in March 2004, is a standard in process of formation by phases, for those who issue insurance and reinsurance contracts. The ascent to Phase II has been initiated, which has involved some exemptions on application of other standards, for example, an entity will apply these modifications that permit insurers that meet certain specific criteria the utilization of a temporary exemption of IFRS 9 for annual periods starting on or after January 1, 2018; it also permits insurers to reclassify under specified circumstances some or all their financial assets, in such a way that they are measured at fair value with changes in profit and loss but affecting the other comprehensive income.

The above implies that the modifications in the application of IFRS 9 “Financial Instruments” with IFRS 4 “Insurance Contracts” (Amendments to IFRS 4) offer two options for entities that issue insurance contracts within the scope of IFRS 4:

- \* An option that permits entities to reclassify, from profit or loss to other comprehensive income, part of the income or expenses derived from designated financial assets; this is the so called overlay approach;
- \* An optional temporary exemption of the application of IFRS 9 for entities whose predominant activity is the issue of contracts within the scope of IFRS 4; this is the so called deferral approach.

The application of both approaches is optional and an entity is allowed to cease to apply them before applying the new insurance contract standard.

An entity would apply the overlay approach retrospectively to the financial assets that qualify when it applies first the IFRS 9. The application of the overlay approach requires the disclosure of sufficient information to permit users of financial statements to understand how the amount reclassified in the period effect of that reclassification in the financial statements is calculated.

An entity would apply the deferral approach for the annual periods that start on or after January 1, 2018. The application of the deferral approach must be disclosed together with the information that permits users of financial statements to understand how the insurer qualified for the temporary exemption and compare the insurers that apply the temporary exemption with the entities that apply IFRS 9. The deferral can only be used for the three years following January 1, 2018.

The company is assessing the impacts that could generate the application of this new standard.

**IAS 28 - Investments in associates and joint ventures:** the amendment to IAS 28 that forms part of the annual improvements to IFRS Standards Cycle 2014-2015 issued in December 2016, clarifies that when an investment in an associate or joint venture is maintained directly or indirectly by an entity that is a venture capital organization or a joint investment, trust fund or investment trust or another analogous entity, including insurance funds linked to investments, the entity may choose to measure those investments at fair value with changes in profit and loss according to IFRS 9. An entity shall make this election separately for each associate or joint venture at the initial recognition of the associate or joint business. It also makes clear that if an entity that is not in itself an investment entity has an interest in an associate or joint venture that is an investment entity, the entity when applying equity method may keep the measurement at fair value applied by that associate or joint business that is an investment entity to the participations of the associate or joint venture that is an investment entity in subsidiaries. This choice is made separately for each associate investment entity or joint venture, on the date subsequent to the date when: a) the investment in the associate or joint venture is initially recognized; b) the associated investment or joint venture becomes an investment entity; and c) the associated investment entity or joint venture becomes first a Parent.

These modifications will be of mandatory application for the annual periods that start on or after January 1, 2018. Their advance application is permitted.

**IAS 40 Investment properties:** The amendment made in December 2016 has effect on the transfers of investment properties (reclassifications) motivated by the “change in their use”, detailing further the latter term: a change in the use occurs when the property meets or ceases to meet, the definition of investment property and there is evidence of the change in the use. In an isolated manner, a change in the intentions of the administration for the use of the property does not provide evidence of a change in the use. For this

purpose, the examples included in the standard in paragraphs 57 and 58 continue to apply (not substantially modified). Paragraphs 84C to 84E and 85G were added to define the transitory provisions.

The company is assessing the impacts that could generate the application of this new standard.

The modifications will be of mandatory application for the annual periods that start on or after January 1, 2018.

#### 2.25.4. Errors of previous periods

As of December 31, 2016 no adjustments were made to the separate financial statements by effect of errors of previous periods.

#### 2.25.5. Changes in presentation

As of December 31, 2016 no changes were made in the presentation of the separate financial statements.

### Note 3. Significant accounting judgements, estimates, and causes of uncertainty in the preparation of financial statements

The following are the significant judgments and assumptions, including those that involve accounting estimates that EPM management used in the application of the accounting policies under IFRS, and that have significant effect on the values recognized in the separate financial statements.

Estimates are based upon historic experience and as a function of the best information available on the facts analyzed at the report date. These estimates are used for determining the value of the assets and liabilities in the separate financial statements, when it is not possible to obtain such value from other sources. EPM evaluates its estimates on a regular basis. Actual results may differ from these estimates.

The significant estimates and judgments made by EPM are described below:

- **Evaluation of the existence of impairment indicators for the assets, goodwill and valuation of assets for determining the existence of value impairment losses.**

The condition of the assets is revised on each report presentation date. Recognized in order to determine whether there are indications that any of them has suffered an impairment loss, impairment indicators are revised. If there is impairment loss, the recoverable amount of the asset is affected; if the estimated recoverable amount is lower, it is reduced up to its fair value and an impairment loss is immediately recognized in operations.

The evaluation of the existence of value impairment indicators is based on external and internal factors, and in turn on quantitative and qualitative factors. Evaluations are based on financial results, the legal, social and environmental settings, and the market conditions; significant changes in the scope or fashion in which it is used or expected to use the asset or cash-generating unit (UGE, for its Spanish initials) and evidence about obsolescence or physical deterioration of and asset or UGE (cash generating unit), among others.

Determining whether goodwill has suffered impairment implies the calculation of the value at use of the cash generating units to which it has been assigned. The calculation of the value at use requires that the entity determines the future cash flows that should arise from the cash-generating units and a discount rate appropriate to calculate the current value. When the actual future cash flows are lower than expected, an impairment loss may arise.

- **Hypothesis used in the actuarial estimate of the post-employment obligations with employees.**

The assumptions and hypothesis used in the actuarial studies include: demographic assumptions and financial assumptions; the former refer to the characteristics of the current and past employments, and relate to the mortality rate, employee turnover rates; the latter relate to the discount rate, the increases in future salaries, and the changes in future benefits.

– **Useful life and residual values of property, plant and equipment, and intangibles**

In the assumptions and hypothesis used for determining the useful lives, technical aspects such as the following are considered: periodical maintenances and inspections made to the assets; failure statistics; environmental conditions and operating environment; protection systems; replacement processes; obsolescence factors, recommendations of manufacturers, climate and geographical conditions; and experience of the technicians that know the assets. Aspects such as market values, reference magazines, and historic sales data are considered for determining the residual value.

– **Assumptions used for the calculation of the fair value of financial instruments including credit risk.**

The company discloses the fair value corresponding to each type of financial instrument in such a way as to permit the comparison with the carrying values. Macroeconomic projects calculated within the company are used. The investment portfolio is valued at market prices. In the absence of the latter, a similar one is looked for in the market and if not found the assumptions are used.

Macroeconomic rate projected at cash flow methodology. Derivatives are estimated at fair value. In accounts receivable an estimate is made at the market rate in effect for similar credits. Accounts receivable from employees are valued similarly to mass debtors, except for home loans.

For equity investments, the methodology is the cash flow; it is estimated at market price for those that are listed in the stock exchange; the rest are valued at historic cost.

– **Likelihood of occurrence and value of contingent or uncertain-value liabilities.**

The assumptions used for uncertain or contingent liabilities include the classification of the legal process by the “expert judgment” of the areas professionals, the type of contingent liability, the possible legislative changes, and the existence of high-courts’ jurisprudence that applies to the concrete case - the existence of similar cases in the company, - the study and analysis of the substance of the issue, - the guarantees existing at the moment when the facts occur.

The company discloses and does not recognize in the financial statements those obligations rated as possible; obligations rated as remote are not disclosed or recognized.

– **Future disbursements for asset dismantlement and retirement obligations.**

- In the assumptions and hypothesis used for determining future disbursements for asset dismantlement and retirement obligations, aspects such as the following were considered: estimate of future outlays in which EPM must incur for the execution of those activities associated to asset dismantlement on which legal or implicit obligations have been identified; the initial date of dismantlement or restoration; the estimated date of finalization; and the discount rates. **Determination of the existence of financial or operating leases in terms of the transfer of risks and benefits of leased assets.**

The significant assumptions that are considered for the determination of existence of a lease include the assessment of the conditions if the right to control the use of the asset for a period of time in exchange for a consideration is transmitted, that is, the existence of an identified asset is assessed; the right to obtain substantially all the economic benefits of the use of the asset throughout the period of use; the right to indicate how and for what purpose the asset used throughout the period of use; right to operate the asset throughout the period of use without the existence of changes in the operating instructions.

– **Recoverability of deferred tax assets**

Deferred tax asset in EPM has been generated by the temporary differences that generate future fiscal consequences in the financial position of Croup Companies; these differences are essentially represented in fiscal assets that exceed the assets under IFRS; and in fiscal liabilities, lower than the

liabilities under IFRS, such as it is the case of the pension liability components, the amortized cost of bonds, financial leasing, and other sundry provisions and contingencies provision.

The company deferred tax asset is recovered in the net income taxed on the current income tax generated.

– **The determination of whether a set of assets meets the conditions to be classified as discontinued operation.**

In the company the assumptions that are subject to disclosure were not taken into account for the determination of whether a set of assets meets the conditions to be classified as a discontinued operation since there were no transactions that would make assume the discontinuity of an operation.

- **Determination of receivables impairment**

For the calculation of the credit loss expected each obligation is assigned an individual probability of default that is calculated based on a probability model that involves sociodemographic variables, of the product and of behavior.

The model uses a 12-month range, so the probability that an obligation will have to be provisioned in a determined percentage in that same period is estimated. The model will be applied based not he scorecard developed taking into account the company's information. The models are defined in accordance with the information available and the characteristics of the population groups for each one. Although the methodology is applied to all accounts with balance, it is necessary to take into consideration some exclusions such as: written-off accounts; self-consumptions; contributions; public lighting and in general charges from third parties. For their calculation, the time form which it is considered that there was a default of the obligation and it will not be recovered is defined.

With this information the calculation of the expected loss is made as follows:

$EL = PD \times EB \times LGD$ , where:

Probability of Default (PD): corresponds to the probability that, in a term of twelve months, the debtors of a determined segment and rating of receivables will be in default.

Exposed Balance of Asset (EB): corresponds to the balance of principal, balance of interest, and other charges in effect of the obligations.

Loss given the default (LGD): it is defined as the economic impairment that the entity would suffer in case that any of the situations of default materializes.

- **Estimates of revenue**

The company recognizes the income originated in the sale of goods in the period of transfer of the risks and benefits and those originated in the rendering of services when they are delivered to the customer, regardless of the date when the corresponding invoice is prepared. The information from the contracts or agreements with the customers is taken to make this estimate and the value to be recognized in the income is established in this manner.

For other items different from the rendering of public utilities, the Company estimates and recognizes the value of the income for sales of goods or rendering of services based on the terms or conditions of interest rate, term, among others, of each contract that originates the sale.

In the month following the recording of the estimates, their value is adjusted by the difference between the value of the actual revenues already known against the estimated revenues.

## **Note 4. Property, plant and equipment, net**

The following is the detail of the carrying value of properties, plant and equipment:

Concept	2016	2015
Cost	23,810,139	21,275,133
Accumulated depreciation and impairment	(3,080,187)	(2,802,594)
<b>Total</b>	<b>20,729,952</b>	<b>18,472,539</b>

- Figures expressed in millions of Colombian pesos -

The following is the detail of the carrying value of properties, plant and equipment that are temporarily out of service, mainly because some generation plants are undergoing a modernization process. These assets are expected to be incorporated to the operation in the medium term:

Properties, plant and equipment that are temporarily out of service	2016	2015
Plants, ducts and tunnels	25,529	26,153
Land and buildings	7,098	7,157
Machinery & equipment	41	49
Other property, plant and equipment	30	60
<b>Total properties, plant and equipment that are temporarily out of service</b>	<b>32,698</b>	<b>33,419</b>

- Figures expressed in millions of Colombian pesos -

This information refers to the components of the Power General Plants of: Rio Abajo, Dolores, Calera, El Limon and Piedras.

The movement of the cost, depreciation and impairment of property, plant and equipment is detailed below:

2016	Network, lines and cables	Plants, ducts and tunnels	Constructions in progress <sup>1</sup>	Land and Buildings	Machinery & Equipment	Communication and Computer Equipment	Furniture & Fixtures & Office Equipment	Other property, plant and equipment <sup>2</sup>	Total
Cost as of January	3,919,606	6,859,853	4,904,192	4,959,471	139,192	170,423	47,700	274,696	21,275,133
Additions <sup>3</sup>	30,057	14,027	2,626,508	5,449	9,640	12,492	659	(29,106)	2,669,726
Advances payments (amortized) made to third parties	(7)	-	(27,743)	-	-	-	-	-	(27,750)
Transfers (-/+)	488,255	227,921	(836,544)	48,829	17,371	1,602	5,346	(11,157)	(58,377)
Disposals (-)	(319)	(16,116)	-	(1,879)	(1,184)	(23,082)	(569)	(2,016)	(45,165)
Other changes	(675)	47,392	(18,753)	27,259	82	(56)	(111)	(58,566)	(3,428)
<b>Cost in books as of December 31</b>	<b>4,436,917</b>	<b>7,133,077</b>	<b>6,647,660</b>	<b>5,039,129</b>	<b>165,101</b>	<b>161,379</b>	<b>53,025</b>	<b>173,851</b>	<b>23,810,139</b>
<b>Accumulated depreciation and impairment</b>									
Accumulated depreciation and impairment as of January 1	(754,425)	(1,117,647)	-	(704,973)	(70,935)	(91,682)	(19,912)	(43,020)	(2,802,594)
Depreciation of the period	(130,976)	(191,207)	-	(55,817)	(10,221)	(28,589)	(3,847)	(9,668)	(430,325)
Impairment of the period (see notes 7 and 29)	(418,382)	(86,876)	-	(55,818)	(1,721)	(305)	(16)	(1,311)	(564,429)
Reversal of loss of impairment (-) (see notes 7 and 28)	192,420	183,011	-	304,978	2,957	19	185	1,979	685,549
Disposals (-)	119	7,295	-	142	811	21,363	508	1,684	31,922
Other changes	(273)	147	-	(36)	(69)	(52)	(161)	134	(310)
<b>Accumulated depreciation and impairment as of December 31</b>	<b>(1,111,517)</b>	<b>(1,205,277)</b>	<b>-</b>	<b>(511,524)</b>	<b>(79,178)</b>	<b>(99,246)</b>	<b>(23,243)</b>	<b>(50,202)</b>	<b>(3,080,187)</b>
<b>Property, plant &amp; equipment as of December 31</b>	<b>3,325,400</b>	<b>5,927,800</b>	<b>6,647,660</b>	<b>4,527,605</b>	<b>85,923</b>	<b>62,133</b>	<b>29,782</b>	<b>123,649</b>	<b>20,729,952</b>
<b>Advances payments made to third parties</b>									
Balance as of January 1, 2016	6	-	48,093	-	-	-	-	-	48,099
Movement (+)	(7)	-	22,262	-	-	-	-	-	22,255
Movement (-)	1	-	(50,005)	-	-	-	-	-	(50,004)
<b>Balance December 31, 2016</b>	<b>-</b>	<b>-</b>	<b>20,350</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>20,350</b>

- Figures expressed in millions of Colombian pesos -



2015	Network, lines and cables	Plants, ducts and tunnels	Constructions in progress 1	Land and Buildings	Machinery & Equipment	Communicatio n and Computer Equipment	Furniture & Fixtures & Office Equipment	Other property, plant and equipment 2	Total
Cost as of January	3,661,625	6,757,321	3,140,557	4,923,084	140,807	156,365	42,424	192,394	19,014,577
Additions <sup>3</sup>	29,027	21,448	2,089,230	24,279	5,192	27,747	4,781	95,957	2,297,661
Advances payments (amortized) made to third parties	6	-	16,732	-	-	-	-	(137)	16,601
Transfers (-/+)	215,755	78,706	(304,107)	21,458	2,927	760	489	(18,074)	(2,086)
Disposals (-)	(140)	(10,678)	-	(3,206)	(922)	(14,451)	(82)	(1,934)	(31,413)
Other changes	13,333	13,056	(38,220)	(6,144)	(8,812)	2	88	6,490	(20,207)
<b>Cost in books as of December 31</b>	<b>3,919,606</b>	<b>6,859,853</b>	<b>4,904,192</b>	<b>4,959,471</b>	<b>139,192</b>	<b>170,423</b>	<b>47,700</b>	<b>274,696</b>	<b>21,275,133</b>
<b>Accumulated depreciation and impairment</b>									
Accumulated depreciation and impairment as of January 1	(634,709)	(930,804)	-	(647,538)	(63,545)	(75,283)	(16,490)	(34,252)	(2,402,621)
Depreciation of the period <sup>6</sup>	(119,642)	(190,310)	-	(54,841)	(10,102)	(29,193)	(3,324)	(10,353)	(417,765)
Disposals (-)	16	5,232	-	353	452	12,944	61	1,310	20,368
Transfers (-/+)	-	-	-	-	-	-	-	-	-
Other changes	(90)	(1,765)	-	(2,947)	2,260	(150)	(159)	275	(2,576)
<b>Accumulated depreciation and impairment as of December 31</b>	<b>(754,425)</b>	<b>(1,117,647)</b>	<b>-</b>	<b>(704,973)</b>	<b>(70,935)</b>	<b>(91,682)</b>	<b>(19,912)</b>	<b>(43,020)</b>	<b>(2,802,594)</b>
<b>Property, plant &amp; equipment as of December 31</b>	<b>3,165,181</b>	<b>5,742,206</b>	<b>4,904,192</b>	<b>4,254,498</b>	<b>68,257</b>	<b>78,741</b>	<b>27,788</b>	<b>231,676</b>	<b>18,472,539</b>
<b>Advances payments made to third parties</b>									
Balance as of January 1, 2015	-	-	31,361	-	-	-	-	137	31,498
Movement (+)	7	-	40,446	-	-	-	-	-	40,453
Movement (-)	(1)	-	(23,714)	-	-	-	-	(137)	(23,852)
<b>Balance December 31, 2015</b>	<b>6</b>	<b>-</b>	<b>48,093</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>48,099</b>

- Figures expressed in millions of Colombian pesos -

Properties, plant and equipment present a variation in respect to 2015, due mainly to the construction of infrastructure in different businesses of the company, of which, the most relevant one corresponds to the construction of the Ituango Hydroelectric project, which shows a variation in respect to 2015 of \$1,721,054.

At the closing of the period, an impairment test made to the assets connected to the CGU which in turn have intangibles with an indefinite useful life, obtaining as result impairment of some components associated to the CGU of Sanitation and reversal thereof in the components of the assets of the CGU Water Provision; this implied their recognition in the financial statements (see Note 7 Impairment of assets).

<sup>1</sup>Includes capitalization of borrowing costs for \$259,890 (2015: \$148,375), the average weighted rate used to determine the amount of the borrowing costs was of 6.34%. (2015: 8.15%), which is the specific effective interest rate of this type of loan.

Includes transportation, traction and lifting equipment, replacement assets, property, plant and equipment in transit, property, plant and equipment in set up and medical and scientific equipment, Replacement assets and kitchen and dining equipment.

<sup>3</sup>Includes the purchases, capitalizable disbursements that meet the recognition criteria, the goods received from third parties and the costs for dismantling, removal and restoration of elements of property, plant and equipment. At the closing of periods 2016 and 2015 no grants were received from the government.

The main projects under construction are the following:

Project	2016	2015
Ituango	5,660,416	3,939,363
Nueva Esperanza	390,603	257,097
Otros proyectos	380,917	607,384
Línea Bello Guayabal	76,979	6,042
Interconexión la ceja-Sonsón	38,825	17,327
Linea Caucasia- Cerromatoso	25,331	9,493
Distrito Frío	25,257	33,686
Confiabilidad Guayabal	19,345	16,081
Conducciones	15,515	13,516
San Lorenzo	14,471	4,203
<b>Total</b>	<b>6,647,660</b>	<b>4,904,192</b>

- Figures expressed in millions of Colombian pesos -

The Ituango hydroelectric project shows a physical progress of 65%, where the current timetable is designed to have all works completed in the plant site, necessary for the first power generation, in the last quarter of 2018.

In order to guarantee the connection to the national interconnected system, the company Interconexión Eléctrica S.A. (ISA), among other actions, carries out the processes for obtaining the required environmental license with the national authority of environmental licenses ALNA and other departmental and municipal organizations. The initial target to meet in this process is to obtain the license at the latest in the first week of April 2017, in order that this front will be adequately synchronized with the needs of the works at the site of the plant. Any difficulty that may arise in this process, if no alternative strategies are established to recover the impact generated, may affect the current conditions of the entry in operation of the Project, provided for the last quarter of 2018.

As of December 31, 2016 there are restrictions on the realization of properties, plant and equipment associated to some equipment of the automotive park for a net carrying value of \$15. These restrictions occur by theft, personal injuries and attachments and have been affected as guarantee for the compliance of obligations.

The most significant commitments of acquisition of property, plant and equipment of the Company as of the report date amount to \$1,023,438 (2015: \$2,522,876).

The Company obtained income for compensations from third parties for loss of property, plant and equipment for \$404,340 corresponding to lost profits and \$67,758 corresponding to consequential damage related to the loss in the Guatape Plant, recorded in other income for indemnifications (See note 28 Other income).

The following is the historic cost of properties, plant and equipment fully depreciated that continue in operation as of December 31 2016 and 2015:

Group	2016	2015
Plants, ducts and tunnels	14,091	9,702
Networks, lines and cables	4,830	2,025
Machinery and equipment	2,920	1,992
Communication and Computer equipment	1,443	3,957
Other property, plant and equipment	921	652
Buildings	221	48
<b>Total</b>	<b>24,426</b>	<b>18,376</b>

- Figures expressed in millions of Colombian pesos -

## Note 5. Investment property

The fair value of investment properties is determined by the Real Estate Asset Negotiation and Administration Unit of EPM. For the determination of the fair value of the investment properties the comparative or market value is used, which consists in deducting the price by comparison of transactions, demand and supply and appraisal of similar or comparable real estate, prior adjustments of time, conformation and location; the comparative or market method, which consists in deducing the price by comparison of transactions, supply and demand and appraisals of similar or comparable properties, prior adjustments of time, conformation, and location; and the residual method that is applied only to the buildings and is based on the determination of the updated cost of the construction, less the depreciation for age and conservation condition. And the income method, which is used to determine the possible value of a good according to its ability to generate income taking into account the probable monthly value of the lease that would be willing to pay tenants in the leases market. See note 39 Measurement of fair value on a recurring and non-recurring basis.

Investment properties	2016	2015
<b>Book value as of January 1</b>	157,213	138,212
Net profit or loss for adjustment of fair value <sup>1</sup>	(12,484)	12,383
Disposals (-)	(1,105)	-
Transfers <sup>2</sup> (-/+)	(26,996)	6,617
<b>Book value as of December 31</b>	<b>116,628</b>	<b>157,213</b>

- Figures expressed in millions of Colombian pesos -

<sup>1</sup> See note 18 Other accumulated comprehensive income, note 26 Total income and note 29 - Other expenses.

<sup>2</sup> Includes transfers to property, plant and equipment from investment property.

The revenues for leasing of investment properties of the period amounted \$610 (2015: \$584). As of December 31, 2016 and 2015 there were no direct expenses related to investment properties.

As of December 31, 2016 and 2015 there are no contractual obligations to acquire, construct or develop investment properties, or for repairs, maintenance or improvements thereof.

As of December 31, 2016 there are contractual restrictions on the investment property for \$1,970 (2015: \$16,970).

## Note 6. Other intangibles assets

The following is the detail of the book value of the intangible assets:

Intangibles	2016	2015
Goodwill	260,950	260,950
<b>Total goodwill</b>	<b>260,950</b>	<b>260,950</b>
Other intangibles	547,770	442,075
Accumulated depreciation and impairment	(270,660)	(197,308)
<b>Total other intangibles</b>	<b>277,110</b>	<b>244,767</b>
<b>Total</b>	<b>538,060</b>	<b>505,717</b>

- Figures expressed in millions of Colombian pesos -

The movement of cost, depreciation and impairment of intangible assets is detailed below:

2016	Goodwill	Concessions and similar rights	Capitalized development expenses	Software & information technology applications	Licenses	Rights	Other intangible assets <sup>1</sup>	Total
Cost as of January	260,950	237,897	20,600	75,568	39,119	54,244	14,647	703,025
Additions <sup>2</sup>	-	121	10,861	17,645	18,957	-	15	47,599
Transfers (-/+)	-	41,380	-	12,840	49	-	4,108	58,377
Disposals (-)	-	-	-	(214)	(968)	-	-	(1,182)
Other changes	-	3,760	1	(1)	-	(6,813)	3,954	901
<b>Cost in books as of December 31</b>	<b>260,950</b>	<b>283,158</b>	<b>31,462</b>	<b>105,838</b>	<b>57,157</b>	<b>47,431</b>	<b>22,724</b>	<b>808,720</b>
Accumulated amortization and impairment as of January 1	-	(129,416)	-	(43,605)	(21,360)	(496)	(2,431)	(197,308)
Amortization of period <sup>3</sup>	-	(18,923)	-	(10,555)	(5,652)	(308)	(1,211)	(36,649)
Impairment of the period (see notes 7 and 29)	-	(63,075)	-	(207)	(32)	-	(776)	(64,090)
Reversal of loss of impairment (-) (see notes 7 and 28)	-	24,189	-	143	75	-	1,257	25,664
Disposals (-)	-	-	-	200	895	-	-	1,095
Other changes	-	(254)	-	15	(24)	-	891	628
<b>Accumulated amortization and impairment as of December 31</b>	<b>-</b>	<b>(187,479)</b>	<b>-</b>	<b>(54,009)</b>	<b>(26,098)</b>	<b>(804)</b>	<b>(2,270)</b>	<b>(270,660)</b>
<b>Intangible assets as of December 31</b>	<b>260,950</b>	<b>95,679</b>	<b>31,462</b>	<b>51,829</b>	<b>31,059</b>	<b>46,627</b>	<b>20,454</b>	<b>538,060</b>

- Figures expressed in millions of Colombian pesos -

2015	Goodwill	Concessions and similar rights	Capitalized development expenses	Software & information technology applications	Licenses	Rights	Other intangible assets <sup>1</sup>	Total
Cost as of January	260,950	243,203	20,600	77,980	30,013	40,062	11,924	684,732
Additions <sup>2</sup>	-	566	-	15,633	9,311	17	1,379	26,906
Transfers (-/+)	-	323	-	255	-	-	1,344	1,922
Disposals (-)	-	(9,317)	-	(18,193)	(205)	-	-	(27,715)
Other changes	-	3,123	-	(107)	-	14,164	-	17,180
<b>Cost in books as of December 31</b>	<b>260,950</b>	<b>237,898</b>	<b>20,600</b>	<b>75,568</b>	<b>39,119</b>	<b>54,243</b>	<b>14,647</b>	<b>703,025</b>
Accumulated amortization and impairment as of January 1	-	(114,893)	-	(54,075)	(17,877)	(188)	(2,173)	(189,206)
Amortization of period <sup>3</sup>	-	(18,635)	-	(7,722)	(3,663)	(308)	(753)	(31,081)
Disposals (-)	-	3,967	-	18,193	188	-	-	22,348
Transfers (-/+)	-	128	-	-	-	-	-	128
Other changes	-	17	-	(1)	(8)	-	495	503
<b>Accumulated amortization and impairment as of December 31</b>	<b>-</b>	<b>(129,416)</b>	<b>-</b>	<b>(43,605)</b>	<b>(21,360)</b>	<b>(496)</b>	<b>(2,431)</b>	<b>(197,308)</b>
<b>Intangible assets as of December 31</b>	<b>260,950</b>	<b>108,482</b>	<b>20,600</b>	<b>31,963</b>	<b>17,759</b>	<b>53,747</b>	<b>12,216</b>	<b>505,717</b>

- Figures expressed in millions of Colombian pesos -

<sup>1</sup> Includes easements, intangibles related to customers and other intangibles corresponding to premiums in Gas Service Stations.

<sup>2</sup> Includes the purchases, capitalizable disbursements that meet the recognition criteria and the concessions. In 2016 the purchases associated to capitalized disbursements for development were intended to information technology projects: Asset management, commercial information system and productivity in the field. At the closing of 2016 and 2015 no Government grants were received.

<sup>3</sup> See note 29 Costs for rendering of services and note 30 Administration expenses. At the closing of the periods the impairment test was performed to the assets for those intangibles with indefinite useful life. The detail of the impairment recognized in the comprehensive income statement is in note 7.

The useful lives of the intangible assets are:

Concessions and similar rights	As per the contract's effective term
Easements	Indefinite
Capitalized disbursement for development	Indefinite
Software and information technology applications	Indefinite/ definite 3 to 5 years
Licenses	Indefinite/ definite 3 to 5 years
Rights	As per the contract's effective term
Other intangible assets	Indefinite/ definite 7 to 15 years

The amortization of intangibles is recognized as costs and expenses in the comprehensive income statement, section of profit and loss of the period, in the lines of costs for rendering services and administration expenses.

As of December 31, 2016 and 2015 no restrictions were identified on the realization of intangible assets and no contractual commitments for the acquisition of such assets were identified.

The book value as of the report date and the remaining amortization period for significant assets are:

Significant intangible assets	Useful life	2016	2015
Goodwill Ituango Hydroelectric Project	Indefinite	177,667	177,667
Goodwill Espiritu Santo	Indefinite	82,980	82,980

- Figures expressed in millions of Colombian pesos -

The following intangible assets have an indefinite useful life: goodwill and easements the latter are agreed perpetually. By definition an easement is the actual right, perpetual or temporary on someone else's real estate, by virtue of which the property can be used, or exercise certain disposal rights, or prevent the owner from exercising some of his property rights. In EPM the easements are not treated individually, since they are created for public utility projects, where the general interest prevails over the private one, considering that the objective is to improve the quality of life of the community; the above-mentioned projects do not have a defined term and thus they are created perpetually supported in their use and in the civil code in its article 2970 and 3009. As of December 31, 2016 and 2015 they have a carrying value of \$279,803 and \$270,908 respectively.

Intangible assets with indefinite useful life	2016	2015
<b>Goodwill</b>		
Goodwill Ituango Hydroelectric Project	177,667	177,667
Goodwill Espiritu Santo	82,980	82,980
Goodwill Surtigas Necoclí	303	303
<b>Subtotal goodwill</b>	<b>260,950</b>	<b>260,950</b>
<b>Other intangibles</b>		
Easements	18,518	9,958
<b>Subtotal other intangibles assets</b>	<b>18,518</b>	<b>9,958</b>
<b>Total intangible assets with indefinite useful life</b>	<b>279,468</b>	<b>270,908</b>

- Figures expressed in millions of Colombian pesos -



## Note 7. Impairment of assets

### 7.1 Impairment of investments in subsidiaries, associates and Joint ventures

The net value of impairment losses recognized in the comprehensive income statement, related to the investments in subsidiaries and associates is as follows:

Investments	Carrying value		Impairment losses (reversal)	
	2016	2015	2016	2015
<b>Subsidiary</b>				
Hidroecológica del Teribe S.A. HET	86,963	86,963	-	-
Aguas de Malambo S.A. E.S.P.	1,641	1,641	-	1,641
<b>Total subsidiaries</b>	<b>88,604</b>	<b>88,604</b>	<b>-</b>	<b>1,641</b>

- Figures expressed in millions of Colombian pesos -

The key assumptions used by the company in the determination of the value in use are the following:

Item	Key assumption
Business plan update	A general update of the business plan was made, which forms part of the strategy review process and of the company's management model, allowing to estimate new capital needs of the company.
Income	Rate aspects: the rate applied corresponds to one denominated by the regulation "reduced costs" that is not directly associated to the investments and actual costs of the company which generates an unbalance and causes income to be lower than expected. Commercial aspects: the improvement of the receivables has been difficult because of the poor payment culture in the region.
Costs and expenses	The purchase of water in block has become necessary from Sociedad de Acueducto, Alcantarillado y Aseo de Barranquilla S.A. E.S.P. - AA for longer time than estimated given that initially it was considered that the neighborhoods served through these means would be interconnected to the system. Likewise, by resolution from the Water Regulation Commission the price was increased by three times its initial value. The company paid obligations generated before the entry of EPM which by stockholders' agreement should cover the previous owner. The recovery of those costs and expenses is in process.
Investment	Master plan: for the performance of the major works of water works and waste water it is necessary to have a master plan, which makes a diagnosis of the current infrastructure, identifies the needs and sets out the solutions in time of a town both at the investment and operating levels. The contract for its preparation was added in time to include a greater scope of customers. Similarly, there were delays due to the existence of problems in the networks that did not permit to make the studies, and that the length thereof exceeded that estimated in the contract. The fact of not having had a final master plan but only in 2013 implied: delays in the investments plant, less new subscribers and the non improvement in the continuity of the service.

## 7.2 Impairment of Cash Generating Units

The carrying value of goodwill and intangible assets with indefinite useful lives associated with each CGU is below:

Cash Generating Unit	Carrying value		Impairment losses (reversal)	
	2016	2015	2016	2015
<b>Power Generation Segment</b>				
Goodwill	260,647	260,647	-	-
Easements	444	444	-	-
<b>CGU - Generation -</b>	<b>261,091</b>	<b>261,091</b>	-	-
<b>Power Transmission Segment</b>				
Easements	2,402	241	-	-
<b>CGU - Transmission</b>	<b>2,402</b>	<b>241</b>	-	-
<b>Power Distribution Segment</b>				
Easements	9,220	3,320	-	-
<b>CGU - Distribution -</b>	<b>9,220</b>	<b>3,320</b>	-	-
<b>Gas Segment</b>				
Goodwill	303	303	-	-
Easements	3,481	3,481	-	-
<b>CGU - Gas -</b>	<b>3,784</b>	<b>3,784</b>	-	-
<b>Sanitation Segment</b>				
Easements	454	1,350	776	-
Licenses	-	-	32	-
Software	-	-	207	-
Concessions	-	-	63,076	-
Lands	-	-	55,404	-
Replacement goods	-	-	28	-
Buildings	-	-	413	-
Plants, ducts and tunnels	-	-	86,876	-
Network, lines and cables	-	-	418,382	-
Machinery & Equipment	-	-	1,693	-
Furniture & Fixtures & Office Equipment	-	-	16	-
Communication and Computer Equipment	-	-	305	-
Traction and lifting equipment	-	-	1,311	-
<b>CGU - Sanitation (see note 29)</b>	<b>454</b>	<b>1,350</b>	<b>628,519</b>	-

<b>Water Provision Segment</b>				-
Easements	2,517	2,841	(1,257)	-
Licenses	-	-	(75)	-
Software	-	-	(143)	-
Concessions	-	-	(24,189)	-
Lands	-	-	(191,596)	-
Replacement goods	-	-	(141)	-
Buildings	-	-	(113,382)	-
Plants, ducts and tunnels	-	-	(183,012)	-
Network, lines and cables	-	-	(192,420)	-
Machinery & Equipment	-	-	(2,957)	-
Furniture & Fixtures & Office Equipment	-	-	(185)	-
Communication and Computer Equipment	-	-	(19)	-
Traction and lifting equipment	-	-	(1,349)	-
Medical and scientific equipment	-	-	(489)	-
<b>CGU - Water Provision - (see note 28)</b>	<b>2,517</b>	<b>2,841</b>	<b>(711,214)</b>	<b>-</b>

- Figures expressed in millions of Colombian pesos -

The goodwill is assigned mainly to the Generation segment/CGU, which showed a balance as of December 31, 2016 for \$260,647 generated as a result of the liquidation of EPM affiliate Ituango S.A. E.S.P. and Espiritu Santo, which assets were transferred to EPM, additionally, a goodwill was generated in the Gas CGU resulting from the business combination with Surtidora de Gas del Caribe S.A. E.S.P. in the municipality of Necocli for \$303.

The easement intangible with indefinite useful life is assigned to the CGUs: Generation, Transmission, Distribution, Gas, Water Supply and Sanitation, which report a balance in 2015 for 2016 for \$18,518 and in 2015 for \$9,959.

At the closing of periods 2016 y 2015 impairment tests were made to the CGUs that had associated intangible assets with indefinite useful life and that presented indication of impairment but this was not evidenced with the exception of the Water Segment that shows an impairment in the CGU of Sanitation and a reversal of the impairment in the CGU of Water Provision.

#### **Impairment of fixed assets and intangibles**

##### **CGU Sanitation**

The impairment of its assets was calculated based on IAS 36 Impairment of assets, seeking to make sure that the value of assets that is being accounted for with report date December 31, 2016 reflects their recoverable value through their use or their sale.

**Value in use:** It was based on the most recent financial projections, estimating the cash flows that the Group expects to obtain from its assets for a period of 20 years<sup>1</sup>.

The discount rate that was used for the valuation reflects the capital structure of the company, which considers the return that the owner would require from this type of investments, taking into account: the risk free rate, the corresponding economic sector, the market, the country where the investment is located and the indebtedness.

Based on the above criteria, the impairment value of the assets amounts as of December 31, 2016 to \$628,519 and results from:

Value in use: \$514,857.

Carrying value of the CGU: \$1,143,376.

The key assumptions used by the company in the determination of the value in use of the CGU Sanitation are the following:

Sanitation Concept	Key assumption
Business plan update	The plan of the CGU was modified with the following facts; (I) rate change with Resolutions CRA 688 of 2014 and CRA 735 of 2015 dispatches by the Commission for Regulation of Drinking Water and Basic Sanitation -CRA, which force compliance with the indicators of quality and coverage and, therefore, the revision (Ii) review of demand projections and (iii) changes in the remuneration and start-up of the Aguas Claras Wastewater Treatment Plant
Income	In the income of the CGU the adjustments for the implementation of the new tariff framework are considered, which implies a decrease in the invoice of the CGU Sanitation of -8%, since the most significant investments were recognized in the previous tariff framework and Are now mostly reflected in investments for sustainability, in addition to a review of the projection of demand that showed a drop of approximately six million cubic meters by 2016, as a result of the penalties to high consumption set by the government , To mitigate the effects of the "El Niño" climate phenomenon, this saving behavior of users is maintained over time.  The invoice is also impacted by the indexation for inflation and the vegetative growth of the dumping.  In August 2017, the variable charge of waste water was increased by the start-up of the Aguas Claras Wastewater Treatment Plant.
Cost and expenses	The costs and expenses reflect from August 2017, the recognition to the subsidiary Aguas Nacionales for the operation and remuneration of the investment of the Aguas Claras plant, the other costs and expenses behave consistently with the operation of the business.  There was a shift in the start-up of the Aguas Claras Wastewater Treatment Plant from April to August 2017. With respect to the previous business plan, there was a decrease in the payments that should be recognized to the subsidiary National Waters for the remuneration of the PTAR Aguas Claras for review and reduction in the profitability required by the regulation.
Investment	The investments respond to the needs of the market, the completion of the Aguas Claras plant and compliance with the new regulation.

<sup>1</sup> The company uses 20 years for the financial projections taking into account that the financial theory states that when cash flows are being projected to perform valuations with them, it is required to project as many years as may be necessary until the cash flows stabilize. It is understood that a cash flow stabilized in the year in which there are not atypical growths of revenues, costs and expenses, and that no significant investments of the business are being made. In general, the public utility business is intensive in capital investments and its recovery period is higher than 20 years; for this reason the financial evaluation of the investments in the public utility sector must consider a period longer than 5 years, according to the provisions of IAS 36, where the actual revenues of the project can be observed and thus the recovery of the investment. In the case of the CGU of water provision and sanitation, the important investments are planned of up to 15 or 20 subsequent years because the cash flow of the companies of this sector is slow in the recovery of investments.

## CGU Water Provision

The impairment of its assets was calculated based on IAS 36, seeking to make sure that the value of the assets that are being accounted for with closing as of December 31, 2016 reflects the recoverable value through their utilization or their sale.

**Value in use:** it was based on the most recent financial projections, estimating the cash flows that the Group expects to obtain from its assets in a period of 20 years<sup>3</sup>.

The discount rate that was used for the valuation reflects the company's capital structure, which considers the return that the owner would require from this type of investments, taking into account: The risk-free rate, the corresponding economic sector, the market, the country where the investment is located and the indebtedness.

In the revenues of the CGU are considered the adjustments for implementation of the new rate framework, which implies an increase in the billings of the CGU Water Provision of 46%.

Based on the above criteria a reversal of impairment was identified in the CGU Water Provision for \$711,214. The carrying value of each asset was increased considering the lower between the value in use of \$1,991,982 and the carrying value that was determined (net of depreciation) for a value of \$1,280,768 as if a loss for impairment had not been recognized in previous periods. This increase was recognized in the income statement immediately.

The key assumptions used by the company in the determination of the value in use of the CGU Water Provision are the following:

Water Provision	
Concept	Key assumption
Business plan update	The CGU plan had changes as a result of the tariff change with Resolutions CRA 688 of 2014 and CRA 735 of 2015 issued by the Commission of Regulation of Drinking Water and Basic Sanitation -CRA, which obligate the fulfillment of indicators of quality and coverage And therefore review of investments and operations and by revision in demand projections.
Income	In the income of the CGU the adjustments for the implementation of the new tariff framework are considered, which implies an increase in the invoice of the CGU Provision of 46%, since it recognizes a higher level of investments as a result of the exigencies as to quality and coverage, an increase that will be applied in a staggered way until the year 2022. A review of the projection of the demand that showed a fall of approximately six million cubic meters for the year 2016, product of the penalties to the high consumptions Established by the government, to mitigate the effects of the "El Niño" climate phenomenon, this saving behavior of users is maintained over time. The invoice is also impacted by the indexation for inflation and the vegetative growth of consumption.
Cost and expenses	The costs and expenses correspond to the needs of the operation of the business, taking into account also the expenses of the projects of prepaid water, massive change of meters and the connection of users of the Valley of San Nicolás
Investment	Investments respond to the needs of the market and compliance with the new regulation.

The value in use and the book value of the CGU at the closing of 2016 that present indefinite useful life is detailed below:

UGE	Value in use	carrying value
Generation	27,181,671	13,540,281
Transmission	7,585,702	3,543,490
Distribution	1,991,982	1,280,768
Gas	1,234,882	702,074
Water Provision	1,175,399	761,175
Sanitation	514,857	1,143,376
<b>Total UGE</b>	<b>39,684,493</b>	<b>20,971,164</b>

- Figures expressed in millions of Colombian pesos -

## Note 8. Investment in subsidiaries

The detail of the subsidiaries of EPM as of the date of the period reported is as follows:

Name of subsidiary	Location (country)	Business	% Ownership and voting rights		Date of creation
			2016	2015	
Empresa de energía del Quindío S.A. E.S.P. EDEQ	Colombia	Provides public utilities of electric power purchase and sale and distribution of electric power.	19.26%	19.26%	12/22/1988
Central Hidroeléctrica de Caldas S.A. E.S.P. CHEC	Colombia	Provides public utilities of electric power, operation of electric power generation plants, transmission and subtransmission lines and distribution networks as well as the commercialization, import, distribution and sale of electric power.	24.44%	24.44%	9/9/1950
Electrificadora de Santander S.A. E.S.P. ESSA	Colombia	Provides public utilities of electric power purchase and sale, commercialization and distribution of electric power.	0.28%	0.28%	9/16/1950
Centrales Eléctricas del Norte de Santander S.A. E.S.P. CENS	Colombia	Provides public utilities of electric power, purchase, export, import, distribution and sale of electric power, construction and operation of generation plants, substation, transmission lines and distribution networks.	12.54%	12.54%	10/16/1952
Hidroecológica del Teribe S.A. HET	Panamá	Finances the construction of the Bonyic hydroelectric project required to meet the growing demand of energy of the Panama Isthmus.	99.19%	99.19%	11/11/1994
Gestión de Empresas Eléctricas S.A. GESA	Guatemala	Provides advisory and consultancy services to electric energy distribution, generation and transportation companies.	99.98%	99.98%	12/17/2004
Aguas Nacionales EPM S.A. E.S.P. <sup>1</sup>	Colombia	Provides public utilities of water, sewage and waste collection, treatment and utilization of waste, complementary activities and engineering services proper of these public utilities.	99.97%	99.97%	11/29/2002
Aguas de Urabá S.A. E.S.P. <sup>2</sup>	Colombia	Guarantee the rendering of domiciliary public utilities of water, sewage and waste collection and offset the infrastructure backlog of these utilities in the member municipalities.	67.25%	72.66%	1/18/2006
Empresas Públicas del Oriente S.A. E.S.P. En Liquidación <sup>3</sup>	Colombia	Provides water and sewage utilities to the rural and suburban zones of the municipalities of Envigado, Rionegro and El Retiro in the so-called San Nicolas Valley.	0.00%	56.00%	11/12/2009



Empresa de Aguas del Oriente Antioqueño S.A. E.S.P.	Colombia	Provides domiciliary public utilities of water and sewage, as well as other complementary activities proper of each of these utilities.	56.00%	56.00%	11/22/1999
Regional de Occidente S.A. E.S.P. <sup>2</sup>	Colombia	Provides domiciliary public utilities of water, sewage and waste collection, as well as other complementary activities proper of each of these utilities and the treatment and utilization of waste.	0.00%	59.98%	12/26/2006
Aguas de Malambo S.A. E.S.P.	Colombia	Engaged in guaranteeing the rendering of domiciliary public utilities of water and waste collection in the jurisdiction of the Municipality of Malambo Department of Atlántico.	94.98%	84.99%	11/20/2010
Empresas Varias de Medellín S.A. E.S.P. <sup>4</sup>	Colombia	Subsidiary engaged in the rendering of the public utility of waste collection within the framework of the integral management of solid waste.	64.98%	64.98%	1/11/1964
EPM Inversiones S.A.	Colombia	Engaged in the investment of capital in national or foreign companies organized as public utilities.	99.99%	99.99%	8/25/2003
Maxseguros EPM Ltd <sup>5</sup>	Bermuda	Negotiation, contracting and management of reinsurance for the policies that cover the equity.	100.00%	100.00%	4/23/2008
Panamá Distribution Group S.A. PDG	Panamá	Capital investment in companies.	100.00%	100.00%	10/30/1998
Distribución Eléctrica Centroamericana DOS S.A. DECA II	Guatemala	It makes capital investments in companies engaged in the distribution and commercialization of electric power and to provide telecommunications services.	99.99%	99.99%	3/12/1999
EPM Capital México S.A. de CV	México	Develops infrastructure projects related to electric power, lighting, gas, telecommunications, sanitation, water treatment plants, sewage, wastewater treatment, buildings, as well as their operation, studies and services.	38,53%	42,50%	5/4/2012
EPM Chile S.A. <sup>6</sup>	Chile	Develops energy projects, lighting, gas, telecommunications, sanitation, water treatment plants, sewage and wastewater treatment, as well as the provision of such services and participation in all kinds of tenders.	99.99%	99.99%	2/22/2013

<sup>1</sup> Subsidiary liquidated, as per minutes No. 012 of the General Stockholders' Meeting of January 29, 2016, registered at the Chamber of Commerce of Eastern Antioquia on February 24, 2016 under number 33233 of book IX.

<sup>2</sup> In March and December 2016, EPM capitalized Aguas de Malambo S.A. E.S.P. by \$9,000 and \$4,999, respectively.

<sup>3</sup> In June 2016, EPM Inversiones S.A. reimbursed contributions to EPM for \$165,000.

<sup>4</sup> In October 2016, EPM capitalized EPM Chile S.A. for \$87,744. In June and November 2015, EPM capitalized EPM Chile S.A. by \$663,749 and \$221,120, respectively.

<sup>5</sup> In December 2015, EPM capitalized Aguas Nacionales EPM S.A. by \$250,000.

<sup>6</sup> On December 23, 2015, in accordance with public deed No. 4934 of Notary Third of Medellín, the approval of the merger for absorption was approved whereby Aguas de Urabá S.A. E.S.P. absorbs Regional de Occidente S.A. E.S.P., as evidenced in minutes 17 and 16 of the general stockholders' meetings of the companies, respectively, entered into on October 23, 2015. Based on the merger commitment, it was established that for accounting purposes, the final operation is formalized based on the figures resulting from accounting of the two companies, as of the last day of the month when the solemnization of the respective deed takes place, that is as of December 31, 2015. Consequently, the operations of the Regional

de Occidente S.A. E.S.P. (absorbed company) are made by Aguas de Urabá S.A. E.S.P. (absorbing company) as of January 1, 2016.

- 7 In December 2015, EPM capitalized Empresas Varias de Medellin S.A. E.S.P. by \$18.
- 8 In May 2015 EPM capitalized Maxseguros EPM Ltd. by \$24,170.
- 9 The value of the investments in subsidiaries as of the report date was:

Subsidiary	2016					2015				
	Value of investment				Total	Value of investment				Total
	Cost	Equity method	Impairment	Dividends		Cost	Equity method	Impairment	Dividends	
Empresa de Energia del Quindío S.A. E.S.P. EDEQ	28,878	8,095	-	(2,615)	34,358	28,878	4,955	-	(3,388)	30,445
Central Hidroeléctrica de Caldas S.A. E.S.P. CHEC	140,663	2,609	-	(5,128)	138,144	140,663	(10,045)	-	(3,485)	127,133
Electrificadora de Santander S.A. E.S.P. ESSA	2,514	(235)	-	(196)	2,082	2,514	(277)	-	(168)	2,069
Centrales Eléctricas del Norte de Santander S.A. E.S.P. CENS	57,052	(21,672)	-	(3,359)	32,021	57,052	(17,152)	-	(4,750)	35,150
Hidroecológica del Teribe S.A. HET	346,067	(259,104)	(86,963)	-	-	346,067	(209,172)	(86,963)	-	49,932
Gestión de Empresas Eléctricas S.A. GESA	25,782	15,803	-	(5,717)	35,868	25,782	18,671	-	(7,464)	36,989
Aguas Nacionales EPM S.A. E.S.P.	1,292,115	(16,855)	-	(2,819)	1,272,441	1,292,115	(23,756)	-	(3,700)	1,264,659
Aguas Regionales EPM S.A. E.S.P. (antes Aguas de Urabá S.A. E.S.P.)	47,228	4,177	-	-	51,405	40,443	5,478	-	-	45,921
Empresas Públicas del Oriente S.A. E.S.P.	-	-	-	-	-	3,015	180	-	-	3,195
Empresa de Aguas del Oriente Antioqueño S.A. E.S.P.	1,564	586	-	-	2,150	1,564	455	-	-	2,019
Regional de Occidente S.A. E.S.P.	-	-	-	-	-	6,785	2,085	-	-	8,870
Aguas de Malambo S.A. E.S.P.	38,218	(23,568)	(1,641)	-	13,009	24,218	(18,246)	(1,641)	-	4,331
Empresas Varias de Medellin S.A. E.S.P.	32,967	70,518	-	-	103,485	32,967	61,828	-	-	94,795
EPM Inversiones S.A.	1,561,331	(267,197)	-	-	1,294,134	1,726,331	(289,690)	-	(97,041)	1,339,600
Maxseguros EPM Ltd	63,784	63,845	-	-	127,629	63,784	65,883	-	-	129,667
Panamá Distribution Group S.A. PDG Distribución Eléctrica	238,117	222,398	-	-	460,515	238,117	245,562	-	(32,000)	451,678
Centroamericana DOS SA DECA II	1,009,257	727,153	-	(71,699)	1,664,712	1,009,257	712,082	-	(102,303)	1,619,036
EPM Capital México S.A. de CV	98,719	(54,725)	-	-	43,994	98,719	1,743	-	-	100,462
Patrimonio Autónomo Financiación Social	84,414	36,761	-	-	121,175	84,414	16,719	-	-	101,133
EPM Chile S.A.	1,031,779	(385,798)	-	-	645,981	944,035	(190,486)	-	-	753,549
<b>Total</b>	<b>6,100,449</b>	<b>122,793</b>	<b>(88,604)</b>	<b>(91,533)</b>	<b>6,043,104</b>	<b>6,166,720</b>	<b>376,817</b>	<b>(88,604)</b>	<b>(254,300)</b>	<b>6,200,633</b>

- Figures expressed in millions of Colombian pesos -

The financial information of the subsidiaries of the company as of the reporting period date is the following. All subsidiaries are accounted for by equity method in the separate financial statements:

2016	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Rendering of services	Result for the period	Other comprehensive income	Total comprehensive income
						Continuing operations		
Empresa de energía del Quindío S.A. E.S.P. EDEQ	58,814	181,259	37,713	36,883	230,078	35,550	(1,651)	230,078
Central Hidroeléctrica de Caldas S.A. E.S.P. CHEC	214,039	809,952	127,844	392,748	673,293	70,585	(1,926)	673,293
Electrificadora de Santander S.A. E.S.P. ESSA	226,040	1,123,487	279,694	501,626	1,053,030	87,327	(9,876)	1,053,030
Centrales Eléctricas del Norte de Santander S.A. E.S.P. CENS	164,812	715,492	182,738	473,573	614,046	29,887	(23,608)	614,046
Hidroecológica del Teribe S.A. HET	24,431	466,699	38,342	349,803	46,277	(50,545)	(7,374)	46,277
Gestión de Empresas Eléctricas S.A. GESA	13,240	-	110	-	6,089	5,817	(3,307)	6,089
Aguas Nacionales EPM S.A. E.S.P.	209,955	1,161,370	85,134	14,625	759	10,992	-	759
Aguas Regionales EPM S.A. E.S.P. (antes Aguas de Urabá S.A. E.S.P.)	20,338	97,236	18,029	23,109	42,047	2,561	-	42,047
Empresas Públicas del Oriente S.A. E.S.P. En Liquidación (EPO)	-	-	-	-	-	-	-	-
Empresa de Aguas del Oriente Antioqueño S.A. E.S.P.	877	3,250	159	129	1,540	273	(39)	1,540
Regional de Occidente S.A. E.S.P.	-	-	-	-	-	-	-	-
Aguas de Malambo S.A. E.S.P.	12,634	12,813	2,713	5,614	7,935	(2,660)	-	7,935
Empresas Varias de Medellín S.A. E.S.P.	160,705	127,129	47,798	199,306	185,950	17,213	(3,731)	185,950
EPM Inversiones S.A.	4,124	1,234,166	19	1,602	5	151,418	(20,789)	5
Maxseguros EPM Ltd	208,696	-	10,695	70,372	9,498	4,278	(6,341)	9,498
Panamá Distribution Group S.A. PDG	28,648	309,741	12	-	-	46,763	(34,370)	-
Distribución Eléctrica Centroamericana DOS S.A. DECA II	10,017	1,307,395	43	-	-	245,772	110,322	-
EPM Capital México S.A. de CV	4,908	98,258	44	-	128	(70,411)	(79,349)	128
EPM Chile S.A.	10,979	976,760	3,467	285,913	2,169	(146,982)	731,147	2,169

- Figures expressed in millions of Colombian pesos -

2015	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Rendering of services	Result for the period	Other comprehensive income	Total comprehensive income
						Continuing operations		
Empresa de energía del Quindío S.A. E.S.P. EDEQ	41,940	181,912	36,420	42,274	184,923	17,708	367	18,075
Central Hidroeléctrica de Caldas S.A. E.S.P. CHEC	188,213	803,748	195,519	338,099	615,138	42,671	2,718	45,389
Electrificadora de Santander S.A. E.S.P. ESSA	174,645	1,027,022	220,227	418,281	926,372	82,145	3,040	85,185
Centrales Eléctricas del Norte de Santander S.A. E.S.P. CENS	127,821	638,506	156,018	361,353	551,167	25,896	1,763	27,659
Hidroecológica del Teribe S.A. HET	34,188	547,658	24,604	396,332	47,885	5,112	39,126	44,238
Gestión de Empresas Eléctricas S.A. GESA	14,374	-	123	-	6,972	6,699	3,219	9,918
Aguas Nacionales EPM S.A. E.S.P.	473,809	860,850	65,106	6,159	555	(1,313)	-	(1,313)
Aguas Regionales EPM S.A. E.S.P. (antes Aguas de Urabá S.A. E.S.P.)	30,933	66,078	14,405	19,410	27,650	519	-	519
Empresas Públicas del Oriente S.A. E.S.P. En Liquidación (EPO)	6,050	-	178	-	1,328	279	-	279
Empresa de Aguas del Oriente Antioqueño S.A. E.S.P.	830	3,061	146	139	1,556	264	(21)	243
Regional de Occidente S.A. E.S.P.	3,694	22,997	3,320	8,582	7,953	1,275	-	1,275
Aguas de Malambo S.A. E.S.P.	5,156	10,233	2,506	5,857	8,170	(11,069)	-	(11,069)
Empresas Varias de Medellín S.A. E.S.P.	138,052	125,355	98,367	137,904	174,454	18,801	6,813	25,614
EPM Inversiones S.A.	60,923	1,568,195	1,732	392	2,916	99,037	1,367	100,404
Maxseguros EPM Ltd	194,796	-	1,788	63,342	7,171	7,612	29,913	37,525
Panamá Distribution Group S.A. PDG	1,204	329,562	11	-	-	92,866	47,882	140,748
Distribución Eléctrica Centroamericana DOS S.A. DECA II	10,444	731,354	27	-	-	90	175,638	175,728
EPM Capital México S.A. de CV	3,840	283,250	3,421	46,207	-	(22,838)	5,340	(17,498)
EPM Chile S.A.	66,207	1,484,272	63,357	357,780	1,949	(13,759)	186,670	172,911

- Figures expressed in millions of Colombian pesos -

## 8.1 Changes in the interest held in subsidiaries that did not give rise to a loss of control

During the year 2016 there were changes in the interest held in the following subsidiaries:

The percentage of the interest in Aguas de Malambo S.A. E.S.P. increased to 94.98% by capitalization by EPM. This variation had an effect on the application of equity method, reducing the investment by \$370 recognized directly in equity.

The percentage of the participation in Aguas Regionales EPM S.A. E.S.P. decreased to 67.25% by effect of the merger by absorption of Aguas de Uraba S.A. E.S.P. and Regional de Occidente S.A. E.S.P. This variation had effect on the application of equity method, reducing the investment by \$5,745, recognized directly in equity.

The percentage of the participation in EPM Capital Mexico SA de CV decreased to 38.53% by effect of the capitalization of EPM Latam S.A., which acquired 6.10% for a total participation held of 40.59% in equity. This variation had effect on the application of equity method, reducing the investment by \$3, recognized directly in equity.

During 2015 there were changes in the participation of the following subsidiaries:

The participation percentage in Empresas Varias de Medellín S.A. E.S.P. decreased to 64.98%, by the effect of the capitalization of EPM Inversiones S.A. that acquired 34.95%. This variation had effect on the application of equity method, increasing the investment by \$34,880, recognized directly in the equity. The Interest percentage in EPM Capital Mexico SA de CV decreased to 42.50% by the effect of the capitalization of EPM Latam S.A. that acquired 34.49% and PDG - Panama Distribution Group S.A. that acquired 18.29%.

This variation had effect on the application of equity method, increasing the investment by \$20,535, recognized directly in equity.

The percentage of participation in Aguas Nacionales EPM S.A. E.S.P. increased to 99.97%, by capitalization by EPM. This variation had effect on the application of equity method, decreasing the investment by \$15, recognized directly in equity.

The percentage of participation in EPM Chile S.A. increased to 99.99%, by capitalization of EPM. This variation had effect on the application of equity method, decreasing the investment by \$575, recognized directly in equity.

## Note 9. Investments in associates

The detail of the associates of EPM as of the date of the period reported is as follows:

Name of Associate	Location (country)	Type of business	% participation		Creation date
			2016	2015	
Hidroeléctrica Ituango S.A. E.S.P.	Colombia	Promotion, design, construction, operation, maintenance and commercialization of energy nationally and internationally of the Central Hidroeléctrica Pescadero Ituango	46.33%	46.33%	12/29/1997
Hidroeléctrica del Río Aures S.A. E.S.P.	Colombia	Generation and commercialization of electric power through a hydroelectric plant, located in the jurisdiction of the municipalities of Abejorral and Sonsón of the Department of Antioquia	42.04%	42.04%	5/14/1997
UNE EPM Telecomunicaciones S.A.	Colombia	Provision of telecommunications, information and communications technology services, information services and complementary activities.	50.00%	50.00%	6/29/2006
Inversiones Telco S.A.S.	Colombia	Investing in companies which corporate objects are based on the rendering of business process outsourcing (BPO) for companies, especially but not limited to telecommunications services.	50.00%	50.00%	11/5/2013

The value of investments in associates as of the report date was:

Name of Associate	2016				2015			
	Value of Investment			Dividends	Value of Investment			Dividends
	Cost	Impairment	Total		Cost	Impairment	Total	
Hidroeléctrica Ituango S.A. E.S.P.	34,227	-	34,227	-	34,227	-	34,227	-
Hidroeléctrica del Río Aures S.A. E.S.P.	2,478	-	2,478	-	-	-	-	-
UNE EPM Telecomunicaciones S.A.	2,342,488	-	2,342,488	-	2,342,488	-	2,342,488	233,870
Inversiones Telco S.A.S.	55,224	-	55,224	-	55,224	-	55,224	-
<b>Total investments in associates</b>	<b>2,434,417</b>	<b>-</b>	<b>2,434,417</b>	<b>-</b>	<b>2,431,939</b>	<b>-</b>	<b>2,431,939</b>	<b>233,870</b>

- Figures expressed in millions of Colombian pesos -

Associate

Total investments in associates

## Note 10. Investments in joint ventures

The detail of joint ventures of EPM as of the date of the period reported is the following:

Name of joint venture	Location (country)	Type of business	Percentage ownership		Creation date
			2016	2015	
Parques del Río S.A.S. <sup>1</sup>	Medellín	Construction, operation and support of project Parques del Río Medellín, as well as acting as urban manager of project.	33%	33%	12/26/2015

- <sup>1</sup> Joint venture incorporated on November 26, 2015, with the participation of the municipality of Medellín, Interconexión Eléctrica S.A. E.S.P. (ISA), Empresa de Transporte Masivo del Valle de Aburrá Ltda. (Metro) and EPM. The entity seeks to be the manager of the next urbanistic developments of the city, the department and the country, taking advantage of the synergies on the subject of infrastructure, mobility, environment and social, among others.

The financial information of the significant joint ventures of the company as of the date of the reporting period is the following:

Name of joint venture	2016				2015			
	Value of Investment			Dividends	Value of Investment			Dividends
	Cost	Impairment	Total		Cost	Impairment	Total	
Parques del Río S.A.S.	99	-	99	-	99	-	99	-
<b>Total investments in joint ventures</b>	<b>99</b>	<b>-</b>	<b>99</b>	<b>-</b>	<b>99</b>	<b>-</b>	<b>99</b>	<b>-</b>

- Figures expressed in millions of Colombian pesos -

## Note 11. Trade debtors and other accounts receivable

Details of trade debtors and other accounts receivables at the date of reporting periods are as follows:



Trade debtors and other accounts receivable	2016	2015
<b>Non current</b>		
Public utilities debtors	290,587	255,089
Public utilities impairment	(72,212)	-
Dividens and participations receivable	-	196,288
Related parties	1,662,265	1,598,769
Employee loans	59,001	48,332
Other loans	21,745	24,818
<b>Total non current</b>	<b>1,961,386</b>	<b>2,123,296</b>
<b>Current</b>		
Public utilities debtors	1,249,723	1,196,921
Public utilities impairment	(184,099)	(124,552)
Related parties	58,884	316,265
Employee loans	20,750	17,729
Impairment of employees loans	(136)	(1)
Construction contracts	-	274
Other loans	267,435	274,149
Impairment of other loans	(46,731)	(13,624)
<b>Total current</b>	<b>1,365,826</b>	<b>1,667,161</b>
<b>Total</b>	<b>3,327,212</b>	<b>3,790,457</b>

- Figures expressed in millions of Colombian pesos -

The non-current portion of trade debtors and other accounts receivable reflects a decrease by \$161,910, corresponding to dividends receivable to Une Telecomunicaciones for \$196,288 paid in 2016.

In the current portion the balance shows a decrease by \$301,335, mainly in related parties by \$257,381 for the payments received from EPM Mexico and the capitalization of interest of EPM Chile.

A percentage of 52% of the total balance corresponds to related parties: Inversiones y Asesoría South Water for \$1,047,759 (2015: \$1,056,291), Hidroecológica del Teribe for \$384,282 (2015: \$395,797) and EPM Chile for \$289,109 (2015: \$415,202). At the closing of 2015 EPM Mexico did not have accounts receivable (2015: \$31,431).

The company measures the correction of value for expected losses during the life of the asset using the simplified approach, which consists in taking the current value of the credit losses that arise from all possible events of “default” at any time during the life of the operation.

This alternative is taken given that the value of customers managed by the company is very high and the risk measurement and control by phases may lead to errors and an undervaluation of the impairment.

The expected loss model corresponds to a forecast tool that projects the probability of default (nonpayment) in a period of one year. Each obligation is assigned an individual probability of non-payment that is calculated based on a probability model that involves sociodemographic, product and behavior variables.

As of the report date the age analysis of financial assets at the end of the reporting period that are in default and impaired is:

	2016		2015			
	Gross accounting value	Value expected credit losses over the life time	Gross accounting value	Value expected credit losses over the life time		
				Issue	Adjustment	Restated
<b>Public utilities debtors</b>						
Not past due nor impaired	1,196,204	(96,352)	1,245,199	(1,467)	(76,735)	(78,202)
Less than 30 days	150,655	(18,398)	53,390	(49)	(1,948)	(1,997)
30 - 60 days	46,580	(14,441)	24,321	(26)	(11,313)	(11,339)
61-90 days	7,071	(966)	3,559	(3,943)	2,958	(985)
91-120 days	5,910	(1,426)	2,914	(1,548)	(722)	(2,270)
121-180 days	7,442	(3,074)	3,621	(2,205)	531	(1,674)
181-360 days	10,788	(8,131)	6,977	(5,547)	(1,359)	(6,906)
Greater than 360 days	115,660	(112,356)	112,033	(109,768)	(4,769)	(114,537)
<b>Total public utilities debtors</b>	<b>1,540,309</b>	<b>(255,145)</b>	<b>1,452,015</b>	<b>(124,552)</b>	<b>(93,358)</b>	<b>(217,910)</b>
<b>Other debtors</b>						
Not past due nor impaired	1,999,643	(2,342)	2,456,827	(18)	(3,917)	(3,935)
Less than 30 days	11,521	(1,411)	7,628	(1)	(187)	(189)
30 - 60 days	7,670	(2,477)	1,145	(10)	(420)	(431)
61-90 days	1,517	(412)	381	(12)	(95)	(107)
91-120 days	5,373	(3,387)	1,792	(30)	(12)	(42)
121-180 days	11,021	(10,224)	402	(45)	(137)	(183)
181-360 days	25,894	(1,933)	1,211	(328)	(709)	(1,037)
Greater than 360 days	27,443	(25,846)	7,233	(13,181)	(10,097)	(23,278)
<b>Total other debtors</b>	<b>2,090,081</b>	<b>(48,032)</b>	<b>2,476,620</b>	<b>(13,626)</b>	<b>(15,575)</b>	<b>(29,200)</b>
<b>Total debtors</b>	<b>3,630,390</b>	<b>(303,178)</b>	<b>3,928,634</b>	<b>(138,178)</b>	<b>(108,932)</b>	<b>(247,110)</b>

- Figures expressed in millions of Colombian pesos -

The variation in the impairment of accounts receivable is due to the determination of the impairment of receivables through the calculation of the expected loss. See detail in note 3 significant accounting judgments, estimates and causes of uncertainty in the preparation of the financial statements, and the inclusion of the prepayment receivables<sup>2</sup> of energy and water in the provision.

<sup>2</sup>According to Internal Decree 2046 of December 16, 2014 and 2078 of June 18, 2015, as prepayment energy and water is understood the following:

Prepayment energy: is the program whereby the company seeks to supply prepaid electric energy to the users of the regulated market, which at the time of requesting the service have at least five (5) consecutive months or not, in suspension or cut off in the period of the past 12 months and the remaining characteristics defined by the company.

Prepayment water: is the program designed by the company for the rendering of water and sewage utilities under the advance payment modality, through the supply of drinking water in quantities limited by the amount of a recharge that is made by users, within which the rates of the water and sewage utilities, the subsidies or contributions and the partial repayment of the debt that the subscriber has with the company are charged.

Movement expected credit losses	2016	2015
Book value as of January 1	(138,178)	(151,728)
Expected credit losses recognized during the period <sup>1</sup>	(63,196)	(7,009)
Utilizations during the period	2,447	2,918
Reversal of expected credit losses during the period	4,681	17,642
Expected credit losses as of January 1	(108,932)	-
<b>Book value as of December 31</b>	<b>(303,178)</b>	<b>(138,177)</b>

- Figures expressed in millions of Colombian pesos -

<sup>1</sup> Includes 100% of receivables from Electricaribe for \$33,431 and Termocandelaria for \$4,940.

<sup>2</sup> Corresponds to the accumulated calculation of receivables impairment at January 1, 2016, using the expected credit loss approach that was recognized affecting the retained profits account.

The utilizations correspond to the receivables write-offs made during the year.

The company writes off, against the impairment recognized in a corrective account, the values of the financial assets impaired when it is evidenced that there are obligations that cannot be recovered by civil proceedings, coercive collection or ordinary channels, actions to which it is necessary to attach the supports of the records where the request of the write off is requested.

The causes to request the approval of the receivables write off in EPM are the following:

- The accounts receivable recorded do not represent rights, goods or obligations for EPM.
- The rights or obligations do not have proper documents and support that permit to carry out the relevant procedures for their collection or payment.
- It is not possible to make the collection of the right or obligation, by coercive or legal collection, once the pre-legal collection phase has been extinguished.
- When there is impossibility to identify or individualized natural or legal person, to make the collection of the receivables.
- Upon evaluation and establishment of the cost/benefit ratio, it becomes more onerous to carry out the collection process than the value of the obligation.
- In case that the security or the title granting the right of execution can no longer be enforced or the right expires.
- That, having carried out court proceedings, there are no goods to enforce the payment of the obligations.
- When having carried out the liquidation process of natural or legal person in terms of the law, the goods received as payment are not sufficient to cover the total debt, the unpaid balance will be written off.

#### Responsible Instances for the write off

The write off in EPM is approved by the receivables Comprehensive Management Committee, which is chaired by the Accounting and Financial Services Manager, and the assistance of the Director of Financial Transactions, and the Head of the Credit and Receivables Management Unit. The Committee meets at the request of the Credit and Receivables Management Unit or when any situation in particular warrants it.

## Note 12. Other financial assets

The breakdown of other financial assets at the end of the period is:

Other financial assets	2016	2015
<b>Non current</b>		
<b>Financial assets measured at fair value with changes in profit and loss for the period</b>		
Variable income securities	37,958	22,198
Trust rights	354,170	312,668
<b>Total financial assets measured at fair value with changes in profit and loss for the period</b>	<b>392,128</b>	<b>334,866</b>
<b>Financial assets designated at fair value with changes through other comprehensive income</b>		
Equity instruments	1,130,682	2,056,204
<b>Total financial assets measured at fair value with changes through other comprehensive income</b>	<b>1,130,682</b>	<b>2,056,204</b>
<b>Other non current financial assets</b>	<b>1,522,810</b>	<b>2,391,070</b>
<b>Current</b>		
<b>Derivatives designed as hedge instruments under hedge accounting</b>		
Swap contracts	18	-
<b>Total derivatives designed as hedge instruments under hedge accounting</b>	<b>18</b>	<b>-</b>
<b>Financial assets measured at fair value with changes in profit and loss for the period</b>		
Derivatives that are not under hedge accounting	-	11,776
Fixed income securities	374,621	43,823
Pledged investments	4,361	-
<b>Total financial assets measured at fair value with changes in profit and loss for the period</b>	<b>378,982</b>	<b>55,599</b>
<b>Total other current financial assets</b>	<b>379,000</b>	<b>55,599</b>
<b>Total other financial assets</b>	<b>1,901,810</b>	<b>2,446,669</b>

- Figures expressed in millions of Colombian pesos -

Conventional purchases and sales of financial assets are accounted for by applying the negotiation date.

## 12.1 Financial assets designated at fair value through the other comprehensive income:

The detail of equity investments designated at fair value through other comprehensive income is:

Equity investment	2016	2015
ISAGEN S.A. E.S.P. <sup>1</sup>	-	1,218,329
Interconexión Eléctrica S.A. E.S.P. <sup>2</sup>	1,123,803	831,029
Other investment	6,879	6,846
<b>Total</b>	<b>1,130,682</b>	<b>2,056,204</b>
Ganancia acumulada por cambios en el valor razonable transferidas a las utilidades acumuladas durante el periodo <sup>1</sup>	578,395	-
Dividends recognized during the period related to investments that are maintained recognized at the end of the period	32,433	93,457

- Figures expressed in millions of Colombian pesos -

<sup>1</sup> On September 6, 2016 EPM disposed of the investment in ISAGEN S.A. E.S.P. for \$1,479,911: cost \$901,516 and valuation at fair value \$578,395, without effects on the Comprehensive Income Statement section of result of the period (profit or loss); the above as per authorization by means of Agreement No. 002 of March 15, 2016. With this transaction, EPM received \$4,130 pesos for each share and owned 358,332,000 shares, which were acquired by Brookfield through a Public Offering (PO). Additionally, due to the transaction a legal expense was incurred for \$46,040 detailed in Note 30. Administration expenses and the associated income tax was \$111,948 detailed in Note 35, Income Tax.

<sup>2</sup> At December 31, 2016 the stock market price of ISA closed at \$9,980 (2015 \$7,380).

Equity investments indicated in the preceding table are not maintained for negotiation purposes, instead, they are maintained with strategic medium and long term purposes. The Administration of EPM considers that this classification for these strategic investments provides more reliable financial information, which reflects immediately changes in their fair value in the result of the period.

## Note 13. Guarantees

The company has not granted guarantees in which the third party is authorized to sell or encumber without the occurrence of a default by the company

The Company has not received guarantees which it is authorized to sell or encumber without the occurrence of a default by the owner of the guarantee.

## Note 14. Other assets

The detail of other assets at the end of the period is:

Concept	2016	2015
<b>Non Current</b>		
Payments made in advance <sup>1</sup>	36,360	34,474
Employee benefits	26,437	21,949
Deferred loss for operation of lease back <sup>2</sup>	23,634	24,309
Goods received as dation in payment	1,286	1,288
<b>Total other non current assets</b>	<b>87,717</b>	<b>82,020</b>
<b>Current</b>		
Payments made in advance <sup>1</sup>	51,391	75,240
Advances delivered to suppliers	33,840	77,145
Sales tax	1,722	38,559
<b>Total other current assets</b>	<b>86,953</b>	<b>190,944</b>
<b>Total other assets</b>	<b>174,670</b>	<b>272,964</b>

- Figures expressed in millions of Colombian pesos -

<sup>1</sup>The non-current portion of the payments made in advance includes payments for the all risk insurance policies of the Ituango Hydroelectric Project for \$24,550 (2015: \$21,432) and third party liability for \$418 (2015: \$609), both effective until March 15, 2010, which are being amortized the premium in legal stability agreements for \$10,033 (2015: \$10,925) and leases for \$1,359 (2015: \$1,508).

The current portion corresponds to insurance for \$50,025 (\$75,225), consisting mainly in all risk policies for \$27,271 (2015: \$24,159), of which \$9,496 (2015: \$6,616) are of the Ituango Hydroelectric Project, and other insurance \$17,099 (2015: \$46,842) of which \$14,866 correspond to the climatic change insurance; goods and services for \$1,321 (2015: \$-) and leases for \$45 (2015: \$15).

<sup>2</sup>See detail of agreements for leasing in note 21. other financial liabilities.

## Note 15. Inventories

Inventories at the end of the period were represented as follows:

Inventories	2016	2015
Materials for the rendering of services <sup>1</sup>	112,531	93,605
Merchandise in stock <sup>2</sup>	1,943	1,629
Goods in transit	606	2,168
<b>Total inventories</b>	<b>115,080</b>	<b>97,402</b>

- Figures expressed in millions of Colombian pesos -

<sup>1</sup> Includes the materials for the rendering of services held by third parties. That are those delivered to the contractors that carry out the activities related to the rendering of the services.

<sup>2</sup> Includes merchandise in stock that does not require transformation, such as power, gas and water meters, communication equipment, telephones and Supply goods, as well as those held by third parties.

Inventories for \$85,934 (2015: \$81,378) were recognized as cost for the rendering of the service during the period. There was loss by the retirement of inventories for during the period amounted to \$1,151 (2015: \$1,029). No losses of value were generated in the company by comparing the net realizable value to the average cost of inventories.

## Note 16. Cash and cash equivalents

The composition of cash and cash equivalents as of December 31, 2015 and 2014 is as follows:

Cash and cash equivalents	2016	2015
Cash on hand and in banks	333,321	320,808
Other cash equivalents	185,757	166,374
<b>Total cash and cash equivalents reported in the statement of financial position</b>	<b>519,078</b>	<b>487,182</b>
<b>Cash and cash equivalents reported in the statement of cash flows</b>	<b>519,078</b>	<b>487,182</b>
<b>Restricted cash</b>	<b>130,059</b>	<b>145,324</b>

- Figures expressed in millions of Colombian pesos -

Treasury investments expire in a term equal or lower than three months from their acquisition date and earn market interest rates for this type of investments.

The Company has restrictions on cash and cash equivalents detailed as follows. As of December 31 2016 The fair value of restricted cash equivalents is \$130,059 (2015: \$145,324).



Fund	Destination	2016	2015
Bogota Agreement Parques del Rio	Transfer of public utilities networks for the development of the project called Parques del Rio Medellin.	26,521	25,472
Sintraemdes Housing Fund	Contribute to the acquisition of housing and improvement thereof, of workers beneficiaries of the bargaining agreement executed between EPM and the Unions.	16,426	22,622
Bogota Bolivar Gallery	Adapt carrera 51 (Bolivar) between 44 street (San Juan) and 57 street (La Paz) and convert that road sector in what will be called the Bolivar Gallery.	16,167	6,753
Banco Bogota INCODER	Join forces and resources between EPM and INCODER to carry out the project "feasibility study for the construction of the irrigation and drainage district in part of the Uraba region of Antioquia" with multipurpose scope.	11,194	10,641
International Energy Transactions	Guarantee corresponding to the "compensation that must be made between the invoice of pool transactions and the advance payments, seeking that the actual payment is made to XM.	10,907	167
Sinpro Housing Fund	Contribute to the acquisition of housing and improvement thereof, of workers beneficiaries of the bargaining agreement executed between EPM and the Unions.	10,675	17,455

- Figures expressed in millions of Colombian pesos -

Fondo o convenio	Destinación	2016	2015
Master Agreement Municipality of Medellín No. 4600049285	Construction by EPM of sidewalks and other roadway elements in the center of the city, taking advantage of the Centro Parrilla project, that is, the renewal of water and sewage networks.	7,677	22,189
Health Adapted Entity Fund and Fosyga Fund	Control and follow up mechanism of the collection of contributions of the Contributive Regime of the General Social Security System in Health.	5,480	861
Ministry of Mines and Energy - Special Fund Development Quota	Co-financing agreement for the construction of distribution and connection infrastructure to lower income users in the municipalities of Amagá, Santafé de Antioquia, Sopetrán, San Jerónimo and Ciudad Bolívar. Compressed Natural Gas and connection to users of Don Matias, Entrerrios, San Pedro, Santa Rosa and Yarumal. Agreement No. 106: construction of the infrastructure of connection to users of Valle de Aburrá, La Ceja, La Unión and El Retiro. Agreement 179: includes municipality of Sonsón.	5,003	4,781
Municipality of Medellín - Water	Integral management of water for human consumption of the inhabitants of the municipality of Medellín.	3,124	6,038
Municipality of Guatapé and Cornare	To join efforts to improve the technical, economic and social conditions for the implementation of phase 1 of the project to improve the environmental and landscape infrastructure of the San Juan del Puerto Malecon, for the development of sustainable tourism in the Municipality of Guatapé.	2,213	-
Autonomous Corporation of Guatapé	To join efforts to improve the technical, economic and social conditions for the implementation of phase 1 of the project to improve the environmental and landscape infrastructure of the San Juan del Puerto Malecon, for the development of sustainable tourism in the Municipality of Guatapé.	2,011	-
Sinpro Education Fund	Promote the wellbeing of the workers to take care of the needs of payment of tuition, texts and supplies that are required to carry out owns studies and those of the family group.	1,956	1,419
Sintraemdes Education Fund	Promote the wellbeing of the workers to take care of the needs of payment of tuition, texts and supplies that are required to carry out owns studies and those of the family group.	1,905	1,448
Sintraemdes Disaster Fund	Promote the wellbeing of its workers to take care of their urgent needs and unforeseen needs or those of their primary family group.	1,454	1,210
Sinpro Disaster Fund	Promote the wellbeing of its workers to take care of their urgent needs and unforeseen needs or those of their primary family group.	1,131	1,021
Aldeas Program	Usage of the wood that completes its maturing cycle in the forests planted by EPM around its reservoirs, to build social interest housing in the municipalities of Antioquia outside the Valle de Aburrá and deliver them to low income families, preferably in situation of forced or voluntary displacement.	1,105	3,791
Inter-administrative Agreement Plaza del Tomatero in the Municipality of Peñol	Combine efforts to improve the technical, economic, environmental and social conditions to boost development and counteract the impact generated by Peñol municipality, the level of the Peñol-Guatapé reservoir	1,052	-

- Figures expressed in millions of Colombian pesos -

Fondo o convenio	Destinación	2016	2015
Agreements on public lighting and sanitation rates with municipalities	Agreement to manage the resources of territorial entities for the payment to the municipalities with collection agreements of the public lighting and sanitation rates; these resources are exempt from the payment of tax on financial transactions (4x1000).	676	51
Ministry of Mines and Energy	Contributions from the Ministry of Mines and Energy in accordance with the provisions of the FAER GGC 430 contract of 2015 for rural electrification works in the Municipality of Ituango	643	-
Convention points SOMOS	Provision of services for the operation of the key capabilities associated with the element Loyalty Points Program for Large Scale EPM Group .	577	-
Agreement Municipality of Itagüí Collector Ajizal	To manage and manage the resources destined by the Municipality of Itagui for the construction of the stabilization works of the channel of the creek the sesteadero for the collector Ajizal	356	-
Motorcycle Repair Fund	Promote the wellbeing of the official workers who work in the regional market and use motorcycles owned by them for the performance of their work.	349	270
Montreal Protocol Multilateral Fund	Cooperation agreement with the Ministry of the Environment and Sustainable Development for the performance of activities within the framework of the implementation in Colombian of the Montreal Protocol.	298	283
Thermal District	Agreement with the Ministry of Environment and Sustainable Development for the performance of activities of the Thermal District La Alpujarra.	282	56
National Royalties Fund - Gas	Construction of the compressed natural gas distribution infrastructure and subsidies for the connection to users of strata 1 and 2 of the municipalities of El Peñol and Guatapé.	281	278
BID 2120 Credit	Disbursement for construction of wastewater treatment plant (PTAR) Bello	167	2,569
Municipality of Caldas	Administering the resources assigned by the municipality to the performance of the replacement and modernization project of the secondary water and sewage networks and their complementary works.	163	-
Municipality of Barbosa	Agreement to partially subsidize the connection of users in strata 1 and 2.	56	54
Espíritu Santo	EPM - Espíritu Santo Liquidation	56	55
Deposits Law 820	Guarantee required by the lessor to the tenant for the payment of public utilities. As per Article 15 of Law 820 of 2003 and Regulatory Decree 3130 of 2003.	53	46
Municipality of Medellin - Land	Acquisition of landed property identified and characterized within the zone of protection of the hydrographic basins that supply the water systems of the municipality of Medellín.	53	49
Cuenca Verde	Administer the resources assigned for fulfillment of the objective of Corporación Cuenca Verde.	32	2,072
Agreement UVA Poblado 037000657546	Support the municipality of Medellín for the construction of the UVA - ARTICULATED LIFE UNIT POBLADO SECTOR.	5	9,039
Department of Antioquia, Construction Agreement via the Aro - Municipality of Ituango	Manage the resources provided by the Government of Antioquia to co-finance the construction of the Via El Aro - Connection Via Puerto Valdivia Dam site - Municipality of Ituango	5	-

- Figures expressed in millions of Colombian pesos -

Fondo o convenio	Destinación	2016	2015
Municipality of Medellín - Moravia	Construction, repair and replacement of water and sewage networks and the paving in the municipality of Medellín of the roadways affected by these works in the Moravia neighborhood.	3	6
IDEA agreement 4600003912	Inter-administrative agreement to join forces for the design and construction of electric power generation and distribution systems in the rural zones in the department of Antioquia.	2	2
IDEA Agreement 4600003283	Join forces for the construction of gas domiciliary service connections in the different subregions of the department of Antioquia under the framework of the program "Gas without Frontiers".	1	1
Encargo EPM-ECOP-70083600976-0	Resource management EPM- Ecopetrol contract .	-	3,742
BBVA Enc Fiduc FAER GGC 315	Contributions from the Ministry of Mines and Energy in accordance with the provisions of the contract FAER GGC 2014 315 bound for rural electrification works in the municipality of Anori .	-	574
Bogotá Agreement Anori Domiciliary	To cover the performance of the construction and supervision works in one hundred seventy-three (173) domiciliary facilities and internal electric power networks, for the electrification of homes in the villages of La Plancha, Chagualo Arriba, Chagualito, La Culebra and El Banco of the municipality of Anori.	-	190
IDEA Agreement 4600003541	To cover the co-financing of up to 70% of the cost of domiciliary electric installations in the different subregions of the department of Antioquia.	-	83
Department of Antioquia Agreement	Join efforts for the institutional development, strengthening, transformation or creation of companies, in order to secure the rendering of public utilities of the municipalities of the department.	-	36
BBVA const network municipality San luis	Construction of electrical networks in the sidewalks of the Municipality of San Luis Antioquia.	-	1
<b>Total recursos restringidos</b>		<b>130,059</b>	<b>145,324</b>

- Figures expressed in millions of Colombian pesos -

## Note 17. Equity

### 17.1 Capital

The company does not have capital divided into quotas/shares and has not had increases or reductions in the period reported.

### 17.2 Reserves

Of the accounts that make up equity, the reserves as of December 31, consisted of the following:

Reserves	2016	2015
<b>Statutory reserves</b>		
Beginning balance	2,870,900	2,511,760
Constitution	182,774	686,435
Appropriation	(548,066)	(327,295)
<b>Total legal reserves</b>	<b>2,505,608</b>	<b>2,870,900</b>
<b>Occasional reserves</b>		
Beginning balance	574,008	574,008
<b>Total occasional reserves</b>	<b>574,008</b>	<b>574,008</b>
<b>Other reserves</b>		
Beginning balance	7,591	7,591
<b>Total Other reserves</b>	<b>7,591</b>	<b>7,591</b>
<b>Total reserves</b>	<b>3,087,207</b>	<b>3,452,499</b>

- Figures expressed in millions of Colombian pesos -

The nature and purpose of equity reserves of EPM are described below:

**Statutory reserves:** in accordance with Decree 2336 of 1995, for the profits incorporated in profit and loss in the application of equity method applied under local regulations, EPM have created these reserves to in order to comply with this Decree.

**Occasional reserves:** in compliance with Colombian tax provisions contained in Article 130 (reserve of 70% for excess of tax over accounting depreciation) and 211 of the Tax Code, EPM have created the required reserves in order to be benefited by a special tax treatment and obtain a rationalization in the payment of the income and complementary tax.

#### Other reserves

Includes equity funds (resources appropriated prior to 1999 to grant housing loans to the workers, Financing Plan, Self-insurance Fund, housing fund).

The Board of Directors, in its sessions of March 31, 2016 and March 17, 2015, approved:

- Creating a reserve for \$182,774 (2015: \$251,269) on the surpluses of 2015 y 2014, in order to comply with article 130 of the Tax Code.
- Release reserves created for \$548,066 (2015: \$327,295) of equity method by virtue of the dividends received from controlled and associated companies in 2015 and in 2014 by the surpluses realized.
- Creating a reserve in 2015 for \$435,166 on the surpluses of 2014, in order to comply with Decree 2336 of 1995, for the profits incorporated to profit and loss in the application of equity method as per the previous GAAP.

### 17.3 Retained profits

The movement of retained profits during the period was:

Retained results	2016	2015
Beginning balance	13,056,702	12,646,413
Retroactive application for changes in accounting policies	-	(544,104)
<b>Opening balance restated</b>	<b>13,056,702</b>	<b>12,102,309</b>
Reservation movement	365,292	(359,140)
Surpluses or dividends decreed	(816,521)	(56,139)
Transfer of other comprehensive income	466,447	-
Impact of adoption of IFRS 9 as of January 1, 2016	(69,278)	-
Equity method for equity variations	(70,448)	-
<b>Total accumulated result</b>	<b>12,932,194</b>	<b>11,687,030</b>
<b>Net result of the period</b>	<b>1,834,792</b>	<b>1,369,673</b>
<b>Total results retained</b>	<b>14,766,986</b>	<b>13,056,702</b>

- Figures expressed in millions of Colombian pesos -

Of the profits received during the year were \$816,521 (2015: \$991,139), \$445,375 ordinary and \$371,146 Additional.

## Note 18. Other accumulated comprehensive income

The detail of each component of the other comprehensive income of the separate statement of financial position and the corresponding tax effect is the following:

Components of the other accumulated comprehensive income	2016			2015		
	Gross	Tax Effect	Net	Gross	Tax Effect	Net
Non-current assets held for sale or for distribution to owners	-	-	-	-	-	-
Reclassification of properties, plant and equipment to investment properties	13,439	(1,360)	12,079	3,736	(401)	3,335
New measurements of defined benefit plans	6,368	(3,632)	2,736	42,636	(21,403)	21,233
Equity investments measured at fair value through equity	1,829,877	(87,400)	1,742,477	1,853,883	(91,367)	1,762,516
Credit risk of liabilities measured at fair value	-	-	-	-	-	-
Participation in other comprehensive income of subsidiaries	627,045	5,863	632,908	881,190	(17,698)	863,492
Cash flow hedges	(23,738)	11,834	(11,904)	-	-	-
<b>Total</b>	<b>2,452,991</b>	<b>(74,695)</b>	<b>2,378,296</b>	<b>2,781,445</b>	<b>(130,869)</b>	<b>2,650,575</b>

- Figures expressed in millions of Colombian pesos -

During the period there was no reclassification of net losses previously recognized in other comprehensive income to the results of the period, in 2015 reclassifications for \$39,224 we made.

Following is presented for each component of the comprehensive income, a reconciliation of the beginning and ending balances at the cut-off date:

### 18.1 Component: reclassification of properties, plant and equipment to investment properties

The component of reclassification of properties, plant and equipment to investment properties of other comprehensive income corresponds to transfers from properties, plant and equipment to investment properties, which are measured at fair value. The changes in the fair value do not reclassify to profit and loss for the period.



Reclassification of properties, plant and equipment to investment properties	2016	2015
Beginning balance	3,335	5
Net gains or losses on changes in the fair value of investment property	9,700	3,731
Associated income tax (or equivalent)	(956)	(401)
<b>Total</b>	<b>12,079</b>	<b>3,335</b>

- Figures expressed in millions of Colombian pesos -

## 18.2 Component of new measurements of defined benefit plans

The component of new measurements of the defined benefit plans represents the accumulated value of the actuarial profits or losses, the returns of the assets of the plan and the changes in the effect of the asset's ceiling, excluding the values included in the net interest over the liability (asset) of net defined benefits. The net value of the new measurements is transferred to the accumulated profits and not reclassified to the results of the period.

Component of new measurements of defined benefit plans	2016	2015
Book value as of January 1	21,233	25,087
Net profits (losses) for new net measurements of defined benefit plans	(36,268)	247
Associated income tax (or equivalent)	17,771	(4,101)
<b>Total</b>	<b>2,736</b>	<b>21,233</b>

- Figures expressed in millions of Colombian pesos -

## 18.3 Component: Equity investments measured at fair value through equity

The component of the other comprehensive incomes of equity investments measured at fair value through equity represents the accumulated value of profits or losses by the valuation at fair value less the values transferred to the accumulated profits when these investments have been sold. The changes in the fair value do not reclassify to the profit and loss for the period.

Equity investments measured at fair value through equity	2016	2015
Book value as of January 1	1,762,516	1,840,662
Net profits or losses for changes in the fair value of equity investments	554,390	15,058
Associated income tax (or equivalent)	(107,982)	(93,204)
Cumulative gains (losses) transferred to cumulative gains / losses for the period	(578,395)	-
Associated income tax (or equivalent)	111,948	-
<b>Total</b>	<b>1,742,477</b>	<b>1,762,516</b>

## 18.4 Interest in other comprehensive income of subsidiaries

The component of other comprehensive income of participation in other comprehensive income of subsidiaries represents the accumulated value of the application of equity method to profits and losses of the other comprehensive income of the subsidiaries. The accumulated value of the profits or losses will be reclassified to

profit or loss for the period or to accumulated profits, depending on the entries that originated equity method, when these investments have been sold.

Participation in other comprehensive income of subsidiaries	2016	2015
Book value as of January 1	863,491	-
Retroactive application for changes in accounting policies	-	381,942
<b>Opening balance restated</b>	<b>863,491</b>	<b>381,942</b>
New measurements of defined benefit plans	(62,340)	15,613
Equity investments measured at fair value through equity	(54,811)	(7,795)
Cash flow hedges	1,681	-
Result for business conversion abroad	(138,508)	473,396
Associated income tax (or equivalent)	23,493	335
Accumulated gains (losses) transferred to retained earnings / losses for the period -New measures of defined benefit plans	(220)	-
Cumulative gains (losses) transferred to accumulated profits / losses for the period-Equity investments measured at fair value through equity	54	-
Cumulative gains (losses) transferred to accumulated profits / losses for the period -Result for conversion of business abroad	(1)	-
Associated income tax (or equivalent) - Cumulative gains (losses) transferred to accumulated profits / losses for the period	69	-
<b>Total</b>	<b>632,908</b>	<b>863,491</b>

- Figures expressed in millions of Colombian pesos -

### 18.5 Component: cash flows hedging

The component of the other comprehensive income of cash flows hedging represents the accumulated value of the effective person of the profits or losses that arise from the changes in the fair value of entries hedged in a cash flows hedging. The accumulated value of profits or losses will be reclassified to the profit and loss of the period only when the transaction hedged affects the result of the profit and loss of the period or the highly probable transaction is not anticipated that it will occur, or is included, as part of its book value, in a non-financial hedged entry.

Cash flow hedges	2016	2015
Book value as of January 1	-	(10,995)
Gains or losses on changes in the fair value of hedging instruments	(23,738)	31,434
Associated income tax (or equivalent)	11,834	18,785
Gains (losses) accrued by changes in the fair value of hedging instruments reclassified to income for the period	-	(39,224)
<b>Total</b>	<b>(11,904)</b>	<b>-</b>

- Figures expressed in millions of Colombian pesos -

## Note 19. Credits and loans

The following is the detail of the carrying value of credits and loans:

Credits and loans	2016	2015
<b>Non-current</b>		
Commercial banks loans	1,746,276	407,771
Multilateral banks loans	1,094,218	640,451
Development banks loans	842,053	-
Other bonds and securities issued	5,849,554	5,963,779
<b>Total Credits and loans non current</b>	<b>9,532,101</b>	<b>7,012,001</b>
<b>Current</b>		
Commercial banks loans	55,696	711,572
Multilateral banks loans	570,337	1,050,265
Development banks loans	121,058	1,082,093
Bonds and securities issued	255,780	318,653
Other bonds and securities issued	285,717	290,935
Loans to related parties	-	54,009
Other loans	-	432,830
<b>Total Credits and loans current</b>	<b>1,288,588</b>	<b>3,940,357</b>
<b>Total credits and loans</b>	<b>10,820,689</b>	<b>10,952,358</b>

- Figures expressed in millions of Colombian pesos -

On December 29, 2015, the company signed a credit agreement for USD \$1,000 million with a group of seven international banks, which will be used for the financing of the budget and the company's 2016 investment plan. The credit was granted with a term of five years, with a single payment of principal at expiration, without any guarantee requirement, prepayable, with a rate Libor + 1.40% and it may be disbursed in a period of 12 months. The banks participating in this credit operation were Bank of America N.A., HSBC Securities (USA) Inc., Bank of Tokyo-Mitsubishi, Sumitomo Mitsui Banking Corporation, Citigroup Global Markets, JP Morgan Securities and Mizuho Bank. In 2016 disbursements of this loan were made for \$1,745,425 (USD560 million).

During 2016 disbursements have been made of the loan IDB 2120 to finance the Bello PTAR for \$238,010, equivalent to USD78 million (2015: \$239,057).

On April 26, 2016 the company signed a loan agreement for USD111 with the Brazilian Development Bank - BNDES, which will be intended to the financing of the turbines and generators of the Ituango Hydroelectric project. The loan was granted with a term of twenty-three point five years (23.5), a grade period of 5.5 years and an availability period of 9.5 years, with a fixed rate of 4.887% to be amortized biannually.

On May 26, 2016 a payment of principal was made of the Treasury loan with BNP Paribas for \$582,384 (USD 190 million).

On August 4, 2016 EPM signed a loan agreement for USD 300 million with the Canadian export credit agency Export Development Canada (EDC). Forty-five percent (45%) of the loan proceeds, USD135 million will be intended to finance partially the investments required for the Ituango project and 55% of the resources of the loan, USD165 million, will be used to finance the investments plan 2016-2022. The loan was granted with a term of five years, with a single payment of principal at expiration, with an interest rate LIBOR - 1.40% and a disbursement period of 12 months. During 2015 there were no disbursement for this loan.

On October 3, 2016 EPM signed a loan agreement for USD200 million with CAF - Latin American Development Bank, which resources will be intended to finance partially the investment plan of the Company. During 2015 there were no disbursements for this loan.

In the third quarter of 2016 the company made the prepayment of transitory loans for \$580,000 as follows: to Banco de Bogota for \$300,000 and to BBVA for \$280,000.

On December 14, 2016 the sum of \$112,700 of principal was paid for expiration of the local CPI bonds trench 1 awarded on December 14, 2010.

On December 27, 2016 a prepayment was made of the capital of the local Credit Club Deal for \$318,286 as follows: to Davivienda Bank for \$154,286, to BBVA for \$102,857, to Helm Bank for \$20,000 and the Banco Corpbanca for \$41,143.

**Conversion to pesos of loans denominated in US dollars:** some of the IDB loan have the currency conversion possibility, which permits the conversion to the Colombian peso of the balance in US dollars, thus eliminating the exchange risk of the outstanding balance. EPM made the following conversions in 2016:

On March 31 EPM applied a currency conversion to loan IDB 1664 for USD153.8 million.

On August 23, EPM applied a currency conversion to loan IDB 2120 for USD154.3 million.

The detail of the credits and loans by entity is the following:

Entity / loan	Original Currency	Initial date	term	Nominal interest rate	2016				2015			
					IRR	Nominal value	Amortized cost value	Total Amount	IRR	Nominal value	Amortized cost value	Total Amount
2015 CLUB DEAL BANK OF TOKYO	USD	1/12/2016	5	LIBOR + 1.4%	2.83%	1,680,398	5,833	1,686,231	0.00%	-	-	-
1262 INTERNATIONAL BONDS	USD	7/29/2009	10	7.63%	8.16%	1,500,355	35,420	1,535,775	8.16%	1,574,735	32,297	1,607,032
1266 GLOBAL 2021 COP	COP	1/31/2011	10	8.38%	8.70%	1,250,000	82,054	1,332,054	8.70%	1,250,000	79,058	1,329,058
1273 GLOBAL 2024 COP	COP	9/10/2014	10	7.63%	7.73%	965,745	16,169	981,914	7.73%	965,745	15,502	981,247
1013 AFD	USD	6/14/2013	14	4.37%	4.47%	930,256	14,959	945,216	4.47%	1,065,135	16,958	1,082,093
1665 IDB-1664-1	COP	3/31/2016	10	7.8%	9.57%	427,154	3,134	430,288	0.00%	-	-	-
IDB 2120-2	COP	8/23/2016	18	7.5%	7.89%	438,172	8,324	446,496	0.00%	-	-	-
2179 BANK OF TOKYO-MITSUB	USD	1/16/2009	15	LIBOR + 0.95%	0.66%	350,063	22,041	372,104	1.82%	419,913	26,679	446,591
1265 BONDS IPC IV TRAM 3	COP	12/14/2010	20	IPC + 4.94%	11.33%	267,400	(788)	266,612	8.33%	267,400	(722)	266,678
1277 BONDS IPC VII TRAM III	COP	3/20/2015	20	IPC + 4.43%	10.78%	260,000	(446)	259,554	7.75%	260,000	(327)	259,673
1272 BONDS IPC VI TRAM III	COP	7/30/2014	20	IPC + 4.5%	11.01%	250,000	(723)	249,277	7.94%	250,000	(208)	249,792
1269 IPC V TRAM III BONDS	COP	12/5/2013	20	IPC + 5.03%	11.55%	229,190	(2,393)	226,797	8.50%	229,190	(1,788)	227,402
1261 BONDS IPC III TRAMO	COP	4/21/2009	15	IPC + 6.24%	12.60%	198,400	4,399	202,799	9.50%	198,400	4,823	203,223
2021 IDB 2120-1	COP	5/27/2014	9	6.27%	6.85%	190,295	(725)	189,570	6.65%	190,295	1,122	191,417
1120 CLUB DEAL-DAVIENDA	COP	11/17/2010	10	DTF + 2.7%	0.00%	-	-	-	7.26%	192,857	4,076	196,934
1254 IPC BONDS	COP	11/20/2008	10	IPC + 7.12%	12.71%	174,410	4,553	178,963	9.71%	174,410	5,776	180,186
1257 BONDS IPC II TRAMO	COP	1/22/2009	10	IPC + 5.8%	12.39%	138,600	2,321	140,921	9.31%	138,600	2,209	140,809
1274 BONDS IPC V TRAM IV	COP	3/20/2015	10	IPC + 4.52%	10.94%	130,000	(175)	129,825	7.93%	130,000	90	130,090
1270 BONDS IPC VI TRAMO I	COP	7/30/2014	6	IPC + 3.57%	10.31%	125,000	57	125,057	7.25%	125,000	(127)	124,873
1271 BONDS IPC VI TRAMO II	COP	7/30/2014	12	IPC + 4.17%	10.73%	125,000	(290)	124,710	7.66%	125,000	(129)	124,871
1122 CLUB DEAL-BBVA	COP	11/17/2010	10	DTF + 2.7%	0.00%	-	-	-	7.47%	128,571	2,111	130,682
5765 AGRARIO	COP	6/24/2014	16	IPC + 4.7%	11.01%	116,000	(259)	115,741	8.13%	116,000	(657)	115,343
1276 BONDS IPC VII TRAM II	COP	3/20/2015	12	IPC + 3.92%	10.22%	120,000	(356)	119,644	7.27%	120,000	(336)	119,664
1264 BONDS IPC IV TRAM 2	COP	12/14/2010	12	IPC + 4.2%	10.67%	119,900	(377)	119,523	7.66%	119,900	(469)	119,431
1275 BONDS IPC VII TRAM I	COP	3/20/2015	5	IPC + 2.72%	9.12%	120,000	(519)	119,481	6.26%	120,000	(759)	119,241
1263 BONDS IPC IV TRAM 1	COP	12/14/2010	6	IPC + 3.25%	0.00%	-	-	-	8.05%	112,700	(702)	111,998
1268 BONDS IPC V TRAMO II	COP	12/5/2013	10	IPC + 4.52%	11.12%	96,210	(881)	95,329	8.09%	96,210	(750)	95,460
1259 BONDS TF II TRAMO	COP	1/22/2009	10	10.8%	10.81%	74,700	7,566	82,266	10.81%	74,700	7,537	82,237
2218 IDB 800- RELICATED	USD	12/14/1995	25	LIBOR + 2.38%	1.96%	72,886	2,856	75,742	3.18%	101,999	4,359	106,358
1256 BONDS FIXED RATE	COP	11/20/2008	10	13.8%	13.79%	58,000	857	58,857	13.82%	58,000	826	58,826
1121 CLUB DEAL-SANTANDER	COP	11/17/2010	10	DTF + 2.7%	0.00%	-	-	-	7.40%	51,429	927	52,355
1267 BONDS IPC V TRAMO I	COP	12/5/2013	5	IPC + 3.82%	10.71%	41,880	(186)	41,694	7.73%	41,880	(306)	41,574
1220 IDB 2120	USD	7/26/2011	25	LIBOR + 0%	2.06%	159,408	(15,419)	143,989	3.79%	421,106	(7,931)	413,175
1123 CLUB DEAL-HELM BANK	COP	11/17/2010	10	DTF + 2.7%	0.00%	-	-	-	7.60%	25,000	336	25,336
3217 BID 2217 / OC-CO	USD	5/31/2012	6	3.48%	3.60%	6,668	90	6,758	3.54%	13,998	186	14,184
BNDES	USD	9/28/2016	24	4.89%	5.23%	24,042	(2,235)	21,807	0.00%	-	-	-
1664 BID-1664 / OC-CO	USD	6/5/2006	20	LIBOR + 2%	0.00%	-	-	-	3.62%	484,534	34,457	518,990
6012 BNP PARIBAS ANTOFAGA	USD	5/29/2015	1	LIBOR + 0.65%	0.00%	-	-	-	1.38%	598,399	294	598,694
8853 BBVA	COP	11/13/2015	1	DTF + 1.7%	0.00%	-	-	-	6.63%	280,000	2,376	282,376
8854 BOGOTA	COP	12/18/2015	1	DTF + 3.7%	0.00%	-	-	-	8.86%	150,000	454	150,454
8855 EPM INVESTMENTS	COP	12/29/2015	1	6.99%	0.00%	-	-	-	7.02%	54,000	10	54,010
<b>Total</b>						<b>10,640,132</b>	<b>184,861</b>	<b>10,824,994</b>	<b>2.67</b>	<b>10,725,106</b>	<b>227,252</b>	<b>10,952,358</b>

- Figures expressed in millions of Colombian pesos -

The costs of the transaction of loans acquired in 2016 that have not been disbursed were \$4,305.  
The interest paid by credit operations was for 2016 \$873,4666 (2015: \$649,384).  
The net exchange difference assumed was for 2016 \$268,545 (2015: \$1,275,383).

The information of the bonds issued is the following:

Subseries	Original Currency	Initial date	Term	Nominal interest rate	2016				2015				Awarded amount				
					IRR	Nominal value	Amortized cost value	Total Amount	IRR	Nominal value	Amortized cost value	Total Amount	2016	2015	2014	2013	2012
A10a	COP	11/20/2008	10	IPC + 7.12%	12.71%	174,410	4,553	178,963	9.71%	174,410	5,776	180,186	174,410	174,410	174,410	174,410	174,410
A10a	COP	1/22/2009	10	IPC + 5.8%	12.39%	138,600	2,321	140,921	9.31%	138,600	2,209	140,809	138,600	138,600	138,600	138,600	138,600
A10a	COP	12/5/2013	10	IPC + 4.52%	11.12%	96,210	(881)	95,329	8.09%	96,210	(750)	95,460	96,210	96,210	96,210	96,210	-
A10a	COP	3/20/2015	10	IPC + 4.52%	10.94%	130,000	(175)	129,825	7.93%	130,000	90	130,090	130,000	130,000	130,000	130,000	-
A12a	COP	12/14/2010	12	IPC + 4.2%	10.67%	119,900	(377)	119,523	7.66%	119,900	(469)	119,431	119,900	119,900	119,900	119,900	119,900
A12a	COP	7/30/2014	12	IPC + 4.17%	10.73%	125,000	(290)	124,710	7.66%	125,000	(129)	124,871	125,000	125,000	125,000	-	-
A12a	COP	3/20/2015	12	IPC + 3.92%	10.22%	120,000	(356)	119,644	7.27%	120,000	(336)	119,664	120,000	120,000	-	-	-
A15a	COP	4/21/2009	15	IPC + 6.24%	12.60%	198,400	4,399	202,799	9.50%	198,400	4,823	203,223	198,400	198,400	198,400	198,400	198,400
A20a	COP	12/14/2010	20	IPC + 4.94%	11.33%	267,400	(788)	266,612	8.33%	267,400	(722)	266,678	267,400	267,400	267,400	267,400	267,400
A20a	COP	12/5/2013	20	IPC + 5.03%	11.55%	229,190	(2,393)	226,797	8.50%	229,190	(1,788)	227,402	229,190	229,190	229,190	229,190	-
A20a	COP	7/30/2014	20	IPC + 4.5%	11.01%	250,000	(723)	249,277	7.94%	250,000	(208)	249,792	250,000	250,000	250,000	-	-
A20a	COP	3/20/2015	20	IPC + 4.43%	10.78%	260,000	(446)	259,554	7.75%	260,000	(327)	259,673	260,000	260,000	-	-	-
A5a	COP	12/5/2013	5	IPC + 3.82%	10.71%	41,880	(186)	41,694	7.73%	41,880	(306)	41,574	41,880	41,880	41,880	41,880	-
A5a	COP	3/20/2015	5	IPC + 2.72%	9.12%	120,000	(519)	119,481	6.26%	120,000	(759)	119,241	120,000	120,000	-	-	-
A6a	COP	12/14/2010	6	IPC + 3.25%	0.00%	-	-	-	8.05%	112,700	(702)	111,998	112,700	112,700	112,700	112,700	112,700
A6a	COP	7/30/2014	6	IPC + 3.57%	10.31%	125,000	57	125,057	7.25%	125,000	(127)	124,873	125,000	125,000	125,000	-	-
C10a	COP	1/22/2009	10	10.8%	10.81%	74,700	7,566	82,266	10.81%	74,700	7,537	82,237	74,700	74,700	74,700	74,700	74,700
C10a	COP	11/20/2008	10	13.8%	13.79%	58,000	857	58,857	13.82%	58,000	826	58,826	58,000	58,000	58,000	58,000	58,000
Bono internacional	USD	7/29/2009	10	7.63%	8.16%	1,500,355	35,420	1,535,775	8.16%	1,574,735	32,297	1,607,032	1,500,355	1,574,735	1,196,230	963,415	884,115
Bono internacional	COP	1/31/2011	10	8.38%	8.70%	1,250,000	82,054	1,332,054	8.70%	1,250,000	79,058	1,329,058	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Bono internacional	COP	9/10/2014	10	7.63%	7.73%	965,745	16,169	981,914	7.73%	965,745	15,502	981,247	965,745	965,745	965,745	-	-
<b>TOTAL</b>						<b>6,244,790</b>	<b>146,262</b>	<b>6,391,052</b>		<b>6,431,870</b>	<b>141,495</b>	<b>6,573,365</b>	<b>6,357,490</b>	<b>6,431,870</b>	<b>5,553,365</b>	<b>3,854,805</b>	<b>3,278,225</b>

Figures expressed in millions of Colombian pesos, the exchange rate used was the closing TMR of each period

The detail of the national bonds issued by the company, is as follows:



Subseries	Original Currency	Initial date	Term	Nominal interest rate	2016				2015				Awarded amount				
					IRR	Nominal value	Amortized cost value	Total Amount	IRR	Nominal value	Amortized cost value	Total Amount	2016	2015	2014	2013	2012
National bond	COP	11/20/2008	10	IPC + 7.12%	12.71%	174,410	4,553	178,963	9.71%	174,410	5,776	180,186	174,410	174,410	174,410	174,410	174,410
National bond	COP	1/22/2009	10	IPC + 5.8%	12.39%	138,600	2,321	140,921	9.31%	138,600	2,209	140,809	138,600	138,600	138,600	138,600	138,600
National bond	COP	12/5/2013	10	IPC + 4.52%	11.12%	96,210	(881)	95,329	8.09%	96,210	(750)	95,460	96,210	96,210	96,210	96,210	-
National bond	COP	3/20/2015	10	IPC + 4.52%	10.94%	130,000	(175)	129,825	7.93%	130,000	90	130,090	130,000	130,000	130,000	130,000	-
National bond	COP	12/14/2010	12	IPC + 4.2%	10.67%	119,900	(377)	119,523	7.66%	119,900	(469)	119,431	119,900	119,900	119,900	119,900	119,900
National bond	COP	7/30/2014	12	IPC + 4.17%	10.73%	125,000	(290)	124,710	7.66%	125,000	(129)	124,871	125,000	125,000	125,000	-	-
National bond	COP	3/20/2015	12	IPC + 3.92%	10.22%	120,000	(356)	119,644	7.27%	120,000	(336)	119,664	120,000	120,000	-	-	-
National bond	COP	4/21/2009	15	IPC + 6.24%	12.60%	198,400	4,399	202,799	9.50%	198,400	4,823	203,223	198,400	198,400	198,400	198,400	198,400
National bond	COP	12/14/2010	20	IPC + 4.94%	11.33%	267,400	(788)	266,612	8.33%	267,400	(722)	266,678	267,400	267,400	267,400	267,400	267,400
National bond	COP	12/5/2013	20	IPC + 5.03%	11.55%	229,190	(2,393)	226,797	8.50%	229,190	(1,788)	227,402	229,190	229,190	229,190	229,190	-
National bond	COP	7/30/2014	20	IPC + 4.5%	11.01%	250,000	(723)	249,277	7.94%	250,000	(208)	249,792	250,000	250,000	250,000	-	-
National bond	COP	3/20/2015	20	IPC + 4.43%	10.78%	260,000	(446)	259,554	7.75%	260,000	(327)	259,673	260,000	260,000	-	-	-
National bond	COP	12/5/2013	5	IPC + 3.82%	10.71%	41,880	(186)	41,694	7.73%	41,880	(306)	41,574	41,880	41,880	41,880	41,880	-
National bond	COP	3/20/2015	5	IPC + 2.72%	9.12%	120,000	(519)	119,481	6.26%	120,000	(759)	119,241	120,000	120,000	-	-	-
National bond	COP	12/14/2010	6	IPC + 3.25%	0.00%	-	-	-	8.05%	112,700	(702)	111,998	112,700	112,700	112,700	112,700	112,700
National bond	COP	7/30/2014	6	IPC + 3.57%	10.31%	125,000	57	125,057	7.25%	125,000	(127)	124,873	125,000	125,000	125,000	-	-
National bond	COP	1/22/2009	10	10.8%	10.81%	74,700	7,566	82,266	10.81%	74,700	7,537	82,237	74,700	74,700	74,700	74,700	74,700
National bond	COP	11/20/2008	10	13.8%	13.79%	58,000	857	58,857	13.82%	58,000	826	58,826	58,000	58,000	58,000	58,000	58,000
<b>TOTAL</b>						<b>2,528,690</b>	<b>12,619</b>	<b>2,541,309</b>		<b>2,641,390</b>	<b>14,638</b>	<b>2,656,028</b>	<b>2,641,390</b>	<b>2,641,390</b>	<b>2,141,390</b>	<b>1,641,390</b>	<b>1,144,110</b>

- Figures expressed in millions of Colombian pesos -

The detail of the international bonds issued by the company, is as follows:

Type of bond	Original Currency	Initial date	Term	Nominal interest rate	2016				2015				Awarded amount				
					IRR	Nominal value	Amortized cost value	Total Amount	IRR	Nominal value	Amortized cost value	Total Amount	2016	2015	2014	2013	2012
Bono internacional	USD	7/29/2009	10	7.63%	8.16%	1,500,355	35,420	1,535,775	8.16%	1,574,735	32,297	1,607,032	1,500,355	1,574,735	1,196,230	963,415	884,115
Bono internacional	COP	1/31/2011	10	8.38%	8.70%	1,250,000	82,054	1,332,054	8.70%	1,250,000	79,058	1,329,058	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Bono internacional	COP	9/10/2014	10	7.63%	7.73%	965,745	16,169	981,914	7.73%	965,745	15,502	981,247	965,745	965,745	965,745	-	-
<b>TOTAL</b>						<b>3,716,100</b>	<b>133,643</b>	<b>3,849,743</b>		<b>3,790,480</b>	<b>126,857</b>	<b>3,917,337</b>	<b>3,716,100</b>	<b>3,790,480</b>	<b>3,411,975</b>	<b>2,213,415</b>	<b>2,134,115</b>

- Figures expressed in millions of Colombian pesos -

## Debt Covenant / EBITDA

EPM has a financial covenant, measured in the ratio long term financial debt to EBITDA, calculated based on the consolidated figures of the EPM Group, of maximum 3.5 times, in the credit contracts: French Development Agency - AFD, Inter American Development Bank - BID 1664, and Guarantee from Japan Bank for International Cooperation -JBIC a credit with the Japanese commercial bank. In addition, it has agreed this credit, but inactive, to count with double degree of investment, in the international bond issue with expiration in 2019.

As of December 2016 the result of the indicator is of 3.69 times. Said result obeys to the appearance of the current circumstances that affected the EBITDA of the Power Generation line of business during the last quarter of 2015 and the first two quarters of 2016, by the materialization of the weather phenomenon “El Niño” in addition to macroeconomic aspects that affected the balance of the long-term debt denominated in U.S. dollars during 2015.

Contractually, one of the schemes to avoid that this fact will become a nonfulfillment is that the banks grants a waiver.

EPM must report the fulfillment of this indicator as follow: to Japan Bank for International Cooperation -JBIC- quarterly, to the French Development Agency -FDA- biannually and to the Inter-American Development Bank - IDB- annually. EPM has waiver from the three entities for the results of December 2016. Because of the periodicity of measurement the waivers from FDA and IDB cover the period of 2017, while the JBIC will review quarterly the fulfillment of that indicator. The latter explains the classification to current liability of the balance of the loan from the Japanese commercial banks with guarantee from JBIC for \$372,104.

It should be noted that the fact that EPM exceeds the debt/EBITDA covenant agreed does not generate activation of the declaration of default by the banks, or the advance payment, since this is an action contractually subject to the decision of the bank(s) of exercising or not that declaration and additionally to the fact of having repair periods agreed in the contracts to take care of an eventual default.

### Defaults

During the accounting period, EPM has not defaulted in the payment of the principal and/or interest of its loans.

## Note 20. Creditors and other accounts payable

Creditors and other accounts payable consist of the following:

Creditors and other accounts payable	2016	2015
<b>Non current</b>		
Acquisition of goods and services	628	628
Deposits received in guarantee	39	33
Resources received in administration	21,606	22,710
Construction contracts	8,002	8,203
<b>Total creditors and other accounts payable non current</b>	<b>30,275</b>	<b>31,574</b>
<b>Current</b>		
Creditors	277,123	307,118
Acquisition of goods and services <sup>1</sup>	512,288	659,212
Assigned grants	3,795	1,966
Deposits received in guarantee	311	311
Advances and advances received	507	507
Resources received in administration	17,963	16,483
Other accounts payable	24,670	616
Construction contracts	24,808	29,942
Commissions payable	2,110	2,110
<b>Total creditors and other accounts payable current</b>	<b>863,575</b>	<b>1,018,265</b>
<b>Total creditors and other accounts payable</b>	<b>893,850</b>	<b>1,049,839</b>

- Figures expressed in millions of Colombian pesos -

<sup>1</sup> The most relevant payments made in the period correspond to the purchase of power in the Generation and Distribution segments made at the end of 2015.

The term for the payment to suppliers is 30 calendar days, with exceptions that are documented in the processes and determined among others, by the type of obligation and contract.

#### Defaults

During the accounting period, the company has not been in default in the payment of the principal or interest of its credits and loans.

## Note 21. Other financial liabilities

Other financial liabilities consist of the following:

Other financial liabilities	2016	2015
<b>Non current</b>		
Financial leasing	196,308	197,213
Pension bonds <sup>1</sup>	282,253	302,477
Derivatives for cash flow hedge purposes (see note 22)	2,032	-
<b>Total other non-current financial liabilities</b>	<b>480,593</b>	<b>499,690</b>
<b>Current</b>		
Financial leasing	906	832
Pension bonds <sup>1</sup>	234,693	180,829
Derivatives for cash flow hedge purposes (see note 22)	68,919	-
<b>Total other current financial liabilities</b>	<b>304,518</b>	<b>181,661</b>
<b>Total other financial liabilities</b>	<b>785,111</b>	<b>681,351</b>

- Figures expressed in millions of Colombian pesos -

Conventional purchases and sales of financial liabilities are accounted for applying the negotiation date.

<sup>1</sup>The variation was explained by the amortized cost and the payments made during the period.

### 21.1 Defaults

During the accounting period the company has not been in default in the payment of the principal and interest of its loans.

### 21.2 Financial leases

As of the closing date the carrying value of properties, plant and equipment under financial leasing is the following:

2016	Land and buildings	Communication and computer equipment	Machinery and equipment	Total Assets
Cost	200,057	2,380	2,063	204,500
Accumulated depreciation	(65,263)	(1,374)	(1,011)	(67,648)
<b>Total</b>	<b>134,794</b>	<b>1,006</b>	<b>1,052</b>	<b>136,852</b>

- Figures expressed in millions of Colombian pesos -

2015	Land and buildings	Communication and computer equipment	Machinery and equipment	Total Assets
Cost	200,057	2,380	2,063	204,500
Accumulated depreciation	(60,926)	(1,283)	(946)	(63,155)
<b>Total</b>	<b>139,131</b>	<b>1,097</b>	<b>1,117</b>	<b>141,345</b>

- Figures expressed in millions of Colombian pesos -

The most significant financial leasing agreement is the real estate property called “Edificio Empresas Públicas de Medellín”. The agreement has a term of 50 years counted as of December 2001, automatically renewable for an equal term if none of the parties expresses otherwise. The value of the rent is \$1,500 monthly, which will be adjusted each year by the Consumer Price Index (CPI).

As of the report date the minimum future payments and the present value of the minimum payments for financial leasing are distributed as follows:

Financial leasing	2016		2015	
	Minimum payments	Present value of minimum payments	Minimum payments	Present value of minimum payments
At one year	18,000	17,181	18,000	17,181
At more than one year and up to five years	72,000	55,613	72,000	55,613
More than five years	540,000	124,420	558,000	125,251
<b>Total leasing</b>	<b>630,000</b>	<b>197,214</b>	<b>648,000</b>	<b>198,045</b>
Less - value of interest not earned	432,786	-	449,955	-
<b>Present value of minimum payments for leasing</b>	<b>197,214</b>	<b>197,214</b>	<b>198,045</b>	<b>198,045</b>

- Figures expressed in millions of Colombian pesos -

The expense for contingent leases recognized in the profit and loss of the period is \$16,407 (2015: \$15,115).

### 21.3 Defaults

During the accounting period the company has not been in default in the payment of the capital and interest of its loans.

## Note 22. Derivatives and hedging

Classification of Hedging	Description	Risk covered	Trench	Hedged item	Carrying value of hedged item	Carrying value of hedging instrument	Changes in the fair value of hedging instrument in the period	Changes in the fair value of the hedged item in the period	Inefficacy of hedging recognized in profit and loss for the period	Efficacy of hedging recognized in profit & loss for the period	Reclassification of other comprehensive income to profit & loss for the period1
<b>Cash flow hedging</b>											
Swaps	Cross Currency Swap	Exchange rate USD / COP and interest rate Libor /fixed of debt service	Total of Club Deal Credit	Credit in U.S. dollars	1,686,230	70,951	70,951	5,833	N.A	70,951	498
Futures	Derivex	Sale price in power exchange	N.A.	Sales of Energy highly probable item	N.A	18	18	N.A	N.A	282	264

- Figures expressed in millions of Colombian pesos -

<sup>1</sup> The reclassification of other comprehensive income to the profit and loss of the period effected the exchange difference for swap instruments, corresponding to the exchange difference of the interest and principal of the right and for the instruments contracts of futures affected the sales of energy in the exchange. Additional \$46,697 was capitalized such as borrowing costs mainly for the Ituango project.

### Cash flow hedging

The characteristics of the main cash flow hedging instruments that are under the hedge accounting are the following:

#### Swaps:

Characteristics	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11	Tranche 12
Credit	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal
Date	24-May-16	24-May-16	26-May-16	3-Jun-16	3-Jun-16	7-Jun-16	8-Jun-16	20-Jun-16	8-Jul-16	12-Jul-16	21-Jul-16	8-Aug-16
Entity	Bank of America Merrill Lynch	JP Morgan	JP Morgan	Bank of America Merrill Lynch	JP Morgan	Bank of America Merrill Lynch	JP Morgan	Bank of America Merrill Lynch	BNP Paribas	BNP Paribas	BNP Paribas	BNP Paribas
Nominal	USD 50,000,000	USD 50,000,000	USD 50,000,000	USD 50,000,000	USD 50,000,000	USD 50,000,000	USD 50,000,000	USD 60,000,000	USD 40,000,000	USD 50,000,000	USD 30,000,000	USD 30,000,000
Exchange rate	3,058	3,058	3	3	2,997	2,945	2,907	2,976	2,965	2,907	2,924	2,990
COP obligation	152,900,000,000	152,650,000,000	152,650,000,000	151,250,000,000	149,850,000,000	147,250,000,000	145,350,000,000	178,560,000,000	118,000,000,000	145,350,000,000	87,720,000,000	89,700,000,000
EPM pays	IBR + 2.1077	IBR + 2.17	IBR + 2.17	IBR + 2.16	IBR + 2.20	IBR + 2.25	IBR + 2.19	9.30%	8.42%	8.55%	8.48%	8.44%
EPM receives	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140
Periodicity	Biannual	Biannual	Biannual	Biannual	Biannual	Biannual	Biannual	Biannual	Biannual	Biannual	Biannual	Biannual
Effective date	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16
Expiration date	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20

### Implicit derivatives

The company has not entered into contracts containing embedded derivatives.



## Note 23. Employee benefits

The item of employee benefits recognized at the report date, present the following composition:

Employee benefits	2016	2015
<b>Non-Current</b>		
Post-employment benefits	219,509	88,764
Long Term Benefits	35,375	115,116
<b>Total non-current employee benefits</b>	<b>254,884</b>	<b>203,880</b>
<b>Current</b>		
Short-term benefits	72,166	62,927
Post-employment benefits	44,459	38,252
<b>Total benefits to current employees</b>	<b>116,625</b>	<b>101,179</b>
<b>Total</b>	<b>371,509</b>	<b>305,059</b>

- Figures expressed in millions of Colombian pesos -

### 23.1. Post-employment benefits

It covers plans of defined benefits and the defined contributions plans detailed below:

#### 23.1.1. Defined benefits plans

Defined Benefit Plans	Pensions <sup>1</sup>		Retroactive benefits <sup>2</sup>		Educational Assistance Plan <sup>3</sup>		Total	
	2016	2015	2016	2015	2016	2015	2016	2015
<b>Present value of defined benefit obligations</b>								
Beginning balance	410,899	429,463	84,275	85,493	151	169	495,325	515,125
Cost of the present service	-	-	3,264	3,435	-	-	3,264	3,435
Interest income or (expense)	30,274	27,681	6,025	5,287	7	9	36,306	32,977
Assumptions by experience	17,486	5,098	7,513	268	(17)	4	24,982	5,370
Financial Assumptions	22,634	(14,383)	1,672	(1,666)	-	(1)	24,306	(16,050)
Payments made by the plan <sup>4</sup>	(37,089)	(36,960)	(10,140)	(8,543)	(37)	(30)	(47,266)	(45,533)
Other changes	339	-	-	-	-	-	-	-
<b>Present value of obligations as of December 31</b>	<b>444,543</b>	<b>410,899</b>	<b>92,609</b>	<b>84,274</b>	<b>104</b>	<b>151</b>	<b>536,917</b>	<b>495,324</b>
<b>Fair value of plan assets</b>								
Beginning balance	284,322	315,438	-	-	-	-	284,322	315,438
Payments made by the plan <sup>4</sup>	(44,502)	(36,960)	-	-	-	-	(44,502)	(36,960)
Interest income	20,654	19,674	-	-	-	-	20,654	19,674
Actuarial gains or losses:	-	(9,035)	-	-	-	-	-	(9,035)
Expected return on plan (excluding interest income)	12,814	-	-	-	-	-	12,814	-
Other changes	-	(4,795)	-	-	-	-	-	(4,795)
<b>Fair value of plan assets December 31</b>	<b>273,288</b>	<b>284,322</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>273,288</b>	<b>284,322</b>
<b>Surplus or (deficit) of the defined benefit plan</b>	<b>171,255</b>	<b>126,577</b>	<b>92,609</b>	<b>84,274</b>	<b>104</b>	<b>151</b>	<b>263,968</b>	<b>211,002</b>
Adjustment to surplus by asset limit								
<b>Net Asset or (liability) of the defined benefit plan</b>	<b>171,255</b>	<b>126,577</b>	<b>92,609</b>	<b>84,274</b>	<b>104</b>	<b>151</b>	<b>263,968</b>	<b>211,002</b>
Other defined benefit items	-	288	-	-	-	-	-	288
<b>Total defined benefits</b>	<b>171,255</b>	<b>126,865</b>	<b>92,609</b>	<b>84,274</b>	<b>104</b>	<b>151</b>	<b>263,968</b>	<b>211,290</b>

- Figures expressed in millions of Colombian pesos -

<sup>1</sup>Includes a retirement pension plan for pensions recognized prior to the effectiveness of the General Pension System of Law 100 of 1993 with its respective substitutions, which are distributed in the actuarial calculation by groups differentiating the lifelong pensions, those shared with the Social Security Institute, the pension substitutions and those that generate retirement quota share. The plan is made up by EPM retirees and those that belong to the pension substitution by the liquidation of the Empresa Antioqueña De Energía EADE. It includes social security contributions and funeral allowance. Retirement pensions are legal under the parameters of Law 6 of 1945 and Law 33 of 1985. No risks have been identified for EPM, generated by the plan. During the period the plans have not suffered any modifications, reductions or liquidations that represent a reduction of the present value of the obligation.

<sup>2</sup>Includes a plan corresponding to retroactive severance pay, it is a post-employment benefit that applies approximately to 10.6% of the employees of EPM, consisting in the recognition of an average monthly salary multiplied by the years of service, payable through advances and at the time of termination of the employment agreement. The sources that gives rise to the plan is “Law Sixth of 1945 whereby some provisions are issued on the labor agreements, professional associations, collective conflicts and special labor jurisdiction” and the National Decree 1160 of 1989, whereby Law 71 of 1988 is partially regulated, whereby rules are issued on pensions and other provisions are ordered. For the retroactive severance plan, no possible risks or significant modifications are identified during the period.

<sup>3</sup> Includes an educational allowance plan that is granted to each of the children of the retirees of EPM, entitled thereto; it consists of aids for high school, technical or college studies. It has its origin in article 9 of Law 4 of 1976, whereby rules are issued on the subject of pensions of the public, official, semiofficial and private sectors and provides that the companies or employers will grant scholarships or aids for high school, technical or college studies, to the children of its retired personnel, under the same conditions as those granted to established for the children of active workers.

The weighted average duration in years of the obligation for defined benefits plans to the court date is the following:

Benefit	2016		2015	
	From	To	From	To
EPM Pension	8.7	11.4	8.5	10.9
EPM Education Allowance	1.6	1.6	1.9	1.9
Retroactive severance	7.1	7.1	7.6	7.6

<sup>4</sup>Includes \$47,266 for 2016 and in 2015: \$45,533, of values paid for liquidations of the plan.

The company does not have restrictions on the current realization of the excess of the defined benefit plan.

The company did not make contributions for defined benefits during 2016, and it does not expect to make contributions for the next annual period.

The fair value of plan assets is composed so:

Assets that support the plan	2016		2015	
	% Participation	Fair value	% Participation	Fair value
Cash and cash equivalents	1.6%	4,281	1.19%	3,383
<b>Debt instruments</b>				
AAA	88.5%	241,894	87.99%	250,175
AA	5.6%	15,282	8.78%	24,963
A	0.6%	1,773	-	-
Investment Funds <sup>1</sup>	3.7%	10,058	2.04%	5,800
<b>Total debt instruments</b>	<b>98.4%</b>	<b>269,007</b>	<b>98.81%</b>	<b>280,938</b>
<b>Total assets that support the plan</b>	<b>100.0%</b>	<b>273,288</b>	<b>100.00%</b>	<b>284,322</b>

- Figures expressed in millions of Colombian pesos -

<sup>1</sup>Among the investment funds there are open collective investment funds without pact of permanence for a value of \$3,747 and the funds traded (International Exchange Trade Fund - ETF) that replicates the Capitalization Share Index (COLCAP) for a value of \$6,311.

The major actuarial assumptions used to determine the obligations for the defined benefit plans are the following:

Assumption	Item	
	2016	2015
Discount rate (%) EPM	5.80 - 7.30	6.00 - 7.80
Annual salary increase rate (%)	4.00 - 7.09	4.00 - 4.70
Actual return rate of plan assets	6.50	3.61
Annual growth rate of futures	3.50 - 5.89	3.50
Annual inflation rate (%)	3.50 - 5.89	3.50
Survival rates	Valid Rentists 2008	

The following table details the effect of a variation of over 1% and less than 1% in the discount rate and in the increase in the benefit on the obligation for plans of defined post-employment benefits:

Assumptions	Increase in discount rate by +1%	Decrease in discount rate by -1%	Increase in salary increase by + 1%	Decrease in salary increase by -1%
EPM Pension Benefit 1	307,788	362,038	-	-
EPM Social Security Contributions Benefit 2	25,983	30,326	-	-
EPM educational aid Benefit 3	102	105	105	102
EADE Pension Benefit 4	73,264	91,019	-	-
EADE Social Security Contribution	1,837	2,158	-	-
Benefit 6 Retroactive Cessation	87,215	98,540	101,992	83,906
<b>Total beneficios Post-empleo</b>	<b>496,189</b>	<b>584,186</b>	<b>102,097</b>	<b>84,008</b>

- Figures expressed in millions of Colombian pesos -

The methods and assumptions used to prepare the sensitivity analysis of the Present Value of the Obligations (DBO - Defined Benefit Obligations) was made using the same methodology that for the actuarial calculation as of December 31, 2016: Projected Unit Credit (PUC) method. The sensibility does not present limitations, or changes in the methods and assumptions used to prepare the analysis of the current period.

### 23.1.2. Defined contribution plans

The Company made contributions to defined contribution plans recognized as expense in profit and loss for \$13,253 (2015: \$12,231), and cost for \$23,938 (2015: \$20,959) and in investment projects for \$8,163 (2015: \$5,967), for a total of \$45,354 (2015: \$39,157).

### 23.2. Long-term employee benefits

Long-term employee benefits	Seniority bonus <sup>1</sup>		Total	
	2016	2015	2016	2015
<b>Present value of obligations for other long term benefits</b>				
Beginning balance	30,841	29,937	30,841	29,937
Cost of present service	2,824	2,618	2,824	2,618
Income or (expenses) for interest	2,286	1,891	2,286	1,891
Assumptions for experience	2,449	740	2,449	740
Financial assumption	837	(1,039)	837	(1,039)
Payments made by the Plan2	(3,863)	(3,306)	(3,863)	(3,306)
<b>Present value of obligations as of December 31</b>	<b>35,374</b>	<b>30,841</b>	<b>35,374</b>	<b>30,841</b>
<b>Surplus or (deficit ) for long -term benefits</b>	<b>35,374</b>	<b>30,841</b>	<b>35,374</b>	<b>30,841</b>
<b>Asset or (liability) for long-term net benefits</b>	<b>35,374</b>	<b>30,841</b>	<b>35,374</b>	<b>30,841</b>

- Figures expressed in millions of Colombian pesos -

For these benefits the company does not have assets that support the plan.

<sup>1</sup> Includes a plan corresponding to Seniority Bonus. It is a long-term benefit granted to the employees through the Collective Bargaining Agreement, in EPM is granted according to the years of continuous or discontinuous service. It is recognized and paid one time in the respective period and according to the terms established: every 5 years 12, 12, 17, 23, 30, 35 and 40 days of basic salary will be paid, respectively. For the Seniority Bonus plan no possible risks are identified.

<sup>3</sup> It includes \$3,863 for the current period and \$3,306 for 2015 by the amounts paid to the settlement plan.

The weighted average duration in years, of the obligations for long-term benefit plans at the report date, is presented below:

Benefit	2016		2015	
	From	To	From	To
Seniority Premium	6.5	6.5	6.4	6.4

The company does not expect to make contributions to the plan for the upcoming annual period.

The major actuarial assumptions used to determine the obligations for the long-term employee benefit plans - Seniority Bonus, are the following:

Assumptions	Item	
	2016	2015
Discount rate (%)	7.10	7.50
Annual salary increase rate (%)	4.70	4.70
Annual inflation rate (%)	5.89	3.50
Survival rates	Valid Rentists 2008	

The following table shows the effect of a variation of more than 1% and less 1% in the salary increase, in the discount rate and in the increase in the benefit over the obligation for long-term benefits:

Assumption	Increase in the discount rate by +1%	Decrease in the discount rate by -1%	Increase in salary increase by +1%	Decrease in salary increase by -1%
Seniority Premium	33,351	37,644	37,497	33,449
<b>Total long term benefits</b>	<b>33,351</b>	<b>37,644</b>	<b>37,497</b>	<b>33,449</b>

- Figures expressed in millions of Colombian pesos -

The methods and assumptions used to prepare the sensibility analysis of the Present Value of Obligations (DBO - Defined Benefit Obligations) was made using the same methodology as for the actuarial calculation as of December 31, 2016: Forecasted Credit Unit (FCU). The sensibility does not present any limitations, or changes in the methods and assumptions used to prepare the analysis of the current period.

### 23.3 Short-term benefits

The common of the short term benefits is as follows:

Short-term benefits	2016	2015
Payroll payable	8,060	5,989
Savings	25,998	22,833
Interest on disposal	3,046	2,685
Holidays	11,164	10,100
Holiday bonus	22,505	20,136
Christmas bonus	34	7
Bonuses	1,359	1,177
<b>Total short-term benefits</b>	<b>72,166</b>	<b>62,927</b>

- Figures expressed in millions of Colombian pesos -

## Note 24. Taxes, contributions and rates

The detail of taxes, contributions and rates, different from income tax, is the following:

Taxes, contributions and rates	2016	2015
<b>Current</b>		
Tax withholding and stamp tax	55,591	52,016
Industry and Commerce Tax	20,287	19,486
Customs tax and surcharges	29	-
Contributions	3,565	741
Rates	14,329	12,602
Other national taxes	697	697
Other municipal taxes	4	24
Value added tax	2,970	2,478
<b>Total Taxes, rates and contributions current</b>	<b>97,472</b>	<b>88,044</b>
<b>Total Taxes, contributions and rates</b>	<b>97,472</b>	<b>88,044</b>

- Figures expressed in millions of Colombian pesos -

## Note 25. Provisions, contingent assets and liabilities

### 25.1 Provisions

The reconciliation of provisions is as follows:



Item	Dismantling or restoration <sup>1</sup>	Onerous contracts	Litigations <sup>2</sup>	Business combinations	Subsidiary implied obligations	Other provisions <sup>3</sup>	Total
Beginning balance	936	162,045	91,022	152,591	-	19,284	425,878
Additions	17,808	-	10,301	-	9,521	72,085	109,715
Utilizations (-)	(1,560)	(20,851)	(959)	(333)	-	(39,697)	(63,400)
Reversals, amounts not used (-)	-	-	(25,331)	(416)	-	(3,519)	(29,266)
Adjustment for discount rate	544	(5,348)	(9,572)	326	-	(6,147)	(20,197)
Other changes	383	5,338	5,125	(4,755)	-	1,237	7,328
<b>Ending balance</b>	<b>18,111</b>	<b>141,184</b>	<b>70,586</b>	<b>147,413</b>	<b>9,521</b>	<b>43,243</b>	<b>430,058</b>
Non current	9,066	105,144	54,784	18,647	9,521	12,134	209,296
Current	9,045	36,040	15,802	128,766	-	31,109	220,762
<b>Total</b>	<b>18,111</b>	<b>141,184</b>	<b>70,586</b>	<b>147,413</b>	<b>9,521</b>	<b>43,243</b>	<b>430,058</b>

- Figures expressed in millions of Colombian pesos -

<sup>1</sup>An increase is observed in the provision for dismantling for the new environmental provision generated as an environmental reforestation obligation regulated by the ANLA, the CAR and the MASD<sup>3</sup>.

<sup>2</sup>The reduction of the provision for litigations was caused mainly by changes in the estimates of some claims which were adjusted by the Legal area to the maximum amount ordered by the legal system in respect to moral damages.

<sup>3</sup>The increase in the item of other provisions was explained mainly by the creation of the provision generated by the delay in the construction of the projects Bello - Guayabal - Ancon and Nueva Esperanza, for a value of \$16,839 and \$4,050 respective and by the obtaining of the employer policy for the term 2017-2018.

**25.1.1. Dismantling or restoration** EPM has the obligation to incur in costs of dismantling of restoration of its facilities and assets. Currently EPM has two provisions for dismantling, one of them related to the removal of transformers that contain PCB (polychlorinated biphenyls), EPM has agreed to the dismantling of these assets from 2014 to 2016 covered in Resolution 222 of December 15, 2011 from the Ministry of the Environment and Sustainable Development and to the Stockholm Convention of May 22, 2008. The provision is recognized for the present value of expected costs to pay off the obligation using estimated cash flows. The major assumptions considered in the calculation of the provision are: estimated costs, CPI and fixed TES (Treasury Bonds). As of this date there has been no evidence of any future events that could affect the calculation of the provision.

The Amaga Mine: with Resolution 130 AS-1106242 of October 21, 2011 issued by CORANTIOQUIA approval is given to the environmental component of the plan to close the coal mines of the mining title and for these purpose construction contracts are performed of various civil works, urbanism and monitoring in the coal mines of the mining title, code RPP 434 of the area of Amaga. EPM has committed to the dismantling of these assets from 2013 to 2016. The main assumptions considered in the calculation of the provision are: estimated costs, CPI, and TES fixed rate. As of this date no future events have been evidenced that could affect the calculation of the provision. Currently the company is in the final stretch of the actions contemplated in the mentioned resolution and is waiting for a pronouncement by Corantioquia to this effect, which could imply the performance of more monitoring. However, it is clear that regardless of this pronouncement, EPM must

<sup>3</sup> **ANLA:** National Authority of Environmental Licenses, **CAR:** Autonomous Regional Corporation and **MADS:** Ministry of the Environment and Sustainable Development.

carry out the necessary actions for the delivery of the title, which include legal and technical processes and the structuring of decisional schemes.

The environmental provision is required in the construction of infrastructure projects, it arises as a legal obligation derived from the granting of the environmental license to compensate the loss of biodiversity during the construction phase, as well as the compensation for the subtraction of reserve areas, affectation of preserved species and forest exploitation; obligations that are formalized through the resolutions of the ANDA - National Environmental License Authority, CAR Autonomous Regional Corporation and/or MADS - Ministry of the Environment and Sustainable Development. The performance of the biotic environmental compensations of the project extend beyond the tie in which the asset start to operate technically, and it becomes necessary to implement the provision in order that those disbursements will be considered as higher value of the construction in progress. The company has committed to compensate the loss of biodiversity, subtraction and preserved species from 2016 to 2019 according to the following resolutions: Res. 1313/2013 ANLA, Res. 519/2014 ANLA, Res LA. 0882/04/08/2014 ANLA, Res. 1166/2013 MADS, Res. 1852/2013 CAR, Res. 2135/2014 CAR, Resolution 1189/22/07/2104 MADS, Res. 1120907/17-03-2015 CORNARE, Res. 141011206/16-10-2014 CORANTIOQUIA, Res LA. EIA1-9872 21/04/2014 CVS, among others. The provision is recognized for the present value of the costs expected to pay the obligation using estimated cash flows. The main assumptions considered in the calculation of the provision are: estimated costs, CPI and fixed rate TES.

#### **25.1.2. Contracts for valuable consideration**

As of December 31, 2015 the Company has the agreement of supply and transportation of fuel for \$162,046 signed with Transportadora de Gas Internacional S.A. E.S.P. (TGI) which object is to support the Termosierra plant and obtain the income of the charge for reliability established by the Energy and Gas Regulation Commission.

The major assumptions considered in the calculation of the provision are: costs associated to the agreement with the mentioned conditions, utilization factor or suspension of payments for maintenance of the agreement, Libor rate, discount rate calculated with reference to the market returns of the bonds issued by the National Government, the Market's Representative Exchange Rate and macroeconomic scenario projected.

The main hypothesis used on the future events are: from 2016 to 2020 the following assumptions are maintained: Suspension of the contract for 30 days every year and utilization of the contract only for 15 days each year for generation of the Termosierra plant and the rest of the time would be paid without using the contract (only fixed costs).

#### **25.1.3. Litigations**

With this provision the Company covers the estimated losses probable related to labor, civil, administrative and tax litigations (through administrative and government channels) that arise in the operations. The major assumptions considered in the calculation of the provision are: CPI average at actual data in previous years and projected data in future years, discount rate calculated with reference to the market returns of the bonds issued by the National Government, estimated value to be paid and the estimated payment date for those litigations Qualified as probable. As of this date no future events have been evidenced that may affect the calculation of the provision.

In the variations that the litigations show, it is worth mentioning the recovery of litigation 14001154 with the plaintiff German Guillermo Marquez Vargas caused by the decision favorable to the Company and litigation 14000735 with Ms. Carmen Maria Alzate Rivera for second instant decision that decreased the value of the claim initially made by the plaintiff.

In order to diminish the uncertainty conditions that may exist in respect to the estimated payment date and estimated value to be paid of a litigation rated as probable, the Company has business rules based on statistical studies that were used to obtain the average duration of the processes by action and also the application of the

law to the maximum limits defined by it for the value immaterial claims when they exceed their amount as described below:

#### Average duration of processes by action

Administrative and tax action

Administrative and fiscal

Action	Average Years
Abbreviated	4
Petition for Compliance	4
Group Action	6
Class Action	4
Pre-trial conciliation	2
Civil action within criminal proceedings	4
Contractual	13
Delimitation and Demarcation	5
Executory Process	5
Singular Executory Process	3
Expropriation	4
Comprehensive Repair Incident	2
Imposition of Easement	4
Nullity of Administrative Acts	5
Nullity and Reestablishment of Right	10
Nullity and Reestablishment of Labor Right	11
Ordinary Proceedings	7
Ordinary Ownership Proceedings	5
Accusatory Criminal (Law 906 of 2004)	4
Proceedings for Partition of Property	4
Protection of Consumer Rights	6
Complaint Filed With the Police	3
Recovery of Possession	7
Direct Repair	12
Verbal	5

#### Labor processes

Action	Average Years
Solidarity	3.5
Pension	3.5
Overtime	3.5
Reintegration	4
Salary Scale Leveling	3.5
Indemnification for termination without cause	3.5
Recalculation of Fringe Benefits	3.5
Indemnification for job related accident	4
Refund of Health-Pension Contributions	4

#### Application of the law

**Typology:** The values of the claims of indemnification for immaterial damages will be recorded in accordance with the following typology:

- **Moral damage**
- Damage to health (physiological or biological damage), derived from a bodily or psychophysical injury.
- Damages to the life of the relationship
- Damages to constitutional and conventional goods.

The values of other immaterial claims not recognized by the law will not be recorded, save that from the complaint it may be inferred that, notwithstanding the being denominated in another way, corresponds to any of the typologies admitted. Claims for immaterial indemnifications for damages to goods will not be recorded either.

**Quantification:** The quantity of the immaterial claims will be recorded in uniform manner as follows, regardless of their typology:

For Direct Victim	100 Minimum legal monthly salaries in effect
For Indirect Victims	50 Minimum legal monthly salaries in effect

The following are recognized litigation:

Third Party	Claim	Value
Consorcio Dragados Porce II	To pay to the plaintiffs, among others, the sums of money that result from the return of all the compensation illegally deducted by EPM in the contracting process No. CD002376.	27,439
Fiduciaria Colpatría S.A.	Free payment warrant against EPM and in favor of Fiduciaria Colpatría S.A. Acting as spokesperson for the Autonomous Heritage FC - Embedded.	4,362
VELPA SOLUCIONES INTEGRALES S.A.	Impossibility of contracting with the State for a period of 5 years, product of the decision taken in the contracting process No. 2009 - 0974.	4,080
Temporary Union Solar Energy S.A. And Estructuras Arbi Ltda.	That it be declared that the bid submitted by the applicants to tender No. ES-2043-GI convened by EPM was legally capable of being taken into account when awarding the respective contract of tender No. ES-2043-GI	1,765
Construcciones Pico y Pala Ltda.	To declare the nullity of Resolution 95070 of 04/05/1999, issued by EPM, by means of which the contract 1 / DJ-682/15 concluded between EPM and CONSORCIO TRAINCO S.A. was liquidated unilaterally. And 113701 of 03/15/2000, issued equally by EPM, by means of which the appeal for reinstatement filed against Resolution 95070 of 04/05/1999 was resolved negatively.	1,626
Francisco Arturo Muriel Palacio	Moral damages, and damage to the life of the relationship, caused to the plaintiffs on the occasion of the death of Claudia Patricia Cepeda Muriel, in events occurred on 05/27/2008 in race 49 between 16 South and 18 South.	1,585
Accesorios y Sistemas S.A.	Declare the nullity of Resolution 3077 of December 11, 2002, issued by the General Manager of EPM, through which it was resolved to declare the realization of the risk of quality and correct operation of the vehicles object of contract 090321557.	957
Didier De Jesús Restrepo Montoya	As a result of being declared jointly and severally liable for the damages caused, both material and immaterial and moral for the eviction of the place where they had built their houses, carried out on 04/15/2009, for the construction of the Porce III Hydroelectric Project.	942
TRAINCO S.A.	That Resolution 161052 of 05/03/2001, issued by EPM, be declared void, by means of which the contract 2101870 concluded between EPM and TRAINCO S.A. was unilaterally terminated. And 178702 of 07/06/2001,	936
Several administrative	Other processes of less than \$ 936 million pesos.	12,628
Municipality of Nechí and others	Industry and commerce and street lighting	306
Jenifer Andrea Marcelo Jiménez	Compensation, solidarity	2,251
Luis Bernardo Mora Meneses	Benefits of the Dept. Doctor	740
Bertha Luz Bustamante Salazar	Reimbursement	710
Various labor	Other processes of less than \$ 710 million pesos.	10,259
<b>Total litigation recognized</b>		<b>70,586</b>

- Figures expressed in millions of Colombian pesos -

#### 25.1.4. Business Combinations

It corresponds to the contingent considerations related to the acquisition of the following group of assets that represent a business: subsidiary Espiritu Santo Energy S. de R.L. and subsidiary Empresas Varias de Medellín S.A E.S.P. - EMVARIAS, the balance at December 31, 2016 is \$129,076 (2015: \$135,123) and \$18,337 (2015: \$17,468), respectively.

The main assumptions considered in the calculation of the contingent consideration related to the acquisition of Espiritu Santo are: estimated date of occurrence of milestones associated to the contingent payment, probability of occurrence associated, and additionally the discount of the flows of payments was considered applying a discount rate (Libor Rate) in accordance with the risk of the liability. As of this date no future events have been evidenced that may affect the calculation of the provision

The main hypothesis used on these future events of the contingent consideration related to the acquisition of EMVARIAS are: for litigations in progress against that Company as of the date of the transaction, definition of the year of materialization of each one of them, definition of the related value and estimate of the future contingent disbursements, discount rate (fixed rate TES [Treasury Securities]) to discount the future contingent flows of disbursements. As of this date no future events have been evidenced that may affect the calculation of the provision.

#### 25.1.5. Implied obligations of subsidiaries

It corresponds to the implied obligation of the Subsidiary Hidroecologica del Teribe S.A. HET) derived from the application of equity method.

#### 25.1.6. Other provisions

EPM maintains other provisions intended to the wellbeing and quality of life of its employees and their family group, such as: employer policy, multiplying points, Somos program, technical reserve and provision for high cost and catastrophic diseases.

The main assumptions considered in the measurement of each type of provision are:

**Employer policy:** Granted to the employees of EPM as extralegal benefit. An aggregated deductible was contracted since november 1, 2016 up to december 31, 2018, of \$5.500 million pesos. The main assumptions considered in the calculation for each type of provision are: discount rate TES (Treasury Securities) fixed rate, estimated value to be paid and estimated payment date. As of this date no future events have been evidenced that could affect the calculation of the provision.

**Multiplying points:** For every point 1.0% of the Minimum Monthly Legal Salary in Effect (MMLSE) will be recognized. One point for an immersion - study of foreign language - is equivalent to 3% of the MMLSE of the period to be provisioned. A percentage of 90% of the points corresponds to claim in cash at the time the points are earned. The remaining 10% is estimated for immersion.

**Program Somos:** The program operates under the modality of accumulation of points. According to the statistics' behavior the points are accounted for with a probability of 80% redemption.

**Technical reserve:** The base to calculate the reserve is that corresponding to all the authorization of services issued and that on the closing date in which the reserve is going to be calculated have not been collected, except those that correspond to authorizations with over twelve months of issue or those that after at least 4 months of having been issued, there is evidence that they have not been used.

**High cost and catastrophic diseases:** The base to calculate said provision is that corresponding to the analysis of the entire population served of affiliates and beneficiaries of Entidad Adaptada de Salud (EAS) of EPM, that suffer any of the authorized pathologies.



**Delay in transmission projects:** This provisions is due to the payment of guarantees for the failure to enter operations of the projects Bello - Guayabal - Ancon and Nueva Esperanza.

The assumptions used are: Their life expectancy is estimated, estimated payment date, estimated payment value, CPI rate of the macroeconomic scenario of EPM to project and the estimated TES fixed rate for discount. As of this date no future events that could affect the calculation of provisions have been evidenced.

#### 25.1.7. Estimated payments

The estimate of the dates on which the Company considers that it will have to face the payments related to the provisions included in the individual statement of financial position as of the report date, is the following:

Estimated Payments	Dismantling or restoration	Onerous contracts	Litigation	Business combination	Others	Total
2017	10,083	36,040	16,646	119,583	32,396	214,748
2018	10,009	35,696	10,209	10,709	3,387	70,010
2019	2,688	35,047	2,065	11	2,870	42,681
2020 y otros	1,644	34,400	55,079	6,629	5,282	103,034
<b>Total</b>	<b>24,424</b>	<b>141,183</b>	<b>83,999</b>	<b>136,932</b>	<b>43,935</b>	<b>430,473</b>

- Figures expressed in millions of Colombian pesos -

#### 25.2 Contingent liabilities and assets

The composition of the contingent liabilities and assets is the following:

Type of contingency	Contingent liabilities	Contingent assets	Net
Litigation	383,474	198,454	185,021
<b>Total</b>	<b>383,474</b>	<b>198,454</b>	<b>185,021</b>

- Figures expressed in millions of Colombian pesos -

The Company has litigations or procedures that are currently in process with the legal, administrative and arbitration bodies. Taking into consideration the reports from the legal counsel it is reasonable to estimate that those litigations will not affect significantly the financial position or solvency, even assuming an unfavorable conclusion of any of them.

The main litigations pending resolution and legal and extralegal disputes to which the Company is part as of the report date, are indicated below:

## Contingent liabilities

### Part 1

Third Party	Claim	Value
National Federation of Coffee Growers	Recognition and payment of the investments made by the Federation of	99,643
Compañía Minera La Cuelga	Indemnification for all economic damages caused to Compañía Minera La Cuelga, which originate in the work of execution, filling of reservoir and start up of the Porce III hydroelectric project.	32,284
ALOS Transporte S.A.	EPM be ordered to enable and classify Alos Conveyors within the contracting process PC-2009-0480, provision of the ground transportation service.	21,110
Juan Carlos Cárdenas Arboleda	That EPM and other entities will be declared liable for the damages caused to the plaintiffs for landslide in Calle Vieja of the neighborhood La Gabriela de Bello on December 5, 2010 and that they will be ordered to pay the property damages.	19,284
Gas Conveyor International TGI S.A. E.S.P. - TGI S.A. E.S.P.	That the ESTF -026-2008 contract binding the parties is declared valid; That the charges will be those established in the contract and that they will be subject to the modifications established by CREG	13,590
Aura de Jesús Salazar Mazo	Violating and putting at risk the collective right, by destroying, interrupting and cutting the ancestral horse trails that lead to the village Alto Chiri of the municipality of Briceño in the township of Valle de Toledo.	8,855

**Part 2**

Third Party	Claim	Value
Oscar Antonio Giraldo Avendaño	EPM and other entities of damages caused to the plaintiffs by landslide in calle Vieja of the district La Gabriela Bello in dec 5/10 are declared responsible.	6,194
Industrias Lehner S.A.	It is stated that in the execution of contract No. SCN-3225E there was an economic imbalance between the benefits of the parties and to the detriment of the contractor.	6,108
CONINSA S.A.	It is declared that EPM failed to comply with Contract No. 2 / DJ-2183/43 and its additional agreements, for non-payment of damages suffered, causing an economic imbalance by failing to recognize in a timely manner the value of higher costs incurred by the Consortium .	5,557
Alba Nancy Madrigal Maya	EPM and other entities of damages caused to the plaintiffs by landslide in calle Vieja of the district La Gabriela Bello in dec 5/10 are declared responsible.	5,463
Doris Elena Quintero Cortés	EPM and other entities shall be held liable for damages caused to the claimants by landslides in calle Vieja in the neighborhood of La Gabriela de Bello on December 5, 2010 and be ordered to pay damages.	5,218
Several administrative staff: Velpa Soluciones S.A., Alejandra Betancur Giraldo, Mateo Aristizábal Tuberquia, among others	Processes of less than \$ 5,218 million pesos.	144,821
Labor lawsuits	Reimbursements, salary levels, overtime, conventional benefits, among others.	10,795
Municipalities of Medellín and Yumbo	Industry and trade, special contributions.	4,552
<b>Total contingent liabilities</b>		<b>383,474</b>

- Figures expressed in millions of Colombian pesos -

In respect to the uncertainty about the estimated payment date and the estimated value payable, the same business rules indicated in note 32.1.3. Litigations for apply for the contingent liabilities.

EPM also has as contingent liability some Environmental Penalization Procedures, with the following information:

Third Party	Claim	Value
Metropolitan Area of the Valley of Aburrá	Non-compliance in the percentages of removal for BOD - Biochemical Oxygen Demand - and SST - Total Suspended Solids - at the San Fernando Wastewater Treatment Plant.	It is not possible to know the sanction to be imposed
Regional Autonomous Corporation of the Center of Antioquia -CORANTIOQUIA-	Environmental effects caused by the activities of indiscriminate logging of trees located in urban area of the Municipality of Yarumal, without permission, also affecting the natural resources flora, fauna and water sources. □	It is not possible to know the sanction to be imposed

## Contingent Assets

Third Party	Claim	Value
Ministry of Environment and Territorial Development	Declaration of nullity invoked, declare that within the costs related to the construction and operation of the Porce III Hydroelectric Project, EPM may include costs related to readjustments and other concepts.	4,295
Electrical Interconnection S.A. E.S.P. ISA	It is civilly responsible for not recognizing EPM's share of the remuneration that ISA received between 1995 and 1999, for the line modules that correspond to assets of use of the STN in the substations Playas and Guatapé.	2,846
Poblado Club Campestre Ejecutivo S.A.	Responsibility for the damage of the EPM owned collector, which collects and transports wastewater from the sanitary basin of the La Honda stream in the municipality of Envigado.	2,651
Municipality of Envigado	Declare the inapplicability of Decree 259 of August 14, 2002 of the Municipality of Envigado, "By means of which urbanistic sanctions are established", as it is contrary to the Political Constitution, the Law and the Public Utilities Regime.	768
Seguros Generales Suramericana S.A.	Payment warrant is filed against Suramericana de Seguros S.A. And in favor of EPM, plus default interest since September 23, 2002.	653
Society Vélez Arango y Cía. SCA	Expropriation servitude of two farms: the tank the pines and the tank of pumping located a lot of greater extension identified M.I. 017-512 and 017-513 of the Vélez Arango Society required for the Valle San Nicolás aqueduct project.	413
Other administrative staff: Caridad Marín Vélez, Leonardo Ramírez Montoya, among others	Processes of less than \$ 413 million pesos.	533
Municipality of Bello	Integral nullity of the complex administrative act contained in Resolutions 2717 of 2009 and 0531 of 2010. PTAR Bello.	96,110
Municipality of Bello	Reimbursement of monies paid by EPM for the purpose of determining and liquidating the goodwill effect, PTAR Bello.	89,917
SENA	Nullity in payment of contributions	268
<b>Total contingent assets</b>		<b>198,454</b>

- Figures expressed in millions of Colombian pesos -

As of December 31, 2016, the value determined by the experts to be indemnified is of \$198,454 (2015: \$213,131).

### Estimated payments and collections

The estimate of the dates on which the Company considers that it will have to face the payments related to the contingent liabilities or will receive the collections for the contingent assets included in this note of the individual statement of financial condition as of December 31, 2016 is as follows:

Year	Contingent liabilities	Contingent assets
2017	125,770	1,107
2018	18,378	5,744
2019	7,617	83
2020 and others	403,873	255,970
<b>Total</b>	<b>555,638</b>	<b>262,904</b>

- Figures expressed in millions of Colombian pesos -

## Note 26. Other liabilities

The composition of other liabilities is the following:

Other Liabilities	2016	2015
<b>Non current</b>		
Collections in favor of third parties	3,485	3,602
Income received in Advance	8,248	8,334
Assets received from customers or third parties	21,298	21,368
Other deferred credits	10	10
<b>Subtotal other non current liabilities</b>	<b>33,041</b>	<b>33,314</b>
<b>Current</b>		
Collections in favor of third parties	67,673	99,346
Income received in Advance	73,041	66,982
<b>Subtotal other current liabilities</b>	<b>140,714</b>	<b>166,328</b>
<b>Total other Liabilities</b>	<b>173,755</b>	<b>199,642</b>

- Figures expressed in millions of Colombian pesos -



## 26.1 income received in advance

The detail of the income received in advance of EPM as of the reporting date is the following:

Revenue received in advance	2016	2015
<b>Non-Current</b>		
Leases	2,728	2,811
Sale of energy service	757	791
<b>Total income received in advance</b>	<b>3,485</b>	<b>3,602</b>
<b>Current</b>		
Leases	173	173
Customer Service	8,097	51,653
Sale of energy service	51,959	31,846
Sale of fuel gas service	8,746	9,530
Other income received in advance	(1,302)	6,144
<b>Total income received in advance</b>	<b>67,673</b>	<b>99,346</b>
<b>Total revenue received in advance</b>	<b>71,158</b>	<b>102,948</b>

- Figures in millions of Colombian pesos -

## Note 27. Income from ordinary activities

The detail of income from ordinary activities is as follows:

Income	2016	2015
<b>Provision of services</b>		
Power service <sup>1</sup>	5,367,415	5,157,614
Fuel Gas Service	804,434	700,776
Sanitation service <sup>2</sup> (see note 7)	397,995	391,489
Service of aqueduct <sup>2</sup> (see note 7)	405,948	353,019
Computer Services	3,355	4,254
Construction contracts	13,347	5,559
Other services	40,697	36,750
Returns <sup>3</sup>	(33,114)	-
<b>Total provision of services</b>	<b>7,000,077</b>	<b>6,649,461</b>
Leases	35,907	32,435
Income from sale of assets	38,750	17,902
<b>Total</b>	<b>7,074,734</b>	<b>6,699,798</b>

- Figures in millions of Colombian pesos -

<sup>1</sup>During the year there were two relevant situations that affected the commercial operation of energy:

- El Niño event. During the year the flow volumes of the rivers that feed the EPM reservoirs were in average of 75% of the historic median. El Niño was stronger during the first half of the year, reducing the EPM flows to values close to 55% of the historic averages. As of September there is a recovery of the contributions that end the year under the effects of La Niña event.
- In the first half of the year the Guatapé station was unavailable due to the fire of the power cables.

Given the above, the income in the Generation segment increased by the increase of the average exchange price of 2016 we up to 302 \$/KWh, mainly from January to April (under the effects of El Niño) when the actual price was of 595 \$/KWh, and the income from the AGC service increased by the increase of the remuneration price that is directly linked to the exchange price.

In the Distribution segment the income from commercialization were higher by the increase in the demand mainly in the regulated non-residential market and price increase.

<sup>2</sup>The was a change in rates with Resolutions CRA 688 of 2014 and CRA 735 of 2015 issued by the Potable Water and Basic Sanitation Regulation Commission - CRA, which make mandatory the compliance with quality and coverage indicators and therefore the review of investments and operations of the two segments.

<sup>3</sup>It includes the refund of the reliability charge tied to the lower generation of energy.

The company does not have income encumbered from ordinary activities, contingencies that have not been recognized affecting the income, or firm commitments with customers for the rendering of future services from which it is estimated that losses will be generated.

#### **27.1 Construction contracts**

The Company recognized revenues from ordinary activities for asset construction agreements within the scope of IAS 11 Construction contracts as of December 31, 2016 for \$13,347(2015: \$5,559).

The method applied to determine the degree of progress of the previous construction contracts is the proportion of the costs of the contract incurred in the work already performed as of this date, in relation to the total estimated costs for the contract. The company recognized the following values in the period, for the agreements in effect at the cut-off date described in the previous paragraph:

2016	Costs incurred plus profits recognized	Advances received from customers for construction contracts
Conventions Municipio de Medellín	5,739	-
Electrification Agreement of Santander	3,545	-
Agreement Ministry of Mines and Energy	1,325	-
Agreement Aguas 3 Municipality of Medellín	1,321	-
Agreement Water 7 Municipality of Medellín	833	341
Agreement Municipio de Caldas	584	174
Agreement Water 5 Municipality of Medellín	-	2,385
Agreement Water 6 Municipality of Medellín	-	6,803
Governor's Office Urabá	-	1,000
Agreement Municipality of El Peñol	-	1,046
Agreement Municipality of Guatapé	-	3,118
Cornare Agreement	-	1,106
Agreement Water 8 Municipality of Bolivar	-	16,514
Other Conventions	-	323
<b>Total</b>	<b>13,347</b>	<b>32,810</b>

- Figures in millions of Colombian pesos -

2015	Costs incurred plus profits recognized	Advances received from customers for construction contracts
Agreement Aguas 3 Municipality of Medellín	1,486	-
Agreement Aguas 5 Municipality of Medellín	-	3,912
Agreement Aguas 6 Municipality of Medellín	-	11,269
Agreement Aguas 7 Municipality of Medellín	525	1,734
Agreement Barbosa	15	1
Agreement CM Caldas	-	381
Agreement Electrificadora de Santander	3,324	-
Agreement Empresas Varias de Medellín	209	-
Agreement FAER 2 - Rural electrification	-	646
Agreement Municipality of El Peñol	-	1,000
Agreement Municipality of Guatapé	-	1,000
Agreement Cornare	-	1,106
Agreement Aguas 8 Municipality Bolívar	-	16,850
Other Agreements	-	246
<b>Total</b>	<b>5,559</b>	<b>38,145</b>

- Figures in millions of Colombian pesos -

## 27.2 Leasing as Lessor

The most significant operating leasing agreements are the leasing of public lighting infrastructure for the installation of telecommunications networks by telecommunications operators. The contingent quotas of these leases are determined based on the update by the variables PPI and CPI as well as the update of lease payments and these contracts may be renewed

The value of non-cancellable payments for operating leases is:

Leases	2016	2015
	Non-cancellable operating leases	Non-cancellable operating leases
One year	40,250	36,125
More than a year and up to five years	10,470	8,439
More than five years	12,811	11,884
<b>Total leases</b>	<b>63,531</b>	<b>56,448</b>

- Figures in millions of Colombian pesos -

The income recognized as the total of contingent installments in the period is \$3,849 (2015: \$3,629)

The Company as lessor, has contracts that adopt the legal form of a lease but that in essence do not correspond to it.

## Note 28. Other income

The detail of other income, which forms part of the income from ordinary activities, is the following:

Other income	2016	2015
Reversal loss for property, plant and equipment <sup>1</sup>	685,550	-
Compensation <sup>2</sup>	478,258	726
Recoveries	121,991	71,141
commissions	28,985	26,281
Reversal impairment loss intangible assets <sup>1</sup>	25,664	-
Other income	24,095	2,161
Valuation of Investment Property	7,010	8,676
Achievements	6,302	6,693
Reversal loss for impairment accounts receivable	4,656	17,642
Government Grants	3,072	8,641
Fee	1,917	4,036
Sale of sheets	723	536
<b>Total Other Income</b>	<b>1,388,223</b>	<b>146,533</b>

- Figures in millions of Colombian pesos -

<sup>1</sup>It corresponds to the reversal of the impairment in the Water Provision segment dealed in Note 7 Impairment of assets.

<sup>2</sup>it includes \$472,098 of the indemnification for loss profits and consequential damage related to the loss of the Guatape Station.

## Note 29. Costs for rendering of services

The detail of the Costs for rendering of services is as follows:

Costs for rendering services	2016	2015
Cost of goods and public utilities for sale 1	2,707,261	2,514,629
Impairment of property, plant and equipment <sup>2</sup>	564,428	-
Depreciations	402,103	389,789
Consumption of direct inputs <sup>2</sup>	394,184	276,253
Personal services	366,004	324,138
Orders and contracts for other services	235,615	217,644
Orders and contracts of maintenance and repairs	137,503	124,132
Licenses, contributions and royalties	118,222	97,845
Materials and other operating costs	99,510	99,155
Insurance	65,520	32,242
Impairment of intangible assets <sup>2</sup>	64,091	-
General	52,611	45,251
Fees	36,362	28,950
Taxes and Rates	32,418	35,365
Amortization	27,837	25,490
Public utilities	7,147	8,126
Leases	5,911	4,424
<b>Total cost for rendering services</b>	<b>5,316,727</b>	<b>4,223,433</b>

- Figures in millions of Colombian pesos -

<sup>1</sup>Includes the value of the purchases of energy in block and in the exchange, connection cost, use of lines, networks and ducts, cost of commercialization and distribution of natural gas, among other costs. The increase in those costs in respect to the previous period is due mainly to the increase in the prices of energy purchased in the exchange, caused by the difficult climatic conditions (descent of water resources and low levels of reservoirs), especially during the first four months of the period, in which El Niño effect intensified as well as the lack of availability of the Guatape Hydroelectric Plant from February 15, 2016, notwithstanding its entry in operation between April and June.

<sup>2</sup>It corresponds to the impairment in the Sanitation segment detailed in Note 7 Impairment of assets.

<sup>3</sup>In includes the cost of production of chemicals, fuel gas, energy, ACPM and fuel oil, which experienced increase basically by the higher consumption of gas and ACPM for the generation of power in the thermal plant La Sierra the first four months of 2016 and by restrictions and deviations due to the generation of energy with liquid fuels in the entire system, associated to the market conditions because of El Niño phenomenon. lack of availability of the Guatape Plant.



## Note 30. Administration expenses

The detail of administration expenses is:

Administration expenses	2016	2015
<b>Personnel expenses</b>		
Salaries and wages	173,000	168,877
Social security expenses	70,548	72,062
Pension expenses	10,026	8,412
Benefits in interest rates to the employees	4,244	3,119
Other long term benefits	2,794	3,390
Other post-employment plans different from pension	1,425	10
<b>Total personnel expenses</b>	<b>262,037</b>	<b>255,870</b>
<b>General expenses</b>		
Taxes, contributions and rates <sup>1</sup>	242,210	163,508
Commissions, fees and services	47,389	90,619
Legal expenses <sup>2</sup>	46,578	705
Other general expenses	45,697	41,654
Maintenance	43,795	42,004
Other miscellaneous provisions	36,143	8,118
Corporate assets	33,471	86,869
Depreciation of properties, plant and equipment	28,222	27,975
Intangibles	21,637	20,797
Provision for contingencies	21,104	28,902
Studies and projects	13,178	9,290
Promotion and disclosure	12,993	12,648
Amortización de intangibles	8,812	5,591
Publiciy and advertising	7,825	9,353
Public services	6,299	5,833
Surveillance and security	6,107	5,829
Toilet, cafeteria, restaurant and laundry services	5,080	4,336
General Insurance	4,693	4,074
Provision for onerous contracts	4,215	19,129
Lease	3,130	4,050
Learning contracts	2,582	2,396
Communications and transportation	2,338	1,325
Cultural events	1,869	2,233
Information processing	1,754	1,664
Principles, publications, subscriptions and affiliations	1,653	1,544
<b>Total general expenses</b>	<b>648,774</b>	<b>600,446</b>
<b>Total administration expenses</b>	<b>910,811</b>	<b>856,316</b>

- Figures in millions of Colombian pesos -

<sup>1</sup> Include the betterment levy for the rectification and pavement of the road El Limon-Anori, according to Resolution 201606000142 from the Government of Antioquia for \$78,6906 and and the wealth tax for \$69,782 taking as a base the net equity owned as of January 1, 2015 at a rate of 1%, which the Statement was submitted in May 2016 and its payment was made in two equal installments in May and September of the same year.

<sup>2</sup> It includes the expense corresponding to 10% of the net proceeds of the disposal of the shares of ISAGEN S.A. E.S.P as per Law 226 of 1995 for \$46,040 detailed in Note 12 Other financial assets.

Leases as lessee. The most significant operating leasing agreements are the leasing of premises for customer service offices in the different municipalities of Antioquia and the metropolitan area, of spaces for the facilities and operating of the antennas in the meteorological stations, office equipment and accessories, user printer infrastructure, equipment for virtual meetings, among others, which do not have restrictions. The contingent installments of these leases are determined based on the Consumer Price Index (CPI), the agreements may be renewed without purchase option. Lease agreement payments are indexed by the CPI.

As of the report date minimum future payments for operating leases, non-cancellable are distributed as follows:

Leases	2016	2015
	Non-cancellable operating leases	Non-cancellable operating leases
At one year	12,557	10,044
At more than one year and up to five year	22,101	17,557
<b>Total</b>	<b>34,658</b>	<b>27,601</b>

- Figures in millions of Colombian pesos -

The total minimum future payments of non-cancellable subleasing of assets acquired under operating leases is \$11 (2015: \$116). The contingent leasing expense recognized in profit and loss of the period is \$18, (2015: \$15).

The operating leasing installments recognized as expenses of the period are \$9,040 (2015: \$8,473).

The company as lessee, does not have contracts that adopt the legal form of a lease but that in essence do not constitute it.

## Note 31. Other expenses

The detail of other expenses is:

Other expenses	2016	2015
Loss for changes in the fair value of investment properties (see note 5)	29,194	24
Contributions in non corporate entities	19,700	28,493
Arbitration awards and out of court conciliations	16,246	1,227
Loss in retirement of assets	15,257	12,384
Other ordinary expenses	1,887	1,567
Loss in the sale of assets	49	-
<b>Total</b>	<b>82,333</b>	<b>43,695</b>

- Figures in millions of Colombian pesos -

## Note 32. Financial income and expenses

### 32.1 Financial Income

The breakdown of financial income is as follows:

Financial income	2016	2015
<b>Interest revenues</b>		
Bank deposits	31,074	10,626
Interest income from financial assets at amortized cost	2,830	-
Interest of debtors and arrears	183,666	150,531
Valuation benefit of financial instruments at fair value	8,492	67,146
Usefulness in rights in trust	38,392	18,303
Other financial income	3,003	2,024
<b>Total Financial income</b>	<b>267,457</b>	<b>248,630</b>

- Figures in millions of Colombian pesos -

### 32.2 Financial expenses

The breakdown of financial expenses is as follows:

Financial expenses	2016	2015
<b>Interest expense:</b>		
Interest for obligations under financial leasing	33,576	32,353
Other interest expense	435	1,233
<b>Total interest</b>	<b>34,011</b>	<b>33,586</b>
Total expense for interest of financial liabilities that are not measured at fair value with changes in profit and loss	833,963	633,095
Less interest capitalized on qualifying assets	(259,882)	(148,375)
<b>Other financial costs</b>		
Commissions	552	592
Other financial expenses	72,336	70,060
<b>Total financial expenses</b>	<b>680,980</b>	<b>588,958</b>

- Figures in millions of Colombian pesos -

## Note 33. Exchange difference, net

The effect of transactions in foreign currency is the following:

Exchange difference, net	2016	2015
<b>Income for exchange difference</b>		
<b>Own position</b>		
For goods and services and others	32,310	58,272
By liquidity	477	146,150
Accounts Receivable	109,008	1,292,525
Other adjustments for difference in exchange	6,669	5,420
<b>Total Own Position</b>	<b>148,464</b>	<b>1,502,367</b>
<b>Financial Services</b>		
Gross income	275,607	328,939
Debt coverage	-	(161,514)
<b>Total financial</b>	<b>275,607</b>	<b>167,425</b>
<b>Total income for difference in exchange</b>	<b>424,071</b>	<b>1,669,792</b>
<b>Expenses for difference in exchange</b>		
<b>Own Position</b>		
For goods and services and others	9,646	78,109
By liquidity	24,995	-
Accounts Receivable	162,811	507,421
Other adjustments for difference in exchange	106	32,554
<b>Total Own Position</b>	<b>197,558</b>	<b>618,084</b>
<b>Financial Services</b>		
Gross expenditure	7,052	1,282,166
Debt coverage	(8,318)	-
<b>Total financial</b>	<b>(1,266)</b>	<b>1,282,166</b>
<b>Total expense per difference in exchange</b>	<b>196,292</b>	<b>1,900,250</b>
<b>Net change</b>	<b>227,779</b>	<b>(230,458)</b>

- Figures in millions of Colombian pesos -

The rates used for the conversion of foreign currency in the financial statements are:

Currency	Currency Type	Direct USD conversion at 31 December		Closing exchange rate as of December 31		Average exchange rate	
		2016	2015	2016	2015	2016	2015
United States Dollar	USD	1.34	1.39	3,000.71	3,149.47	3,050.98	2,743.39
Quetzal	GTQ	7.52	7.63	398.84	412.58	401.30	358.28
Mexican Peso	MXN	20.60	17.27	145.65	182.35	163.64	173.30
Chilean Peso	CLP	669.79	708.60	4.48	4.44	4.51	4.21
Euro	EUR	0.95	0.92	3,165.00	3,421.27	3,375.96	3,045.08
Yen	JPY	116.64	120.30	25.73	26.17	28.13	22.67
Libra	GBP	0.81	0.68	3,707.83	4,642.00	4,133.64	4,192.60
Franco Suizo	CHF	1.02	1.00	2,952.44	3,146.32	3,097.64	2,853.91

## Note 34. Effect by Interest in equity investments

The effect by the Interest in equity investments is the following:

Interest in equity investment	2016	2015
Dividends and participacion <sup>1</sup>	32,433	327,327
Result in sale of equity investment	24	-
Impairment of investment of subsidiaries, associates and joint business (see note 7)	-	(1,641)
<b>Total</b>	<b>32,457</b>	<b>325,686</b>

- Figures in millions of Colombian pesos -

<sup>1</sup> Includes dividends of financial instruments for \$32,433 (2015 \$93,457) (see note 12. Other financial assets) and in 2015 it corresponded to associates for \$233,870 (see note 9. Investments)

## Note 35. Income tax

### 35.1 Tax provisions

Tax provisions applicable and in effect, establish the following:

- The nominal rate of the income tax was of 25%. The nominal rate of the income tax for equality
- CREE is of 9% and surtax of 6%.
  - In Colombia domiciliary public utility companies, are excluded from determining the income tax through the presumptive income system calculated based on the Net of tax for the year immediately preceding.

During 2016 the National Government presented to Congress a tax reform bill, which purpose according to the statement of reasons consists in establishing a more equitable, efficient and simple tax system.

The initiative is supported on the report presented by the Commission of Experts that was created to study the Colombian tax system and propose improvements to its structure, in addition to the economic pressures resulting from the decrease of the oil revenues, an uncertainty overview given by the increase in the volatility

of financial markets and the slowdown of the Chinese economy, that impacted negatively the nation's current income.

Under this scenario and after extinguishing the phases required by Colombian regulations for the creation of the Law, on December 29, 2016 Law 1819 of 1016 was enacted, "whereby a structural tax reform is adopted, the mechanisms for the fight against tax evasion and elusion are strengthened and other provisions are issued."

Accordingly, among the major modifications we can mention:

– **General Income and complementary tax rate**

The income tax and the income tax for equality - CREE- are unified, with the following income tax rates:

2017: 34% and surtax 6%

2018: 33% and surtax 4%

2019 and following: 33%, surtax disappears.

The surtax is subject to the advance mechanism and applies for the portion of the taxable base that exceeds eight hundred million pesos.

**Presumptive income**

The presumptive income in 2016 was of 3% and for 2017 and following will be 3.5%

The exoneration in the determination of the presumptive income for public utilities is maintained.

**Sales tax**

In 2016 the VAT rate was of 16% and as of 2017 the general VAT rate will be of 19%.

In the contracts entered into with Public Entities, the rate in effect as of the time of the award is maintained, for contracts executed before January 1, 2017, the rate is increased once they are added.

The right to claim as deduction the VAT paid in the acquisition or import of capital goods is incorporated.

Express references are made to the International Financial Reporting Systems for determination of the tax bases.

The general statute of limitations of tax returns is increased from two (2) to three (3) years. For taxpayers subject to the transfer-pricing regime it will be of six (6) years. The same term will apply when tax losses are offset.

Article 130 is derogated, whereby the appropriation of profits for reserve purposes is avoided.

New rules are established on the subject of depreciation related to the annual deduction rate.

The tax on carbon is created, the consequences of which will be evidenced in the prices of the goods acquired by the company subject to this tax.

The rules for withholding on dividends are defined:

- A limit of twelve (12) years is established for the offset of tax losses.
- Adoption of international mechanisms against erosion of the tax base and the transfer of benefits, incorporation of the Controlled Entities from Abroad (ECE) Regime, limitation to payments for royalties with related parties located abroad and free trade zone, implementation of the legal form of cooperating jurisdictions, of low or no taxation and preferential tax regimes, modifications to the transfer pricing regime and rules on effective beneficiary.

Rules are defined related to territoriality, taxable base, and single national form for the compliance with obligations on the subject of industry and commerce tax.



### 35.2 Reconciliation of effective rate

The reconciliation between the applicable tax rate and the effective rate and the composition of the income tax expense for periods 2015 and 2014 is the following:

Income and complementary tax	2016	%	2015	%
<b>Result before taxes</b>	<b>2,236,340</b>		<b>1,591,163</b>	
<b>Theoretical tax</b>				
<u>Plus entries that increase the income</u>	<u>762,109</u>	34%	<u>914,102</u>	57%
Wealth / equity tax	69,782		78,917	
Dividends effectively received from controlled entities	331,851		548,066	
Other - Provisions and non-deductible expenses	360,476		287,119	
<u>Less entries that decrease the income</u>	<u>2,104,086</u>	94%	<u>1,771,772</u>	111%
Deduction real productive fixed assets	725,851		544,437	
Dividends not taxed	232,832		425,142	
Excess of tax depreciation and amortization	365,753		264,509	
Remainder of companies liquidation	-		14,651	
Non taxed recoveries	63,752		62,789	
Differences IFRS vs. GAAP	(219,454)		389,264	
Others <sup>1</sup>	935,352		70,980	
<b>Net ordinary income of period</b>	<b>894,363</b>	40%	<b>733,493</b>	46%
Less exempt income	39,564		21,613	
<b>Net taxable income</b>	<b>854,799</b>	38%	<b>711,880</b>	45%
Income tax rate (average)	25%		25%	
CREE tax rate	9%		9%	
CREE surtax rate	6%		5%	
Capital gains tax rate	10%		10%	
Income tax	213,700	10%	177,970	11%
CREE tax	142,430	6%	113,319	7%
CREE surtax	94,906	4%	62,915	4%
Casual Income Tax	2,583	0%	-	
Less tax discounts	(67,313)	-3%	(92,878)	-6%
Rent adjustment	20,198	1%	(74,624)	-5%
<b>Current tax and CREE</b>	<b>406,504</b>	18%	<b>186,702</b>	12%
<b>Detail of current and deferred expense</b>				
Current tax, CREE and surtax	406,504	18%	186,702	12%
Deferred tax	(4,956)	0%	34,788	2%
<b>Income tax</b>	<b>401,548</b>	18%	<b>221,490</b>	14%

- Figures in millions of Colombian pesos -

<sup>1</sup>The main entries are: profits in the sale of fixed assets for \$735,709, the amortization of the goodwill for \$105,706, indemnification for consequential damage related to the loss of the Guatape Plant for \$71,030, payment of the betterment levy of the road El Limon - Anori for \$11,227, deduction for hiring disable personnel for \$2,108 and other entries less representative for a value of \$9,572.

### 35.3 Income tax recognized in profit or loss

The most significant components of the income tax expense as of the report date are:

Income tax	2016	2015
<b>Current income tax</b>		
Expense (income) for current income tax	453,619	354,204
Adjustments recognized in the current period related to the current income tax of previous periods	20,198	(74,624)
Tax benefits of tax losses, tax credits or temporary differences used in the period	(67,313)	(92,877)
<b>Total current income tax</b>	<b>406,504</b>	<b>186,703</b>
<b>Deferred tax</b>		
Net expense (income) for deferred tax related to the origin and reversal of temporary differences	97,121	29,536
Net expense (income) for deferred tax related to changes in tax rates or laws 1	(101,829)	5,252
Reclassification of deferred taxes from equity to income statement	(248)	-
<b>Total deferred tax</b>	<b>(4,956)</b>	<b>34,788</b>
<b>Income tax</b>	<b>401,548</b>	<b>221,491</b>

- Figures in millions of Colombian pesos -

<sup>1</sup> The expense (income) for deferred tax related to changes in the tax rates originated by the la modification brought by the Law 1819 on december 29, 2016, applicable rates As of January 2017. The rates used for determination of the deferred tax are:

40% for 2017 (34% income and 6% surtax), which varied in respect to the one used in the previous year, which was 42%, this for short-term entries that are reversed during 2017. For generation the rate of 39% is used considering the legal stability contract.

37% for 2018 (33% income and 4% surtax), which changed in respect to that used in the previous year, to 43%, this for the long term entries that are reversed during 2018.

33% para 2019, which varied in respect to the one used in the previous year, which was 34%, this for long-term items which revert during 2019 and following.

For property, plant and equipment, the rate in effect was used, considering the year in which it is expected to reverse the difference, taking as reference the remaining useful life of each asset.

The rates used for the determination of the deferred tax are:

Year	2016	2017	2018	2019	2020
Income	25%	34%	33%	33%	33%
CREE	9%	-	-	-	-
Surtax	6%	6%	4%	-	-
<b>Total Rate</b>	<b>40%</b>	<b>40%</b>	<b>37%</b>	<b>33%</b>	<b>33%</b>

With the entry into force of Law 1819 of December 29, 2016, the CREE tax and the CREE Surtax are eliminated and an Income and Complementary Tax Surtax is created as of tax year 2017.

Item	2016	2015
<b>Asset or liability for current income tax</b>		
Income tax	(16,798)	-
CREE Tax or surtax	(38,867)	-
Balances in favor for income and tax CREE	-	122,558
<b>Total income tax asset (or liability)</b>	<b>(55,665)</b>	<b>122,558</b>

- Figures in millions of Colombian pesos -

In 2015 the profits were affected by El Niño event and consequently the tax; additionally we had important tax discounts by the capitalization of Aguas Nacionales. In 2016 the impact of El Niño was lower, we did not have important capitalizations and there was a tax for the sale of the shares of ISAGEN for \$111,948.

### 35.5 Income tax recognized in other comprehensive income

The detail of the tax effect corresponding to each component of “other comprehensive income” of the individual statement of comprehensive income is the following:

Other comprehensive income of the Statement of comprehensive income	2016			2015		
	Gross	Tax effect	Net	Gross	Tax effect	Net
<b>Items that will not be reclassified after the period result</b>						
Appreciation of properties, plant and equipment and other assets	9,700	(956)	8,744	3,731	(401)	3,330
New measurements of defined benefit plans	(36,268)	17,771	(18,497)	247	(4,101)	(3,854)
Equity investments measured at fair value through equity	554,390	(107,982)	446,408	15,058	(93,204)	(78,146)
Participation in other comprehensive income of subsidiaries	(117,151)	23,998	(93,153)	7,818	335	8,153
<b>Partidas que pueden ser reclasificados posteriormente al resultado del periodo</b>						
Cash flows hedging	(23,738)	11,834	(11,904)	(7,790)	18,785	10,995
Participation in other comprehensive income of subsidiaries	(136,827)	(505)	(137,332)	473,396	-	473,396
<b>Total</b>	<b>250,106</b>	<b>(55,840)</b>	<b>194,266</b>	<b>492,460</b>	<b>(78,586)</b>	<b>413,874</b>

- Cifras en millones de pesos colombianos -

### 35.6 Deferred tax

The detail of the deferred tax is:

Deferred tax	2016	2015
Deferred tax asset	1,402,505	1,731,032
Deferred tax liability	3,390,324	3,796,078
<b>Total net deferred tax</b>	<b>1,987,819</b>	<b>2,065,045</b>

- Figures in millions of Colombian pesos -

### 35.6.1. Deferred tax assets

Deferred tax assets	Beginnign balance	Net changes included in profit and loss	Recognized directly to equity	Changes included in OCI	Reclassified from equity to income	Ending balance
<b>Current assets</b>	<b>46,569</b>	<b>65,029</b>	<b>20,052</b>	-	-	<b>131,650</b>
Cash and cash equivalents	9	(9)	-	-	-	-
Accounts Receivable	24,281	83,179	20,052	-	-	127,512
Inventory	1,833	1,825	-	-	-	3,658
Others	20,447	(20,088)	-	-	-	359
Investments and derivative instruments	-	122	-	-	-	122
<b>Non-current assets</b>	<b>822,129</b>	<b>(317,980)</b>	<b>19,602</b>	-	-	<b>523,750</b>
Properties, plant and equipment	246,912	61,382	-	-	-	308,294
Intangibles	2,481	(931)	-	-	-	1,550
Accounts Receivable	174,915	(110,088)	19,602	-	-	84,429
Others	75,711	(42,293)	-	-	-	33,419
Investments and derivative instruments	322,110	(226,051)	-	-	-	96,059
<b>Current liabilities</b>	<b>353,771</b>	<b>123,412</b>	-	-	-	<b>477,183</b>
Credits and loans	184,517	59,244	-	-	-	243,761
Derivatives	42,206	(7,857)	-	-	-	34,349
Employee benefits	42,389	(19,681)	-	-	-	22,709
Provisions	35,583	54,979	-	-	-	90,562
Other passives	27,360	22,298	-	-	-	49,657
Debts to pay	21,716	14,429	-	-	-	36,145
<b>Non-current liabilities</b>	<b>508,564</b>	<b>(250,725)</b>	-	<b>11,835</b>	<b>248</b>	<b>269,922</b>
Derivatives	110,391	(144,741)	-	11,835	248	(22,267)
Employee benefits	83,096	(14,249)	-	-	-	68,848
Provisions	150,827	(79,116)	-	-	-	71,710
Other passives	163,999	(12,589)	-	-	-	151,410
Debts to pay	251	(30)	-	-	-	221
<b>Deferred tax assets</b>	<b>1,731,032</b>	<b>(380,264)</b>	<b>39,654</b>	<b>11,835</b>	<b>248</b>	<b>1,402,505</b>

- Figures in millions of Colombian pesos -

### 35.6.2. Deferred tax liabilities

Deferred tax liabilities	Beginnign balance	Provisions	Net changes included in profit and loss	Reconocidos directamente a patrimonio	Changes included in OCI	Reclassified from equity to income	Ending balance
<b>Current assets</b>	<b>180,397</b>	-	<b>(107,447)</b>	-	-	-	<b>72,950</b>
Cash and cash equivalents	9	-	(8)	-	-	-	1
Accounts Receivable	130,409	-	(63,504)	-	-	-	66,905
Inventory	1,958	-	1,295	-	-	-	3,253
Others	43,310	-	(40,642)	-	-	-	2,669
Investments and derivative instruments	4,711	-	(4,589)	-	-	-	122
<b>Non-current assets</b>	<b>2,988,840</b>	<b>(93,195)</b>	<b>(138,293)</b>	-	<b>90,184</b>	-	<b>2,847,536</b>
Investments in subsidiaries	-	-	25,650	-	-	-	25,650
Properties, plant and equipment	2,558,358	-	70,588	-	956	-	2,629,902
Intangibles	72,896	-	(45,923)	-	-	-	26,973
Accounts Receivable	6,763	-	56,354	-	-	-	63,116
Others	38,800	-	990	-	-	-	39,790
Investments and derivative instruments	312,023	(93,195)	(245,952)	-	89,228	-	62,104
<b>Current liabilities</b>	<b>234,372</b>	-	<b>(61,685)</b>	-	-	-	<b>172,686</b>
Credits and loans	18,363	-	(9,116)	-	-	-	9,247
Derivatives	46,033	-	(46,033)	-	-	-	-
Employee benefits	44,451	-	10,685	-	-	-	55,136
Provisions	-	-	2,688	-	-	-	2,688
Other passives	16,751	-	(16,751)	-	-	-	-
Debts to pay	108,774	-	(3,159)	-	-	-	105,615
<b>Non-current liabilities</b>	<b>392,469</b>	-	<b>(77,546)</b>	-	<b>(17,771)</b>	-	<b>297,152</b>
Credits and loans	54,371	-	57,796	-	-	-	112,167
Derivatives	103,740	-	(103,740)	-	-	-	-
Employee benefits	139,285	-	(27,931)	-	(17,771)	-	93,583
Provisions	4,147	-	(1,043)	-	-	-	3,104
Other passives	82,119	-	(480)	-	-	-	81,639
Debts to pay	8,807	-	(2,149)	-	-	-	6,659
<b>Deferred tax liabilities</b>	<b>3,796,078</b>	<b>(93,195)</b>	<b>(384,972)</b>	-	<b>72,414</b>	-	<b>3,390,324</b>
<b>Total deferred tax assets / liabilities</b>	<b>2,065,045</b>	<b>(93,195)</b>	<b>(4,708)</b>	<b>(39,654)</b>	<b>60,579</b>	<b>(248)</b>	<b>1,987,819</b>

- Figures in millions of Colombian pesos -

### 35.7 Temporary differences

Temporary differences associated to investments in subsidiaries, associates and joint ventures, for which no liabilities for deferred taxes have been recognized, amount to \$511,827 (2015 \$223,908)

The most significant items on which temporary differences result are the following:

In current assets, the highest impact for deferred tax occurs in the accounts receivable in respect to receivables provisions due to the difference in the calculation of the receivables provision under the tax rules and the cascade method under the International Standard. It is important to emphasize that in 2016 there was an adjustment for impairment of the IFRS receivables using the expected credit loss approach, the calculation of this methodology accumulated at January 1, 2016 was recognized affecting the retained profits accounts, in the same manner the deferred tax associated to this entry was recognized. In addition, temporary differences occur by the effect of the valuation at amortized cost of the short term loans between related parties. In non-current assets the highest impacts on the deferred tax arise by the temporary differences in property, plant and equipment and by the valuation at amortized cost of the long-term accounts receivable.

In respect to current liabilities, the items that impact the calculation of the deferred tax is, mostly, the calculation of the provision corresponding to pension bond shares, to the actuarial calculation in pensions and the pension transfer of EADE. In addition, the credits and loans for valuation at amortized cost of bonds, securities issued and short term credits and loans.

In other non-current liabilities, the most significant amounts in the deferred tax were generated by the temporary differences in the valuation at amortized cost of the long term credits and loans, in addition, by the temporary differences of the loans for long term benefits to employees such as retirement pensions, pension bond shares and actuarial calculation of retroactive severance and interest on severance.

in the items that do not have future tax consequences, such as the case of liabilities for taxes and for financial returns generated in the plan assets, because they are exempt income., no deferred tax was generated.

The approval of dividends after the date of presentation and before the financial statements were authorized to be published, does not generate any consequences in the income tax since the policy established for national subsidiaries is that only profits and reserves not taxed are distributed. The tax effects that could be generated by the dividends decreed of the subsidiaries abroad, is offset by using the discounts for taxes paid abroad and amortization of the goodwill whenever applicable. A calculation is made of the deferred tax liability on the dividends that are expected to be received in the foreseeable future from the affiliates abroad, applying the rate corresponding to the differential of the rate of Colombia and the country from which the dividends are expected to be received.

## Note 36. Information to be disclosed on related parties

EPM is a decentralized entity of the municipal level, which sole owner is the Municipality of Medellin. The capital for its incorporation and operation, as well as its equity, is of a public nature. The Mayor of Medellin is the chairman of the Board of Directors of EPM.

As related parties EPM are considered the subsidiaries, associates, joint ventures, including the subsidiaries of the associates and joint ventures, key management personnel, as well as the entities on which the key management personnel may exercise control or joint control and the post-employment benefit plans for benefit of the employees.

Following is presented the total value of the transactions carried out by the Company with its associates and other related parties during the corresponding period:



Transactions & balances with related parties	Income <sup>1</sup>	Costs/ Expenses <sup>2</sup>	Values receivable <sup>3</sup>	Values payable <sup>4</sup>	Guarantees & endorsements received <sup>5</sup>
<b>Subsidiary:</b>					
2016	62,771	23,848	1,721,149	51,424	-
2015	263,333	153,202	1,915,034	122,031	-
<b>Associates:</b>					
2016	12,798	44,991	36,644	8,595	-
2015	247,120	46,017	200,329	14,415	-
<b>Joint ventures in which the company participates</b>					
2016	-	-	-	-	-
2015	-	-	-	99	-
<b>Key management personnel clave of the Group:</b>					
2016	-	6,075	165	530	274
2015	-	6,078	94	1,923	23
<b>Other related parties:</b>					
2016	11,075	124,401	155,248	3,600	-
2015	11,287	26,369	45,928	14,528	-

- Figures in millions of Colombian pesos -

The transactions between EPM and its related parties were made in conditions equivalent to those that exist in transactions between independent parties, as refers to their object and conditions.

- Corresponds to income generated by transactions with subsidiaries and related parties associated to the sale of energy for \$52,184 (2015 \$226,663), sale of goods and services for \$6,997 (2015 \$17,139), financial income for \$1,760 (2015 \$5,288 and other income for \$1,830 (2015 \$14,243).
- Corresponds to costs and expenses generated by transactions with subsidiaries and related parties associated to purchase of energy for 23,049 (2015 \$72,499) and acquisition of goods and services for \$799 (2015 \$80,703).
- Includes rendering of public utilities for \$48,310 (2015 \$27,567, rendering of services \$2,033 (2015 \$4,082), credits to related parties for \$1,721,749 (2015 \$1,988,349) and other debtors for 20,237 (2015 \$41,466). EPM must rate the receivables under criteria that permit to prioritize the process of their recovery through the instrumentalities managed by it or collection entities. In respect to domiciliary public utilities the collection applies according to the billing cycle.
- Includes acquisition of goods and services for \$13,227 (2015 \$80,077, collections in favor of third parties for \$5,920 (2015 \$15,009, loans from related parties \$0 (2015 \$54,009) and other liabilities for \$32,277 (2015 \$3,901. The payment policy for EPM is 30 days after presentation of the invoice.

#### Transactions and balances with related entities of the Government

The total financial surpluses paid to the municipality of Medellin as of December 2016 was \$816,521 (2015 \$991,139).

#### Remuneration to the Board of Directors and key personnel of the Company:

The remuneration of key personnel members of the Company for the years ended as of December 31, is as follows:

Concept	2016	2015
Salaries and other short-term benefits to employees	5,101	5,473
Pensions and other post-employment benefits	974	605
<b>Remuneration to key management personnel</b>	<b>6,075</b>	<b>6,078</b>

- Figures in millions of Colombian pesos -

The amounts disclosed are those recognized as cost or expense during the period report for compensation of key personnel of EPM.

## Note 37. Capital management

The capital of EPM includes indebtedness through the capital market, commercial bank, development banks, central bank and multilateral bank, at a national and international level.

EPM manages its capital in order to plan, manage and assess the obtaining of financial resources in the national and international financial markets, for strategic investments, investment projects, through the different options that optimize the cost, that guarantee the maintenance of adequate financial indicators and adequate credit rating and minimize the financial risk. For the above purposes EPM has defined the following capital management policies and processes:

**Financial management:** Financial management corresponds to the performance of all long term credit operations, in order to guarantee the timely availability of the resources required for the normal operation of the company and to materialize the investment and growth decisions, optimizing the financing costs.

The Company has not made changes in its capital financing management objectives, policies and processes during the period ended on December 31, 2015 and 2014, and has not been subject to external capital requirements.

In order to face the changes in the economic conditions the company implements proactive mechanisms to manage its financing, enabling up to the extent viable different financing alternatives, in such a way that at the time that any long term credit operation is required, it has access to the source that has availability at each time of competitive market conditions and at the time needed.

Following, we present the values that the company manages as capital:

Item	2016	2015
Bonds and loans		
Other bonds and securities issued	6,135,271	6,254,714
Commercial Banking Loans	1,801,972	1,119,343
Multilateral bank loans	1,664,555	1,690,716
Development bank loans	963,111	1,082,093
Bonds and securities issued	255,780	318,653
Other loans	-	486,839
<b>Total debt</b>	<b>10,820,689</b>	<b>10,952,358</b>
<b>Total capital</b>	<b>10,820,689</b>	<b>10,952,358</b>

- Figures in millions of Colombian pesos -

## Note 38. Financial risk management objectives and policies

The company is exposed to the financial risk that is defined as the possibility of occurrence of an event that affects negatively the financial results, among which are the market risk, liquidity risk, credit risk and operating risk.

The market risk refers to the changes or volatility of the market variables that may generate economic losses. The market variables refer to exchange rates, interest rates, securities, commodities, among others; and their changes may impact, for example, the financial statements, the cash flow, the financial indicators, contracts, viability of projects and investments.

The credit risk refers to the possible default in the payment obligations by third parties derived from contracts or financial transactions entered into.

The liquidity risk is the funding shortage and incapacity to obtain the resources at the time they are required to fulfill contractual obligations and carry out investment strategies. The shortage of funds leads to the need to sell assets or contract financing operations under unfavorable market conditions.

Finally, the operating risk, from a financial perspective, is defined as deficiencies or failures in the processes, technology, infrastructure, human resources or occurrence of unforeseen external events.

The objective of the Integral Risk Management Office is to lead the definition and implementation of the strategy for an integral risk management, in order to achieve an adequate protection and assurance of the goods, resources and interest of EPM group.

The company has as policy to carry out the management of the risks that have an incidence on its activity and environment, by adopting the best practices and international standards of Integral Risk Management (IRM), as a way to facilitate the achievement of the purpose, strategy, objective and business goals, both of statutory and legal origin. It has an information system that facilitates the integral management of risks, guarantees confidentiality, availability and reliability of information and permits to make analysis and monitoring of risks and improvement plans. It has implemented an internal risk management system and has in place a methodology for the identification, analysis, evaluation, control and monitoring of risks, among which are those associated to money laundering and financing of terrorism, that permits to reduce vulnerability, and propose and implement efficient mechanism for the proper performance of business, processes, projects and contracts. As valuation criteria the Company has valuation tables of the consequences of the materialization of risks and of the probability tables, which are applicable in the different management levels defined in the methodological guide for integral risk management.

The integral risk management monitoring and review activity is aligned with the process of follow up of the management established in the Company, in order to propose and implement improvement actions. The monitoring and review scheme established assesses, among others, the following aspects:

- The implementation strategy of the integral risk management.
- The changes in the internal and external context that imply making adjustments in the treatment of risks identified or those that generate new risks.
- The variation of the risks in terms of frequency, probability and consequence.
- The valuation criteria of probability and consequence of risks.
- The establishment and efficacy of treatment plans.

The Company manages the financial risks associated to the different management levels, for which it identifies the risks within market, liquidity and credit congregators that are classified in the category of financial risks and quantifies their impact and implements strategy for their mitigation.

### **38.1 Market risks**

The market risk is the risk that the fair value of future cash flows of a financial instrument may fluctuate by variations in the market prices. The Company has identified that the financial instruments affected by the market risk include:

- Cash and cash equivalents
- Other financial assets:
  - Through profit and loss
  - Trust rights
  - Derivative instruments

The sensitivity analyses included in the following sections correspond to the financial position at the report date of December 31 2016 and 2015. These sensitivity analyses were made under the assumption of maintaining constant balances exposed, the hedging contracted, as well as the mix of liabilities according to their indexation rates.

The methods and hypothesis used in preparing the sensitivity analysis consist of:

- For cash and cash equivalents and other financial assets, the methodology used for measuring the market risk is the Risk Value, consisting in the quantification of the maximum loss that could suffer the portfolio in one month with a reliability level of 95%. For the quantification of VaR the methodology used is that defined by the Financial Superintendency of Colombia, in Basic Accounting Financial Circular (CE100 of 1995). For derivative instruments, the sensitivity analysis was made under the assumption of maintaining constant the hedging operations contracted according to their indexation rates.

### 38.2 Interest rate risk

The interest rate risk is the risk that the fair value or the future cash flows of a financial instrument may fluctuate as consequence of the variations in the market interest rates. The Company has identified that financial instruments affected by the interest rate risk include:

- Cash and cash equivalents
- Other financial assets
  - Investments at fair value through profit and loss
  - Derivative instruments
- Credits and loans
- Accounts receivable in foreign currency

The concentration of the interest rate risk appears when there are great individual exposures and when there are significant exposures in respect to counterparts which probability of default is determined by factors such as the economic sector, foreign currency and credit ratings. The interest rate risk management seeks the conservation of the principal and the maintenance or increase of profitability. In the Company policies have been defined on the subject of interest rate risks, through the identification, determination of the position of rates and simulation of possible hedging strategies. The above supports the making of decisions, which are oriented to maintaining the position or hedge it and later an analysis is made of the results of the strategies carried out

#### *Interest rate sensibility analysis*

The following table indicates the sensibility in respect to a possible reasonable change of interest rates of the financial instruments exposed to this risk, not considering the effect of the hedge accounting. Maintaining the rest of the variables constant, the profit/loss before taxes and equity of EPM would be affected by changes in the variable interest rates as follows:

	Increase/ decrease in basic points	Financial effect	
		In profit or loss before taxes	In the equity
<b>2016</b>			
<b>Financial assets measured at fair value through profit or loss</b>			
Investments at fair value through profit or loss	100	34,549	27,639
	(100)	(31,089)	(24,871)
<b>Financial assets measured at amortized cost</b>			
Accounts receivable in foreign currency	100	18,093	14,474
	(100)	(18,093)	(14,474)
<b>Financial assets measured at fair value with changes in other comprehensive</b>			
Derivatives	-	-	-
	-	-	-
<b>Financial liabilities measured at amortized cost</b>			
Credits and loans	100	(71,190)	(56,952)
	(100)	71,798	57,438
<b>Financial liabilities measured at fair value with changes in other comprehensive</b>			
Derivatives	100	-	104,821
	(100)	-	(43,772)

- Figures in millions of Colombian pesos -

The Company considers that the sensibility analysis is representative in respect to the exposure of the interest rate risk.

### 38.3. Exchange rate risk

The exchange rate risk is the risk that the fair value or the future cash flows of a financial instrument may fluctuate as consequence of the exchange rate variations.

The Company has identified that financial instruments affected by the exchange rate risk include:

- Cash and cash equivalents
- Other financial assets:
  - ✓ Derivative instruments
- Credits and loans
- Accounts receivable in foreign currency

The exchange risk exposure refers, first, to the financing activities in a currency different from the functional currency and with the hedging operations contracted. The Company manages its exchange rate risks through hedging operations in a medium term horizon. It is the Company policy not to close speculative hedging operations, and thus the conditions of the derivative hedging instrument reply the underlying conditions in order to maximize the efficacy of the hedging. EPM covers its exposure to fluctuations in the exchange rate using different hedging instruments among which are worth mentioning swaps, fowards and options at different terms.

During the current year, EPM has designated certain contracts on foreign currency as hedging, to cover up to 100% of the amount disbursed of the Club Deal International credit intended to the financing of the Ituango project and other projects of the investments plan.

#### *Sensitivity analysis to exchange rates*

The following table indicates the sensibility in respect to a possible reasonable change in exchange rates of \$100 pesos in the currency against the United States dollar not considering the effect of the hedging accounting. The impact originates by the change in monetary and non-monetary assets. Maintaining the rest variables

constant the profit/loss before taxes and equity of the Company would be affected by changes in the exchange rates as follows:

	Increase/decrease in basic points	Financial effect	
		In profit or loss before taxes	In the equity
<b>2016</b>			
<b>Investments at fair value through profit and loss</b>			
Cash and cash equivalents (USD)	100	2.155	1.724
	(100)	(2.155)	(1.724)
<b>Financial assets measured at amortized cost</b>			
Accounts receivable in foreign currency	100	57.358	45.866
	(100)	(57.358)	(45.866)
<b>Financial assets measured at fair value with changes in other comprehensive income</b>			
Derivative Instruments	-	-	-
	-	-	-
<b>Financial liabilities measured at amortized cost</b>			
Credits and loans	100	(68.600)	(54.880)
	(100)	32.567	26.054
<b>Financial liabilities measured at fair value with changes in other comprehensive income</b>			
Derivative Instruments	100	191.085	152.868
	(100)	9.633	7.707
<b>2015</b>			
<b>Investments at fair value through profit and loss</b>			
Cash and cash equivalents (USD)	100	2.724	2.179
	(100)	(2.724)	(2.179)
<b>Financial assets measured at amortized cost</b>			
Accounts receivable in foreign currency	100	60.386	48.309
	(100)	(60.386)	(48.309)
<b>Financial assets measured at fair value with changes in other comprehensive income</b>			
Derivative Instruments	100	79.933	63.946
	(100)	27.807	22.246
<b>Financial liabilities measured at amortized cost</b>			
Credits and loans	100	(147.548)	(118.038)
	(100)	147.548	118.038
<b>Financial liabilities measured at fair value with changes in other comprehensive income</b>			
Derivative Instruments	-	-	-
	-	-	-

- Figures in millions of Colombian pesos -

The Company considers that the sensibility analysis is representative in respect to the exposure of the exchange rate risk.

### 38.4 Credit Risk

The credit risk is the risk that one of the counterparts does not comply with the obligations derived from a financial instrument or purchase contract and that this will translate in a financial loss. The Company has identified that the financial instruments affected by the credit risk include:



- Cash and cash equivalents
- Investments at fair value through profit and loss
- Accounts receivable at amortized cost
- Other accounts receivable

The credit risk management by type of financial instrument of EPM is detailed below:

#### **Cash and cash equivalents and investments at fair value through profit and loss**

For credit risk management, the Company assigns limits by issuer, by counterpart and by intermediary taking into account the financial, risk and fundamental analysis of the entities, emphasizing on equity support of shareholders. The methodology considers the characteristics proper of the investments portfolio and the regulations applicable. The credit risk concentration is limited since it is due to the provisions of the business rules manual for treasury operations. The description of the factors that define the risk concentration is detailed below:

- The limits are updated quarterly based on the latest financial statements available of the entities analyzed.
- When the value of the consolidated investment portfolio exceeds the equivalent of 10,000 minimum monthly legal salaries in effect (MMLSE), no more than 20% of this value should not be concentrated in a single issuer, counterpart or intermediary with the exception of securities issued by governments that comply with the regulations in effect.
- Stock market intermediaries, other than the monitored banking institutions, may act as counterparts to perform operations, but cannot be considered as admissible issuers.
- Stock broker companies that act as counterpart of the treasury operations must have at least the second risk rating in strength or quality in the portfolio administration.
- Stock broker companies supported by banks, that is, bancarized counterparts, must have a minimum equity of 30,000 MMLSE.

Finally, the actions to avoid risk concentration are intended to establish, analyze, follow up and control the limits, for which they control the limits in effects and the status of utilization thereof. On the other hand, the justifications related to the need to override the limits temporarily are submitted to approval.

The investments referred to are created with banking institutions that have the following risk rating, according to the term of the investment, as follows:

- For investments with a term equal or lower than one (1) year, the banking establishment must have a rating in effect corresponding to the maximum category for the short term in accordance with the scales used by the rating companies that grant it and have minimum the second best rating in effect for the long term used by the respective companies;  
For investment with a term over one (1) year, the banking establishment must have the maximum rate in effect for the long term according to the scale used by the rating companies and the maximum rating for the short term in accordance with the scales used for this term.

**Accounts receivable measured at amortized cost and other accounts receivable:** EPM is exposed to the risk that customers/users of public utilities and others incur in default in the payment of the utilities. The accounts receivable from debtors of domiciliary public utilities are classified in two large groups: those originated by default in the payment and the other corresponds to financing or payment agreements with the customers that are made as strategy for recovery of receivables or for obtaining new customers.

EPM assesses at the end of each balance sheet period the performance and value of accounts receivable to determine if there is any objective evidence that the receivables are impaired and identify the possible impact on future cash flows. The criteria used to determine if there is objective evidence of a loss for impairment are:

- Default in the payment by customers two (2) or more accounts receivable.
- It is known or evidenced that the customer is initiating a business restructuration in insolvency or or liquidation process
- Events of a social, political public order or natural disaster types occur that according to the experience are directly correlated to the non payment of the accounts receivable.

In order to avoid an excessive concentration of risk EPM has put in operation various strategies that permit it to mitigate the risk of non payment of the receivables:

- Persuasive collection by making telephone calls and sending letters to the customers/users with the support of specialized collection agencies.
- Segmentation of customers that permits to identify those of higher risk, by their value, to carry out with them personalized collection activities.
- Possibility of making payment agreements or partial payments that lead to the recovery of the exposed capital.
- Offset of accounts receivable against accounts payable by EPM with customers suppliers.
- When the above strategies do not generate satisfactory results then changes in the customers' product portfolio are made to facilitate the payment of the debt.
- If the above strategies do not give satisfactory results the collection of the receivables is made through legal channels.
- Likewise, the company seeks to extend product portfolio to customers in such a way as to facilitate the payment of the debt; for example prepaid energy and water.

As already mentioned, EPM makes payment agreements or financing that are made as strategy for recovery of receivables or for attracting new customers. These give the right to fixed or determinable payments and are included in the current assets, except those with expirations over 12 months counted from the date of generation of the balance sheet, in which case they are classified as non-current assets.

In general terms, in order to guarantee the debts of customers blank promissory notes are prepared with letters of instructions, and when the value of the financing exceeds the amounts pre-established in the internal regulation, real or bank guarantees are requested, and in the cases in which the customer is a state entity, the resources that EPM collects for the customer are encumbered, prior agreement.

For the management of the credit risk of accounts receivable at their different stages (risk cycle), methodologies, procedures, guidelines and business rules are incorporated, in compliance with commercial and financial policies, in order to achieve a comprehensive and sustainable view of the customers.

To leverage the credit risk cycle, there are different statistical methodologies in place that permit to obtain an estimate of the behavior of the future payment of accounts. These methodologies are described below:

**BURO:** Permits to obtain the profile risk of a customer based on his payment behavior and own characteristics, which helps in the segmentation of the population, suggesting the optimal candidates for offers of assignment of basic and/or Value-added services.

- **APPROVAL SCORING FOR VALUE ADDED PRODUCTS:** It makes a profile of customers that apply for a value added credit, it assigns a risk level to the applicants and according to the business rules established contribute to make the final approval or denial decision.

- RECEIVABLES PORTFOLIO CLASSIFICATION MODEL: It assigns the probability of short-term default (2 months) of the services subscribed, in order to design collection prioritization strategies.
- MODEL FOR CALCULATION OF EXPECTED LOSS: It permits to find the probability that the services subscribed may be in payment default in a term of 12 months, which is used to calculate the expected loss of the accounts.

The company considers that the value that represents best its exposure to credit risk at the end of the period, not considering any guarantee taken or other credit improvements, is:

Item	2016	2015
Deposits		
Cash and cash equivalents	519.078	487.182
Investments in debt instruments	378.982	66.021
Investments in equity instruments	1.130.682	2.056.204
Accounts receivables	(256.311)	(124.552)
Other accounts receivable	(46.867)	(13.626)
<b>Maximum exposure to credit risk</b>	<b>1.725.565</b>	<b>2.471.229</b>

- Figures in millions of Colombian pesos -

### 38.5 Liquidity Risk

It refers to the possibility that there would be insufficiency of resources for the timely payment of operations and commitments of the entity, and that because of this the Company would be forced to obtain liquidity in the market or to liquidate investments in an onerous manner. It is also understood as the possibility of not finding buyers for the portfolio securities.

EPM has identified that the financial instruments affected by the liquidity risk include: Cash and cash equivalents, other financial assets, derivative instruments and credits and loans. In order to control the liquidity risk comparisons of figures are made of benchmark indicators and of liquidity levels at different time horizons. As of that analysis, investment strategies are performed that do not affect the liquidity of the Company taking into account the cash budget and the market risk analyses to consider the diversification of the sources of funds, the capacity to sell assets and the creation of contingency plans.

In general, the main aspects that are taken into account in the analysis are:

- Liquidity of securities: the characteristics of the issuer, amount of the issue and negotiation volume are analyzed.
- Market liquidity: the market's general behavior is analyzed and forecasts of rates are made in order to infer their future behavior.
- Portfolio liquidity: cash flows are coordinated in order to determine investment strategies in accordance with the future requirements of liquidity and diversification is sought to avoid the concentration of securities by issuer, rates and/or terms.

The following table shows the analysis of contractual expirations remaining for financial liabilities and assets not derivative:

	Average effective interest rate	Less than 1 year	From 1 to 2 years	From 2 to 3 years	From 3 to 4 years	More than 4 years	Total contractual obligation
<b>2016</b>							
Non-Derivative Financial Liabilities variable interest rate	9,23%	137.550	347.172	269.482	2.037.784	2.416.579	5.208.567
Non-derivative financial liabilities fixed interest rate	7,89%	109.607	167.607	1.684.662	109.607	3.360.083	5.431.566
Financial assets not derivatives	5,61%	344.277	12.000	4.000	4.000	10.000	374.277
Financial assets not derivatives	5,77%	112.756	283.811	108.051	187.500	1.604.395	2.296.513
<b>Total</b>		<b>704.190</b>	<b>810.590</b>	<b>2.066.195</b>	<b>2.338.891</b>	<b>7.391.057</b>	<b>13.310.923</b>
<b>2015</b>							
Financial liabilities not derivatives	7,00%	1.365.499	235.781	445.072	367.382	3.078.760	5.492.496
Financial liabilities not derivatives	7,88%	142.761	88.761	146.761	1.738.196	3.116.130	5.232.610
Financial assets not derivatives	5,81%	41.100	1.141	-	-	-	42.241
Financial assets not derivatives	5,60%	309.524	296.696	180.430	137.648	1.432.613	2.356.911
<b>Total</b>		<b>1.858.885</b>	<b>622.380</b>	<b>772.264</b>	<b>2.243.227</b>	<b>7.627.504</b>	<b>13.124.259</b>

- Figures in millions of Colombian pesos -

The values included in the above tables for financial assets and liabilities not derivative may change in view of changes in the variable interest rate with respect to the interest rate estimated at the end of the reporting period. The Company considers that the cash flows cannot occur earlier than indicated above.

The following table shows the analysis of contractual expirations remaining for financial liabilities derivatives:

	Less than 1 year	From 1 to 2 years	From 2 to 3 years	From 3 to 4 years	More than 4 years	Total contractual obligation
<b>2016</b>						
Swap contracts	106.902	69.509	69.563	(185.020)	-	60.955
<b>Total</b>	<b>106.902</b>	<b>69.509</b>	<b>69.563</b>	<b>(185.020)</b>	<b>-</b>	<b>60.955</b>
<b>2015</b>						
Swap contracts	(7.061)	-	-	-	-	(7.061)
<b>Total</b>	<b>(7.061)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(7.061)</b>

- Figures in millions of Colombian pesos -

The main method for the measurement and follow up of the liquidity is the projection of the cash flow that is carried out in the company and is consolidated in the cash budget. Derived from this a daily follow up is made of its cash position and projections of the latter are continuously made in order to:

- Follow up the liquidity needs related to the operating and investment activities associated to the acquisition and disposal of long term assets.
- Pay, prepay, refinance and/or obtain new credits, in accordance with the cash flows generation capacity in EPM.

These projections take into account the debt financing plans of EPM, the compliance of ratios, the compliance with the organizational objectives and the regulations applicable.

Finally and as part of the strategy of a cautious management of the liquidity risk, EPM seeks to guarantee the maintenance of sufficient cash through the availability of financing with committed credit alternatives. As respect to EPM, as of 2015 it has lines of credit duly approved and renewable with the local banks for approximately \$2 trillion pesos, a limit available to place in the market local bonds for \$1.5 trillion and signed a credit agreement for \$1,000 million U.S. dollars with a group of 7 international banks, at a term of five years and to partially finance the 2016 budget.

## Note 39. Measurement of fair value on a recurring and non-recurring basis

The methodology established in IFRS 13 Fair value measurement specifies a hierarchy in the valuation techniques based on whether the variables used in the determination of the fair value are observable or not. The Company determines the fair value on a recurring and non-recurring basis, as well as for disclosure purposes:

- Based on the prices quoted in active markets for assets or liabilities identical to those that EPM can access on the measurement date (level 1).
- Based on valuation techniques commonly used by market participants that use different variables of the prices quotes that are observable for assets or liabilities, directly or indirectly (level 2).
- Based on internal cash flow discount valuation techniques, using variables estimated by the company not observable for the assets or liabilities, in lieu of variables observed in the market; and in some cases, the cost is taken as an estimate of the fair value. This applies when recent information available is insufficient to measure it, or if a wide range of possible measures exists of the fair value and the cost represents the best estimate of the fair value within that range (level 3).

During 2016 and 2015 in EPM no transfers have been made between the fair values hierarchy levels, either for the transfers into and out of the levels.

### Valuation techniques and variables used by the Company in the measurement of the fair value for recognition and disclosure:

**Cash and cash equivalents:** includes the cash on hand and in banks and the high liquidity investments, easily convertible into a determined amount of cash and subject to insignificant risk of changes in their value, with an expiration of three months or less from the date of their acquisition. EPM uses as valuation technique for this entry the market approach; these entries are classified in level 1 of the fair value hierarchy.

**Accounts receivable:** For disclosure purposes EPM values its accounts receivable at fair value, using the technique of cash flows discount at rates observable in similar markets. For the above, it calculates the net present value of the financial instruments classified in the long term, with the market rates in effect at the time of the closing of the period. For massive accounts receivables it uses the current bank interest certified by the Financial Superintendency; for accounts receivable from employees the latest average mortgage rate certified by the Financial Superintendency for credits not for priority interest housing (No V.I.P.); and for the credit to related parties in foreign currency, the effective interest rate (TIR or Return Interest Rate) of the credit, taking as a base that the contractual rate granted to credits is a rate with international market conditions.

**Investments at fair value through profit and loss and through equity:** includes the investments that are made to optimize the liquidity surpluses, that is, all those resources that are not immediately allocated to the performance of the activities that constitute the corporate object of the companies. EPM uses as valuation technique the market approach; these entries are classified in level 1 of the fair value hierarchy. Regarding the investments at fair value through equity the market approach is used for the investments listed in the stock



market, classifying them in level 1 and for the rest equity investments the cost is taken as the best estimate of its fair value and they are classified in level 3.

**Derivative instruments - Swaps:** The Company uses derivative financial instruments, such forwards, futures, swaps and options to cover financial risks, mainly the risks of interest rate, exchange rate and commodities prices. Such derivative financial instruments are recognized initially at their fair value as of the date when the derivative agreement is executed, and subsequently they are again measured at their fair value. Derivatives are accounted for as financial assets when their fair value is positive and as financial liabilities when their fair value is negative, in the statement of financial position.

EPM uses as valuation technique for the swaps the cash flow discounted, in approach of the income. The variables used are: Interest rate swap curve for types denominated in U.S. dollars, to discount the flows in U.S. dollars; and the external interest rate swap curve for types denominated in Colombian pesos to discount the flows in Colombian pesos. These items are classified in the level 2 of the fair value hierarchy.

**Investment properties:** these are those held to obtain rent and/or appreciations of capital (including investment properties in construction for those purposes). The investment properties are measured initially at cost, including the transaction costs. The carrying value includes the replacement or substitution cost of one part of the investment property existing at the time in which the cost is incurred, if the recognition criteria are met; and it excludes the costs of the daily maintenance of the investment property.

Subsequently to the initial recognition, the investment properties are measured at the fair value that reflects the market conditions as of the date of presentation. EPM uses two valuation techniques for these entries. Within the market approach, it uses the comparative or market method, which consists in deducting the price by comparison of transactions, supply and demand and appraisals of similar or comparable properties, prior adjustments of time, conformation and location. Within the cost approach, the residual method is used, which is applied only to buildings, and is based on the determination of the construction cost updated, less the depreciation for age and conservation status. Within the income approach, the income method is used where the value of the good is determined according to its capacity to generate income, taking into account the probable value of the monthly rent that the lessees would be willing to pay in the leasing market. These entries are classified in level 2 of the fair value hierarchy.

**Credits and loans:** For disclosure purposes EPM values its credits and loans at fair value, using the discounted cash flow technique at rates observable in the market. For the above, it calculates the net present value of credits classified in the long term, with the market rates in effect at the closing time of the period.

The following table shows for each of the fair value hierarchy levels, the assets and liabilities of EPM, measured at fair value on a recurring basis as of December 31, 2016 and 2015, as well as the total value of the transfers between level 1 and level 2 occurred during the period:



Fair value measurement on a recurring basis as of December 31, 2016	Level 1	Level 2	Level 3	Total
<b>Assets</b>				
<b>Designated at fair value</b>				
Cash and cash equivalents	519.078	-	-	519.078
	519.078	-	-	519.078
<b>Other equity investments</b>				
Fixed income securities	374.621	-	-	374.621
Equity instruments	37.958	-	-	37.958
Investments pledged or delivered under warranty	4.361	-	-	4.361
	416.940	-	-	416.940
<b>Other equity investments</b>				
Equity instruments	1.123.949	-	6.733	1.130.682
	1.123.949	-	6.733	1.130.682
<b>Trust rights</b>				
Trust in administration	354.170	-	-	354.170
	354.170	-	-	354.170
<b>Derivatives</b>				
Swap Contracts	-	18	-	18
	-	18	-	18
<b>investment properties</b>				
urban and rural lands	-	108.851	-	108.851
buildings and houses	-	7.777	-	7.777
	-	116.628	-	116.628
<b>Derivatives</b>				
Swaps	-	70.951	-	70.951
	-	70.951	-	70.951
<b>Total</b>	<b>2.414.137</b>	<b>187.597</b>	<b>6.733</b>	<b>2.608.467</b>
	<b>93%</b>	<b>7%</b>	<b>0%</b>	

- Figures in millions of Colombian pesos -

Fair value measurement on a recurring basis as of December 31, 2015	Level 1	Level 2	Level 3	Total
<b>Assets</b>				
<b>Designated at fair value</b>				
<b>Cash and cash equivalents</b>	487.182	-	-	487.182
	487.182	-	-	487.182
<b>Other equity investments</b>				
<b>Fixed income securities</b>	43.823	-	-	43.823
<b>Equity instruments</b>	22.198	-	-	22.198
	66.021	-	-	66.021
<b>Other equity investments</b>				
<b>Equity instruments</b>	2.049.471	-	6.733	2.056.204
	2.049.471	-	6.733	2.056.204
<b>Derivatives</b>				
<b>Swaps</b>	-	11.776	-	11.776
	-	11.776	-	11.776
<b>Investment properties</b>				
<b>Urban and rural lands</b>	-	141.236	-	141.236
<b>Buildings and houses</b>	-	15.977	-	15.977
	-	157.213	-	157.213
<b>Total</b>	<b>2.602.674</b>	<b>168.989</b>	<b>6.733</b>	<b>2.778.396</b>
	94%	6%	0%	

- Figures in millions of Colombian pesos -

As of 31 December 2016 and 2015 no transfers between levels occurred.

As of December 31, 2016 and 2015 there were no changes in the assets and liabilities of the company measured at fair value on a recurrent basis using unobservable variables, classified in level 3 of the fair value hierarchy.

The book value and the estimated fair value of assets and liabilities of the Company that are not recognized at fair value in the consolidated statement of financial condition, but require their disclosure at fair value, as of December 31, 2016 and 2015 is the following::

Concepto	2016			2015	
	Book balance	Estimated fair value		Estimated fair value	
		Level 2	Total	Level 2	Total
<b>Assets</b>					
Public services	1.540.309	1.527.234	1.527.234	1.455.888	1.455.888
Employees	79.751	76.810	76.810	67.352	67.352
Related parties	1.721.150	1.721.150	1.721.150	1.915.034	1.915.034
<b>Other receivables</b>	(13.998)	(14.695)	(14.695)	356.872	356.872
<b>Total assets</b>	<b>3.327.212</b>	<b>3.310.499</b>	<b>3.310.499</b>	<b>3.795.146</b>	<b>3.795.146</b>
<b>Liabilities</b>					
Other bonds and securities issued	6.135.271	6.135.271	6.135.271	6.254.714	6.254.714
Commercial banks loans	1.801.972	1.801.972	1.801.972	1.119.342	1.119.342
Multilateral banks loans	1.664.555	1.664.555	1.664.555	1.690.716	1.690.716
Development banks loans	963.111	963.111	963.111	1.082.093	1.082.093
Bonds and securities issued	255.780	255.780	255.780	318.653	318.653
Loans with related parties	-	-	-	54.009	54.009
Other loans	-	-	-	432.830	432.830
<b>Total liabilities</b>	<b>10.820.689</b>	<b>10.820.689</b>	<b>10.820.689</b>	<b>10.952.357</b>	<b>10.952.357</b>
<b>Total</b>	<b>14.147.901</b>	<b>14.131.188</b>	<b>14.131.188</b>	<b>14.747.503</b>	<b>14.747.503</b>
		<b>100%</b>		<b>100%</b>	

- Figures in millions of Colombian pesos -

As of 31 December 2016 and 2015 assets and liabilities not classified at level 1 and 3

## Note 40. Service concession contracts

At the report date the Company manages, as operator, various concessions that contain provisions for construction, operation and maintenance of facilities, as well as the rendering of public utilities such as water supply and water collection and treatment, in accordance with the application regulations.

Following is the detail of the remaining period of concessions where EPM act as operator:

Company/agreement	Activity	County	Concession Period	Initial period remaining
EPM - municipality of Caldas	The municipality agrees to make available and facilitate the use of the networks and other infrastructure for the rendering of the water and sewerage services.	Colombia	30 years (extendable)	12 years
EPM - municipality of Sabaneta	The municipality agrees to make available and facilitate the use of the networks and other infrastructure for the rendering of the water and sewerage services.	Colombia	10 years (extendable)	8 years
EPM - municipality of La Estrella	Execution of work and rendering of services of potable water supply and sewerage	Colombia	10 years (extendable)	8 years
EPM - municipality of Envigado	Rendering of the water and sewerage service.	Colombia	10 years (extendable)	1 año
EPM - municipality of Itagüí	Construction of the water supply and sewerage networks for the rendering of the service in the neighborhoods assigned.	Colombia	30 years (extendable)	1 año
EPM - municipality of Bello	Execution of work and rendering of services of water supply and sewerage.	Colombia	10 years (extendable)	6 years
EPM - municipality of Copacabana	The municipality agrees to the execution of works for the supply of potable water, sewerage and rendering of such services.	Colombia	20 years (extendable)	14 years
EPM - municipality of Girardota	Rendering of the service of water supply and sewerage.	Colombia	20 years (extendable)	16 years
EPM - municipality of Barbosa	The municipality agrees to make available and facilitate the use of the networks and other infrastructure for the rendering of the services of water supply and sewerage.	Colombia	30 years (extendable)	11 years

At the cut-off date, no income and costs incurred by the construction services exchanged for a financial asset or an intangible asset have been recognized.

#### ***Service concession agreements for the rendering of the water and sewage service***

The concession agreements between EPM and the municipalities provide the conditions under which the water and sewage networks are managed, operated and maintained for the provision of the potable water and wastewater treatment services to its inhabitants, in the terms, conditions and rates established by the Potable Water and Water Sanitation Regulation Commission - CRA (for its initials in Spanish).

The agreements indicate the following rights and obligations for EPM as operator in the service concession agreement:

- Right to receive from the Municipality the total water and sewer networks and to have exclusiveness as operator of the system.
- Obligation to make the exclusive use of the water and sewage networks for the purposes for which they were intended, maintain them and return them in the conditions of use they were received.
- Some concession agreements have the option to be automatically renewed for equal periods unless one of the parties expresses the intention not to continue with it.
- Concession agreements do not establish the obligation of construction of property, plant and equipment elements.

Upon termination of the concession, EPM shall return the water and sewage networks without any consideration to the Municipalities. There have been no changes in the terms of the concession agreements during the period.

For this agreement, the Intangible asset model is applicable (See Note 6 Intangibles Assets).


### **Note 41. Facts occurred after the period being reported**

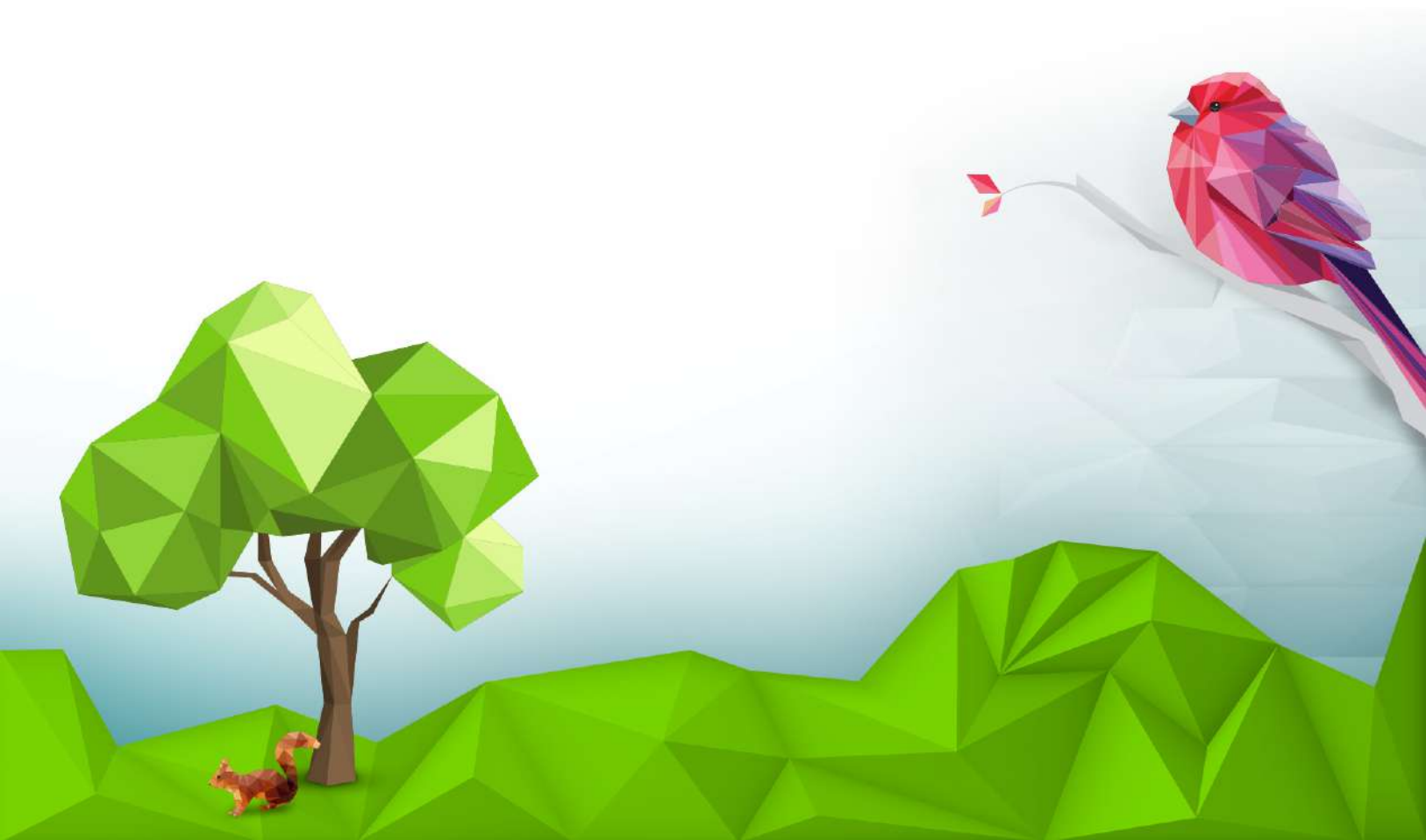
After the date of presentation of the separate financial statements and prior to the date of authorization of its publication, no relevant facts were presented that imply adjustments to the figures.



# Sustainability 2016



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## INDEPENDENT AUDITOR'S REPORT

To the Board of Directors of  
EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P.:

### Identification of the financial statements subject to audit

We have audited the financial statements of EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P., which comprise the statement of financial position as of December 31, 2016, and the related statements of income and other comprehensive income, changes in shareholders' equity and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information. The financial statements as of December 31, 2015, included for comparative purposes only, was audited and we have expressed an unqualified opinion dated on March 31, 2016.

### Responsibility of the Company's management for the financial statements

Management is responsible for the preparation and fair presentation of the accompanying financial statements in accordance with International Financial Reporting Standards, and for such internal control relevant to the preparation and fair presentation of the financial statements that are free from material misstatements, whether due to fraud or error; select and apply the appropriate accounting policies; and make accounting estimates that are reasonable in the circumstances.

### Auditor's Responsibility

Our responsibility is to express an opinion on the accompanying financial statements based on our audit. We conducted the audit in accordance with International Standards on Auditing accepted in Colombia. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence that we have obtained is sufficient and appropriate to provide a basis for my audit opinion.

### **Opinion**

In our opinion, the accompanying financial statements referred above, taken from the accounting books, present fairly, in all material respects, the financial position of EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P. as of December 31, 2016, the results of its operations and its cash flows for the year then ended in conformity with International Financial Reporting Standards.

### **Emphasis of Matter Paragraphs**

1. As described in note 19 of the attached financial statements, during 2016 EPM obtained the waivers from the financial entities related to the compliance with the financial covenant, in accordance with the provisions of the contracts with multilateral banks, measured in the long-term financial debt to EBITDA ratio at December 31, 2016, except for the obligation with the financial entity Bank of Tokyo-Mitsubishi for \$372,104 million, on which it made the reclassification of the total financial debt from long term to short term in accordance with the provisions of the International Financial Reporting Standards.
2. Without modifying our audit opinion, we draw attention to Note 2.25.2 to the financial statements, in respect to:
  - a) The Company applied earlier IFRS 9 Financial Instruments (revised in July 2014), which generated an impact by the effect on the change of the policy for measuring the value correction for expected credit losses on the accounts receivable, in the accumulated results at December 31, 2016 for \$69,278 million and in the result of the period, net for \$58,540 million.
  - b) The Company changed its policy for subsequent measurement of investments in subsidiaries by passing from the cost method to equity method, in accordance with the modification to IAS 27 Separate Financial Statements, determining adjustments that have been recorded with charge to accumulated results of December 31, 2015 for \$103,850 million. The financial statements previously issued for the year ended on December 31, 2015, have been re-expressed retroactively to reflect those adjustments as if they had been made on that date.

*Deloitte & Touche Ltda.*  
DELOITTE & TOUCHE LTDA.  
March 14, 2017.

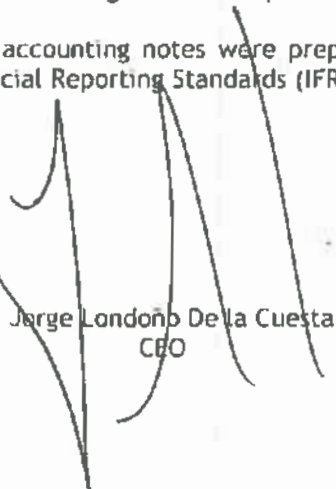
## Certification of the Legal Representative and Accountant of EPM

March 14<sup>th</sup>, 2017

Board of Directors  
Empresas Públicas de Medellín E.S.P.

The undersigned, Legal Representative and Accountant of Empresas Públicas de Medellín E.S.P., certify that the balance of the financial statements of Empresas Públicas de Medellín E.S.P up to December 31<sup>st</sup>, 2016 and 2015, were made in accordance with the International Financial Reporting Standards (IFRS) and that the information reflects the financial, economic, social and environmental situation and operation of Empresas Públicas de Medellín E.S.P in a reliable manner; furthermore, they note that, for its preparation, the claims appearing on the aforementioned financial statements were verified, regarding:

- a) All the transactions that have been made in the covered years have been accurately registered on the respective period, pursuant to the appropriate acknowledgement of the proper quantities and accounts, and measured by the reasonable costs and appropriately revealed.
- b) All the assets, liabilities and net equity of the financial statements reflect the existence of rights and obligations of Empresas Públicas de Medellín E.S.P.
- c) The accounting notes were prepared with clarity and in accordance with the International Financial Reporting Standards (IFRS).



Jorge Londoño De la Cuesta  
CEO



John Jaime Rodríguez Sosa  
Director of Accounting and Costs  
Professional License: 144842-T

*estamos ahí.*

# EPM Group Financial Report

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# **Empresas Públicas de Medellín E.S.P. and subsidiaries**

**Consolidated Financial Statements and Notes  
December 31, 2016 and 2015**

**EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENT OF FINANCIAL POSITION**

Years ended as of December 31, 2016 and 2015

Amounts stated in millions of Colombian pesos

	Notes	2016	2015 <i>Restated</i>
<b>Assets</b>			
<b>Non current assets</b>			
Properties, plant and equipment, net	4	28,266,110	25,783,576
Investment properties	5	124,589	165,488
Goodwill	6	2,918,817	3,078,274
Other intangible assets	6	1,870,379	1,758,576
Investments in associates	10	1,826,273	1,908,319
Investments in a joint ventures	11	93	99
Deferred tax assets	37	188,293	170,421
Trade and other accounts receivables	12	816,128	1,028,590
Other financial assets	13	1,602,495	2,459,117
Other assets	15	103,786	93,316
<b>Total non current assets</b>		<b>37,716,963</b>	<b>36,445,776</b>
<b>Current assets</b>			
Inventories	16	393,861	351,251
Trade and other accounts receivable	12	2,522,136	2,663,051
Current tax assets	37	139,582	290,255
Other financial assets	13	758,094	511,516
Other assets	15	213,322	315,679
Cash and cash equivalents	17	1,194,499	1,338,626
<b>Total Current assets</b>		<b>5,221,494</b>	<b>5,470,378</b>
<b>Total assets</b>		<b>42,938,457</b>	<b>41,916,154</b>
Debit balances of deferred regulatory accounts	28	15,813	-
Deferred tax assets related to balances of deferred regulatory accounts	28	-	17,967
<b>Total assets and debit balances of deferred regulatory accounts</b>		<b>42,954,270</b>	<b>41,934,121</b>
<b>Equity</b>			
Capital	18	67	67
Premium on placement of shares		(25,014)	(2,700)
Reserves	18	3,604,789	3,836,190
Other comprehensive income	19	2,440,216	2,673,594
Retained earnings	18	11,235,786	10,533,255
Profit for the year	18	1,724,000	883,776
<b>Equity attributable to controlling interests</b>		<b>18,979,844</b>	<b>17,924,182</b>
Non controlling interests		803,461	843,974
<b>Total equity</b>		<b>19,783,305</b>	<b>18,768,155</b>



**EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENT OF FINANCIAL POSITION**

Years ended as of December 31, 2016 and 2015

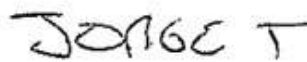
Amounts stated in millions of Colombian pesos

	Notes	2016	2015 <i>Restated</i>
<b>Liabilities</b>			
<b>Non current liabilities</b>			
Credits and loans	20	12,954,621	10,380,634
Trade and other payables	21	329,791	444,617
Other financial liabilities	22	534,823	549,117
Employee benefits	24	826,621	737,178
Deferred tax liabilities	37	2,488,658	2,675,635
Provisions	26	335,552	506,309
Other liabilities	27	133,654	131,956
<b>Total non current liabilities</b>		<b>17,603,720</b>	<b>15,425,447</b>
<b>Current liabilities</b>			
Credits and loans	20	1,893,387	4,258,238
Trade and other payables	21	2,328,612	2,301,370
Other financial liabilities	22	358,961	238,478
Employee benefits	24	219,485	177,941
Income tax payable	37	132,305	213,359
Taxes contributions and rates payable	25	164,618	159,420
Provisions	26	279,209	122,747
Other liabilities	27	185,924	209,074
<b>Total current liabilities</b>		<b>5,562,501</b>	<b>7,680,628</b>
<b>Total liabilities</b>		<b>23,166,221</b>	<b>23,106,075</b>
Credit balances of deferred regulatory accounts	28	-	59,891
Deferred tax liabilities related to balances of deferred regulatory accounts	28	4,744	-
<b>Total liabilities and credit balances of deferred regulatory accounts</b>		<b>23,170,965</b>	<b>23,165,966</b>
<b>Total liabilities and equity</b>		<b>42,954,270</b>	<b>41,934,121</b>

The accompanying notes are an integral part of the financial statements



**Jorge Londoño De la Cuesta**  
Chief Executive Officer



**Jorge Andrés Tabares Ángel**  
Chief Financial Officer



**John Jaime Rodríguez Sosa**  
Accountant  
T.P. 144842-T

EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P. AND SUBSIDIARIES  
**CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME**


For the period from January 1 to December 31, 2016 and 2015  
 Amounts stated in millions of Colombian pesos

	Notes	2016	2015 <i>Restated</i>
<b>Continued operations</b>			
Sale of goods	29	36,156	20,159
Rendering of services	29	14,195,064	13,554,748
Leases	29	62,954	57,472
Other income	30	1,517,925	264,384
<b>Income from ordinary activities</b>		<b>15,812,099</b>	<b>13,896,763</b>
Profit in sale of assets	29	42,112	28,708
<b>Total income</b>		<b>15,854,211</b>	<b>13,925,471</b>
Costs for rendering services	31	(11,257,135)	(9,645,885)
Administration expenses	32	(1,478,556)	(1,439,450)
Impairment loss recognised on trade receivables	12	(101,327)	(49,081)
Other expenses	33	(115,868)	(82,557)
Financial income	34.1	341,932	263,592
Financial expenses	34.2	(989,165)	(846,676)
Net exchange difference	35	245,899	(543,762)
Equity method in associates and joint business		(70,530)	(161,265)
Dividends on equity instruments	36	35,045	93,264
<b>Profit before tax</b>		<b>2,464,506</b>	<b>1,513,651</b>
Income tax expense	37	(649,129)	(453,819)
<b>Profit for the year before net movement in balances of deferred regulatory accounts</b>		<b>1,815,377</b>	<b>1,059,832</b>
Net movement in balances of net regulatory accounts related to the result of the year	28	72,160	(75,750)
Net movement in deferred tax related to deferred regulatory accounts related to the results of the year	28	(21,792)	24,402
<b>Profit for the year and net movement in balances of deferred regulatory accounts</b>		<b>1,865,745</b>	<b>1,008,484</b>
<b>Other comprehensive income, net of taxes</b>			
<b>Items that will not be reclassified subsequently to the result of the year</b>			
Reclassification of properties, plant and equipment to investment properties	19	9,700	3,731
New measurements of defined benefit plans	19	(112,141)	21,304
Equity investments measured at fair value through equity	19	554,131	5,227
Income tax related to components that will not be reclassified	19 y 37	(60,406)	(108,816)
Equity method in associates and joint ventures business	19	(2,028)	-
		<b>389,256</b>	<b>(78,554)</b>
<b>Items that may be reclassified subsequently to the result of the year :</b>			
<b>Cash flow hedging</b>			
Result recognized of the year	19	(18,284)	(7,790)
Reclassification adjustment	19	(65,214)	31,434
Exchange differences for conversion of business abroad	19	46,931	(39,224)
Profit (loss) recognized in the year	19	(152,425)	507,841
Income tax related to the components that can be reclassified	19 y 37	(152,425)	507,841
Equity method in associates and joint ventures business	19	10,196	18,785
		628	1,512
		<b>(159,885)</b>	<b>520,348</b>
<b>Other comprehensive income, net of taxes</b>		<b>229,371</b>	<b>441,794</b>
<b>Total comprehensive income for the year</b>		<b>2,095,116</b>	<b>1,450,278</b>
<b>Profit for the year attributable to:</b>			
Owners of the company		1,724,000	883,776
Non controlling interest		141,745	124,708
		<b>1,865,745</b>	<b>1,008,484</b>
<b>Total comprehensive income attributable to:</b>			
Controlling interests		1,958,521	1,326,054
Non controlling interests		136,595	124,224
		<b>2,095,116</b>	<b>1,450,278</b>

The accompanying notes are an integral part of the financial statements

  
**Jorge Londoño De la Cuesta**  
 Chief Executive Officer

  
**Jorge Andrés Tabares Ángel**  
 Chief Financial Officer

  
**John Jaime Rodríguez Sosa**  
 Accountant  
 T.P. 144842-T

EMPRESAS PÚBLICAS DE MEDELLÍN E. S. P. AND SUBSIDIARIES  
**CONSOLIDATED STATEMENTS OF CHANGES IN THE EQUITY**

Years ended on December 31, 2016 and 2015  
 Amounts stated in millions of Colombian pesos

	Capital issued	Premium on placement of shares	Reserves	Retained earnings	Other comprehensive income					Result of the year in other comprehensive income of associates and joint ventures business	Attributable to non-controlling interests	Non-controlling interests	Total
					Equity Investment	Defined benefit plans	Cash flow hedging	Conversion differences	Appreciation of properties, plant and equipment				
	Nota 18.1		Nota 18.2	Nota 18.3	Nota 19.3	Nota 19.2	Nota 19.5	Nota 19.6	Nota 19.1				Nota 18.4
<b>Balance as of January 1, 2015</b>	67	(3,053)	3,139,572	11,291,298	1,841,717	51,047	(10,996)	368,466	6,117	75	16,684,310	736,370	17,420,680
Retroactive restatement of errors in previous periods	-	-	-	(51,246)	-	-	-	(11,798)	-	-	(63,044)	-	(63,044)
<b>Balance as of January 1, 2015 restated</b>	67	(3,053)	3,139,572	11,240,052	1,841,717	51,047	(10,996)	356,668	6,117	75	16,621,266	736,370	17,357,636
Profit for the year	-	-	-	883,777	-	-	-	-	-	-	883,777	124,708	1,008,485
Other comprehensive income of the year net of income tax	-	-	-	-	(85,966)	4,833	10,996	507,576	3,330	1,513	442,282	(484)	441,798
<b>Comprehensive income for the year</b>	-	-	-	883,777	(85,966)	4,833	10,996	507,576	3,330	1,513	1,326,059	124,224	1,450,283
Surpluses and dividends declared	-	-	-	(56,139)	-	-	-	-	-	-	(56,139)	(168,405)	(224,544)
Movement of reserves	-	-	641,798	(641,798)	-	-	-	-	-	-	-	-	-
Purchases and sales to non-controlling interests	-	354	-	-	-	-	-	-	-	-	354	-	354
Other movement of the year	-	8,283	46,537	(8,861)	7,380	(9,648)	-	(4,936)	(6,112)	-	32,643	151,785	184,428
<b>Balance as of December 31, 2015 restated</b>	67	5,584	3,827,907	11,417,031	1,763,131	46,232	-	859,308	3,335	1,588	17,924,183	843,974	18,768,157
<b>Balance as of January 1, 2016</b>	67	5,584	3,827,907	11,417,031	1,763,131	46,232	-	859,308	3,335	1,588	17,924,183	843,974	18,768,157
Impact of adoption IFRS 9 as of January 1, 2016 (Note 2.28.2)	-	-	-	(89,269)	-	-	-	-	-	-	(89,269)	(5,667)	(94,936)
<b>Balance as of January 1, 2016 restated</b>	67	5,584	3,827,907	11,327,762	1,763,131	46,232	-	859,308	3,335	1,588	17,834,913	838,306	18,673,220
Profit for the year	-	-	-	1,724,000	-	-	-	-	-	-	1,724,000	141,745	1,865,745
Other comprehensive income of the year net of income tax	-	-	-	-	450,514	(61,064)	(9,881)	(152,393)	8,744	(1,399)	234,521	(5,150)	229,370
<b>Comprehensive income for the year</b>	-	-	-	1,724,000	450,514	(61,064)	(9,881)	(152,393)	8,744	(1,399)	1,958,521	136,595	2,095,115
Surpluses and dividends declared	-	-	-	(816,521)	-	-	-	-	-	-	(816,521)	(78,031)	(894,552)
Movement of reserves	-	-	(222,874)	222,874	-	-	-	-	-	-	-	-	-
Purchases and sales to non-controlling interests	-	(23,413)	(236)	(6,125)	-	-	-	-	-	-	(29,774)	29,774	-
Transfers to retained earnings	-	-	-	466,447	(466,447)	-	-	-	-	-	-	-	-
Income tax related to transactions with owners	-	-	-	(5,085)	-	-	-	-	-	-	(5,085)	-	(5,085)
Effect by disposal of subsidiary	-	-	(8)	4,298	-	-	-	-	-	-	4,290	(2,368)	1,922
Other movement of the year	-	(7,185)	-	42,136	(1,322)	(117)	1,619	(1,631)	-	-	33,500	(120,815)	(87,315)
<b>Balance as of December 31, 2016</b>	67	(25,014)	3,604,789	12,959,786	1,745,876	(14,949)	(8,262)	705,284	12,079	189	18,979,844	803,461	19,783,305

The accompanying notes are an integral part of the financial statements

**Jorge Londoño De la Cuesta**  
 Chief Executive Officer

**Jorge Andrés Tabares Ángel**  
 Chief Financial Officer


**John Jaime Rodríguez Sosa**  
 Accountant  
 T.P. 144842-T

EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P. AND SUBSIDIARIES  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**


For the period from January 1 to December 31, 2016 and 2015  
 Amounts stated in millions of Colombian pesos

Notes	2016	2015
<b>Cash flows for operating activities:</b>		<i>Restated</i>
<b>Profit of the year attributable to controlling interests</b>	<b>1,724,000</b>	<b>883,776</b>
Adjustments to reconcile the net profit for the year to the net cash flows used in operating activities:		
Depreciation and amortization of properties, plant and equipment and intangible assets	31 y 32 892,402	793,505
Impairment of property, plant and equipment and intangibles	31 985,502	16,962
Impairment of financial instruments	12 101,327	49,080
Reversal of loss of impairment of property, plant and equipment and intangible assets	4 y 6 (711,214)	-
Reversal of loss for impairment of financial instruments	34 (6,468)	(18,271)
(Profit) loss for exchange difference	35 (348,971)	717,700
(Profit) loss for valuation of investment properties	5 12,429	(13,491)
(Profit) loss for valuation of financial instruments and hedge accounting	881,999	473,526
Provisions, post-employment and long term defined benefit plans	24 235,715	78,599
Government subsidies applied	27 (1,152)	(1,230)
Deferred income tax	37 (25,930)	(123,180)
Current income tax	37 675,059	577,000
Participation in the profit (loss) of investments in associates and joint business	10 y 11 70,531	161,265
(Income) or interest expense	34 (23,784)	9,111
(Profit) loss for disposal of properties, plant and equipment, intangibles and investment properties	(3,638)	119,086
(Profit) loss for disposal of non-current assets held for sale and other assets	-	(2,722)
Non-controlling interests	141,745	124,708
Dividends from investments	36 (35,107)	(93,264)
Other income and expenses not effective	(213,759)	615,711
	<b>4,350,686</b>	<b>4,367,871</b>
<b>Purchases and sales to non-controlling interests</b>		
(Increase)/decrease in inventories	(43,274)	(64,547)
(Increase)/decrease in debtors and other accounts receivable	38,934	(172,216)
(Increase)/decrease in other assets	74,952	(449,645)
Increase/(decrease) in creditors and other accounts payable	(73,643)	656,519
Increase/(decrease) in labor obligations	(177,134)	(45,113)
Increase/(decrease) in other liabilities	(75,227)	(33,675)
Interest paid	(1,041,381)	(789,061)
Income tax paid and equity tax	(479,011)	(407,483)
<b>Net cash flows originated by operating activities</b>	<b>2,574,902</b>	<b>3,062,650</b>
<b>Cash flows for investment activities:</b>		
Acquisition of subsidiaries or business, net of cash acquired	-	(2,352,995)
Disposal of subsidiaries or business	5,688	832
Acquisition of property, plant and equipment	(3,877,390)	(3,557,317)
Disposal of property, plant and equipment	49,507	28,708
Acquisition of intangible assets	(162,118)	(54,088)
Disposal of investment properties	1,105	-
Acquisition of investments in financial instruments	(464,057)	(91,743)
Disposal of investments in financial instruments	1,619,743	1,598,854
Interest received	235,134	123,059
Dividends received from subsidiaries, associates and joint business	231,396	93,457
Other cash flows from investment activities	(36,741)	64,237
<b>Net cash flows originated by investment activities</b>	<b>(2,397,733)</b>	<b>(4,146,996)</b>
<b>Cash flows for financing activities:</b>		
Obtaining of public credit and treasury	3,051,011	4,984,208
Payments of public credit and treasury	(2,472,681)	(2,657,026)
Payments of liabilities for financial leasing	(1,190)	(1,379)
Dividends or surpluses paid	(816,521)	(991,139)
Dividends or surplus paid to non-controlling interests	(78,031)	-
Capital Subsidies	255	5,862
<b>Net cash flows (used) / originated by financial activities</b>	<b>(317,157)</b>	<b>1,340,526</b>
<b>Net cash and cash equivalent increase/(decrease)</b>	<b>(139,988)</b>	<b>256,180</b>
Effects of variations in exchange rates in the cash and cash equivalents	(4,139)	58,712
Cash and cash equivalent at the beginning of year	1,338,626	1,023,734
<b>Cash and cash equivalent at the end of the year</b>	<b>1,194,499</b>	<b>1,338,626</b>
<b>Restricted resources</b>	<b>186,147</b>	<b>216,815</b>

The accompanying notes are an integral part of the financial statements

  
**Jorge Londoño De la Cuesta**  
 Chief Executive Officer

  
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# Notes to the consolidated financial statements of the EPM Group for the periods ended on December 31, 2016 and 2015.

(In million of Colombian pesos, except when otherwise indicated)

## Note 1. Reporting Entity

Empresas Públicas de Medellín E.S.P. (hereinafter, "EPM Group") is the holding company of a multi-Latin enterprise group; Which, in accordance with International Financial Reporting Standards has as of December 31, 2016 a consolidation perimeter made up of 45 companies and a structured entity<sup>1</sup>; that have presence in the provision of public utilities in Colombia, Chile, El Salvador, Guatemala, Mexico and Panama.

EPM is a municipal decentralized entity created in Colombia through Decision 58 dated August 6, 1955 issued by the Administrative Council of Medellín, as an autonomous public institution. It was transformed into an industrial and commercial government company through Decision 069 of December 10, 1997 of the Medellín Council. Due to its juridical nature, EPM has administrative, and financial autonomy and its own equity according to Article 85 of Law 489 of 1998. The capital stock with which the company was constituted and operates with, as well as its equity, is of a public nature, and it's only owner is the Municipality of Medellín. Its main corporate domicile is located at Carrera 58 No. 42-125 in Medellín, Colombia. It has not established a term of duration.

EPM provides domiciliary public services of aqueduct, sewage and gas distribution. It also can provide the domiciliary public utilities of cleaning, waste treatment and utilization, as well as the supplementary activities that are related to abovementioned of each and every public utility services.

EPM Group offers its services through the following sectors:

- Energy: it includes the Energy Generation, Transmission, Distribution and Commercialization, and Natural Gas Distribution businesses.
- Aqueduct: integrated by the Aqueduct, Residual Waters and Cleaning businesses.
- Other segments: Consists of the following investment vehicles: EPM Inversiones, Panamá Distribution Group S.A. (PDG), EPM Chile, and EPM Capital Mexico. Additionally, Max Seguros Ltd., a captive reinsurance company formed to negotiate, engage, and provide reinsurance services.
- Also, the Company participates in the telecommunications business, a segment in which since August 2014 the Company has significant influence, through EPM Telecomunicaciones S.A. - UNE and its affiliates Edatel S.A. E.S.P, Empresa de Telecomunicaciones de Pereira S.A. - ETP, Orbitel Servicios Internacionales S.A. - OSI, Cinco Telecom Corporation CTC, Orbitel Comunicaciones Latinoamericanas S.A - OCL, Inversiones Telco S.A.S. and Colombia Móvil S.A. provides voice, data, Internet, professional services, and data center services, among others.

As of December 31, 2016, the Telecommunications Company of Pereira S.A. - ETP was merged with UNE EPM Telecomunicaciones S.A. (Absorbing entity) and Orbitel Comunicaciones Latinoamericanas S.A. - OCL was liquidated.

The consolidated financial statements of EPM Group corresponding to the year ended as of December 31, 2016, were authorized by the Board of Directors to be published on march 14, 2017. The main activities of EPM Group are described in Note 43 Operation Segments.

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<sup>1</sup>Autonomous Patrimony Social Financing. Under International Financial Reporting Standards (IFRS), it is considered a structured entity that forms part of the consolidation perimeter of the financial statements of the EPM Group.

## 1.1 Translation of financial statements

These financial statements have been translated into English for the convenience of English-speaking readers. The financial statements are the English translation of those originally prepared by the Company in Spanish and presented in accordance with International Financial Reporting Standards.

## 1.2 Legal and regulatory framework

The activities of EPM Group, i.e., domiciliary public utilities and telecommunications services, are regulated in Colombia, Chile, El Salvador, Guatemala, Mexico, and Panama. The most significant matters that apply are:

### 1.2.1 Legislation for Colombia

The activity that EPM Group carries out, i.e., domiciliary public utility services, is regulated in Colombia mainly by Law 142, Public Utilities Act, and Law 143 of 1994, the Electricity Act.

The functions of control, inspection and supervision of the entities that provide domiciliary public utilities are exercised by the Office of the Superintendent of Domiciliary Public Utilities (SSPD, for its Spanish initials).

Because of being a municipal decentralized entity, EPM is subject to the political control of the Council of Medellín, to the fiscal control of the Office of the General Comptroller of Medellín, and to the disciplinary control of the Office of the General Prosecutor.

#### 1.2.1.1 Regulation commissions

Decree 1524 of 1994 delegates in the regulation commissions the presidential function of stating general policies of administration and control of efficiencies in domiciliary public utilities.

These entities are:

- The Energy and Gas Regulatory Commission (CREG, for its Spanish initials), a technical body attached to the Ministry of Mines and Energy (MME), that regulates the rates for energy sales and the aspects related to the operation of the Wholesale Energy Market (MEM, for its Spanish initials) and to the provision of electric power and gas services.
- Regulatory Commission of Drinking Water and Basic Sanitation (CRA, for its Spanish initials), regulates the rates of aqueduct, sewage and cleaning, a technical body attached to the Ministry of Housing, City and Territory.

#### 1.2.1.2. Regulation by sector

##### 1.2.1.2.1. Activities of the aqueduct, sewage and waste management sector

Law 142, Public Utilities Act, defined the aqueduct, sewage and cleaning services:

**Aqueduct:** Also called drinking water domiciliary public utility. Activity consisting of the municipal distribution of water, which is fit for human consumption, including its connection and measurement. It includes supplementary activities such as water catchment and its processing, treatment, storage, conduction and transportation.

**Sewage:** Activity that consists of the municipal collection of waste, mainly liquid, through piping and conduits. It includes the supplementary activities of transportation, treatment, and final disposal of such waste.

**Waste management:** Activity that consists of the municipal collection of waste, mainly solid waste. It includes the supplementary activities of transportation, treatment, utilization, and final disposal of such waste.

The rate framework for these utilities is established in Resolutions CRA 688 of 2014 and CRA 735 of 2015 issued by the Potable Water and Basic Sanitation Regulation Commission - CRA, which make mandatory the fulfillment of quality and coverage indicators and therefore review of investments and operations in the two segments.

#### 1.2.1.2.2 Electric sector activities

Law 143 of 1994 segmented the electric power service into four activities: generation, transmission, distribution, and commercialization, which may be developed by independent companies. The purpose of the legal framework is to supply the demand of electricity under economic and financial feasibility criteria and to tend to an efficient, secure and reliable operation of the sector.

**Generation:** It consists of the production of electric power from different sources (conventional or non-conventional), developing this activity either exclusively or combined with another or other activities of the electric sector, regardless of which of them is the main activity.

**Transmission:** The national transmission activity is the transportation of energy in the National Transmission System (STN, for its Spanish initials). It encompasses the set of lines, with its corresponding connection equipment that operate in tensions that are greater than or equal to 220 kV. The National Transmitter is the legal entity that operates and transports electric power in the STN or has incorporated a company the purpose of which is the development of such activity.

**Distribution:** It consists of transporting electric power through a set of lines and substations, with the associated equipment, that operate at tensions that are lower than 220 KV.

**Commercialization:** An activity that consists of the purchase of electric energy in the wholesale market and its sale to other market participants or to the final regulated and non-regulated users, developing this activity either exclusively or combined with other activities of the electric sector, regardless of which of them is the main activity.

Law 143 of 1994 prohibits the vertical integration between generators and distributors, but allows both agents to be able to develop carry out the commercialization activity. For the transmission, the law defined that the companies that should undertake it, must have that activity as the exclusive object. However, the companies that were vertically integrated as of the promulgation date of Law 143 of 1994 could continue to be so, only if they have separated accounting books for the different activities.

#### 1.2.1.2.3 Activities of the natural gas sector

Law 142 of 1994 defined the legal framework for the provision of domiciliary public utilities, an environment in which natural gas is defined as a public service (utility).

**Gas:** It is the set of activities targeted to the distribution of gas fuel, through pipes or another mean, from a place of collection of large volumes or from a central gas pipeline to the facilities of a final consumer, including their connection and measurement. This Law will also be applied to the supplementary activities of commercialization from the production and transportation of gas through a main gas pipeline, or through other means, from the generation site and to that where it connects to a secondary network.

### 1.2.2 Legislation for Chile

#### 1.2.2.1 Electric sector activities

The activities of generation, transmission and distribution regulated by the Electric Services General Act (LGSE, for its Spanish initials) are identified in the Chilean electric market.

In Chile there are four electric systems interconnected: the Interconnected System of the Great North ("Sistema Interconectado del Norte Grande - SING") that covers the territory included between the cities of Arica and Antofagasta, with 28.06% of the country's installed capacity; the Central Interconnected System ("Sistema Interconectado Central - SIC") that goes between the locations of Taltal and Chiloé, with 71.03% of the country's installed capacity; the Aysén System that covers the consumption of Region

XI, with 0.29% of the capacity; and the Magallanes System that supplies Region XII, with 0.62% of the country's installed capacity.

The reforms in the Chilean electric sector started in 1978 with the creation of the National Energy Commission and were formalized with the approval of the Electric Act in 1982. Due to the privatization of the sector in Chile, as from 1980, there has been no interest of the Government.

### 1.2.2.2 Sanitary service activities

The Sanitary Sector is made up by the group of entities which functions relate to the services of production and distribution of potable water and collection and disposal of waste water, that is, the companies in charge of providing those services and the Superintendency of Sanitary Services, regulatory and overseeing entity of this sector.

### 1.2.2.3 Regulatory framework

**Electric:** According to the Electric Services General Act ("Ley General de Servicios Eléctricos - LGSE"), the National Power Commission is the competent authority to calculate the rates through the technical reports of "knot price setting" (fijación de precio de nudo) that are subsequently established by decree of the Ministry of Economy, Promotion and Reconstruction. Current legislation establishes as a basic premise that the rates must represent the actual costs of electricity generation, transmission and distribution so that an optimal development of the electric systems can be obtained.

The legal framework of the Chilean electric sector mainly consists of:

Decree with Force of Law DFL

- Decree Law N° 1 DFL N° 1 of 1982. The Electric Services General Act establishes the fundamental norms for the development of the economic activity in the electric industry. It may only be modified at the National Congress and its most relevant modifications are those that are applied through Law N° 19.940 of 2004 (Short Act I ("Ley Corta I")), that reformed the regulatory framework of the Transmission, and Law N° 20.018 of 2005 (Short Act II ("Ley Corta II")), that reformed the commercialization regime between generators and distributors for the supply of regulated clients. The bylaws, in turn, are elaborated by the sectorial bodies of the Executive Power and must be submitted to the norms established in the Law.
- Decree with Force of Law (DFL) No. 4 DFL of 2007. Approves modifications to the Decree with Force of Law No. 1 of 1982, General Law of Electric Services, on the subject of electric power.
- Law No 20.257 of 2008. It introduces modifications to the General Law of Public Services (GLPS) in respect to the generation of public power with renewable non conventional energy sources.
- Law No. 20.402 of 2009. It creates the Ministry of Energy, establishing modifications to Decree Law No. 2.224 and to other legal legislation.

**Sanitary:** In the regulation scheme in effect, where the regulatory and monitoring function of the State is separated from the producing function, the Superintendency of Sanitary Services is created, which is the regulating and monitoring body of the sector. This body is a decentralized entity that has its legal status and own equity, subject to the supervision of the President of the Republic through the Ministry of Public Works. It performs the regulatory and monitoring functions of the activity of companies that operate in this sector.

The regulatory model places emphasis on two crucial aspects to introduce the economic rationality in the operation of the sector: the rates and the concessions regime, both aspects are contained in the legal framework under which the operation of the sector is regulated, the function of the Superintendency of Sanitary Services being that of applying and enforcing the provisions fo the respective legal bodies: Decree with Force of Law No. 70 of 1988, Law of Rates and the Decree with Force of Law No. 382 of 1988, General Law of Sanitary Services.

The legal framework of the Chilean sanitary sector is made up mainly by:

- Law of the Superintendency of Sanitary services - Law 18.902 of 1990 (Modified by Law No. 19.549 of 1998 and Law No. 19.821 of 2002): it creates the Superintendency of Sanitary Services as a functionally decentralized service, with legal status and its own equity, subject to the supervision of the President of the Republic through the Ministry of Public Works.

To the Superintendency of Sanitary Services will correspond the monitoring of the providers of sanitary services, of the compliance with rules related to sanitary services and the control of industrial liquid waste that is connected to the rendering of services of sanitary companies, capable either officially or at the request of any interested party to inspect the sanitary infrastructure works made by the providers.

Regulations of the General Sanitary Service Law, Supreme Decree (SD..) of the Ministry of Public Works (M.P.O) No. 1199, Dec/2004 Published in the Official Diary on November 9, 2005): they approve the regulations of sanitary concessions of production and distribution of potable water and collection and disposal of waste water and of the regulations on the quality of the customer service to the users of these services.

Law of rates of sanitary services: Decree with Force of Law MOP No. 70 of 1988 - Published in the Official Diary on March 30, 1988.

Code of Waters and its modifications: the Decree with Force of Law No. 1.122 regulates the property and the right of the use of the water. The latest modifications are: Law No. 20.017 of 2005 and Law No 20.099 of 2006.

Regulation of the General Law of Sanitary Services Supreme Decree MOP No. 1199, December/2004: approves the regulations of the sanitary concession of production and distribution of potable water and of collection and disposal of waste water and of the regulations on the quality of the customer services to the users of these services.

#### 1.2.2.4 Regulatory entities

Some of the main regulatory entities for the energy service in Chile are:

- Ministry of Energy: It is the higher body of collaboration to the President of the Republic in the functions of governance and administration of the energy sector. This public body is responsible for determining the plans, policies and norms for the development of the electric sector. Further, it grants concessions for hydro-electrical centrals, transmission lines, substations, and electric distribution zones. The National Energy Commission (“Comisión Nacional de Energía - CNE”) is attached to the Ministry of Energy.
- National Energy Commission (“Comisión Nacional de Energía - CNE”): The Comisión Nacional de Energía (CNE) is a public decentralized entity with its own equity and full capacity to acquire and exercise rights and obligations that relate to the President of the country through the Ministry of Energy. In particular, the Comisión Nacional de Energía leads the tariff fixation processes to the electricity and gas companies of the network. It is responsible for designing technical standards and calculating the regulated prices established in the Law. Likewise, it monitors and projects the current and expenses operation of the energy sector, through the generation of the works plan that constitutes an indicative guide for a ten-year expansion of the system. Likewise, proposes to the Ministry of Energy the legal and regulatory norms that are required in the matters of its competence.
- Office of the Superintendent of Electricity and Fuels (“Superintendencia de Electricidad y Combustibles - SEC”): It is the public body whose mission is to watch over the adequate operation of the electricity, gas and fuels services, in terms of their safety, quality and price. In addition to fixing technical standards, the SEC’s objective is to audit and oversee compliance with the legal and regulatory norms for generation, production, storage, transportation and distribution of liquid fuels, gas and electricity, to verify that the quality of services that are provided to the users be the one stated in those decisions and technical norms and that the operations and the use of the energy resources do not constitute danger to the people or their things. The institutional framework of SEC is Law 18410 of 1985, modified by Law 20402 of 2009.



- Economic Center of Cargo Shipping of the Central Interconnected System (CDEC-(SIC): The CDEC-SIC is the entity in charge of coordinating and determining the operation of SIC facilities, including power generating station, lines and substations of the transmission and consumption bars system of free clients. Amongst its functions are: watching over the service security in the electrical system; guaranteeing the most economical operation of the set of facilities of the electrical system; and guaranteeing the right of way on the transmission systems established through electrical concession decree. The CDEC-SIC is integrated by the power generators, transmitters and free clients that operate in the SIC, and the members are the ones that fund it. The institutional framework of CDECs is Decree 291. of 2008.
- Economic Cargo Shipping Center (of the Large North Interconnected System (CDEC- (SING): The CDEC-SING is the body in charge of coordinating and determining the operation of the SING facilities. It is analog to the CDEC-SIC.
- Some of the major regulatory entities for the sanitary sector (potable water and sewerage system) are:
  - Ministry of Public Works (MOP): grants the concessions and promotes the supply of water and the sanitation in rural zones through its Sanitation Programs Department. Besides to the functions that are proper to it, in respect to the sanitary sector it corresponds to the administration of the legislation on the subject of water resources, the assignment of water rights and the approval of the concession rights to establish, construct and exploit sanitary services.
  - Superintendency of Sanitary Service (SISS): entity of the State of Chile that regulates and monitors the companies that provide the potable water service and collection and treatment of wastewater of the urban population.
  - Ministry of Health: monitors the quality of water in the sanitary services that are not under the jurisdiction of the Superintendency (that are not sanitary public utilities) and officializes the rules of quality studied under the provisions of the National Standardization Institute.
  - Ministry of Economy, Development and Reconstruction: designs and monitors the implementation of public policies that affect the competitiveness of the country; It promotes and monitors the activities in the sectors of the industry, services and commerce. Its major lines of action are related to the design and promotion of Innovation and Entrepreneurship Policies. Its main function in respect to the sanitary sector is the determination of regulated prices, at the proposal from the Superintendency.

### 1.2.3. Legislation for El Salvador

A restructuring process of the electrical sector was developed in El Salvador, which was materialized in a juridical and institutional framework that aims to promote the competition and conditions necessary to assure the availability of an efficient energetic supply, capable of supplying the demand under technical, social, economic, environmental and financial feasibility criteria.

In the 90's, El Salvador pushed a process of reforms in the energetic sector that consisted of the restructuring of the hydrocarbons and electricity sectors, the privatization of most government companies that provided energetic goods or services and the deregulation of the markets.

#### 1.2.3.1 Regulatory framework

The legal framework of the Salvadorian electric sector is formed by the Law of Creation of the General Superintendence of Electricity and Telecommunications ("Superintendencia General de Electricidad y Telecomunicaciones") (SIGET), issued through Legislative Decree 808 of September 12, 1996, that gave juridical life to the regulatory entity; as well as by the General Law of Electricity ("Ley General de Electricidad") (LGE), issued through Legislative Decree 843 of October 10, 1996, and by the Bylaws of the General Law of Electricity, established through Executive Decree 70 of July 25, 1997, including its modifications.



As a result of the restructuring process of the electrical sector the following was created: the Unidad de Transacciones S.A. (UT), that manages the Wholesale Market of Electric Energy, and the Empresa de Transmisión de El Salvador (ETESAL), at the same time that distribution companies were privatized as well as those of the thermal generation. Further, the hydro-electrical and geothermal generation activities, and a private partner was incorporated in the latter.

### 1.2.3.2 Regulatory entities

Some of the main regulatory entities at energetic level in El Salvador are:

- **Ministry of Economy (MINEC):** Central government institution which purpose is the promotion of the economic and social development through the increase of the production, the productivity, and the rational utilization of the resources. Among its responsibilities there is to define the commercial policy of the country and the follow-up and momentum to the Central American economic integration. It has under its command the Direction of Electric Energy and the Social Investment Fund for the Local Development; further, it chairs the National Council of Energy. Likewise, it contributes to the development of the competence and competitiveness of productive activities, both for the internal market and for the external market.
- **General Superintendence of Electricity and Telecommunications (“Superintendencia General de Electricidad y Telecomunicaciones”) (SIGET):** It is a not-for-profit public service autonomous institution. Such autonomy includes the administrative and financial aspects and it is the competent entity to apply the norms contained in international treaties on electricity and telecommunications in force and effect in El Salvador, as well as in the laws that rule the electricity and telecommunications sectors and its bylaws, in addition to knowing about the non-compliance therewith.
- **Transactions Unit (“Unidad de Transacciones”) (UT):** Among its functions is the managing with transparency and efficiency of the wholesale electrical energy market and operating the transmission system, maintaining the security and the quality and providing to the market operators satisfactory responses for the development of its activities. Likewise, it coordinates with the Regional Operator Entity (“Ente Operador Regional”) (EOR) the energy transactions that El Salvador carries out with other countries at Central American and international levels. Finally, it determines responsibilities in case of failures in the systems.

### 1.2.4 Legislation for Guatemala

The Political Constitution of the Republic of Guatemala of 1985 declared the electrification of the country as national urgency, based upon plans formulated by the State and the municipalities, in a process that could count on the interest of the private initiative.

#### 1.2.4.1 Regulatory framework

With the Political Constitution as a legal handle, in 1996 it was decreed the General Electricity Act, through which the fundamental juridical norms were established to facilitate the acting of the different electrical system sectors.

#### 1.2.4.2 Regulatory entities

Some of the main energy regulatory entities in Guatemala are:

- **Ministry of Energy and Mines:** The Ministry of Energy and Mines is the most important Guatemalan government entity of the electric sector. It is responsible for enforcing the General Electricity Act and related regulations, as well as for the coordination of policies between National Commission of Electric Energy (CNEE) and the Administrator of the Wholesale Market (AMM). This government office also has the authority to grant authorization permits for the operation of the distribution, transmission and generation companies.

- **Comisión National Electrical Power Commission (“Comisión Nacional de Energía Eléctrica - CNEE”):** The Guatemalan electric sector is regulated by the CNEE, a regulatory entity created pursuant to the General Electricity Act, as a technical body of the Ministry of Energy and Mines and subordinated to it. It consists of three members appointed by the President of the Republic from groups of three proposed by the Principals of universities, the Ministry of Energy and Mines and the Wholesale Market agents. The duration of each directorate is five years.
- **Wholesale Market Administrator (“Administrador del Mercado Mayorista - AMM”):** is the entity in charge of managing the the Guatemalan wholesale market, a private entity created by the General Electricity Act, that coordinates the operation of the generating facilities, the international interconnections, and the transmission lines that conform the national electricity system. Likewise, it is responsible for the system’s safety and operation conducting an economically efficient shipment and managing the electricity resources, in such a way that it minimizes the operating costs, including the costs of failures, within the restrictions imposed by the transmission system and the service quality requirements. Likewise, the AMM is in charge of the scheduling of the supply and the shipment of electricity. AMM’s bylaws are subject to CNEE’s approval. If a generation, transmission or distribution company, or an electricity agent or large user does not operate their facilities in conformity with the regulations established by the AMM, the CNEE has the capacity to sanction it with penalties and, in the case of a severe violation, it may require to be disconnected from the national electricity system.

## 1.2.5 Legislation for México

### 1.2.5.1 Regulatory framework for the water and sanitary

In the government environment, each of the 32 federative entities has their respective water laws, with sensibly equal purposes in spite of the diverse denominations. The modifications to the government legislation associated to the provision of water and sanitation services mainly derived from a series of initiatives promoted by the National Waters Commission (“Comisión Nacional de Aguas - CAN”) in the 90’s.

A summary of the evolution from then and until the beginning of this decade that the legal state regime has experienced with respect to water and sanitation is:

- Reforms in 1983 to Article 115 of the constitution, with which it was ratified and strengthened the municipal character of the water and sanitation services, which forced to target the state authorities’ role in this matter to assign them a subsidiary and somehow regulatory role.
- Government policies established to promote the creation of decentralized bodies (creation decrees) of the Municipal Administration, with the technical capacity and he administrative and financial autonomy necessary for the efficient provision of those services, together with the introduction of interest schemes of the private sector.
- Greater interest if the state authorities in the administration of the national waters, through covenants that, pursuant to the provisions of Article 116 of the constitution, can be entered into by the federation with the state governments with the purpose that the latter carry put or exercise different tasks or attribution, of the exclusive competence of the federal government. This possibility was reinforced even more with the reforms and additions to the National Waters Act that entered into force and effect in 2004.

### 1.2.5.2 Regulatory entities

Some of the main energy regulatory entities in Mexico are:

- **Secretariat of the Environment and Natural Resources (“Secretaría de Medio Ambiente y Recursos Naturales - SEMARNAT”):** In the different environments of the society and of the public function, it incorporates criteria and instruments that assure the optimal protection, preservation, and utilization

of the country's natural resources, thus forming an integral and inclusive environmental policy that allows achieving sustainable development, provided that they are not expressly entrusted to another office; likewise, in matters of ecology, environmental sanitation, water, environmental regulation of the urban development and the fishing activity, with the interest that shall correspond to other offices and entities.

- National Water Commission (“Comisión Nacional del Agua - CONAGUA”): With the interest of the society, it manages and preserves the national waters to achieve the sustainable use of the resource with the co-responsibility of the three orders of the government and the society in general. It is the authority with technical quality and promoter of the government orders in the integrated management of the hydric resource and its inherent public goods, and protects the water bodies to guarantee a sustainable development and preserve the environment.
- Social Development Secretariat (“Secretaria de Desarrollo Social - SEDESOL”): Defines the commitments of the administration to advance in the achievement of an effective social development. Formulates and coordinates the solidary and subsidiary social policy of the federal government, targeted to the common good, and executes it in a co-responsible fashion with the society.

### 1.2.6 Legislation for Panama

The electrical sector in Panama is divided into three activity areas: generation, transmission and distribution. The country has established a regulatory structure for the electrical industry, based upon the legislation that was approved between 1996 and 1998. This framework creates an independent regulator, the National Authority of the Public Utilities (“Autoridad Nacional de los Servicios Públicos - ASEP”), and also creates a transparent process for setting the tariffs for the sale of energy to regulated clients.

#### 1.2.6.1 Regulatory framework

The regulatory regime mainly consists of the following norms:

- Law 6 of February 3, 1997. It dictates the regulatory and institutional framework for the provision of the electricity public service. It establishes the regime to which the electrical energy distribution, generation, transmission and commercialization activities shall be subject.
- Law 57 of October 13, 2009. Several modifications are made to Law 6 of 1997; among them there are: the obligation of the generating companies to participate in the energy or power purchase processes, the compulsoriness for Empresa de Transmisión Eléctrica S.A. (ETESA) of buying energy in representation of the distributing companies, and the increase in fines that the regulator may impose of up to \$20 million Balboas, and at the same time it establishes the right of the clients to refrain from paying for the portion they claim and grants a 30-day term to claim before the regulator in case of not being satisfied with the response given by the distributing company.
- Law 58 of May 30, 2011. It modifies those articles related to rural electrification, among which there are: the modification of the calculation of subsidy that the Rural Electrification Office (“Oficina de Electrificación Rural - OER”) must pay to the distributors for a 4-year period (formerly it was paid to 20 years) and the creation of a rural electrification fund for 4 years, which shall be formed with the contributions of the market agents that sell electric energy and shall not exceed 1% of their net profit before taxes.

#### 1.2.6.2 Regulatory entities

Some of the main energy regulatory entities in Panama are:

- The Energy Secretariat (“Secretaría de Energía”): its mission is to formulate, propose and promote the national energy policy with the purpose of guaranteeing the security of the supply, the rational and efficient use of the resources and energy in a sustainable fashion, as per the National

Development Plan (“Plan de Desarrollo Nacional”). Currently, it is processing before the Electrical Transmission Company (“Empresa de Transmisión Eléctrica - ETESA”) the formation of an energetic matrix with greater and more varied renewable and clean resources (Aeolian, gas, among others.)

- The National Authority of the Public Services (“Autoridad Nacional de los Servicios Públicos - ASEP”): Established according to the law of the regulatory entity of public services of 1996. It is an autonomous Government entity with the responsibility of regulating, controlling, and auditing the provision of the water and sanitary sewage, telecommunications, radio and television, electricity and natural gas services.

On February 22, 2006, through Decree Law 10, the Public Services Regulatory Entity (“Ente Regulador de los Servicios Públicos - ERSP”) was restructured and changed its name; for that reason, since April 2006 it is known as the ASEP, with the same responsibilities and functions that the regulatory entity had but with a general administrator and an executive director, each designated by the President of the Republic of Panama and ratified by the National Assembly. Likewise, it has three national directors under the authority of the general administrator: one for the electricity and water sector, one for the telecommunications sector, and one for the user service sector. The national directors are responsible for issuing resolutions related to their respective industries and the appeals thereto are solved by the general administrator as a final stage of the administrative process.

- The Planning Unit of the Electric Transmission Company (“Unidad de Planificación de la Empresa de Transmisión Eléctrica - ETESA”): It elaborates the reference expansion plans and projects the global requirements of energy and the fashions to satisfy those requirements, including the development of alternative sources and establishing programs to preserve and optimize the use of energy. The public service companies are called to prepare and present their expansion plans to ETESA.
- The National Dispatching Center (“Centro Nacional de Despacho - CND”): It is operated by ETESA. Plans, supervises and controls the integrated operation of the National Interconnected System (“Sistema Interconectado Nacional”). Receives the supplies of the generators who participate in the power sale market (spot), it determines the spot prices of energy, administers the transmission network, and provides the liquidation values between suppliers, producers, and consumers, among others.
- The Rural Electrification Office (“Oficina de Electrificación Rural - OER”): It is responsible for promoting the electrification in non-served, non-profitable and non-franchised rural areas.

### 1.3 External Audit

As included in the Code of Good Corporate Governance, the external audit is established as a control mechanism with the purpose Audit consolidated financial statements and accounting policies in accordance with international financial reporting standards. as well as the provision of an independent opinion with respect to the reasonableness with which they indicate the company’s financial position as of the cut-off date of each accounting exercise

## Note 2. Significant accounting policies

### 1.1 Bases for preparation of the consolidated financial statements

The consolidated financial statements of EPM Group are prepared in conformity with the International Financial Reporting Standards (hereinafter, IFRS) and the International Accounting Standards (hereinafter, IAS) issued by the International Accounting Standards Board (hereinafter, IASB), as well as the interpretations issued by the Interpretations Committee (hereinafter, IFRIC). These financial statements are harmonized with generally accepted accounting principles in Colombia as set out in the Annex to Decree 2784 of 2012 and subsequent amendments accepted by the National Accounts Office through Resolution 743 of 2013 and its amendments.

affect the amounts reported and disclosed in the financial statements, without undermining the reliability of the financial information. Actual results may differ from those estimates. The estimates and assumptions are constantly revised. The review of accounting estimates is recognized in the period where the estimates are revised if the review affects such period or in the review period and future periods, if it affects both the current and the future periods. The estimates made by Management, in applying the IFRS, that have a material effect on the financial statements, and those that imply significant judgments for the annual financial statements, are described in greater detail on Note 3 - Significant accounting judgments, estimates, and causes for uncertainty in the preparation of the financial statements.

EPM and each subsidiary present independent financial statements for compliance before the controlling entities and for internal administrative follow-up purposes and provide information to the investors.

Assets and liabilities are measured at cost or amortized cost, with the exception of certain financial assets and liabilities and the investment properties that are measured at fair value. The financial assets and liabilities measured at fair value correspond to those that are classified in the category of fair value assets and liabilities through profit and loss, and for some equity investments at fair value through equity, all the financial derivatives, assets and liabilities recognized that are designated as hedged items in a fair value hedging through other comprehensive income and those that do not comply with hedging accounting through profit or loss, the carrying value of which is adjusted with the changes in fair value attributed to the risks subject matter of the hedging.

## **2.2 The consolidated financial statements are presented in Colombian pesos and their figures are stated in millions of Colombian pesos. Consolidation principles**

The consolidated financial statements include the financial statements of EPM and of its subsidiaries as of December 31, 2015 and 2014. Using the global integration method, EPM consolidates the financial results of the companies on which control is exercised, and which are detailed in Note 8.

A subsidiary is an entity controlled by any of the companies that make up the EPM Group. Control is obtained whenever any of the companies of EPM Group controls the relevant activities of the subsidiary, that generally speaking are those activities of operation and financing, it is exposed, or it is entitled, to the variable yields hereof and holds the capacity of using its power over the subsidiary to influence its yields.

In general, there is a presumption that a majority of the voting rights ends up taking control. To support this presumption, and when EPM Group has less than the majority of the voting or similar rights of an investee entity, EPM Group considers all the pertinent facts and circumstances to evaluate whether it has the power over an investee company, including the contractual agreements with the other holders of votes in the investee entity, the rights arising from other contractual agreements, and the voting rights of EPM Group as the potential voting rights.

EPM Group reevaluates whether or not they control the investee, if the facts and circumstances indicate that there are changes in one or more of the three controlling elements.

The consolidated financial statements of EPM Group are presented in Colombian pesos, which is the functional and presentation currency of EPM's, which is the controlling company of EPM Group. Every subsidiary of EPM Group determines their own functional currency and includes the items in their financial statements using that functional currency.

All the companies of EPM Group prepare and present their financial statements under IFRS according to the Group's accounting policies, except for the international companies that, due to their own country's regulation cannot apply IFRS, in which case they homologate their local practices to the Group's accounting policies at the moment of reporting information for the consolidation of the financial statements.

For consolidation purposes, the subsidiaries' financial statements are prepared under EPM Group's accounting policies and are included in the consolidated financial statements from the acquisition date to the date when EPM Group loses their control.



Intra-group assets, liabilities, equity, revenues, costs, expenses and cash flows are eliminated in the preparation of the consolidated financial statements. Those related to transactions between Group Companies, including unrealized internal results, which are eliminated in their entirety.

The consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ends when the Group loses control of the subsidiary. Specifically, the income and expenses of a subsidiary acquired or sold during the year are included in the consolidated statement of comprehensive income from the date the Group obtains control until the date on which it ceases to control the subsidiary.

When EPM Group loses control over a subsidiary, the assets (including the goodwill), liabilities, non-controlling interests, and other components of the net equity are written-off; any residual interest it may retain is measured at fair value; the gains or losses that arise from this measurement are recognized in the results for the period.

Non-controlling interests in the consolidated net assets of the subsidiaries are presented separately from EPM Group's equity. The results for the period and the other comprehensive income are also attributed to the non-controlling and controlling interests.

Any changes in the interest share of EPM Group in subsidiaries that do not result in the loss of control, are recorded as equity transactions. The carrying value of EPM Group's controlling interest and the non-controlling interest are adjusted to reflect the changes in their relative interest in the subsidiaries. Any difference between the amount for which the controlling interest, the non-controlling interest, and the fair value of the consideration paid or received are adjusted, is directly recognized in net equity.

Whenever EPM Group loses control over a subsidiary, the gain or loss is recognized in operations and is calculated as the difference between: the fair value amount of the consideration received and the fair value of any interest retained and the prior carrying amount of the assets (including the goodwill) and the liabilities of the subsidiary and any non-controlling interest. All amounts related to the subsidiary, previously recognized in the other comprehensive income are recorded as if the Group had directly disposed the assets or liabilities related to it (i.e., reclassified into profit or loss or transferred to another equity category as allowed by the applicable IFRS). The fair value of the investment retained in the previous subsidiary on the date when control is lost, is considered as the fair value in the initial recognition for its subsequent measurement either as an investment made in a financial instrument, an investment made in a joint venture or in an associate.

### 2.3 Classification of assets and liabilities into current and non-current

An asset is classified as current asset when it is mainly maintained for negotiation purposes or it is expected to be realized over a term not to exceed one year after the period being reported, or it is cash and cash equivalents if it is not subject to restrictions for exchange or for being used in the cancellation of a liability over a term not to exceed one year after the period being reported. All other assets are classified as non-current assets.

A liability is classified as current liability when it is mainly kept for negotiation purposes or it is expected to be liquidated over a term not to exceed one year after the period being reported or when EPM Group does not have an unconditional right to postpone its liquidation for at least one year after the period being reported. All other liabilities are classified as non-current liabilities.

All derivative instruments for which the hedging accounting does not apply are classified as current or non-current, or are divided into current and non-current portions, based upon the evaluation of the facts and circumstances (i.e., the underlying contractual cash flows):

- When EPM Group keeps a derivative, for which the hedging accounting is not applied, during a term exceeding twelve (12) months as from the presentation date, the derivative is classified as non-current (or divided into current and non-current portions) so that it corresponds with the classification of the underlying item.
- Implicit derivatives that are not closely related to the host contract are classified coherently with the cash flows of the host contract.



- Derivative instruments that are designated as hedging instruments and that are effective, are classified coherently with the classification of the underlying hedged item. The derivative instrument is divided into a current portion and another non-current only if such assignment can be made reliably.

## 2.4 Cash and cash equivalents

The cash and cash equivalents in the statement of financial position and in the statement of cash flows include the money in cash and banks and the high-liquidity investments, easily convertible in a determined amount of cash and subject to a non-significant risk of changes in their value, with maturity of three (3) months or less from their acquisition date. Callable bank overdrafts that are an integral part of the cash management of EPM Group represent a cash and cash equivalents component in the statement of cash flows.

## 2.5 Business combinations

Business combinations are recorded by the acquisition method. The acquisition cost is measured as the addition of the consideration transferred measured on the acquisition date at fair value and the amount of minority interest in the acquired entity. For each business combination, EPM Group decides whether the non-controlling interests in the acquired entity should be measured at their fair value or for the proportional part of the identifiable net assets of the acquired entity. All costs related to the acquisition are recognized as expenses when incurred and are included in administration expenses.

Identifiable assets acquired, contingent assets and liabilities assumed from the acquired entity are recognized at fair value on the acquisition date, Except that:

- Deferred tax assets or liabilities and the assets or liabilities related to employee benefit agreements shall be recognized and measured in conformity with IAS 12 Tax on gains and IAS 19 Employee Benefits, respectively.
- Liabilities or equity instruments related to payment agreements based upon stock of the acquired entity or payment agreement based upon Group's stock made as a replacement of the agreements with payment based upon stock of the acquired entity are measured in conformity with IFRS 2 Share-based payments at the date of acquisition.
- The assets (or group of assets for disposal) that are classified as available-for-sale in conformity with IFRS 5 Non-Current Assets Available-for-Sale and Discontinued Operations are measured in conformity with such Standard.

When EPM Group acquires a business, the financial assets and liabilities assumed for the classification and appropriate designation in conformity with contractual terms, the economic circumstances, and the pertinent conditions on the acquisition date are evaluated. This includes the separation of those derivatives implicit in the contracts hosted by the acquired entity.

The Group recognizes an intangible asset acquired in a business combination, regardless of the goodwill, provided that such intangible asset meets the criteria for recognition, is identifiable, or arises from contractual and legal rights; it measures the value of a reacquired right recognized as an intangible asset, based on the remaining contractual term of the related contract, regardless of whether the market participants would consider potential contractual renewals to determine the fair value.

If a business combination is carried by stages, any prior interest is valued once again as of their acquisition date at fair value and any resulting gains or losses are recognized in operations. The accounting treatment of what is recorded in the Other comprehensive income (ORI, for its Spanish initials), also known as Other Comprehensive Income (OCI), at the moment of the new purchase, i.e., the amounts resulting from the previous interest in the acquired entity as of the acquisition date that had been previously recognized in other comprehensive income, are reclassified into the result for the period, provided that such treatment were appropriate in case such interest were sold.

If the initial recording of a business combination is not finalized at the end of the period for presentation of the financial statements when the combination takes place, the Group reports the provisional amounts

of the items for which recording is incomplete. During the measurement period, the acquiring entity recognized adjustments to the provisional amounts or recognizes additional assets or liabilities necessary to reflect the new information obtained on facts and circumstances that existed on the acquisition date and, if they had been known, they would have affected the measurement of the amounts recognized on that date.

The consideration transferred is measured as the added value of the fair value, on the acquisition date, of the assets delivered, the liabilities incurred in or assumed, and equity instruments issued by EPM Group, including any contingent consideration, to gain control of the acquired entity.

Goodwill is measured as the excess of the consideration amount transferred, the value of any non-controlling interest, and, whenever applicable, the fair value of any interest previously maintained in the acquired entity; over the net value of the acquired assets, the liabilities and the contingent liabilities assumed on the acquisition date. The resulting gain or loss of the measurement of the interest previously maintained is recognized in the results for the period or in the other comprehensive income. When the consideration transferred is lower than the fair value of the net assets of the acquired entity, the corresponding gain is recognized in the results for the period, on the acquisition date.

Any contingent consideration of a business combination is classified as asset, liability or equity and is recognized at fair value on the acquisition date and is included as part of the consideration transferred in a business combination. The changes subsequent to the measurement period made to the fair value of a contingent consideration, classified as financial asset or liability are recognized in the results for the period or in the case of concrete liabilities designated at fair value with changes in profit and loss, the amount of the change in fair value that is attributable to changes in the credit risk of the liability are recognized in the other comprehensive income; when it is classified as equity it is no measured again; its subsequent liquidation is recognized within equity. If the consideration does not classify as a financial liability it is measured in conformity with the applicable IFRS; according to the foregoing, an asset or liability is re-measured on its reporting date in conformity with IFRS 9 Financial Instruments or IAS 37 Provisions, contingent liabilities and contingent assets whenever appropriate.

The accounting policy established to record changes at fair value of the contingent benefit during the measurement period is as follows: all changes at fair value of the contingent consideration that classify as measurement period adjustments, are retrospectively adjusted, with the corresponding adjustments against the goodwill. The measurement period adjustments are adjustments that arise from the additional information obtained during the “measurement period” (which may not exceed one year as from the acquisition date) on facts and circumstances that existed on the acquisition date.

Goodwill acquired in a business combination is assigned, on the acquisition date, to the cash generating units of EPM Group, that are expected to be benefited with the combination, regardless of whether other assets or liabilities of the acquired entity are assigned to those units. The capital gain/added value that arises from the acquisition of a business is recorded at cost on the acquisition date less the accumulated impairment losses, if any.

For impairment assessment purposes, the capital gain is assigned to each cash-generating unit (or group of cash generating units) of the Group that expects to obtain benefits from the synergies of that combination.

The cash generating units that are assigned the capital gain are subject to annual impairment assessments, or with shorter frequency if there is indication that the unit may have suffered impairments. If the recoverable amount of the cash generating unit is lower than the carrying value of the unit, the impairment loss is assigned first in order to reduce the carrying value of the capital gain assigned to the unit and then to the other assets of the unit, proportionately, taking as a base the carrying value of each asset in the unit. Any impairment loss for the capital gain is directly recognized in profits or losses. The impairment loss recognized for capital gain purposes may not be reverted in the following period.

When the goodwill is part of a cash-generating unit and a portion of the operation within that unit is sold, goodwill associated to the operation sold is included in the carrying value of the transaction at the moment of determining the gain or loss for the disposal of the operation. The goodwill that is written-

off is determined based upon the operation's portion sold, which is the ratio between the carrying value of the operation sold and the carrying value of the cash-generating unit.

If the initial recognition of a business combination is incomplete at the end of the accounting period where the combination takes place, EPM Group discloses the provisional values of the items the recording of which is incomplete. These provisional values are adjusted during the measurement period and are the additional assets and liabilities are recognized to reflect the new information obtained on facts and circumstances that existed on the date of acquisition that would have affected the values recognized on that date.

## 2.6 Investments made in associates and joint ventures

An associate is an entity on which EPM Group has significant influence over the financial and operation policy decisions, without getting to have their control or joint control.

A joint venture is a joint agreement that EPM Group controls jointly with other participants, where the latter keep a contractual agreement that establishes the joint control and are entitled to the net assets of the agreement.

On the acquisition date, the excess of the acquisition cost over the share of the net fair value of the identifiable assets, liabilities and contingent liabilities assumed of the associate or joint venture, is recognized as goodwill. Goodwill is included in the carrying value of the investment, and is neither amortized nor individually subject to impairment tests of its value.

Investments in associates and joint ventures are measured in the consolidated financial statements by equity method, except if the investment or a portion thereof is classified as held for sale, in which case it is accounted for in accordance with IFRS 5 Non-current assets held for sale and discontinued operations. Through this accounting methodology, the investment is initially recorded at cost and is later adjusted in terms of the changes experienced, after the acquisition, by the portion of the net assets of the entity that corresponds to the investor. The Profit and Loss of the Group includes its participation in the Profit and Loss of the entity in which the interest is held and the other comprehensive income of the Group includes its participation in the other comprehensive income of the entity in which the interest is held. When there are variations in the percentage of participation in the associate or joint venture that do not imply a loss of control, the effect of these changes is recognized directly in equity. When the participation of the Group in the loss of an associate or joint venture exceeds the participation of the Group thereon (which includes any long term participation that, in substance, forms part of the net investment of the Group in the associate or joint venture), the Group ceases to recognize its participation in future losses. Additional losses are recognized provided that the Group has contracted some legal or implied obligation or has made payments in the name of the associate or joint venture. When the associate or joint venture subsequently makes a profit, the enterprise resumes the recognition of its interest therein only after its share in the aforementioned profits equals the share of unrecognized losses.

Investments in associates and joint ventures are accounted for using equity method from the date when the entity in which the interest is held becomes an associate or joint venture.

All dividends received from the associate or joint venture, are recognized by reducing the carrying value of the investment.

The Group analyzes periodically the existence of impairment indicators and if necessary, recognizes losses for impairment in the investment of the associate or joint venture. Impairment losses are recognized in the Profit and Loss for the period and are calculated as the difference between the recoverable value of the associate or joint venture, the latter being the higher between the value in use and its fair value less the costs necessary for its sale and its carrying value.

When the significant influence over the associate or the joint control over the joint venture is lost, EPM Group measures and recognizes any residual investment that they may keep in it at its fair value. The difference between the carrying value of the associate or joint venture (taking into account the corresponding items of other comprehensive income) and the fair value of the residual investment retained, with the amount coming from its sale, is recognized in the result for the period.

The Group discontinues the use of equity method from the date on which the investment ceases to be an associate or joint venture, or when the investment is classified as held for sale.

Additionally, EPM Group records all the amounts previously recognized in other comprehensive income with respect to this associate or joint venture on the same basis that would have been required if such associate or joint venture had directly sold the financial assets or liabilities. Therefore, if a gain or loss previously recognized in other comprehensive income by the associate or joint venture had been reclassified into gains or losses at the moment of the sale of the related assets or liabilities, the Group would classify the gain or loss from equity into gains or losses (as a reclassification adjustment) upon discontinuation using equity method.

## 2.7 Joint ventures

A joint operation is a joint agreement whereby the parties that have joint control of the agreement, have the right to the assets and obligations with respect to the liabilities, related to the agreement.

In joint operations, EPM Group, recognizes its share as follows: its assets, including its share in the assets jointly held; its liabilities, including its share in the liabilities jointly incurred in; its revenues from ordinary activities coming from the sale of its share in the product that arises from the joint operation; its share in the revenues from ordinary activities coming from the sale of the product that is made by the joint operation; and its expenses, including its share in the jointly incurred in expenses. EPM Group records the assets, liabilities, revenues from ordinary activities, and expenses related to its participation in a joint operation according to the guidelines applicable in particular to the assets, liabilities, revenues from ordinary activities, and expenses.

## 2.8 Functional and foreign currency

The functional currency of EPM, the parent company of EPM Group, is the Colombian peso, because it is the currency of the main economic environment where it operates, i.e., in the one that it generates and uses cash.

The operations denominated in foreign currency are initially recorded at the exchange rates of the functional currency in force and effect on the transaction date. Subsequently, the foreign-currency denominated monetary assets and liabilities are translated using the exchange rate of the functional currency, in force and effect as of the period's closing date; the non-monetary items that are measured at their fair value are translated using the exchange rates as of the date when their fair value is determined, and the non-monetary items that are measured at historic cost are translated using the exchange rates in force and effect as of the date of the original transactions.

All exchange differences are recognized in the statement of comprehensive income in the section "statement of income" except for the monetary items that provide an effective hedging for a net investment in a foreign business. These items and their tax effects are recognized in the other comprehensive income until the disposal of the net investment, at which moment they are recognized in the result for the period, as well as the exchange differences coming from foreign-currency loans to the extent that they are considered as adjustments of interest costs.

For the presentation of the consolidated financial statements of EPM Group, the assets and liabilities of the foreign businesses, including the goodwill and any adjustment to the fair value of the assets and liabilities that arose from the acquisition, are translated into Colombian pesos using the exchange rate in force and effect as of the closing date of the period being reported. The revenues, costs and expenses and cash flows are translated using the average exchange rates of the period.

The exchange differences that arise from the conversion of the foreign businesses are recognized in the other comprehensive income, as well as the exchange differences of the long-term accounts receivable or payable that are part of the net investment made abroad. In the disposal of the foreign business, the item of the other comprehensive income that relates to the foreign business is recognized in the result for the period.

The adjustments corresponding to goodwill and the fair value over identifiable assets and liabilities acquired that are generated in the acquisition of a foreign business are considered as assets and liabilities

of such transaction and are translated using the exchange rate in force and effect at the end of each period being reported. Any exchange difference that may arise shall be recognized in other comprehensive income.

In addition, with respect to the partial disposal of a subsidiary (which includes a business abroad), the entity will again attribute the proportional part of the accumulated amount of the exchange differences to the non-controlling interests, and they are not recognized in gains or losses. In any other partial disposal (i.e., partial disposal of associates of joint agreements that do not involve the loss of significant influence and joint control by the Group), the entity shall reclassify into gains or losses only the proportional part of the accumulated amount of the exchange differences.

## 2.9 Ordinary income

The ordinary income corresponds basically to the result of the Group's main activity, which is the rendering of the services of electric power, gas, supply of water and sanitation, and is recognized when the service is rendered or at the time of the delivery of the goods, to the extent that it is probable that the economic benefit enter the Group and that the income can be reliably measured. Income is measured at the fair value of the consideration received or to be received, excluding taxes and other obligations. Discounts granted are recorded as adjustment value of income.

The Group assesses its income agreements based on specific criteria to determine when it acts in a capacity of principal or of agent. The Group acts in a capacity of agent in some contracts.

The most representative incomes of the energy business in Colombia are as follows:

**Reliability charge:** remuneration paid to a generating agent for the availability of Generation assets with the declared characteristics and parameters for the calculation of the firm energy for the reliability charge - ENFICC, which guarantees compliance with the Firm Energy Obligation - OEF that was assigned to it in an auction for the assignment of firm energy obligations or in the mechanism that makes its turn.

**Long-term contracts:** a contract for the sale of energy between traders and generators, which is settled in the energy exchange, under this modality of energy contract generators and traders freely agree on quantities and prices for the purchase and sale of energy Electricity in more than 1 day.

In the case of long-term energy purchase contracts, which have lower prices than the market and whose intention is not to use the energy purchased in the operation but to resell it in a market to obtain profits, it is considered that it does not comply with the Exception for own use

**Secondary Market of Firm Energy or Secondary Market:** A bilateral market in which generators negotiate a back-up contract with each other to ensure, for a given period of time, partial or total compliance with the firm's energy obligations acquired by one of them.

**Non Regulated Energy Sales:** This is the energy that is sold in the market to customers whose maximum demand exceeds a value in MW (megawatts) or a monthly minimum energy consumption in MWh (mega watts per MWh). Time by its acronym in English), defined by the regulatory body, by legalized installation, from which it does not use public networks of electric energy transport and uses it in the same property or in contiguous estates. Your purchases of electricity are made at freely agreed prices between the buyer and the seller.

**Energy sales regulated market:** It is the energy sold to customers whose monthly consumption is less than a predetermined value and is not entitled to negotiate the price paid by it, since both concepts are regulated; Usually uses energy for its own consumption or as an input for its manufacturing processes and not to develop marketing activities of it.

**Automatic Generation Regulation - AGC:** is a system for the control of the secondary regulation, used to accompany the variations of load through the Generation, to control the frequency within a range of operation and the programmed exchanges. The AGC can be programmed in centralized, decentralized or hierarchical mode.



Firm energy: this is the incremental contribution of a company's Generation plants to the interconnected system, which is carried out with a 95% reliability and is calculated based on a methodology approved by the Commission and the operational planning models used in The national interconnected system.

Gas revenues come from the Distribution and sale of natural gas to the regulated and unregulated market.

In the water business, revenues come from the provision of aqueduct and sewer services.

In the remaining countries where the Group provides its services, including energy, they have their own regulation, which is described for each country in section 1.1 Legal and regulatory framework

At the time of recognition of income, the Group evaluates based on specific criteria to identify when it acts as a principal or commission agent and thus determines whether gross or net income must be recognized for marketing activities.

The revenues and costs from contracts are recognized as a function of the stage of completion, which is measured as a function of the costs incurred to date as a percentage of total estimated costs for each contract. When the result of a contract cannot be reliably measured, the revenues are recognized only up to the point where the expense incurred in meets all the conditions to be recovered; expected losses are immediately recognized.

For the financial instruments measured at amortized cost, the interest gained or lost is recorded using the effective interest rate method, which is the interest rate that accurately discounts the future flows of cash payments and collections throughout the financial instrument's expected life, or a lower duration period, as applicable, with respect to the net carrying value of the financial asset or liability. Interest earned is included in financial revenues in the statement of comprehensive income within the result-for-the-period section.

Dividend revenues are recognized when the right of EPM Group to receive such payment is established.

Revenues coming from operating leases over investment properties are recorded on a linear fashion throughout the lease term.

## 2.10 Construction contracts:

When contract results can be reliably measured, EPM Group recognizes the revenues and expenses associated to construction contracts using the advance-level method, as a function of the proportion represented by the costs earned by the work conducted to that date and the estimated total costs up to its completion.

The cost incurred in includes the costs, including borrowing costs directly related to the contract, until the work has been completed. Administrative costs are recognized in the result for the period.

When the result of a contract under course cannot be reasonably estimated, the revenues thereof are recognized to the extent that it is probable to recover the costs incurred in. In those projects where it is probable that costs are greater than revenues, the expected losses are immediately recognized.

The payments received from the customer before the corresponding work has been carried out, are recognized as a liability in the Statement of Financial Position as advances received.

The difference between the revenues recognized in the statement of income and the billing is presented as asset in the statement of financial position denominated "Trade and other receivables", or as liability denominated "Other financial liabilities".

## 2.11 Government grants

Government grants are recognized at fair value when there is reasonable security that those subsidies shall be received and that all conditions linked to them shall be met. The grants that pretend to offset costs and expenses already incurred in, without subsequent related costs, are recognized in the statement of income of the period when they become enforceable. When the grants related to an asset, it is recorded as deferred income and is recognized in the result for the period on a systematic basis



throughout the estimated useful life of the corresponding asset. The benefit of a government loan at an interest rate below market is treated as a government subsidy, measured as the difference between the amounts received and the fair value of the loan based upon the market interest rate.

## 2.12 Taxes

The fiscal structure of each country where EPM Group companies are located, the regulatory frameworks and the plurality of operations that the companies undertake make each of the companies a taxpayer (passive subject of taxes, rates and contributions) on a national and territorial basis. Those liabilities are generated by the central government, the states/departments, municipal entities and other active subjects, once the conditions foreseen in the corresponding standards issued are met.

Amongst the most relevant taxes, we detail the income tax and the Value Added Tax:

### Income tax

- **Current income tax:** The current income tax assets and liabilities for the period are measured by the amounts that are expected to be recovered or paid to the fiscal authorities. The income tax expense is recognized in the current tax according to the cleaning made between the fiscal income and the book profit or loss affected by the income tax rate of the current year and pursuant to the provisions of the tax norms in each country. The tax rates and norms used for computing those values are those that are approved at the end of the period being reported, in the countries where EPM Group operates and generates taxable profits.

The fiscal profit differs from the gain profit reported in the statement of income for the period due to the revenue and expense items that are imposable or deductible in other years and items that shall not be taxable or deductible in the future.

Current Income tax assets and liabilities are also offset if they relate to the same fiscal authority and there is the intention to liquidate them for the net value or to realize the asset and liquidate the liability simultaneously.

- **Deferred income tax:** The deferred income tax is recognized using the liability method calculated on the temporary differences between the fiscal bases of the assets and liabilities and their carrying values. The deferred tax liability is generally recognized for all imposable temporary differences and the deferred tax asset is recognized for all deductible temporary differences and for the future offsetting of fiscal credits and unused fiscal losses to the extent that it is probable the availability of future tax gains against which they can be imputed. Deferred taxes are not discounted.

The deferred tax assets and liabilities are not recognized if the temporary difference arises from the initial recognition of an asset or a liability in a transaction that is not a business combination and that, at the moment of the transaction, affected neither the book gain nor the fiscal profit or loss; and for the deferred tax liability case, whenever it arises the initial recognition of goodwill.

The deferred tax liabilities related to investments made in subsidiaries, associates and participations in joint ventures, are not recognized the timeliness of if the timing of the reversal of temporary differences can be controlled and it is probable that those differences will not be reversed in the near future and the deferred tax assets related to investments made in subsidiaries, associates and participations in joint ventures shall revert in the near future and it is probable the availability of future taxable gains profits against which these deductible differences will be imputed.

The carrying value of the deferred tax assets is reviewed in each presentation date and they are reduced to the extent that it is no longer probable that there is enough taxable gains profits to use for the entire or one part of the deferred tax asset. The deferred tax assets that are not recognized are reassessed on each presentation report date and are recognized to the extent that it is probable that future taxable gains profits allow their recuperation/recovery.

Deferred tax assets and liabilities are measured at the fiscal rates expected to be applied in the period when the asset is realized or the liability is cancelled, based upon the fiscal rates and norms that were approved on the presentation date, or the approval procedure of which is about to be

completed for such date. The measurement of deferred tax assets and liabilities will reflect the fiscal consequences that would be derived from the fashion in which the entity expects to recover or liquidate the carrying value of its assets and liabilities, at the end of the period being reported.

The deferred tax assets and liabilities must be presented as non-current.

The deferred tax assets and liabilities are offset if there is a legally enforceable right for that and are related to the same tax authority.

The deferred tax is recognized in the result for the period, except that related to items that are recognized outside the results; in this latter case, it will be presented in the other comprehensive income or directly in equity.

With the purpose of measuring the deferred tax liabilities and the deferred tax assets for investment properties that are measured using the fair value model, the carrying value of those properties is presumed that will be fully recovered through their sale, unless the presumption is challenged. The presumption is challenged when the investment property is depreciable and is kept within a business model the object of which is to consume, substantially, all the economic benefits that are generated by the investment property through the time, and not through the sale. Management reviewed the Group's investment property portfolio and concluded that none of the Group's investment properties is kept under a business model the objective of which is to consume, substantially, all economic benefits generated by investment properties over time rather than through the sale. Therefore, the management have determined that the presumption of "sale" established in the modifications to IAS 12 is not challenged.

Whenever the current tax or deferred tax arises from the initial recording of the business combination, the fiscal effect is considered within the recording of the business combination.

#### **Value Added Tax - VAT**

All EPM Group companies located in Colombia that shall carry out sales of movable assets and provide taxed services or obtain exempt income are responsible for this tax in the common regime. Currently, the energy (power), aqueduct, sewage, and domiciliary gas services are excluded from this tax. The general rate is 16% and there are differential rates of 5% and 35%.

In Colombia, the Generation of income excluded in the particular case of public home services, VAT paid on purchases is part of a higher cost value. Also, when taxable income is generated, that is to say when taxed goods or services are sold, the VAT paid on the purchase or purchase of inputs for these sales will be deductible from the value payable of the tax. When the company generates income that is excluded from VAT, but at the same time generates income that is exempt and taxed, in that case a proration of the VAT paid must be made to determine the percentage of VAT to be discounted.

In Panama, the Value Added Tax is generated in the transfer of movable assets, the rendering of services, and the importation of goods; certain goods and services are specifically exempt, such as medical services and fixed telephony that is not for commercial use. The tax rate is 7%.

In Guatemala, the transfer of movable assets, the rendering of services, the importation and some transactions with immovable assets generate the Value Added Tax; the tax rate is 12%.

The Value Added Tax rate in El Salvador is 13% and taxes the transfer of movable assets and the rendering of services. Nevertheless, the transfer of fixed assets that have been used during four or more years is not subject to this tax.

In Mexico, the Value Added Tax is generated in any transfer of goods or services, excluding exports and imports. The general rate is 16%.

The Value Added Tax (VAT) in Chile applies on sales and other transactions related to tangible movable assets, as well as to the payment of certain services. It also applies to certain transactions of real estate. The general tax rate is 19%.

## Wealth tax

In order to determine the accrual of the tax under IFRS, it is necessary to analyze the event or activity that produces the payment of the tax, that is, the taxable base, as stated in IFRIC 21 (IFRIC - International Financial Reporting Standards Interpretations Committee) in paragraphs 8, 9 and 10. For the wealth tax, as defined in Article 4 of Law 1739 of 2014, the taxable base is the value of the gross equity of the legal persons and de factor corporations owned as of January 1, 2015, 2016 and 2017, that is there is an “binding event” that generates the obligation in respect to the tax authority only upon arriving to January 1 of each of these years, therefore in this period it is when the tax of each year must be accrued; on the other hand, taking into consideration that this tax does not meet the conditions of being an asset, it is recorded in the Comprehensive income statement as an expense.

### 2.13 Non-current assets held for sale and discontinued operations

Non-current assets and the groups of assets for disposal purposes are classified as held for sale if their carrying value will be recovered through a sales transaction, instead of by their continued use; these assets or groups of assets are presented separately in the statement of financial position as current assets and liabilities at their carrying value or their fair value less costs of sale, whichever is lower, and are neither depreciated nor amortized as from the date of their classification.

This condition is met if the asset or group of assets is available, in their current conditions, for immediate sale, the sales transaction is highly probable and is expected to be done within the year subsequent to the classification date.

Income, costs and expenses from a discontinued operation are presented separately from those from continued operations, in a single item after the income tax, in the comprehensive income statement of the current period and of the comparative period of the previous year, even though the Group retains a interest that does not grant it control on the subsidiary after the sale.

When EPM Group is committed with a sales plan that involves the sale of an investment, or a portion of an investment, in an associate or joint venture, the investment or portion of the investment that shall be sold is classified as held for sale whenever the criteria described above are complied with, and EPM Group discontinues the use of equity method with respect to the portion that is classified as available-for-sale. Any portion held of an investment made in an associate or in a joint venture that has not been classified as available-for-sale, continues to be recorded using equity method. EPM Group discontinues the use of equity method upon the sale when the results in the Group losing significant influence of the associate or the joint venture.

After the sale is made, EPM Group records any interest retained in the associate or joint venture in accordance with IFRS 9, unless the interest maintained continues to be an associate or a joint venture, in which case EPM Group uses equity method (see Notes 10 and 11).

### 2.14 Property, plant and equipment

Property, plant and equipment are measured at cost, net of accrued depreciation and accrued impairment losses, if any. The cost includes the acquisition price; the costs directly related to putting the asset at the place and condition necessary to operate in the way foreseen by EPM; the costs corresponding to loans of the construction projects that take a substantial period to be completed, if the requirements of recognition are complied with; and the present value of the expected cost for the dismantlement of the asset after its use, if the criteria for recognition for a provision are met.

Constructions in progress are measured at cost less any loss for impairment recognized and includes those disbursements that are indispensable and that are directly related to the construction of the asset, such as professional fees, work supervision, civil works and, in the case of those assets qualified, the borrowing costs are capitalized. Those constructions in progress are classified in the proper categories of properties, plant and equipment at the time of their completion and when they are ready to use. The depreciation of these assets starts when they are ready to use in accordance with the same basis as in the case of other elements of property, plant and equipment.

In EPM Group, all additions or improvements made on the assets are capitalized as a greater value thereof, provided that any of the following conditions is met: a) They increase their useful life; b) They increase their productive capacity and operating efficiency thereof; and c) They reduce costs to the Company. All other repair and maintenance costs are recognized in the statement of comprehensive income as incurred, except when they increase the useful life, or the productive capacity and efficiency thereof, in which case they are capitalized.

The inventory of spare parts for specific projects, which are expected to have no turnover in one year and meet the criteria to be capitalized, known as replacement assets, are presented in other property, plant and equipment.

The initial depreciation when the asset is available for use and is calculated in a linear fashion throughout the estimated useful life of the asset as follows:

Plants, ducts and tunnels	50 to 100 years
Construction	10 to 100 years
Equipment	
Networks, lines and cables	
Electrical transmission network	30 to 40 years
Electrical distribution network	30 to 40 years
Aqueduct network	40 to 80 years
Residual waters network	30 to 80 years
Gas network	60 to 80 years
Buildings	50 to 100 years
Communications and computing equipment	5 to 40 years
Machinery and equipment	7 to 40 years
Furniture, fixtures and office equipment	10 to 15 years
Land <sup>1</sup>	10 to 20 years

<sup>(1)</sup> It corresponds to the affiliate Emvarias that depreciates the land on which it performs the final disposal activity according to the detriment it suffers with the disposal of solid waste, environmental degradation and period of recovery that goes beyond 20 years.

Useful lives are determined considering, among others, the manufacturer's technical specifications, the knowledge of the technicians that operate and maintain the assets, the geographic location and the conditions to which it is exposed.

EPM Group calculates the depreciation by components, which implies depreciating individually the parts of the asset that should have useful lives different from that of the asset. The depreciation of assets is calculated for all asset classes (except for land); the depreciation method used is the straight line and it is calculated taking into account the residual value for the assets (vehicles), which is not part of the depreciable amount.

A component of property, plant and equipment and any significant part initially recognized, is written-off once disposed of or when it is not expected to obtain future economic benefits from its use or disposal. The gain or loss at the moment of writing the asset off, calculated as the difference between the net value of the disposal and the carrying value of the asset, is included in the statement of comprehensive income.

Any residual values, useful lives, and depreciation methods for the assets are revised and adjusted prospectively every exercise closing, if required.

## 2.15 Leases

The determination of whether an agreement constitutes or contains a lease is based upon the essence of the agreement at its initial date, if compliance with the agreement depends upon the use of a specific asset(s), or if the agreement grants a right of use of the asset.

Leases are classified as finance and operating leases. A lease is classified as financial lease whenever it substantially transfers all the risks and benefits inherent to the ownership of the asset leased to the lessee; otherwise, it is classified as an operating lease.

### EPM Group as a lessee

The assets leased under financial leases are recognized and presented as assets in the statement of financial position at the beginning of the lease, for the fair value of the asset leased or the present value of the minimum lease payments, whichever is lower. The corresponding liability is included in the statement of financial position as a financial lease liability.

The assets leased under financial leases are depreciated throughout the useful life of the asset through the straight-line method. However, if there were no reasonable certainty that EPM Group shall get the ownership upon the lease term termination, the asset is depreciated throughout its estimated useful life or over the lease term, whichever is lower. Lease payments are divided between financial expenses, and debt reduction. The financial cost is recognized in the statement of comprehensive income of the period, unless they could be directly attributable to qualifying assets, in which case they are capitalized in conformity with the entity's policy for borrowing cost. Contingent lease installments are recognized as expenses in the period where incurred.

All payments for operating leases, including the incentives received, are recognized as expenses in the statement of comprehensive income, on a linear basis throughout the lease term, except when another systematic basis for distribution results being more representative because it reflects more adequately the timing pattern of the benefits of the lease for the user.

### EPM Group as a lessor

Assets rented under financial leases are not presented as property, plant and equipment given that the risks associated to the ownership have been transferred to the lessee; rather, a financial asset is recognized.

Land and buildings rented under operating leases are presented as investment properties, and the other assets given under operating lease are presented as property, plant and equipment. Initial direct costs incurred in the negotiation of an operating lease are added to the carrying value of the asset leased, and are recognized as expenses throughout the lease term on the same basis as the revenues from the lease. Financial lease revenues are distributed during the lease term in order to reflect a constant yield rate in the net investment. Contingent leases are recognized in the period when obtained.

## 2.16 Borrowing costs

Borrowing costs that are directly attributable to the acquisition, construction or production of an asset that necessarily takes substantial time to be prepared for their destined use or sale, are capitalized as part of the cost of the respective asset until the asset is ready for their intended use. The revenue from the temporary investment in specific loans pending to be consumed in qualified assets is deducted from the borrowing costs that qualify for their capitalization. All other borrowing costs are recorded as expenses in the period when incurred. Borrowing costs consist of interest and other costs incurred in by EPM with respect to the loan of funds. To the extent that the funds derive from generic loans and are used to obtain a qualified asset, the value of the costs susceptible of capitalization is determined by applying a capitalization rate to the disbursements made in that asset.

The capitalization of borrowing costs begins on the date that the following conditions are met:

- Disbursements are incurred in relation to the asset.
- Loans costs incurred, and
- The necessary activities to prepare the asset for the intended use or for sale are carried out.

The capitalization of borrowing costs is suspended during periods in which the development of activities of a qualifying asset for periods of more than one year is interrupted. However, the capitalization of borrowing costs over a period is not interrupted if important technical or administrative actions are being undertaken. The capitalization of borrowing costs is also not suspended when a temporary delay is required as part of the process of preparing an asset qualified for its use or sale.

Capitalization of loan costs is terminated when substantially all of the activities necessary to prepare the asset have been completed for use or sale. When the asset has components that can be used separately while construction continues, the capitalization of borrowing costs on such components is stopped.

### 2.17 Investment properties

Investment properties are those held to obtain rentals and/or capital revaluations (including the investment properties under construction for those purposes). Investment properties are initially measured at cost, including transaction costs. The carrying value includes de replacement or substitution cost of one part of an existing investment property at the moment when the cost is incurred in, if all criteria for recognition are met; and they exclude the daily maintenance costs of the investment property.

After the initial recognition, investment properties are measured at the fair value reflected by market conditions on the presentation date. All gains and losses arising from changes in the fair values of the investment properties are included in the statement of comprehensive income in the section “result for the period” in the period when they arise.

Investment properties are derecognized, either at the moment they are disposed, or when they are retired from use on a permanent basis, and no future economic benefit is expected. The difference between the net value of disposal and the carrying value of the asset is recognized in the statement of comprehensive income in the section “result for the period” in the period when it was written-off.

Transfers to or from investment properties are conducted only when there is a change in their use. In the case of a transfer from an investment property to a property, plant and equipment, the cost taken into account for its subsequent posting is the fair value on the date of the change in use. If a property, plant and equipment become an investment property, it shall be recorded at its fair value; the difference between the fair value and the carrying value shall be recorded as revaluation surplus applying the International Accounting Standard (IAS) 16.

### 2.18 Intangible assets

Intangible assets acquired separately are measured initially at their cost. The cost of the intangible assets acquired in business combinations is their fair value at the acquisition date. After their initial recognition, the intangible assets are accounted for at cost less any accumulated amortization and any accumulated loss for impairment. Intangible assets generated internally are capitalized provided that they meet the criteria for their recognition as asset and the generation of the asset must be classified as: research phase and development phase; if it is not possible to distinguish the research phase from the development phase, the disbursements must be reflected in the Comprehensive income statement in the period in which they incurred.

The useful lives of intangible assets are determined as finite or undefined. Intangible assets with finite useful lives are amortized throughout their economic useful life on a linear basis and are evaluated to determine whether they had value impairment in carrying amount, provided that there are indications that the intangible asset could have suffered such impairment. The amortization period and the amortization method for an intangible asset with a finite useful life are revised at least at every period's



closing. Any changes in the expected useful life or the expected consumption pattern of the future economic beneficiaries of the asset are recorded when changing the amortization period or method, as the case may be, and are treated as changes in the accounting estimates. The amortization expense of intangible assets with finite useful lives is recognized in the statement of comprehensive income in the section “result for the period” in the category of expenses that shall result being coherent with the intangible asset’s function.

Intangibles assets with undefined useful lives are not amortized, but they are subject to annual tests to determine whether they suffer a value impairment, either individually or at the cash-generating unit level. The evaluation of the undefined useful life is revised on an annual basis to determine whether such undefined life continues to be valid. If that is not the case, the change of useful life from undefined to finite is made prospectively.

An intangible asset is written-off upon disposal, or whenever future economic benefits are not expected from their use or disposal. The gains or losses arising when an intangible asset is written-off are measured as the difference between the value obtained in the disposal and the carrying value of the asset, and it is recognized in the statement of comprehensive income in the “result for the period” section.

#### **Research and Development Costs**

Research costs are recorded as expenses as incurred. Development outlays in an individual project are recognized as intangible assets whenever EPM Group can demonstrate:

- The technical feasibility of finalizing the intangible asset so that it is available for use or sale;
- Their intention of finalizing the asset and its capacity to use or sell the asset;
- How the asset will generate future economic benefits, considering, among others, the existence of a market for the production that generates an intangible asset for the asset itself, or the profit of the asset for the entity.
- The availability of resources to finalize the asset; and
- The capacity of reliably measuring the disbursement during the development.

In the statement of financial position the development disbursements asset is recognized from the moment the element meets the aforementioned conditions for its recognition, and it is recorded at cost less accrued amortization and the value impairment accrued losses.

When the development of an intangible asset related to an Energy Generation project begins, costs are accumulated as constructions in progress.

Amortization of the asset starts when the development has been completed and the asset is available to be used. It is amortized throughout the period of the expected future economic benefit. During the development period, the asset is subject to annual tests to determine whether or not there is impairment of its value.

Research costs and development costs that do not qualify to capitalization are recorded as expenses in results for the period.

#### **Goodwill**

Goodwill represents the difference between the cost of a business combination and the fair value at the moment of acquisition of the acquired assets, the liabilities assumed, and the contingent liabilities of the acquired party.

Goodwill is not amortized, it is measured at cost less any value impairment accrued loss and is subject to annual value impairment tests or more frequently when there are impairment indicators. Value impairment losses are recognized in the statement of comprehensive income in the “result for the period” section.

For the Cash Generating Units (“Unidades Generadoras de Efectivo - UGE”), which have been assigned goodwill, on an annual basis the Company verifies the value impairment, which implies the calculation of the value at use of the UGEs to which it is assigned. The value at use requires determining the future cash flows that must arise from the UGEs and an appropriate discount rate to calculate the current value. When the actual future cash flows are less than expected, an impairment loss may arise.

#### **Other intangible assets**

Other intangible assets such as concession of services, licenses, software, exploitation rights, trademarks and similar rights acquired by the Group are measured at cost less the accumulated amortization and any loss for impairment.

### **2.19 Financial instruments**

Financial assets and liabilities are recognized in the statement of financial position when EPM becomes a party according to the contractual conditions of the instrument.

Financial assets and liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issuance of financial assets and liabilities (other than the financial assets and liabilities designated at fair value with change in operations) are added to or deducted from the fair value of the financial assets or liabilities, whenever appropriate, at the moment of the initial recognition. All transaction costs directly attributable to the acquisition of financial assets or liabilities designated at fair value with change in operations are immediately recognized in the results for the period.

#### **Financial assets**

The Group classifies its financial assets for subsequent measurement at amortized cost or fair value (through other comprehensive income or through results) depending upon the business model of EPM Group to manage financial assets and the characteristics of the contractual cash flows of the instrument.

A financial asset is subsequently measured at amortized cost or at fair value with changes in other comprehensive income, using the effective interest rate if the asset is maintained within a business model the objective of which is to keep them to obtain contractual cash flows and the contractual terms thereof grant, in specific dates, cash flows that are only payments of the principal and interest on the pending principal amount. Without detriment to the foregoing, EPM Group can designate a financial asset as measured at fair value with changes in operations irrevocably.

All other financial assets different from those at amortized cost are subsequently measured at fair value with changes recognized in the results for the period. However, for the investments made on capital instruments that are not maintained for negotiation purposes, EPM Group may elect in the initial recognition and irrevocably to present the gains or losses for the measurement at fair value in other comprehensive income. In the disposal of investments at fair value through the other comprehensive income, the accrued value of the gains or losses is directly transferred to the withheld gains; they are not reclassified to results for the period. The dividends received from these investments are recognized in the statement of comprehensive income, in the “result for the period” section. EPM Group has selected to measure some of its investments in capital instruments at fair value through the other comprehensive income.

The fair value through results category includes the investments that are made to optimize liquidity surpluses, i.e., all those resources that are not immediately devoted to the development of the activities that form the company’s corporate purpose. The investment of the liquidity surpluses is made under the criteria of transparency, security, liquidity and profitability, under the guidelines of an adequate control and in market conditions without speculative purposes (Decree of the General Manager of EPM No. 2015-DECGGL-2059 of February 6, 2015).

#### **Impairment of financial assets**

At each reporting date, the Group recognizes a correction in value for expected credit losses on financial assets measured at amortized cost or at fair value through changes in other comprehensive income,

including receivables from leases, contract assets or loan commitments And financial guarantee contracts to which the impairment requirements are applied over the life of the asset.

Expected credit losses are estimated considering the probability that an impairment loss may or may not occur and are recognized as a gain or loss in the statement of comprehensive income, the profit or loss section of the period against a lower value of the financial asset.

The Group assesses on a collective basis the expected losses for financial assets that are not individually significant. When the collective assessment of expected losses is carried out, the accounts receivable are grouped by similar credit risk characteristics, allowing the identification of the debtor's ability to pay, in accordance with the contractual terms of the accounts receivable.

The Group considers the following as an event of default for the internal management of credit risk, since historical experience indicates that credits that meet any of the following criteria are generally not recoverable: when there is a breach of financial agreements by Of the counterpart; Or information developed internally or obtained from external sources indicates that it is unlikely that the debtor will pay its creditors in its entirety without taking into account the guarantees maintained.

The Group penalizes a financial asset when there is information indicating that the counterparty is in severe financial difficulties and there is no realistic prospect of recovery, for example, when the counterparty has been wound up or has commenced bankruptcy or, in the case Of accounts receivable, when the amounts exceed the two years due, whichever occurs earlier. Amortized financial assets may continue to be subject to execution activities under the Group's recovery procedures, taking into account the legal recovery when appropriate. The realized recoveries are recognized in profit or loss for the period.

#### **Classification as debt or equity**

Debt and equity instruments are classified as financial liabilities or equity in conformity with the substance of the contractual agreement and the definitions of financial liability and equity instrument.

#### **Financial liabilities**

At the moment of the initial recognition, EPM Group classifies financial liabilities for a subsequent measurement at amortized cost or at fair value with changes in results.

The financial liabilities at fair value with changes in results include those liabilities held to negotiate, the financial liabilities designated at the moment of their initial recognition like at fair value with changes in results and the derivatives. The gains or losses for liabilities held to negotiate are recognized in the statement of comprehensive income in the "statement of income" section. In the initial recognition, EPM Group designated financial liabilities as at fair value with changes in results.

Liabilities at amortized cost are measured using the effective interest rate. All gains and losses are recognized in the statement of comprehensive income in the "Statement of income" section whenever the liabilities are written-off, as well as through the amortization process under the effective interest rate method, that is included as financial cost in the Statement of comprehensive income in the "statement of income" section.

#### **Financial guarantee contracts**

The financial guarantee contracts issued by EPM Group are those contracts that require the making of a specific payment to reimburse the holder of the loss incurred in when a specified debtor does not meet their payment obligation, according to the conditions of a debt instrument. The financial guarantee contracts are initially recognized as a liability at fair value, adjusted by the transaction costs that are directly attributable to the issuance of the collateral. Subsequently, the liability is measured at: (i) the best estimate of the disbursement required to settle the current obligation as of the presentation date; and (ii) the amount initially recognized less the accrued amortization, whichever is greater.

### Write-off of financial assets and liabilities

A financial asset, or part of it, is derecognized from the statement of financial position whenever it is sold, transferred, expires or EPM Group loses control on the contractual rights or on the cash flows of the instrument.

If the entity does not transfer or substantially retains all the risks and advantages that are inherent to the property and continues to retain the control of the asset transferred, the entity will recognize its share in the asset and the obligation associated for the amounts that it would have to pay. If the group substantially retains all risks and advantages inherent to the ownership of a financial asset transferred, the entity shall continue to recognize the financial asset and also shall recognize a loan guaranteed in a collateral fashion for the revenues received.

In the total derecognition of a financial asset measured at fair value with changes in profit and loss, the difference between the carrying value of the assets and the sum of the consideration received and to be received, is recognized in the statement of comprehensive income, result of period section. In case of financial assets measured at fair value with change in equity, the difference between the carrying value of the asset and the sum of the consideration received and to be received is recognized in the Profit and Loss for the period, and the profit or loss that would have been recognized in the other comprehensive income will be reclassified to accumulated profit and loss.

A financial liability or part of it is written-off from the statement of financial position when the contractual obligation has been settled or has expired. If the entity does not transfer or substantially retains all risks and advantages inherent to the ownership and continues to retain the control of the asset transferred, the entity shall recognize its participation in the asset and the associated obligation for the amounts that it would have to pay. If the group substantially retains all the risks and advantages inherent to the ownership of a financial asset transferred, the entity shall continue to recognize the financial asset and also recognize a guaranteed loan on a collateral way for the incomes received.

Whenever an existing financial liability is replaced by another coming from the same lender under substantially different conditions, or if the conditions of an existing liability are substantially modified, such exchange or modification is treated as a decrease of the original liability and the recognition of a new liability, and the difference in the respective carrying values is recognized in the statement of comprehensive income in the “statement of income” section.

Whenever an existing financial liability is replaced by another coming from the same lender under substantially different conditions, or if the conditions of an existing liability are substantially modified, such exchange or modification is treated as a decrease of the original liability and the recognition of a new liability, and the difference in the respective carrying values is recognized in the statement of comprehensive income in the “statement of income” section result of the period.

### Compensation of financial instruments

Financial assets and financial liabilities are subject to compensation in a way that the net value is informed in the consolidated statement of financial position, only if (i) at the current moment, there is a legally enforceable right of compensating the amounts recognized; and (ii) there is the intention of settling them at their net value, or of realizing the assets and cancelling the liabilities simultaneously.

### Derivative financial instruments

EPM Group used derivative financial instruments, like term contracts (“Forward”), futures, financial barterers (“Swaps”) and options to hedge several financial risks, mainly the interest rate, exchange rate and commodities price risks. Such derivative financial instruments are initially recognized at their fair values on the date when the derivative contract is entered into, and subsequently they are measured again at their fair value. Derivatives are recorded as financial assets in the statement of financial position when their fair value is positive, and as financial liabilities when their fair value is negative.

The fair value of the commodity contracts that meet the definition of a derivative, but that are entered into in conformity with the expected purchase requirements of EPM Group, are recognized in the statement of comprehensive income as cost of sales.

Any gain or loss that arises from the changes in derivatives' fair value is directly recognized in the statement of comprehensive income in the "statement of income" section, except for those that are under hedge accounting. The derivatives implicit in main contracts are treated as separate derivatives whenever they meet the definition of a derivative and when their risks and characteristics are not closely related to those main contracts and the contracts are not measured at fair value with change in results."

### Hedge accounting

At the beginning of a hedging transaction, EPM Group designates and formally documents the hedging transaction to which they want to apply the hedging accounting and the objective of the risk management and the strategy to carry out the hedging. The documentation includes the identification of the hedging instrument, the item or transaction hedged, the nature of the risk being hedged and how EPM Group shall evaluate the effectiveness of the changes in fair value of the hedging instrument when offsetting the exposure before changes in the fair value of the hedged item or in the cash flows, attributable to the risk hedged. That hedging is expected to be highly efficient in achieving the offsetting of changes in the fair value or in the cash flows, and they are permanently evaluated to determine whether that was actually so throughout the information periods for which they were designated.

EPM Group counts on the following hedging (for greater details, see Note 23 Derivatives and Hedging):

For hedging accounting purposes, the hedging is classified and recorded as follows, once the stringent criteria for their recording are complied with:

- Fair value hedging, when they hedge the exposure to fair value changes of assets or liabilities recognized or non-recognized firm commitments.

A change in the fair value of a derivative that is a hedging instrument is recognized in the statement of comprehensive income, in the "statement of income" section as financial cost or revenue. A change in the fair value of the item hedged attributable to the risk hedged is recorded as part of the carrying value of the hedged item, and also is recognized in the statement of comprehensive income in the "statement of income" section as financial cost or revenue. For the fair value hedging that related to items recorded at amortized cost, the adjustments to the carrying value are amortized through the statement of comprehensive income in the "statement of income" section during the remaining term until their expiration. Amortization of the effective interest rate may begin as soon as there is an adjustment to the carrying value of the hedged item, but it must start at the latest when the hedged item is no longer adjusted for their fair value changes attributable to the risk being hedged. Amortization of carrying value adjustments is based upon the effective interest rate recalculated on the amortization's start date. If the hedged item is written-off, the non-amortized fair value is immediately recognized in the statement of comprehensive income in the "statement of income" section.

When a non-recognized firm commitment is designated as a hedged item, the subsequent accrued change in the fair value of the firm commitment attributable to the hedged risk shall be recognized as an asset or liability with their corresponding gain or loss recognized in the statement of comprehensive income in the "statement of income" section.

- Cash flow hedging, when they cover the hedging to the attributed cash flow variations exposure, either to a particular risk associated to a recognized asset or liability or to a highly probable foreseen transaction, or to the exchange rate risk in a non-recognized firm commitment.

The purpose of cash flows hedging accounting is to recognize in the other comprehensive income the fair value variations of the hedging instrument to apply them to the income statement accounts when, and the rhythm that, the hedged item affects the same. Only the derivative inefficiencies shall be recognized in the income statement as they are produced.

The effective portion of the gain or loss for the measurement of the hedging instrument is immediately recognized in the other comprehensive income, whereas the ineffective portion is immediately recognized in the statement of comprehensive income in the "statement of income" section as financial cost.



The values recognized in the other comprehensive income are classified into the statement of comprehensive income in the “statement of income” section when the hedged transaction affects the result, as well as when the financial revenue or financial expense hedged is recognized, or when the transaction foreseen takes place. When the hedged item constitutes the cost of a non-financial asset or liability, the values recognized in the other comprehensive income are reclassified at the initial carrying value of the no-financial asset or liability. If the foreseen transaction or the firm commitment is no longer expected to happen, the accrued gain or loss previously recognized in the other comprehensive income is reclassified into the statement of comprehensive income in the “statement of income” section.

If the hedging instrument expires or is sold, it is resolved, or is exercised without a replacement or successive renovation of a hedging instrument for another hedging instrument, or if its designation as hedging is revoked, any accrued gain or loss previously recognized in the other comprehensive income remains in the other comprehensive income until the operation foreseen or the firm commitment affects the result.

- Hedging of a net investment abroad, when they hedge the exposure to the variations in the translation of foreign businesses into the presentation currency of EPM Group, associated to the exchange rate risk.

The objective of the foreign-currency net investment hedging is to hedge the exchange rate risks that a Principal or Intermediate Parent Company having businesses abroad may have on the impact of the translation of financial statements from functional currency to presentation currency. The hedging of net investment in foreign currency is a hedging to the exposure in foreign currency, not a hedging of the fair value due to changes in the investment value.

The gains or losses of the hedging instrument related to the effective portion of the hedging are recognized in other comprehensive income, whereas any other gain or loss related to the ineffective portion is recognized in the statement of comprehensive income in the “statement of income” section. Before the disposal of the business abroad, the accrued value of the gains or losses recorded in the other comprehensive income are reclassified in the statement of comprehensive income in the “statement of income” section.

### Equity instruments

An equity instrument consists of any contract showing a residual interest on an entity’s assets after deducting all its liabilities. Equity instruments issued by EPM are recognized at the revenues received, net of direct issuance costs.

The repurchase of the Company’s own equity instruments is recognized and directly deducted in equity. No gain or loss is recognized in operations, coming from the purchase, sale, issuance, or cancellation of the Company’s own equity instruments.

### 2.20 Inventories

The goods acquired with the intention of selling them during the ordinary course of business or of consuming them in the service rendering process are classified as inventories.

Inventories are valued at cost or net realizable value, whichever is lower. The net realizable value is the sales price estimated in the normal course of business, less the estimated finalization costs and the estimated costs necessary to make the sale.

Inventories include merchandise in stock that do not require transformation, such as energy, gas and water meters, communication equipment, telephone sets, and procurement goods. They include materials such as minor spare parts and accessories for the rendering of services and the goods in transit and held by third parties.

Inventories are valued by using the weighted average method and their cost includes the costs directly related to the acquisition and those incurred in to give them their current conditions and location.



## 2.21 Impairment value of non-financial assets

As of every presentation date, EPM Group evaluates whether they have any indication that a tangible or intangible asset may be impaired. EPM Group estimates the recoverable value of the asset or cash-generating unit at the moment it detects an indication of impairment, or annually (as november 30 And it is reviewed if there are significant or significant events presented in the month of December that merit analysis and be included in the calculation of the deterioration.) for intangible assets with undefined useful life and those that are still being used.

The recoverable value of an asset is the fair value less costs of sale, either of an asset or a cash-generating unit, and its value in use, whichever is greater, and it is determined for an individual asset, except that the asset does not generate cash flows that are substantially independent from the other assets or group of assets; in this case, the asset should be grouped into a Cash Generating Unit (“Unidad Generadora de Efectivo - UGE”). When a reasonable and consistent base of distribution is identified, common/corporate assets are also assigned to the individual Unidades Generatoras de Efectivo - UGE, or distributed to the smallest group of cash-generating units for which it can be identified a reasonable and consistent distribution base. When the carrying value of an asset or of a cash-generating unit exceeds its recoverable value, the asset is considered impaired and the value is reduced to its recoverable amount.

When calculating the value of use, either for an asset or a cash-generating unit, the estimated cash flows are discounted at their present value through a discount rate before taxes that reflects the market considerations of the temporary value of money and the specific risks of the asset. An adequate valuation model is used for determining the reasonable value less the costs of sale.

Losses for impairment of continued operations are recognized in the comprehensive income statement in the section income statement in those expense categories that correspond to the function of the impaired asset. Losses for impairment attributable to a Cash Generating Unit are assigned proportionately based in the book value of each asset to the non-current assets of the Cash Generating Unit after extinguishing goodwill. The CGU is the smallest identifiable group of assets, which generates cash inflows in favor of the Group, which are largely independent of cash flows derived from other assets or groups of assets. The Group defined the Cash Generating Units considering: 1) The existence of income and costs for each group of assets, 2) The existence of an active market for the Generation of cash flows and 3) the way in which Manage and monitor operations.

The impairment value for goodwill is determined by evaluating the recoverable value of each cash-generating unit (or group of cash-generating units) to which the goodwill relates. The value impairment losses related to goodwill may not be reverted in future periods.

For assets in general, excluding the goodwill, on each presentation date an evaluation is conducted about whether there is any indication that the impairment losses previously recognized no longer exist or have decreased. If such indication exists, EPM Group makes an estimate of the asset’s or the cash-generating unit’s recoverable value. An impairment loss previously recognized only can be reverted if there was a change in the assumptions used for determining the recoverable value of an asset since the last time when it was recognized the last impairment loss. The reversal is limited in such a way that the carrying value of the asset neither exceeds its recoverable amount, nor exceeds the carrying value that would have been determined, net of depreciation, if no impairment loss had been recognized for the asset in the previous years. Such reversal is recognized in the statement of comprehensive income in the “statement of income” section.

## 2.22 Provisions

Provisions are recorded when EPM Group has a present, legal or implicit obligation, as a result of a past event; it is probable that EPM Group have to give off resources that incorporate economic benefit to cancel out the obligation, and a reliable estimate can be made of the value of the obligation. In those cases in which EPM Group expects that the provision be reimbursed in whole or in part, the reimbursement is recognized as a separate asset, but only in the cases when such reimbursement is practically certain and the asset amount can be reliably measured.

Provisions are measured with the best estimate from Management of the disbursements necessary to cancel the present obligation, at the end of the period being reported, taking into account the risks and the corresponding uncertainties. When a provision is measured using the estimated cash flow to cancel the current obligation, its carrying value corresponds to the present value of such cash flow, using for the discount a rate calculated with reference to market yields for the bonds issued by the National Government. In Colombia, it must be used the yield of TES Bonds (Public Debt Securities issued by the General treasury of the Nation) at the end of the period being reported.

The expense corresponding to any provision is presented in the statement of comprehensive income in the “result for the period” section net of all reimbursement. The increase in provision due to the time elapsed is recognized as financial expense.

#### **Dismantlement reserve**

To the extent that there is a legal or implicit obligation of dismantling or restoring, EPM Group recognizes as part of the cost of a fixed asset in particular, the estimation of the future costs EPM Group expects to incur in to perform the dismantlement or restoring and its balancing entry is recognized as a provision for dismantling and restoring costs. The dismantling cost is depreciated over the estimated useful life of the fixed asset.

Dismantlement or restoring costs are recognized at the present value of the expected costs of cancelling out the obligation using estimated cash flows. Cash flows are discounted at a particular rate before taxes, which should be determined by taking as a reference the market yields of the bonds issued by the National Government. In Colombia, regarding risk-free rate, it must be used the yield of TES Bonds (Public Debt Securities issued by the General Treasury of the Nation).

Future estimated dismantlement or restoration costs are annually revised. Changes in the future estimated costs, in the dates estimated for the disbursements, or in the discount rate applied are added or deducted from the asset cost, without exceeding the carrying value of the asset; any surpluses are immediately recognized in results for the period. The change in the provision value associated to the time elapsed is recognized as financial expense in the statement of comprehensive income in the “result for the period” section.

#### **Onerous Contracts**

EPM Group recognizes as provisions the current obligations that are derived from an onerous contract. As provisions and its counterpart is in the statement of comprehensive income in the result section of the period. An onerous contract is the one in which the unavoidable costs of complying with the obligations it implies, exceed the economic benefits that are expected to receive therefrom.

#### **Contingent liabilities**

The possible obligations that arise from past events and the existence of which shall only be confirmed by the occurrence or non-occurrence of one or more uncertain future events that are not entirely under EPM’s control or the current obligations that arise from past events, but that it is not probable, but possible, that on outlay of resources including economic benefits be required to liquidate the obligation or the amount of the obligation cannot be measured with enough reliability, are not recognized in the statement of financial position, they are rather disclosed as contingent liabilities. Contingent liabilities generated in a business combination are recognized at fair value on the acquisition date

#### **Contingent assets**

Assets of a possible nature, that arise from past successes, the existence of which has to be confirmed only by the occurrence, or the non-occurrence, of one or more uncertain events in the future, that are not entirely under EPM Group’s control, are not recognized in the statement of financial position; rather, they are disclosed as contingent assets when their occurrence is probable. Whenever the contingent fact is true, the asset and the revenue associated are recognized in operations. Contingent liabilities acquired in a business combination are initially measured at their fair values, on the acquisition date. At the end of subsequent periods being reported, those contingent liabilities are measured at the amount it would

have been recognized and the amount initially recognized less the accrued amortization recognized, whichever is greater.

## 2.23 Employee benefits

### 2.23.1 Post-employment benefits

**2.23.1.1 Defined contribution plans:** the contributions to the defined contribution plans are recognized as expenses in the statement of comprehensive income in the “result for the period” section at the moment when the employee has rendered the service that grants them the right to make the contributions.

**2.23.1.2 Defined benefit plans:** Post-employment benefit plans are those in which EPM Group has the legal or implicit obligation to respond for the payments of the benefits that were left to their charge.

For the defined benefit plans, the difference between the fair value of the plan assets and the present value of the plan obligation is recognized as asset or liability in the statement of financial position. The cost of giving benefits under the defined benefit plans is determined separately for each plan, through the actuarial valuation method of the projected credit unit, using actuarial assumptions on the date of the period being reported. Plan assets are measured at fair value, which is based upon the market price information and, in the case of quoted securities, it constitutes the published purchase price.

The actuarial gains or losses, the yield of plan assets and the changes in the asset ceiling effect, excluding the securities included in the net interest on the net defined benefits liabilities (assets), are recognized in the other comprehensive income, in the case of post-employment benefits; and if it is long-term benefits they are recognized in the statement of comprehensive income in the “statement of income” section in the period where they arise. The actuarial gains or losses include the effects of changes in the actuarial assumptions as well as adjustments due to experience.

The net interest on the liabilities (assets) for net defined benefits includes the interest revenue for the plan assets, interest cost for the obligation for defined benefits and interests for the asset ceiling effect.

The current service cost, the past service cost, any settlement or reduction of the plan are immediately recognized in the statement of comprehensive income in the “statement of income” section in the period when they arise.

### 2.23.2 Short-term employee benefits

EPM classifies as short-term employee benefits those obligations with the employees that it expects to liquidate during the twelve (12) month period following the closing of the accounting period where the obligation has been generated or the service has been rendered. Some of these benefits are generated from the current labor legislation, from collective bargaining agreements, or from non-formalized practices that generate implicit obligations.

EPM recognizes the short-term benefits at the moment the employee has rendered their services, as the following:

A liability for an amount that shall be repaid to the employee, deducting the amounts already paid before, and its balancing entry as expense for the period, unless another chapter obliges or allows including the payments in the cost of an asset or inventory, for instance, if the payment corresponds to employees the services of whom are directly related to the construction of a work, they shall be capitalized to that asset.

The amounts values already paid before correspond, for instance, to advanced payments of salaries, advanced payments of per diems, among others. If they exceed the corresponding liability, the Company will have to recognize the difference as an asset in the prepaid expenses account, to the extent that the advanced payment gives place to a reduction in the payments to be made in the future or to a cash reimbursement.

According to the foregoing, the accounting recognition of short-term benefits is made upon occurrence of the transactions, regardless of when they are paid to the employee or to the third parties to which the Company has entrusted the provision of certain services.

### 2.23.3 Long-term employee benefits

EPM classifies as long-term employee benefits those obligations that it expects to settle after the twelve (12) months following the closing of the accounting exercise or the period where employees provide the related services, i.e., from the month thirteen forward; they are different from the short-term benefits, post-employment benefits, and contract termination benefits.

EPM measures long-term benefits in the same fashion as post-employment defined benefit plans. Although their measurement is not subject to the same uncertainty level, the same following methodology will be applied for its measurement:

- The Company should measure the surplus or deficit in a long-term employee benefit plan using the technique applied for post-employment benefits both for estimating the obligation as well as for the plan assets.
- The Company should determine the value of net long-term employee benefits (assets or liabilities) finding the deficit or surplus of the obligation and comparing the asset ceiling.

The benefits that employees receive year after year throughout their labor life should not be considered “long term” if at the accounting exercise closing each year, the Company has fully delivered them.

### 2.23.4 Benefits for termination

The company recognizes as benefits for termination, the considerations granted to the employees, payable as result of the decision of the company to terminate the employment agreement to an employee before the normal retirement date or the decision of an employee to accept the voluntary resignation in exchange for those benefits.

## 2.24 Service concession agreements

EPM Group recognizes the service concession agreements pursuant to the interpretation requirements of the IFRIC 12 Service Concession Agreements.

This interpretation is applicable to those concessions where:

- The grantor controls or regulates which services the operator with the infrastructure should provide, to whom and at what price; and
- The grantor controls, through the ownership, the right of use, or otherwise, any significant residual participation in the infrastructure at the end of the term of the agreement.

EPM Group does not recognize these infrastructures as property, plant and equipment; it recognizes the consideration received in the contracts that meet the above conditions at its fair value, as an intangible asset to the extent that EPM Group receives a right to make charges to users of the service, provided that these rights are conditioned to the service use level, or as a financial asset, to the extent that there is an unconditional contractual right to receive cash or other financial asset, either directly from the assignor or from a third party. In those cases where EPM Group receives payment for the construction services, partly through a financial asset and partly through an intangible asset, each component of the consideration is recorded separately.

Financial assets of service concession agreements are recognized in the consolidated statement of financial position as operating financial assets and subsequently are measured at amortized cost, using the effective interest rate. The evaluation of impairment of these financial assets is made pursuant to the value impairment policy of the financial assets.

Intangible assets of service concession agreements are recognized in the consolidated statement of financial position as intangible assets denominated “intangible assets for service concession agreements” and are amortized on a linear basis within the term of duration thereof.

Revenues from ordinary activities and costs related to the operating services are recognized according to the accounting policy of ordinary revenues and the services related to construction or improvement services according to the accounting policy of construction contracts. Contractual obligations assumed by EPM Group for maintenance of the infrastructure during its operation, or for its return to the assignor at the end of the concession agreement in the conditions specified therein, to the extent that it does not assume a revenue-generating activity, it is recognized following the provisions accounting policy.

## 2.25 Fair value

The fair value is the price that would be received when selling an asset or that would be paid when transferring a liability in an orderly transaction between market participants on the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or liability, EPM takes into account the characteristics of the asset or liability if the market participants take into account these characteristics when valuing the asset or liability on the measurement date. Fair value for measurement and/or disclosure purposes in these financial statements is determined on that basis, except for the transactions of stock-based payments, lease transactions, and the measurements that have certain similarities with the fair value but that are not fair value, such as the realizable value or the value at use. The fair value of all financial assets and liabilities is determined on the date of presentation of the financial statements, for recognition or disclosure in the notes to the financial statements.

The fair value is determined:

- Based upon prices quoted in active or passive markets identical to those the Company can access on the measurement date (level 1).
- Level 2 inputs are inputs other than quoted prices included in Tier 1, which are observable for the asset or liability, directly or indirectly.
- Based upon internal valuation techniques of cash flow discounts or other valuation models, using variables estimated by EPM Group non-observable for the asset or liability, in the absence of variables observed in the market (level 3).

In the note 41 Measurement of fair value on a recurring and non-recurring basis provides an analysis of the fair values of financial instruments and non-financial assets and liabilities and more detail of their measurement.

## 2.26 Operating segments

An operating segment is a EPM Group component that develops business activities from which it can obtain revenues for ordinary activities and incur costs and expenses, on which there is financial information and the operating results of which are revised on a regular basis by the highest authority in EPM Group’s operating decision-making, which is the EPM’s Institutional Committee, to decide on the assignment of resources to the segments and evaluate their performance.

The financial information of operating segments is prepared under the same accounting policies used in the elaboration of EPM Group’s consolidated financial statements.

## 2.27 Dividends in cash distributed to stockholders of the Group

The group recognizes a liability to make the distributions to the stockholders of the Group in cash when the distribution is authorized and it is no longer at the Group’s discretion. The corresponding amount is recognized directly in the net equity.



## 2.28 Changes in estimates accounting policies and errors

**2.28.1 Changes in accounting estimates:** As of December 31, 2016, the Group recorded no significant changes in its financial statements as a result of a revision to its estimated book value. , Except for the following:

Changes in the discount rate used for the impairment of assets. The Group has established the methodology for estimating the capital cost of its different businesses (CAPM methodology adjusted for country risk), a variable that, when observed in 2016 compared to that obtained in 2015, on average had an upward performance as a result of A greater implicit devaluation (due to changes in the macroeconomic variables), a higher cost of debt estimated for the company and a higher perception of country risk as measured by the EMBI + (JP Morgan index), parameters that are part of Of the estimate of this variable. Changes in estimates of estimated amounts payable for litigation. Some of the claims were adjusted by the Legal area of each company of the Group to the maximum ordered by the Jurisprudence, in terms of damages and moral damages. In addition, the litigation valuation model was adjusted using a projected CPI for each year, in accordance with the estimated date of payment of the obligation.

### 2.28.2 Changes in accounting policies:

The new standards and amendments to IFRSs, as well as the interpretations (IFRIC), which have been implemented by the Group, are detailed as follows:

As of December 31, 2016, the Group made a change in the subsequent measurement of investments in subsidiaries by moving from the cost method to equity method for the separate financial statements of Group companies that have investments in subsidiaries, since this Policy more reliably reflects financial information and is more consistent with the industry practice in which the company operates; the change was made in accordance with the modification issued in August 2014 to IAS 27 Separate Financial Statements.

Except for the previous policy change, the Group did not make any other voluntary changes in accounting policies that required retroactive adjustments to the consolidated financial statements in accordance with IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors. However, it applied the new and modified standards, as follows: In 2016, the Group has applied IFRS 9 Financial Instruments

(Revised July 2014) and the corresponding amendments to other IFRSs before their effective dates. IFRS 9 introduces new requirements for: classification and measurement of financial assets, impairment of financial assets and hedge accounting. The detail of these new requirements, as well as their impact on the financial statements are described below:

**Classification and measurement of financial assets:** the standard introduces a measurement category for debt instruments denominated "Fair value with changes in other comprehensive income". Debt instruments that are maintained within a business model whose purpose is to collect contractual cash flows and sell the debt instruments and which have contractual cash flows that are only payments of principal and interest on the outstanding principal are measured At fair value through other comprehensive income. This measurement category recognizes the information in the result of the period as if the financial asset were measured at amortized cost, while being measured in the statement of financial position at fair value. Gains or losses, other than those recognized in profit or loss for the period, are recognized in other comprehensive income, except for impairment losses and gains or losses on exchange losses, until the financial asset is derecognised Or be reclassified. When these financial assets are derecognised, the accumulated gains or losses previously recognized in other comprehensive income are reclassified from equity to income for the period. This reflects the gain or loss that would have been recognized in profit or loss for the period at the time of disposal if the financial asset had been measured at amortized cost. The company reviewed and evaluated the existing financial assets as of January 1, 2016 based on the facts and circumstances that existed at that date and concluded that the initial application of IFRS 9 has no impact in the Group's financial assets.

**Impairment of financial assets:** In relation to the impairment of financial assets, IFRS 9 requires an expected loss of credit model as opposed to the credit loss model incurred in accordance with IAS 39.



The expected credit loss model requires that the Group to quantify expected credit losses at each reporting date to reflect changes in credit risk since the initial recognition of financial assets. In other words, it is no longer necessary for a credit event to occur before credit losses are recognized.

Specifically, IFRS 9 requires the company to recognize a provision for expected credit losses in: debt investments subsequently valued at amortized cost or at fair value with changes in other comprehensive income; Leasing debtors, contract assets, loan commitments and financial collateral contracts to which the impairment requirements apply.

In particular, IFRS 9 requires the Group to measure impairment for financial instruments over the life of the asset for which there are significant increases in credit risk since the initial recognition or if the financial instrument is acquired with Credit deterioration. On the other hand, if the credit risk of a financial instrument has not increased significantly since the initial recognition, the Group measures the provision of the financial instrument based on the 12 months following its acquisition. IFRS 9 also provides a simplified approach to measuring the provision for losses for an amount equivalent to the life of the asset under certain circumstances.

Changes in the accounting policies resulting from the adoption of IFRS 9 have not been restated, in which case the cumulative difference in provision for losses recognized under the standard is charged against the accumulated results as of January 1, 2016. Therefore, the information presented for 2015 does not reflect the requirements of IFRS 9 and is therefore not comparable to the information submitted for 2016.

The provision for additional credit losses of \$ 145,731 as of January 1, 2016 has been recognized against retained earnings at the respective dates, net of their related deferred tax impact of \$ 50,795 resulting in a net decrease in retained earnings of \$ 94,936 as of January 1. The application of the impairment requirements of IFRS 9 has resulted in a provision for losses of \$ 94,859 to be recognized in the current year. (See note 12 Trade and other receivables for further financial details of the adjustments). Changes resulting from IFRS 7 have also led to broader disclosures about credit risk exposure (see note 40 Financial Risk Management Objectives and Policies).

- Hedge accounting: the standard introduces a substantially reformed approach to hedge accounting that aligns it more closely with risk management. The Group was not impacted by this new approach.
- The proportion of other comprehensive income of associates and joint ventures accounted for using equity method that will not be reclassified after the result.
- The proportion of other comprehensive income of associates and joint ventures accounted for using equity method that will not be reclassified after the result.

IAS 19 Employee benefits, amendment issued in September 2014. The returns to be used as a discount rate are no longer referred to a country market, but to a currency market, which "overflows" local borders. The discount rate is determined under two alternatives, in the first instance under high-quality corporate bonds (if there is a market) or government default bonds (as a second option). The focus is to find out if there is such a currency in the first option, so it is not in the local market. For the company no impact is generated in this respect because it applies the second option (the use of government bonds in local currency). No impact is generated for the Group in this respect because the second option applies (when resorting to the government bonds in local currency). Except in the affiliate Hidroecológica del Teribe S.A. - HET in Panama where a strong currency such as the United States dollar, was adopted, the discount rate is reduced and, therefore, the present obligation of the post-employment benefits of that affiliate is increased.

### 2.28.3. Application of new and revised standards

The new standards and modifications to the IFRS, as well as the interpretations (IFRIC) that have been published in the period, but that have not been yet implemented by the company and those that will be adopted as of the date of the mandatory application, are detailed below:

Standard	Date of mandatory application	type of change
	January 1, 2018	New
IFRIC 22 Foreign currency operations and early consideration	January 1, 2018	New
IFRS 16 - Leases	January 1, 2019	New
IFRS 10 - Consolidated Financial Statements	Postponed	Modification
IFRS 12 - Disclosures about Shares in Other Entities	January 1, 2017	Modification
IAS 7 - Cash Flows	January 1, 2017	Modification
IAS 12 - Income tax	January 1, 2017	Modification
IFRS 4 - Insurance Contracts	January 1, 2018	Modification
IAS 28 - Investments in associates and joint ventures	January 1, 2018	Modification
IAS 40 - Investment Property	January 1, 2018	Modification

**IFRS 15 Revenue from contracts with customers:** issued in May 2014, is a new standard applicable to all contracts with customers, except leases, financial instruments and insurance contracts. This is a joint project with the Financial Accounting Standards Board - FASB to eliminate differences in the recognition of income between IFRS and US GAAP.

The amendments made in April 2016 to IFRS 15 include the following aspects:

a. **Identification of the principal or agent acting:** When a third party is involved in providing goods or services to a customer, the Group will determine whether the nature of its commitment is a performance obligation consisting in providing the goods or services specified by itself ( That is, it acts as a principal) or in organizing for the third party the supply of those goods or services (ie acts as an agent).

The Group acts as a principal if it controls a committed good or service before it transfers it to a customer. However, the Company is not necessarily acting as a principal if it obtains the legal right on a product only momentarily before the right is transferred to the customer. The Group acting as a principal in a contract may satisfy a performance obligation on its own or may contract a third party (for example, a subcontractor) to satisfy all or part of a performance obligation on its behalf. When the Group acts as a principal, it satisfies a performance obligation, recognizes revenue from ordinary activities for the gross value of the consideration it expects to be entitled to in exchange for the goods or services transferred.

The Group acts as an agent if the performance obligation is to organize the supply of goods or services to another company. When the Group, acting as an agent, satisfies a performance obligation, recognizes revenue from ordinary activities for the value of any payment or commission it expects to be entitled in exchange for arranging for the other party to provide its goods or services. The payment or commission may be the net value of the consideration that the entity retains after paying the other party the consideration received in exchange for the goods or services to be provided by that party.

B. **Variable consideration:** Any amount that varies according to the contract. Variable consideration will only be included in the transaction price when the entity expects it to be 'highly probable' that the resolution of the associated uncertainty would not result in a significant reversal of revenue. This valuation takes into account both the probability of a change in the estimate and the magnitude of any reversal of revenue that would result. If the Group is unable to include its full estimate of the variable consideration, since it could give rise to a significant reverse of revenue, it must recognize the amount of the variable consideration that would be highly likely not to result in a significant reversal of revenue Ordinary There is an exception to this when the entity earns revenue-based sales or use for royalties from its intellectual property licenses. In such circumstances, the entity would typically only include the revenue from those licenses when the sale or subsequent use occurs.

The standard also introduces a specific restriction on royalty payments related to intellectual property licenses. If royalty payments are based on subsequent use or sale, entities are restricted from recognizing associated revenue until subsequent use or sale has occurred, even if based on historical evidence it is possible to make a reliable estimate of this quantity.

C. Methods of application: The standard allows the use of two methods for the initial application of the standard as follows:

Full retrospective approach: the standard can be applied retrospectively to all comparative periods presented. According to this option, the previous year's comparisons are re-issued, with the resulting adjustment to the opening balance of equity in the first comparative period. When this option is selected, the standard provides a series of optional practical dossiers. These include the following:

- For completed contracts, entities are not required to re-issue contracts that begin and end in the same annual reporting period.
- For completed contracts that have variable consideration, the entity may use the transaction price at the date the contract was completed rather than estimate the amounts of the variable consideration in the comparative reporting periods.
- For all periods presented before the date of the initial application, the entity need not disclose the amount of the transaction price assigned to the remaining performance obligations and any explanation of when the entity expects to recognize those amounts as revenue.

**Modified approach:** according to the modified approach, the standard can be applied only from the date of the initial application. If they choose this option, they will need to adjust the opening balance of equity to the date of the initial application (i.e., January 1, 2017) but are not required to adjust the previous year's comparisons. This means that they do not need to consider contracts that have been completed before the date of the initial application. Broadly, the figures reported from the date of the initial application will be the same as if the standard had always been applied, but the figures for the comparative periods will remain with the previous base.

If this option is used, disclosure is required of the amount by which each line item of the financial statement is affected in the current period as a result of the application of the guidance and an explanation of the important changes between reported results According to IFRS (IFRS 9, 15 and previous guidance on revenue).

The amendments have a effective date of January 1, 2018, which is the effective date of IFRS 15. Entities are required to apply these amendments retroactively. The amendments seek to clarify the requirements of IFRS 15, do not change the standard.

This new standard intends to improve the inconsistencies and weaknesses of IAS 18 and provide a model that will facilitate the comparability of companies of different industries and regions. It provides a new model for revenue recognition and more detailed requirements for contracts with multiple elements. In addition it requires more detailed disclosures.

The basic principle of IFRS 15 is that an entity recognizes revenues from ordinary activities in a way that represents the transfer of goods or services committed with clients in exchange for an amount that reflects the consideration that the entity expects to be entitled to change Of such goods or services. An entity recognizes revenue from ordinary activities in accordance with that basic principle by applying the following steps:

Stage 1: Identify the contract (or contracts) with the customer

Stage 2: Identify performance obligations in the contract

Step 3: Determine the price of the transaction

Stage 4: Assign the price of the transaction between the performance obligations of the contract

Stage 5: Recognize the income from ordinary activities when (or as) the entity meets a performance obligation

Under IFRS 15, an entity recognizes revenue when an obligation is satisfied, for example, when the "control" of the goods or services underlying the execution of the particular obligation is transferred to the customer. More specific guidance have been added to the standard to handle specific scenarios. Further disclosure is required.

It would replace the standards IAS 18, Revenues and IAS 11 Construction Contracts, IFRIC 13 Customer loyalty programs, IFRIC 15 Agreements for the Construction of Real Estate, IFRIC 18 Transfers of assets from customers and SIC 31 Barter Transactions Involving Advertising Services.

The Group evaluated the impacts generated by the application of this new standard, and concluded that there are no material impacts on the financial statements.

The amendments will be mandatory for annual periods beginning on or after January 1, 2018. Early application is permitted.

**IFRIC 22 Foreign currency operations and advance consideration:** issued in December 2016, this interpretation deals with how to determine the transaction date, in order to define the exchange rate to be used in the initial recognition of the asset, expense or revenue (or part thereof), in the derecognition of a non-monetary asset or non-monetary liability resulting from the payment or receipt of advance consideration in foreign currency. In this respect the Interpretation Committee reached the following conclusion: the date of the transaction, for the purposes of determining the exchange rate, is the date of initial recognition of the non-monetary prepayment asset or deferred income liability. If there are multiple payments or receipts in advance, a date of transaction is established for each payment or receipt. Not applied when an entity measures the related asset, expense or revenue in the initial recognition at its fair value or at the fair value of the consideration paid or received on a date different from the initial recognition date of the non-monetary asset or non-monetary liability derived from the advance consideration (for example, the measurement of the goodwill according to IFRS 3 Business Combinations). It is not applied either for the income tax and insurance contracts.

The company is evaluating the impacts that the application of this interpretation could generate.

The amendments will be mandatory for annual periods beginning on or after January 1, 2018. Early application is permitted.

**IFRS 16 Leases:** issued in January 2016, this new standards Introduces an integral model for the identification of leases and accounting treatments for landlords and tenants. It will replace the current standards for the accounting treatment of the leases included in IAS 17 Leases and related interpretations.

The distinction between leases and service contracts is based on the control of the customer over the identified asset. For the lessee, the distinction between operating leases (off-balance sheet) and finance leases (on the balance sheet) is removed and replaced with a model in which an asset (right of use) and its corresponding liability must be recognized for all Leases (ie all on the balance sheet), except for short-term leases and leases of low-value assets.

Assets (right of use) are initially measured at cost and subsequently measured at cost (with certain exceptions) less accumulated depreciation and impairment losses, adjusted for any reassessment of the lease liability. Lease liability is initially measured at the present value of future lease payments. Subsequently, the lease liability is adjusted to interest and rent payments, as well as to the impact of lease modifications, among others. In addition, the classification of cash flows will also be affected since operating lease payments under IAS 17 are presented as operating cash flows; While in model IFRS 16, lease payments will be divided into amortization to capital and a portion of interest that will be presented as cash flow from financing and operation, respectively.

In contrast to tenant accounting, IFRS 16 includes as accounting requirements for the lessor the same as that provided by IAS 17, ie, it continues to require a lessor to classify a lease as an operating lease or a finance lease.

This new standard requires more detail in the disclosures.

The company is evaluating the impacts that could be generated by the application of this new standard, since it is planned that in 2017 technical guidelines and definitions will be elaborated and the impacts for the implementation in 2018 will be identified.

The amendments will be mandatory for annual periods beginning on or after January 1, 2019. Early adoption is permitted if IFRS 15 is also adopted - Income from contracts with customers.

IFRS 10 Consolidated financial statements and IAS 28 Investments in associates and joint ventures. IFRS 10 has been amended to reflect the following: gains or losses resulting from the loss of control of a subsidiary that does not contain a business in a transaction with an associate or a joint venture that are accounted for using equity method are recognized in the result of the parent company to the extent of the participation of unrelated investors in that associate or joint venture. Likewise, gains and losses resulting from the revaluation of investments accrued in a subsidiary (which has become an associate or a joint venture accounted for using equity method) at fair value are recognized in the income statement. Former parent only to the extent of the participation of unrelated investors in the new associate or joint venture. Additionally, the amendments to IFRS 10 and IAS 28 deal with conflicting accounting requirements on the sale or contribution of assets between an investor and its associate or joint venture, to that effect, it is established that to determine whether the assets sold or contributed constitute a business, it must be considered whether the sale or contribution of those assets is part of multiple agreements that must be accounted for as a single transaction.

The amendments are applied prospectively to transactions occurring in annual periods beginning on or after January 1, 2016 with anticipated permitted application. At the IASB June 2015 meeting, the IASB tentatively decided to postpone the mandatory date of this amendment. No draft has been issued at the time of writing this document.

**These changes have no impact on the financial statements.**

Note: with respect to “*IFRS 10, IFRS 12 IAS 28 Investment Entities: Applying the Consolidation Exception - Amendments to IFRS 10, IFRS 12 and IAS 28*”, The change in the standard does not apply to any of the companies of the EPM Group, since the exemption applies to investment entities, however, this modification was included in the technical definitions.

**IFRS 12 - Disclosures about Investments in Other Entities:** The amendment to IFRS 12, which is part of the annual improvements to IFRS Cycle 2014-2016 issued in December 2016, clarifies the scope of the standard by adding the indication That the requirements of this IFRS apply to the interests of subsidiaries, joint ventures, associates and non-consolidated structured entities that are classified (or classified) as held for sale or discontinued operations in accordance with IFRS 5 Assets Non-current assets held for sale and discontinued operations, but the exception of disclosing information on them in accordance with paragraph B17 of the standard is retained.

The amendments shall be mandatory for annual periods beginning on or after 1 January 2017.

These changes do not have any material impact on the financial statements.

**IAS 7 Cash flows:** the modification to IAS 7 issued in January 2016 defines the liabilities derives from financing activities as liabilities “for which the cash flows were or will be classified in the Statement of cash flows as cash flows for financing activities”. It also make emphasis on the fact that the new disclosure requirements also related to the changes in the financial assets if they meet the same definition.

It requests new information to be disclosed on the changes in the liabilities derived from the financing activities, such as: changes in cash flows from financing activities, changes derived from the obtaining or loss of control of subsidiaries or other business, the effect of the changes in the foreign exchange rates, the changes in the fair value and other changes. It also establishes that the changes in the liabilities derived from financing activities must be disclosed separately from the changes in other assets and



liabilities, and includes a reconciliation between the beginning and ending balances in the statement of financial position, for the liabilities derived from financing activities. Early adoption is permitted.

The Company evaluated the impacts of the change in the standard, concluding that it will have no material impact on the financial statements.

**IAS 12 Income tax:** the amendment to IAS 12, issued in January 2016, does not change the underlying principles for the recognition of deferred tax assets, makes the following clarifications:

- Unrealized losses on debt instruments measured at fair value in financial instruments, but at cost for tax purposes may give rise to deductible temporary differences.
- When an entity evaluates whether the taxable profit against which a deductible temporary difference can be used will consider whether the tax law restricts the sources of taxable income against which it can make deductions at the time of reversal of that temporary difference deductible. If tax law does not impose these restrictions, an entity will evaluate a deductible temporary difference in combination with all others. However, if the tax law restricts the use of losses to be deducted against income of a specific rate, a difference.
- The Entity shall confirm whether it has sufficient taxable profits in future periods, comparing deductible temporary differences with future taxable income that excludes tax deductions arising from the reversal of such temporary deductible differences. This comparison shows the extent to which future taxable income will be sufficient for the entity to deduct the amounts arising from the reversal of deductible temporary differences.
- Possible future taxable profits could include the recovery of certain assets of the entity for an amount greater than its carrying amount if there is sufficient evidence that the entity is likely to be able to meet it. That is, in the case of an asset when measured at fair value, an entity must verify whether it is certain that the asset is recoverable by a figure greater than the carrying amount, such as maintaining a Fixed-rate debt instrument and collect contractual cash flows

The amendments shall be mandatory for annual periods beginning on or after 1 January 2017.

**IFRS 4 Insurance Contract:** issued in March 2004, is a standard in the process of phased training, for those who issue insurance and reinsurance contracts. The ascent to Phase II has been initiated, which has involved some exemptions from applying other standards, for example, an entity will apply those modifications, which allow insurers who meet specific criteria to use a temporary exemption from IFRS 9 for periods Per annum beginning on or after 1 January 2018, insurers are also permitted to reclassify some or all of their financial assets under specified circumstances so that they are measured at fair value through profit or loss but affecting other comprehensive income.

This implies that changes in the application of IFRS 9 "Financial instruments" with IFRS 4 "Insurance contracts" (Amendments to IFRS 4) offer two options for entities that issue insurance contracts within the scope of the IFRS 4:

- An option that allows the entities to reclassify, from the profit or loss to other comprehensive income, part of the income or expenses derived from designated financial assets; This is the so-called overlapping approach;
- An optional temporary exemption from the application of IFRS 9 for entities whose predominant activity is the issuance of contracts within the scope of IFRS 4; This is the so-called deferral approach.

The application of both approaches is optional and an entity is allowed to stop applying them before the new standard of insurance contracts is applied.

An entity would apply the overlapping approach retrospectively to qualifying financial assets when it first applies IFRS 9. The application of the overlap approach requires the disclosure of sufficient information to enable financial statement users to understand how the reclassified amount is calculated in Period Effect of such reclassification on the financial statements.



An entity would apply the deferral approach for annual periods beginning on or after January 1, 2018. The application of the deferral approach must be disclosed in conjunction with information that allows the users of financial statements to understand how the insurer qualified for The temporary exemption and Compare the insurers applying the temporary exemption with the entities applying IFRS 9. The deferral can only be used for the three years following January 1, 2018.

The company is evaluating the impacts that could be generated by the application of this new standard.

IAS 28 - Investments in associates and joint ventures: the amendment to IAS 28, which is part of the annual improvements to IFRS Cycle 2014-2016 issued in December 2016, clarifies that when an investment in an associate or joint venture Directly or indirectly maintained by an entity that is a venture capital organization or a collective investment trust, investment trust or other similar entity, including investment insurance funds, the entity may choose to measure such investments at fair value With changes in results in accordance with IFRS 9. An entity shall make this separate choice for each associate or joint venture at the initial recognition of the associate or joint venture. It also clarifies that if an entity that is not itself an investment entity has a stake in an associate or joint venture that is an investment entity, the entity applying equity method may retain the fair value measurement applied by That associate or joint venture that is an investment entity to the interests of the associate or joint venture that is an investment entity in subsidiaries. This choice is made separately for each associated investment entity or joint venture, on the date after the date on which: a) the investment in the associate or joint venture is initially recognized; B) the associated investment or joint venture becomes an investment entity; And (c) the associated investment entity or joint venture becomes a Parent.

These changes do not have any material impact on the financial statements.

The amendments will be mandatory for annual periods beginning on or after January 1, 2018. Early application is permitted.

IAS 40 Investment Property: The amendment made in December 2016, has an effect on the transfer of investment property (reclassifications) motivated by "change in use", extending the latter term: a change in use occurs when the property Meets, or fails to meet, the definition of investment property and there is evidence of change in use. In isolation, a change in management's intentions for the use of a property does not provide evidence of a change in use. This is followed by the examples provided by the standard in paragraphs 57 and 58 (not substantially modified). Paragraphs 84C to 84E and 85G were added to define the transitional provisions when transferring investment property.

The company is evaluating the impacts that could be generated by the application of this new standard. The amendments shall be mandatory for annual periods beginning on or after 1 January 2018.

#### **2.28.4 Errors in previous periods**

The consolidated financial statements have been adjusted for the homologation of the record made by ADASA in 2015 due to a recovery of provisional payments for absorbed profits - PPAP, transaction that according to the accounting practices of the EPM Group has homologated as higher value of the goodwill generated in the business combination of that affiliate and a lower value of the income tax. During 2016, as a result of the analysis of the transaction, it was possible to established that the PPAP should be recognized with charge to goodwill.

The adjustments to December 31, 2015 were made affecting results accounts.

Likewise, the associated disclosures were adjusted. To the financial statements. The adjustments have been recognized retroactively in accordance with the requirements of IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors, adjusting the figures for the comparative periods presented.

As a result of the correction of prior periods, the consolidated financial statements were adjusted as follows:

Effect of changes	2016	2015		
		Issue	Adjustment	Restated
<b>Statement of financial position</b>				
Goodwill	2,918,817	3,124,194	(45,920)	3,078,274
Other accumulated comprehensive income	2,440,216	2,671,869	1,725	2,673,594
Net result of the period	1,724,000	931,422	(47,645)	883,777

- Figures expressed in millions of Colombian pesos -

Effect of changes	2016	2015		
		Issue	Adjustment	Restated
<b>Statement of comprehensive income</b>				
Income tax	(649,129)	(406,174)	(47,645)	(453,819)
OCI - Foreign exchange translation differences	(152,425)	506,116	1,725	507,841

- Figures expressed in millions of Colombian pesos -

Effect of changes	2016	2015		
		Issue	Adjustment	Restated
<b>Statement of changes in the equity</b>				
Accumulated results	12,959,786	11,464,676	(47,645)	11,417,031
OCI - Foreign exchange translation differences	705,284	857,583	1,725	859,308

- Figures expressed in millions of Colombian pesos -

Effect of changes	2016	2015		
		Issue	Adjustment	Restated
<b>Statements of cash flow</b>				
Current income tax	657,980	529,355	47,645	577,000

- Figures expressed in millions of Colombian pesos -

### 2.28.5 Changes in presentation

As of December 31, 2016, there were no changes in presentation to the consolidated financial statements.

## Note 3. Significant accounting judgments, estimates, and causes of uncertainty in the preparation of financial statements

The following are the significant judgments and assumptions, including those that involve accounting estimates that EPM Group's management used in the application of the accounting policies under IFRS, and that have significant effect on the values recognized in the consolidated financial statements.

Estimates are based upon historic experience and as a function of the best information available on the facts analyzed as of December 31, 2015 and 2014. These estimates are used for determining the value of the assets and liabilities in the separate financial statements, when it is not possible to obtain such value

from other sources. EPM Group evaluates its estimates on a regular basis. Actual results may differ from those estimates.

The significant estimates and judgments made by EPM Group are described below:

- **Evaluation of the existence of impairment indicators for the assets, goodwill and valuation of assets for determining the existence of value impairment losses.**

The condition of the assets is revised on each report presentation date. Recognized in order to determine whether there are indications that any of them has suffered an impairment loss, impairment indicators are revised. If there is impairment loss, the recoverable amount of the asset is affected; if the estimated recoverable amount is lower, it is reduced up to its fair value and an impairment loss is immediately recognized in operations.

The evaluation of the existence of value impairment indicators is based on external and internal factors, and in turn on quantitative and qualitative factors. Evaluations are based on financial results, the legal, social and environmental settings, and the market conditions; significant changes in the scope or fashion in which it is used or expected to use the asset or cash-generating unit (UGE, for its Spanish initials) and evidence about obsolescence or physical deterioration of an asset or UGE (cash generating unit), among others.

Determining whether goodwill has suffered impairment implies the calculation of the value at use of the cash generating units to which it has been assigned. The calculation of the value at use requires that the entity determines the future cash flows that should arise from the cash-generating units and a discount rate appropriate to calculate the current value. When the actual future cash flows are lower than expected, an impairment loss may arise.

- **Hypothesis used in the actuarial estimate of the post-employment obligations with employees.**

The assumptions and hypothesis used in the actuarial studies include: demographic assumptions and financial assumptions; the former refer to the characteristics of the current and past employments, and relate to the mortality rate, employee turnover rates; the latter relate to the discount rate, the increases in future salaries, and the changes in future benefits.

- **Useful life and residual values of property, plant and equipment, and intangibles**

In the assumptions and hypothesis used for determining the useful lives, technical aspects such as the following are considered: periodical maintenances and inspections made to the assets; failure statistics; environmental conditions and operating environment; protection systems; replacement processes; obsolescence factors, recommendations of manufacturers, climate and geographical conditions; and experience of the technicians that know the assets. Aspects such as market values, reference magazines, and historic sales data are considered for determining the residual value.

- **Assumptions used for calculating the fair value of financial instruments including the credit risk.**

EPM Group discloses the fair value corresponding to each class of financial instrument in such a way that allows comparing it with the carrying values.

Macro-economic projections calculated within each Group company are used.

Investment portfolio is valued at market price. In its absence, a similar one is looked for in the market and if not, assumptions are used.

Macro-economic rates are projected using the cash-flow methodology.

Derivatives are estimated at fair value.

Accounts receivable are estimated at the market rate in force and effect for similar credits. Accounts receivable from employees are valued in a similar way as massive debtors, except for mortgage (housing) credits.

The methodology used for equity investments is the cash flow; those quoted in the stock exchange such as Interconexión Eléctrica S.A. -ISA- and ISAGEN S.A. E.S.P. are estimated at market prices; all others, are valued at historic cost.

- **Likelihood of occurrence and value of contingent or uncertain-value liabilities.**

The assumptions used for uncertain or contingent liabilities include the classification of the legal process by the “expert judgment” of the areas professionals, the type of contingent liability, the possible legislative changes, and the existence of high-courts’ jurisprudence that applies to the concrete case - the existence of similar cases in the company, - the study and analysis of the substance of the issue, - the guarantees existing at the moment when the facts occur.

The Company shall disclose and not recognized in the financial statements those obligations classified as “possible”.

- **Future disbursements for asset dismantlement and retirement obligations.**

In the assumptions and hypothesis used for determining future disbursements for asset dismantlement and retirement obligations, aspects such as the following were considered: estimate of future outlays in which the Group companies must incur for the execution of those activities associated to asset dismantlement on which legal or implicit obligations have been identified; the initial date of dismantlement or restoration; the estimated date of finalization; and the discount rates.

- **Determination of the existence of financial or operating leases based on the transfer of risks and benefits of the leased assets.**

The significant assumptions that are considered in the Group to determine the existence of a lease include the assessment of the conditions if the right to control the use of the asset is transmitted for a period of time in exchange for a consideration, that is, it is evaluated The existence of an identified asset; The right to obtain substantially all economic benefits from the use of the asset over the period of use; The right to direct how and for what purpose the asset is used throughout the period of use; Right to operate the asset over the period’s use without any changes in the operating instructions.

- **Recoverability of deferred tax assets**

Deferred tax asset in the Group has been generated by the temporary differences that generate future fiscal consequences in the financial position of Group Companies; these differences are essentially represented in fiscal assets that exceed the assets under IFRS; and in fiscal liabilities, lower than the liabilities under IFRS, such as it is the case of the pension liability components, the amortized cost of bonds, financial leasing, and other sundry provisions and contingencies provision.

The Group’s deferred tax asset is recovered in the net income taxed on the current income tax generated in each Group company.

- **Determination of whether a set of assets meets the conditions to be classified as a discontinued operation.**

For determination of whether a set of assets meets the conditions to be classified as a discontinued operation, the assumptions that are subject to disclosure were not taken into account in the Group, because there were no transactions that made believe the discontinuity of an operation.

- **Determination of portfolio deterioration**

For the calculation of the expected credit loss, each obligation is assigned an individual probability of non-payment that is calculated from a probability model involving sociodemographic, product and behavior variables.

The model uses a window of twelve months, which is why it is estimated that an obligation has to be provisioned at a certain percentage in the same period. The model will be applied based on the scorecard developed taking into account the information of each Group Company. The models are defined according to the information available and the characteristics of the population groups for each one. Although the methodology applies to all accounts with balance, some exclusions must be

taken into account, such as:Accounts written-off; Self-consumptions; Contributions; Public Lighting and in general charges from third parties. For its calculation, it is previously defined the moment from which it is considered that an obligation was breached and will not be recovered.

With this information the calculation of the expected request is made as follows:

$$PE = PI \times SE \times PDI, \quad \text{where:}$$

Probability of Default (PI): this corresponds to the probability that, within a period of twelve months, the debtors of a certain segment and portfolio rating incur in default.

Outstanding Balance of the Asset (SE): corresponds to the balance of capital, balance of interests, and other current charges of the obligations.

Loss due to non-compliance (PDI): defined as the economic deterioration that the entity would incur in the event that any of the non-compliance situations materialize.

- **Estimate of income.**

The Group recognizes income from the sale of goods in the period of transfer of risks and benefits and those arising from the provision of services when they are delivered to the customer, regardless of the date on which the corresponding invoice is drawn up, to carry out This estimate takes information from contracts or agreements with customers and thus establishes the value to be recognized in income.

For other concepts than the provision of public residential services, the Group estimates and recognizes the value of revenues from sales of goods or services rendered based on the terms or conditions of interest rate, interim period, of each contract Which originates the sale.

In the month after recording the estimated income, its value is adjusted by the difference between the value of the actual income already known against the estimated income.

## Note 4. Property, plant and equipment, net

The following is the detail of the book value of property, plant and equipment:

Concept	2016	2015
Cost	34,151,205	31,078,638
Accumulated depreciation and impairment	(5,885,095)	(5,295,062)
<b>Total</b>	<b>28,266,110</b>	<b>25,783,576</b>

- Figures expressed in millions of Colombian pesos -

The following is the detail of the book value of the properties, plant and equipment that are temporarily out of services, mainly because some Generation plants are being modernized. These assets are expected to be incorporated into the operation in the medium term:

Properties, plant and equipment that are temporarily out of service	2016	2015
Land and buildings	25,529	26,153
Machinery & equipment	7,098	7,157
Other property, plant and equipment	41	49
<b>Total properties, plant and equipment that are temporarily out of service</b>	<b>2,659</b>	<b>60</b>
<b>Total propiedades, planta y equipos temporalmente fuera de servicio</b>	<b>35,327</b>	<b>33,419</b>

- Figures expressed in millions of Colombian pesos -

In 2016, it includes \$32,698 (2015: \$33,419) of EPM corresponding to the components of the Power Generation Plants: Rio Bajo, Dolores, Calera, El Limon and Piedras.

At December 31, 2016 and 2015 the Group does not have properties, plant and equipment retired from their use and that have not been classified as non current assets held for sale.



The movement of the cost, depreciation and impairment of property, plant and equipment is detailed below:

2016	Network, lines and cables	Plants, ducts and tunnels	Constructions in progress <sup>1</sup>	Land and Buildings	Machinery & Equipment	Communication and Computer Equipment	Furniture & Fixtures & Office Equipment	Other property, plant and equipment <sup>2</sup>	Total
Cost as of January 1	8,018,610	9,347,301	6,499,020	5,798,401	618,075	303,027	87,218	406,986	31,078,638
Additions <sup>4</sup>	205,722	68,443	3,786,269	70,353	58,985	35,599	4,019	(9,611)	4,219,779
Advances payments (amortized) made to third parties	(2,083)	-	(69,082)	-	-	-	-	-	(71,165)
Transfers (-/+)	627,605	311,218	(1,553,391)	62,574	19,774	9,803	6,311	(21,784)	(537,890)
Disposals (-)	(29,991)	(173,255)	(735)	(2,209)	(19,041)	(28,484)	(1,234)	(6,431)	(261,380)
Effect on foreign currency translation	(115,038)	(44,199)	(45,340)	(18,714)	(19,843)	(3,696)	(468)	(3,069)	(250,367)
Other changes	(14,835)	13,728	2,803	30,459	292	(232)	(73)	(58,552)	(26,410)
<b>Cost in books as of December 31</b>	<b>8,689,990</b>	<b>9,523,236</b>	<b>8,619,544</b>	<b>5,940,864</b>	<b>658,242</b>	<b>316,017</b>	<b>95,773</b>	<b>307,539</b>	<b>34,151,205</b>
<b>Accumulated depreciation and impairment</b>									
Accumulated depreciation and impairment as of January 1	(1,972,628)	(2,051,588)	-	(779,403)	(182,412)	(167,876)	(31,825)	(109,330)	(5,295,062)
Depreciación del periodo <sup>(6)</sup>	(306,777)	(277,000)	-	(65,327)	(48,077)	(44,264)	(6,621)	(18,720)	(766,786)
Impairment of the period (see note 7)	(420,898)	(297,822)	(838)	(85,331)	(13,252)	(314)	(22)	(1,336)	(819,813)
Reversal of loss of impairment (-)	192,420	183,011	-	304,978	2,957	19	185	1,979	685,549
Disposals (-) <sup>5</sup>	18,278	157,829	-	174	15,814	26,874	1,378	5,195	225,542
Transferencias (-/+)	(73)	213	-	(80)	174	(42)	45	82	319
Effect on foreign currency translation	32,144	38,632	2	(3,478)	6,796	248	372	(3,067)	71,649
Other changes	2,821	3,625	-	5,042	(14)	2,047	(190)	176	13,507
<b>Accumulated depreciation and impairment as of December 31</b>	<b>(2,454,713)</b>	<b>(2,243,100)</b>	<b>(836)</b>	<b>(623,425)</b>	<b>(218,014)</b>	<b>(183,308)</b>	<b>(36,678)</b>	<b>(125,021)</b>	<b>(5,885,095)</b>
<b>Property, plant &amp; equipment as of December 31</b>	<b>6,235,277</b>	<b>7,280,136</b>	<b>8,618,708</b>	<b>5,317,439</b>	<b>440,228</b>	<b>132,709</b>	<b>59,095</b>	<b>182,518</b>	<b>28,266,110</b>
<b>Advances payments made to third parties</b>									
Balance as of January 1, 2016	1,682	-	127,110	-	-	-	-	1,737	130,529
Movement (+)	6,817	-	22,723	-	-	-	-	-	29,540
Movement (-)	(8,900)	-	(91,805)	-	-	-	-	(1,737)	(102,442)
Effect on foreign currency translation	814	-	379	-	-	-	-	-	1,193
<b>Balance December 31, 2016</b>	<b>413</b>	<b>-</b>	<b>58,407</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>58,820</b>

- Figures expressed in millions of Colombian pesos -

2015	Network, lines and cables	Plants, ducts and tunnels	Constructions in progress <sup>1</sup>	Land and Buildings	Machinery & Equipment	Communication and Computer Equipment	Furniture & Fixtures & Office Equipment	Other property, plant and equipment <sup>2</sup>	Total
Cost as of January 1	6,867,497	8,314,816	4,823,071	5,469,435	367,793	251,896	61,312	296,283	26,452,103
Business combination <sup>3</sup>	-	-	88,033	-	18,748	2,708	12,086	10,377	131,952
Aditions <sup>4</sup>	137,399	104,327	3,171,229	81,542	57,148	48,454	9,310	117,233	3,726,642
Advances payments (amortized) made to third parties	907	-	9,613	-	-	-	-	320	10,840
Transfers (- / +)	463,602	773,776	(1,871,048)	193,591	155,262	8,101	1,599	(38,683)	(313,800)
Provisions (-) <sup>5</sup>	(18,559)	(14,713)	(46,927)	(7,239)	(42,728)	(20,936)	(815)	(5,250)	(157,167)
Effect on foreign currency translation	567,031	156,037	364,999	50,431	64,886	17,167	3,410	11,755	1,235,716
Effect on loss of subsidiary control	-	-	-	-	(23)	(9)	(14)	(8)	(54)
Other changes	733	13,058	(39,950)	10,641	(3,011)	(4,354)	330	14,959	(7,594)
<b>Cost in books as of December 31</b>	<b>8,018,610</b>	<b>9,347,301</b>	<b>6,499,020</b>	<b>5,798,401</b>	<b>618,075</b>	<b>303,027</b>	<b>87,218</b>	<b>406,986</b>	<b>31,078,638</b>
<b>Accumulated depreciation and impairment</b>									
Accumulated depreciation and impairment as of January 1	(1,478,470)	(1,345,122)	(290,202)	(705,716)	(155,266)	(127,683)	(25,126)	(64,867)	(4,192,452)
Depreciation of the period <sup>6</sup>	(272,359)	(263,786)	-	(63,321)	(35,110)	(44,269)	(5,940)	(19,253)	(704,036)
Deterioration of the period-See note <sup>7</sup>	(1,945)	(5,551)	-	(621)	(161)	(9)	(37)	(203)	(8,526)
Business combination <sup>3</sup>	(7,574)	-	-	-	(10,132)	(1,812)	-	-	(19,518)
Provisions (-) <sup>5</sup>	9,885	6,952	-	567	(22,547)	19,709	1,000	3,450	19,016
Transfers (- / +)	(220)	393,743	(393,623)	-	95	(2)	3	(32,398)	(32,402)
Effect on foreign currency translation	(225,778)	(73,859)	(91,824)	(9,513)	38,432	(14,949)	(1,576)	(8,607)	(387,673)
Effect on loss of subsidiary control	-	-	-	-	5	6	7	1	19
Other changes	3,833	(763,965)	775,649	(799)	2,271	1,132	(157)	12,546	30,510
<b>Accumulated depreciation and impairment as of December 31</b>	<b>(1,972,628)</b>	<b>(2,051,588)</b>	<b>-</b>	<b>(779,403)</b>	<b>(182,412)</b>	<b>(167,876)</b>	<b>(31,825)</b>	<b>(109,330)</b>	<b>(5,295,062)</b>
<b>Property, plant &amp; equipment as of December 31</b>	<b>6,045,982</b>	<b>7,295,713</b>	<b>6,499,020</b>	<b>5,018,998</b>	<b>435,663</b>	<b>135,151</b>	<b>55,393</b>	<b>297,656</b>	<b>25,783,576</b>
Advances delivered to third parties									
Balance as of January 1, 2016	-	-	117,498	-	-	-	-	1,416	118,914
Movement (+)	908	-	42,149	-	-	-	-	458	43,515
Movement (-)	(1)	-	(32,537)	-	-	-	-	(137)	(32,675)
Effect on foreign currency translation	775	-	-	-	-	-	-	-	775
<b>Balance December 31, 2016</b>	<b>1,682</b>	<b>-</b>	<b>127,110</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,737</b>	<b>130,529</b>

- Figures expressed in millions of Colombian pesos -

The property plant and equipment presents a variation from 2015, mainly due to the construction of infrastructure in the different businesses of the company, of which the most relevant is the construction of the Hidroeléctrico Ituango project, which presents

A change from 2015 by \$1,721,054. Additionally, in respect to the Waste Water Treatment Plant- (WWTP) located in the municipality of Bello of the affiliate Aguas Nacionales EPM S.A. there is a variation for \$303,343.

At the end of the period, impairment tests were performed on the assets linked to the CGUs, which in turn have intangible assets with indefinite useful lives, resulting in the impairment of certain components associated with the Generation of Energy and Sanitation Reversion of the same in the components of the assets of the UGE Provision Aguas, this implied its recognition in the financial statements. See note 7. Impairment of assets.

<sup>1)</sup> Includes capitalization of borrowing costs of \$ 271,224 (2015: \$ 180,165), the weighted average rate used to determine the amount of borrowing costs was 8.45% (2015: 7.00%), which is the specific effective interest rate of this type of loan.

(2) Includes automotive fleet equipment and vehicles, medical and scientific equipment, property, plant and equipment in assembly, property, plant and equipment in transit, replacement assets and dining and kitchen equipment.

(3) Includes in 2015 the assets acquired through a business combination with Aguas de Antofagasta S.A. And with Cartida del Caribe S.A. E.S.P - SURTIGAS of the municipality of Necoclí - Antioquia, respectively (see note 9).

(4) Includes purchases, capitalizable disbursements that meet the recognition criteria, assets received from third parties and costs for dismantling and withdrawing elements of property, plant and equipment. At the close of 2016 and 2015 no government subsidies were received.

(5) See note 29 - Income from ordinary activities and note 33 - Other expenses.

(6) See note 2931- Costs for provision of services and note 3032- Administrative expenses.

The main projects under construction are:

Project	2016	2015
Ituango <sup>(1)</sup>	5,660,416	3,939,363
Planta de tratamiento de aguas residuales Bello	1,038,356	697,416
Nueva Esperanza	390,603	257,097
DECA Projects	248,977	163,817
ENSA Projects	138,847	158,756
ESSA Projects	252,141	171,410
ADASA Projects	106,473	-
CHEC Projects	48,408	53,552
Distrito de frío	25,257	33,686
Conexión San Nicolás D. Primaria	13,812	74,414
EDEQ Projects	11,813	13,108
Delsur Projects	30,217	34,170
Conexión Ecopetrol-Magdalena Medio	3,602	85,722
AMA projects- Sewer and Sewer Networks	891	11
Proyectos AOR-Reposición Redes de alcantarillado el Retiro	140	-
EMVARIAS Projects - Administrative headquarters and Puntos naranjas	37	122
AMA Projects- Project Merchandise	10	10
AOR Projects - Supply and El Retiro Tank	10	-
EMVARIAS Projects - Lixiviados	-	22,164
Other projects	648,698	794,202
<b>Total</b>	<b>8,618,708</b>	<b>6,499,020</b>

- Figures expressed in millions of Colombian pesos -

<sup>(1)</sup> As of December 31, 2016, the Ituango Hydroelectric Project presents the following physical progress of 65%, where the current schedule is designed to have all the works located on the site of the plant, necessary for the first generation of energy, in the Last quarter of 2018.

In order to guarantee the connection to the national interconnected system, Interconexión Eléctrica S.A. (ISA), among other actions, executes the procedures for obtaining the required environmental license from the national environmental licensing authority ANLA and other departmental and municipal bodies. The initial goal to be met in this process is to obtain the license no later than the first week of April 2017, in order for this front to be synchronized adequately with the needs of the works on the site of the plant. Any difficulties encountered in this process, if alternative strategies are not generated to recover the impact generated, can affect the current conditions of the start of operation of the Project, scheduled for the last quarter of 2018.

The breakdown of progress is as follows:

Activity	Unit of measure	Total	Executed	%
<b>Dump</b>				
Excavations of the landfill	m <sup>3</sup>	14,022,086	11,399,956	81%
Concrete control structure (Water + right wall)	m <sup>3</sup>	46,462	31,130	67%
<b>Dam</b>				
Excavation of the prey	m <sup>3</sup>	1,094,352	860,161	79%
Full of prey	m <sup>3</sup>	19,484,575	9,157,750	47%
<b>Driving</b>				
Total driving tunnels (upper and lower +	m	2,489	2,184	88%
Concrete elbows of lower conduction 1 to 4	m <sup>3</sup>	4,709	4,379	93%
Gate Wells - Full Section Excavation (8 x 85 m	m	680	669	98%
Catchment square	m <sup>3</sup>	580,000	575,940	99%
Cable well - Excavation complete section	m	336	336	100%
<b>Underground station</b>				
Concrete machine house (Assembly room +	m <sup>3</sup>	25,982	9,979	38%
Concrete cave transformers	m <sup>3</sup>	3,355	2,305	69%
Concrete beacon 1	m <sup>3</sup>	3,013	1,778	59%
<b>Central Download</b>				
Tunnels 1 to 4 - Excavation Vault	m	3,149	3,149	100%
Tunnels 1 to 4 - Excavation Bank	m	3,149	2,847	90%
Concrete in discharge tunnel 1	m <sup>3</sup>	1,301	1,301	100%
Concretes in discharge tunnel 2	m <sup>3</sup>	1,315	1,315	100%
Concrete in discharge tunnel 3	m <sup>3</sup>	1,315	1,315	100%
Concrete in discharge tunnel 4	m <sup>3</sup>	1,423	1,252	88%
<b>Auxiliary deflection system</b>				
Auxiliary gallery of deviation GAD (Vault)	m	2,145	2,059	96%
Auxiliary gallery of deviation GAD (Bank)	m	2,145	1,308	61%
GAD bottom discharge tunnel	m	287	287	100%

□ Unit of measurement expressed in cubic meters (m<sup>3</sup>) and meters (m)

As of December 31, 2016, there are restrictions on the realization of EPM properties, plant and equipment, associated with some automobile fleet equipment for a net book value of \$ 15. These

restrictions are for theft, personal injury and embargoes and have been affected as a guarantee for the fulfillment of obligations. For the rest of the affiliates of the Group no other restrictions were identified restrictions on the realization of the property, plant and equipment or affectations as a guarantee for the fulfillment of obligations.

The most significant commitments to acquire the Group's property, plant and equipment at the report date amount to \$1,033,192 (2015: \$2,941,678).

At December 31, 2016 the Group obtained revenues for compensations from third parties for the loss of property, plant and equipment for \$480,621 (2015: \$2,706) of which \$404,340 correspond to lost profits and \$67,758 to consequential damage related to the loss that occurred in the beginning of 2015 in the Guatape Plant Of EPM; Recorded in other income from indemnities. See note 30. Other income.

The following is the historical cost of fully depreciated properties, plant and equipment that continue to operate in 2016 and 2015:

Group	2016	2015
Plants, ducts and tunnels	14,103	9,702
Communication and Computer equipment <sup>1</sup>	22,235	3,957
Networks, lines and cables	4,831	2,025
Machinery and equipment	4,418	1,992
Buildings	393	48
Other property, plant and equipment	4,519	652
<b>Total</b>	<b>50,499</b>	<b>18,376</b>

- Figures expressed in millions of Colombian pesos -

- (1) The variation corresponds mainly to computer equipment totally depreciated in the subsidiaries EEGSA and TRELEC.

## Note 5. Investment property

The fair value of the investment properties is based on an annual appraisal made by experts that have renown professional capacity and a recent experience on the category of the real estate investments object of the valuation; this value has been determined each year by officers of the EPM Group specialist appraisers or by independent appraiser companies such as Vertex Resources Ltda., Lonja de Propiedad Raíz and Panamericana de Avaluos S.A. The appraiser officers and companies use the comparative or market method, which consists in deducing the price by comparison of transactions, supply and demand and appraisals of similar or comparable properties, prior adjustments of time, conformation, and location; and the residual method that is applied only to the buildings and is based on the determination of the updated cost of the construction, less the depreciation for age and conservation condition; And the income method, which is used to determine the possible value of a good according to its ability to generate income taking into account the likely monthly value of the property that renters would be willing to pay in the rental market. See note 41 Measurement of fair value on a recurring and non-recurring basis.

Investment properties	2016	2015
<b>Book value as of January 1</b>	165,488	143,751
Net profit or loss for adjustment of fair value <sup>1</sup>	(12,429)	13,530
Disposals (-)	(1,105)	-
Exchange Rate Differences	(370)	1,622
Transfers <sup>2</sup> (-/+)	(26,996)	6,585
<b>Book value as of December 31</b>	<b>116,628</b>	<b>165,488</b>

- Figures expressed in millions of Colombian pesos -

- (1) See note 19 Other accumulated comprehensive income, note 29. - Income from ordinary activities and note 33- Other expenses.
- (2) Includes transfer of investment property to or from inventories, or either to or from property, plant and equipment.

The valuation obtained has been adjusted in order to be used in the financial statements, as shown in the sample of the following reconciliation:

Item	2016	2015
Market value estimated by independent appraiser	7,841	7,775
<b>Fair value for financial information purposes</b>	<b>7,841</b>	<b>7,775</b>

- Figures expressed in millions of Colombian pesos -

Revenue from property leases for the period amounted to \$ 694 and was obtained by EPM, ENSA and EDEQ (2015: \$ 612). As of December 31, 2016 direct expenses related to investment properties were \$ 28, originated by the EDEQ affiliate, of which \$ 14 relate to properties that did not generate revenues from leases.

As of December 31, 2016 and 2015 there were no contractual obligations to acquire, construct or develop investment property or for repairs, maintenance or improvements thereto.

The following are the contractual restrictions on investment properties:

- In EPM for \$1,970 (2015: \$16,970), among which the lot of land of Niquia is outstanding, given that it is affected by an power conduction easement, which may restrict the commercial development of the lot; in addition, the land located next to EPM's smart building where they are located (EPM, Plaza Mayor, Barefoot Park) that may present limitations in a future use of the land of the zone, which has repercussions on the commercial value of the square meter.
- In EDEQ restriction on the property located at Calle 14 No. 10-16 of the Municipality La Tebaida since they were in a Legal process, situation that continued during 2016; therefore, no revenues were received on this good.



## Note 6. Other intangible assets

The following is the detail of the book value of the other intangible assets:

Intangibles	2016	2015
Goodwill	2,918,817	3,078,274
<b>Total goodwill</b>	<b>2,918,817</b>	<b>3,078,274</b>
Other intangibles <sup>1</sup>	2,707,560	2,414,166
Accumulated depreciation and impairment	(837,181)	(655,590)
<b>Total other intangibles</b>	<b>1,870,379</b>	<b>1,758,576</b>
<b>Total</b>	<b>4,789,196</b>	<b>4,836,850</b>

- Figures expressed in millions of Colombian pesos -

- (1) Includes balance of intangibles recognized under utility concession agreements for rendering water and sewage services. See note 42. Utility Concession Agreements.
- (2) The movement of cost, depreciation and impairment of intangible assets is detailed below:

2016	Goodwill	Concessions and similar rights	Capitalized development expenses	Software & information technology applications	Licenses	Rights	Other intangible assets <sup>1</sup>	Total
<b>Cost as of January</b>	3,078,274	1,557,054	36,198	171,189	92,622	55,687	501,418	5,492,442
Additions <sup>2</sup>	-	92,720	10,861	32,416	25,715	-	406	162,118
Anticipos entregados a terceros (amortizados)	-	-	-	-	-	-	-	-
Transfers (-/+)	-	115,426	-	15,286	1,019	2,931	4,510	139,172
Disposals (-)	-	-	-	(1,360)	(1,279)	(9,943)	-	(12,582)
Exchange difference	(35,668)	(4,698)	(15,576)	(118)	(6,678)	9,576	(21,389)	(74,551)
Other changes	(53,003)	(46,558)	14,840	(1)	4,463	(6,813)	6,851	(80,221)
<b>Cost in books as of December 31</b>	<b>2,989,603</b>	<b>1,713,944</b>	<b>46,323</b>	<b>217,412</b>	<b>115,862</b>	<b>51,438</b>	<b>491,796</b>	<b>5,626,378</b>
<b>Accumulated amortization and impairment as of January 1</b>	-	(394,598)	-	(82,024)	(55,468)	(496)	(123,005)	(655,591)
Amortization of period <sup>4</sup>	-	(57,678)	-	(19,219)	(9,005)	(472)	(34,280)	(120,654)
Impairment of the period (see notes 7)	(84,144)	(63,305)	(1,472)	(207)	(440)	(17)	(16,104)	(165,689)
Reversal of loss of impairment (-)	-	23,539	-	416	164	-	1,545	25,664
Disposals (-)	-	-	-	1,345	1,206	-	-	2,551
Transfers (-/+)	-	-	-	-	-	-	44,261	44,261
Exchange difference	13,358	15,390	-	1,038	2,059	18	-	31,863
Other changes	-	-	-	(259)	(140)	-	811	412
<b>Cost in books as of December 31</b>	<b>(70,786)</b>	<b>(476,652)</b>	<b>(1,472)</b>	<b>(98,910)</b>	<b>(61,624)</b>	<b>(967)</b>	<b>(126,772)</b>	<b>(837,183)</b>
<b>Intangible assets as of December 31</b>	<b>2,918,817</b>	<b>1,237,292</b>	<b>44,851</b>	<b>118,502</b>	<b>54,238</b>	<b>50,471</b>	<b>365,024</b>	<b>4,789,195</b>

- Figures expressed in millions of Colombian pesos -

2015	Goodwill	Concessions and similar rights	Capitalized development expenses	Software & information technology applications	Licenses	Rights	Other intangible assets <sup>1</sup>	Total
<b>Cost as of January</b>	1,292,022	309,351	32,448	143,727	74,095	41,431	41,527	1,934,601
Business combinations <sup>(2)</sup>	1,492,295	755,972	-	-	-	-	-	2,248,267
Additions <sup>(3)</sup>	-	8,203	-	29,899	14,534	17	1,435	54,088
Transfers (-/+)	-	20,464	-	2,876	475	-	288	24,103
Disposals (-)	-	(13,414)	-	(18,776)	(7,271)	(96)	(75)	(39,632)
Effect on loss of subsidiary control	-	-	-	-	-	-	(9)	(9)
Exchange difference	207,477	74,264	3,750	13,570	10,789	170	6,173	316,193
Other changes	86,480	402,214	-	(107)	-	14,165	452,079	954,831
<b>Cost in books as of December 31</b>	<b>3,078,274</b>	<b>1,557,054</b>	<b>36,198</b>	<b>171,189</b>	<b>92,622</b>	<b>55,687</b>	<b>501,418</b>	<b>5,492,442</b>
<b>Accumulated amortization and impairment as of January 1</b>	-	(121,010)	-	(81,547)	(50,482)	(188)	(6,723)	(259,950)
Amortization of period <sup>4</sup>	-	(31,801)	-	(32,097)	(7,658)	(308)	(17,605)	(89,469)
Impairment of the period (see notes 7)	-	(8,419)	-	-	(18)	-	-	(8,437)
Business combinations <sup>(2)</sup>	-	(279,148)	-	-	-	-	-	(279,148)
Disposals (-)	-	3,967	-	18,776	7,246	-	-	29,989
Transfers (-/+)	-	7,793	-	-	-	-	-	7,793
Exchange difference	-	40,337	-	12,845	(4,548)	-	(99,172)	(50,538)
Other changes	-	(6,317)	-	(1)	(8)	-	494	(5,832)
<b>Accumulated amortization and impairment as of December 31</b>	-	<b>(394,598)</b>	-	<b>(82,024)</b>	<b>(55,468)</b>	<b>(496)</b>	<b>(123,006)</b>	<b>(655,592)</b>
<b>Intangible assets as of December 31</b>	<b>3,078,274</b>	<b>1,162,456</b>	<b>36,198</b>	<b>89,165</b>	<b>37,154</b>	<b>55,191</b>	<b>378,412</b>	<b>4,836,850</b>
Advances payments made to third parties								
Balance as of January 1, 2016	-	-	-	-	-	-	19	19
Movement (-)	-	-	-	-	-	-	(19)	(19)
<b>Balance December 31, 2016</b>								

- Figures expressed in millions of Colombian pesos -

- 1 Includes easements, intangibles related to customers and other intangibles
- 2 In 2015 and 2014 goodwill generated in the business combination with Aguas de Antofagasta S.A. and Surtidora de Gas del Caribe S.A. E.S.P - SURTIGAS of the municipality of Necoclí, respectively is included. See Note 9 Business combinations.
- 3 Includes the purchases, capitalizable disbursements that meet the recognition criteria. At the end of 2016 and 2015 no government subsidies were received related to intangible assets.
- 4 See note 31 Costs for provision of services and note 32 Administrative expenses
- 5 Corresponds to the decrease of the goodwill resulting in the purchase of Adasa, for the recognition of an asset for deferred tax originated in the tax loss determined at December 31, 2015.

At the closing of the periods an impairment test was made to the assets because there were intangible assets recorded with indefinite useful life. The detail of the impairment recognized in the Comprehensive income statement is in note 7. Impairment of assets.

The useful lives of the intangible assets are:

Concessions and similar rights	As per the contract's effective term
Easements	Indefinite
Capitalized disbursement for development	Indefinite
Software and information technology applications	Indefinite/ definite 3 to 5 years
Licenses	Indefinite/ definite 3 to 5 years
Rights	As per the contract's effective term
Other intangible assets	Indefinite/ definite 7 to 15 years

The amortization of intangibles is recognized as Costs of \$ 82,136 (2015: \$ 35,234) and expenses of \$ 38,517 (2015: \$ 54,235) in the statement of comprehensive income, profit and loss for the period, in the lines of service delivery costs (Note 31) and administrative expenses.

As of December 31, 2016 and 2015 n no restrictions were identified on the realization of intangible assets nor they have been affected as guarantee for the fulfillment of obligations, or contractual commitments for the acquisition of other intangible assets.

The carrying amount at the cut-off date and the remaining amortization period for the significant assets is:

Significant intangible assets	Useful life	Remaining amortization period	2016	2015
Goodwill	Indefinida	N/A	2,918,817	3,078,274
Concession of secondary networks Municipality of Bello	Definida	166 months	-	15,396
La Garcia secondary network concession	Definida	120 months	-	10,986
La Ayura secondary network concession	Definida	120 months	-	9,859
La Mina secondary network concession	Definida	166 months	-	7,267
El Dorado red circuit concession	Definida	77 months	-	5,630
Concession Chile	Definida	192 months	-	1,243,699

- Figures expressed in millions of Colombian pesos -

The following intangible assets have an indefinite useful life: goodwill and easements. By definition an easement is the actual right, perpetual or temporary on someone else's real estate, by virtue of which the property can be used, or exercise certain disposal rights, or prevent the owner from exercising some of his property rights. In the Group the easements are not treated individually, since they are crated for public utility projects, where the general interest prevails over the private one, considering that the objective is

to improve the quality of life of the community; the above-mentioned projects do not have a defined term and thus they are created perpetually supported in their use.

As of December 31, 2016 and 2015 have a book value of \$ 2,953,964 and \$ 3,105,970, as detailed below:

<b>Intangible assets with indefinite useful life</b>	<b>2016</b>	<b>2015</b>
<b>Goodwill</b>		
Aguas de Antofagasta S.A.	1,541,829	1,578,775
Empresa Eléctrica de Guatemala S.A. (EEGSA)	915,784	941,789
Proyecto Hidroeléctrico Ituango	177,667	177,667
Elektra Noreste S.A. (ENSA)	115,353	117,556
Espíritu Santo	82,980	82,980
Tecnología Intercontinental S.A. de C.V. (TICSA)	1,114	82,740
Empresas Varias de Medellín S.A. E.S.P.	78,642	78,642
Parque Eólico Los Cururos Ltda.	-	12,677
Empresa de Energía del Quindío S.A. E.S.P. (EDEQ)	5,135	5,135
Surtigás Necodí	303	303
Central Hidroeléctrica de Caldas S.A. E.S.P. (CHEC)	10	10
<b>Subtotal goodwill</b>	<b>2,918,817</b>	<b>3,078,274</b>
<b>Other intangibles</b>		
Easements	35,147	27,696
<b>Subtotal other intangibles assets</b>	<b>35,147</b>	<b>27,696</b>
<b>Total intangible assets with indefinite useful life</b>	<b>2,953,964</b>	<b>3,105,970</b>

- Figures expressed in millions of Colombian pesos -

## Note 7. Impairment of assets

### 7.1 Impairment of investments in associates And joint ventures

As of the date of presentation of the financial statements no losses for impairment were recognized in the Statement of Comprehensive income, related to investments in associates and joint ventures

### 7.2 Impairment of Cash Generating Units

The carrying amount of goodwill and intangible assets with indefinite useful lives associated with each CGU are detailed below:

Cash Generating Unit	Carrying value		Impairment losses (reversal)	
	2016	2015	2016	2015
<b>Power Generation Segment</b>				
Goodwill	260,647	273,325	12,626	-
Easements	3,791	3,955	21	-
Concessions and franchises	-	-	229	-
Licensing	-	-	408	-
Disbursements development phases	-	-	1,472	-
Other intangibles	-	-	4,588	-
Real Estate	-	-	7,402	-
Constructions in progress	-	-	838	-
Buildings	-	-	22,111	-
Plants, ducts and tunnels	-	-	210,946	-
Networks, lines and cables	-	-	2,515	-
Machinery and equipment	-	-	11,532	-
Furniture, office requisites and equipment	-	-	6	-
Communication and computer equipment	-	-	9	-
Transport, traction and lifting equipment	-	-	26	-
<b>Generation</b>	<b>264,438</b>	<b>277,280</b>	<b>274,729</b>	<b>-</b>
<b>Energy Transmission Segment</b>				
Servitudes	2,437	276	-	-
<b>Transmission</b>	<b>2,437</b>	<b>276</b>	<b>-</b>	<b>-</b>
<b>Energy Distribution Segment</b>				
Merchant credit	1,036,281	1,064,490	-	-
Intangible asset	22,146	15,795	-	-
<b>Distribution</b>	<b>1,058,427</b>	<b>1,080,285</b>	<b>-</b>	<b>-</b>
<b>Gas Segment</b>				
Servitudes	3,481	3,481	-	-
Merchant credit	303	303	-	-
<b>Gas</b>	<b>3,784</b>	<b>3,784</b>	<b>-</b>	<b>-</b>
<b>Water Supply Segment</b>				
Merchant credit	1,403,065	1,436,685	-	-
Servitudes	2,858	2,841	(1,257)	-
Concessions and franchises	-	-	(24,189)	-
Plants, ducts and tunnels	-	-	(183,011)	5,551
Networks, lines and cables	-	-	(192,420)	1,945
Buildings	-	-	(113,382)	382
Real Estate	-	-	(191,596)	239
Transport, traction and lifting equipment	-	-	(1,349)	174
Machinery and equipment	-	-	(2,957)	161
Furniture, office requisites and equipment	-	-	(185)	37
Medical and scientific equipment	-	-	(489)	29
software	-	-	(143)	-
Replacement goods	-	-	(141)	-
Licensing	-	-	(75)	18
Communication and computer equipment	-	-	(19)	9
<b>Water Supply</b>	<b>1,405,923</b>	<b>1,439,526</b>	<b>(711,213)</b>	<b>8,545</b>
<b>Sanitation Segment</b>				
Merchant credit	218,521	303,472	71,518	-
Servitudes	1,350	1,350	776	-
Concessions and franchises	-	-	63,076	8,419
Rights	-	-	17	-
Licensing	-	-	32	-
software	-	-	207	-
Other intangibles	-	-	10,719	-
Real Estate	-	-	55,404	-
Buildings	-	-	414	-
Plants, ducts and tunnels	-	-	86,876	-
Networks, lines and cables	-	-	418,383	-
Machinery and equipment	-	-	1,720	-
Furniture, office requisites and equipment	-	-	16	-
Communication and computer equipment	-	-	305	-
Transport, traction and lifting equipment	-	-	1,311	-
<b>Sanitation</b>	<b>219,871</b>	<b>304,822</b>	<b>710,774</b>	<b>8,419</b>
<b>Total</b>	<b>2,954,880</b>	<b>3,105,973</b>	<b>274,290</b>	<b>16,964</b>

- Figures expressed in millions of Colombian pesos -



The goodwill is assigned mainly to the segments or CGUs that are detailed below:

Cash Generating Unit	2016	2015	Generated as proceeds from:
Generation EPM	260,647	260,647	Liquidation of the affiliate EPM Ituango S.A. E.S.P. and Espiritu Santo which assets were transferred to EPM
Generation Los Cururos Aeolian Park	-	12,677	Business Combination in the acquisition made by EPM Chile
Distribution EDEQ	5,135	5,135	Business Combination in the acquisition made by EPM Inversiones
Distribution CHEC	10	10	Business Combination in the acquisition made by EPM Inversiones
Distribution EEGSA	915,784	941,789	Business Combination in the acquisition of the Group DECA II made by EPM
Distribution ENSA	115,353	117,556	Business Combination in the acquisition of the Group PDG made by EPM
Gas EPM	303	303	Business Combination with Surtidora de Gas del Caribe S.A. E.S.P. made by EPM
Water Provision ADASA	1,403,064	1,436,685	Business Combination in the acquisition of Aguas de Antofagasta made by Inversiones Hanover
Sanitation ADASA	138,765	142,090	Business Combination in the acquisition of Aguas de Antofagasta made by Inversiones Hanover
Sanitation TICSA	1,114	82,740	Business Combination in the acquisition of Grupo TICSA made by EPM Mexico
Sanitation EMVARIAS	78,642	78,642	Business Combination in the acquisition made by EPM
<b>Total</b>	<b>2,918,817</b>	<b>3,078,274</b>	

The intangible Easements is assigned mainly to the segments or CGUs that are detailed below:

Cash Generating Unit	2016	2015
Generation EPM	444	444
Generation CHEC	2	-
Generation Hidroecológica del Teribe	3,345	3,511
Transmission EPM	2,402	241
Transmission ESSA	35	35
Distribution EPM	9,220	3,320
Distribution EDEQ	254	254
Distribution CHEC	5,097	4,755
Distribution CENS	724	723
Distribution ESSA	3,016	2,725
Distribution EEGSA	476	492
Distribution ENSA	3,359	3,526
Gas EPM	3,481	3,481
Water Provision EPM	2,858	2,841
Sanitation EPM	1,350	1,350
<b>Total</b>	<b>36,063</b>	<b>27,698</b>

#### Impairment of fixed and intangible assets

##### UGE Generation HET

For the UGE of the property, plant and equipment the impairment of its assets was calculated based on IAS 36, seeking to make sure that the value of the assets that are being accounted for at the report of December 31, 2016 reflects their recoverable value through its utilization or their sale.

Value in use: Was based on the most recent financial projections, estimating the cash flows that the Group expects to obtain from its assets for a period of 20 years.

The discount rate used for the valuation reflects the Company's capital structure, which considers the return that the owner would require to this type of investment, taking into account: the risk-free rate, the corresponding economic sector, the Market, the country where investment and debt are located.

At the closing of the period an impairment test of CGE was performed, finding evidence of impairment, the global energy market was evaluated, a path of prices lower than those expected is evidenced; the impairment was generated basically because in the commercial operation a generalized drop of energy prices is evidenced in the spot market, the marginal cost of the average energy is lower especially in the meium term, impacted by the price of oil and by the increase of renewable energies and changes in the energy basket of the Panamanian market, also, a lower generation is reflected due to restrictions expected by the control entity, lower water inflows are assumed as a reslt of the climatic conditions.

Based on the above, the value of impairment recorded At December 2016 is the following:

Value in use:	\$158,360,157	United States dollars
Carrying value of CGV:	\$171,806,057	United States dollars
Impairment value:	\$13,445,900	United States dollars

Conversion rate impairment expense 2,992.86

The key assumptions used by the EPM Group in the determination of the value in use/fair value less costs of sale of the CGU Generaton HET are the following:

Item	Key Assumption
Income	<p>The main on which the Company has based the estimate of the income are: The key factor is the estimate of the current and future prices of energy in Panama; for this the sale prices were calculated by simulations of the market of Central America (including exchanges with Ecuador and Venezuela), additionally, they consider aspects such as the hydro-thermal dispatch model MPODE, the projected demand with the expected growths of the GDP in a horizon up to 2034. For the base expansion The Expansion Plan of Panama is taken into account with adjustments in the assumptions of entry in operations of generation projects, and the scenarios of fuel prices in accordance with the WTI projections. The final price was obtained from the prices granted in the free occurrence processes in which the Company participated.</p> <p>The energy sale process of the Company is subject to the bidding processes of the energy distribution companies: EDEMET, EDECHI and ENSA, which, in turn, can determine to purchase energy from other generators in the spot market.</p>
Costs & Expenses	<p>Costs and expenses were estimated in compliance with the regulation that is applied to the generators of energy in the Republic of Panama and taking into account the proposal presented by the deputy management of energy operation of EPM for the AOM of the plant; additionally, expenses associated to the environmental and social management and to the fulfillment of the commitments derived from the compensation and benefits agreement to those acquired with the National Environmental Authority ANAM, were also considered.</p> <p>Given that the investments of the Companies in the generation sector have an extensive useful life, the customary recovery period of 5 years is not considered, because in this period it is not possible that the recovery of the investment will be carried out. The evaluation considered a period of 50 years, longer, where the actual income of the Company can be observed and therefore the return on the investment in this time is correlated to the term established in the generation concession that the Company has.</p>
Investment	<p>In order to estimate the investment required, the disbursements corresponding to costs of development, land, easements and rights of way were considered. Within the investment in physical works was considered the cost of the main civil works, the transmission line, the Changuinola substation and the equipment. Likewise, the disbursements associated to the environmental and social management, engineering and the provision for physical contingencies.</p>

#### Impairment CGU Aeolian Park Los Cururos Ltda.

**Aeolian Park Los Cururos Ltda.**, Calculated the impairment of its assets based on IAS 36 and IAS 16, seeking to ensure that the value of assets that are accounted for as of December 31, 2016 reflects their recoverable value through their use or sale.

Value in use: An estimate was made of the future cash flows that the Company expects to obtain on the assets; Considering expectations about possible changes in value, it was also based on the most recent financial projections, cash flow was calculated to 20 years with continuity value given the useful life Of assets. The discount rate used for the valuation reflects the capital structure of the company, which considers the performance that the owner would require to this type of investments.

Based on the above, the value of impairment recorded in the report of June and December 2016 is the following:

First half of the year

Value in use:	\$184,624,247	United States dollars
Book value of the CGU:	\$208,707,946	United States dollars
Impairment value:	\$24,083,699	United States dollars
Conversion rate impairment expense	4.42	

Second half of the year

Use value:	\$126,420,210	United States dollars
Carrying value of CGU:	\$180,592,273	United States dollars
Impairment value:	\$54,172,063	United States dollars
Conversion rate impairment expense	4.51	

The key assumptions used by the EPM Group in determining Value in use / fair value less costs to sell of the CGU Generation Aeolian Park Los Cururos Are as follows:

Item	Key Assumption
Income	<p>The energy sale process of the Aeolian Park Los Cururos Ltda. is subject essentially to the sales for the spot market, to the bidding processes with the energy distribution companies and to the bidding processes in the free market, which in turn may determine to purchase energy from other generators in the spot market.</p> <p>The lower results of the income in the horizon of the projections are marked basically by the combination of various commercial elements where the generalized drop in energy prices, the excess offer of renewable energy, the saturation of the transmission network, the lower generation in some periods of the horizon due to climatic conditions and the “decoupling” effect are the most outstanding; all these aspects have impacted the Company’s income both in the determination of the price and of the generation proper of the park.</p>
Costs and expenses	<p>The costs and expenses included in the financial projection behave in a stable manner; they were estimated in compliance with the regulation that is applied to the energy generating companies in the Republic of Chile taking into account the expenses associated to the environmental and social management, and the fulfillment of corporate commitments; the operating costs are due to the operating and maintenance contracts in effect which permit renegotiation of clauses and conditions including rates. It is possible that in the short and medium term, following the market conditions, these rates may decrease, situation that is not reflected in the projection.</p>
Investment	<p>In order to estimate the required investment those disbursements corresponding to those associated to the replacement and overhauls necessary in the horizon of the projection were considered.</p>

UGE Sanitation EPM

The impairment of its assets was calculated based on IAS 36 Impairment of assets, Seeking to ensure that the value of the assets that are accounted for as of December 31, 2016 reflects their recoverable value through their use or sale.

**Value in use:** Was based on the most recent financial projections, estimating the cash flows that the Group expects to obtain from its assets for a period of 20 years.

The discount rate that was used for the valuation reflects the capital structure of the company, which considers the performance that the owner would require from this type of investments, Taking into account: the risk-free rate, the corresponding economic sector, the market, the country where the investment is located and the indebtedness.

Based on the foregoing, the value of the deterioration recorded At December 2016 is the following:

Value in use:	\$514,857
Book value of the CGU:	\$1,143,376
Impairment value:	628,519

The key assumptions used by the EPM Group in determining the Value in use / fair value minus the costs of selling the EPM Saneamiento EPM are as follows:

Item	Key Assumption
Business Plan update	The plan of the CGU was modified by the following events: (i) rate change with Resolutions CRA 688 of 2014 and CRA 735 of 2015 issued by the Regulation Commission of Potable Water and Basic Sanitation - CRA, which make the fulfillment of the quality and coverage indicators and therefore, the review of investments and operations, (ii) review in demand projections mandatory, and (iii) changes in the remuneration and in the entry in operation of the Aguas Claras Waste Treatment Plant
Income	<p>In the income of the CGU were considered the adjustments for the implementation of the new rate framework, which implies a decrease in the invoice of the Sanitation CFU of -8%, because the most significant investments were recognized in the previous rate framework and are now in their majority reflected, investments for the support; additionally a review was made of the projection of the demand that showed a drop of approximately six million cubic meters for year 2016, resulting from the penalizations to the high consumptions established by the government, in order to mitigate the effects of El Niño, this savings behavior of subscribers is maintained with time.</p> <p>The invoice is also impacted by the indexation by inflation and the vegetative growth of discharges.</p> <p>In August 2017 the variable charge of waste water is increased by the entry into operation of the Aguas Claras Wastewater Treatment Plant.</p>
Cost and expenses	<p>Cost and expenses reflect At August 2017 the recognition to the affiliate Aguas Nacionales for the operation and remuneration of the investment of the Aguas Claras plant; the rest of the costs and expenses are behave in a consistent manner with the business operation.</p> <p>There was a displacement of the entry into operation of the Aguas Claras Waste Water Treatment Plant that moved from April to August 2017. In respect to the previous business plan there was a decrease in the payments to be recognized to the affiliate Aguas Nacionales for the remuneration of the WWTP Aguas Claras for review and decrease in the profitability required by the regulation.</p>
Investment	Investment respond to the market needs, the completion of the Aguas Claras Plant and the fulfillment of the new regulation.

### Ticsa Sanitation CGU

The impairment of its assets was calculated based on the IAS 36 Impairment of assets, seeking to make sure that the value of the assets that are accounted for with report at December 31, 2016 reflects their recoverable value through their utilization or their sale.

**Value in use:** It was based on the most recent financial projections, estimating the cash flows that the Group expects to obtain from its assets for a period of 20 years.

The discount rate that was use for the valuation reflects the company's capital structure, which considers the return that the owner would require from this type of investments, taking into account: the risk free rate, the corresponding economic sector, the market, the country where the investment is located and the indebtedness.

Value in use:	\$0	Mexican pesos
Carrying value of the CGU:	\$446,080,200	Mexican pesos
Impairment value:	\$ 446,080,200	Mexican pesos
Impairment expense conversion rate 160.32		

The key assumptions used by the EPM Group in the determination of the value in use/fair value less costs of sale of the TICSA Sanitation CGU are the following:

Item	Key Assumption
Income	<p>The Cash Generating Unit (CGU) corresponding to the Construction business has as components the management of the companies of the group of companies TICSA and the performance of projects, which takes into account lower expectations of projects as consequence of the contraction of public contracting in the sanitation sector, higher competence in the private sector and the affectation of one of the main customers, particularly Petroleos Mexicanos (PEMEX) due to the drop in the oil prices.</p> <p>In the income of the CGU are considered the continuity of the concessions in effect among which are worth mentioning new income derived from the entry into operation of the project PEMEX Madero, of the Uruapan Plant and of the rate corresponding to the remuneration of the investment in Tuxtla; additionally, the adjustments in the commercial plan are also taken into account, which take into consideration lower project expectations, reducing its success rate to fifty percent of the figure established in the plan thus using a conservative criterion.</p>
Costs and expenses	The costs and expenses respond to the operating needs of the business, both in the operating part corresponding to the management of current concessions, and those corresponding to the ones necessary to carry out the new projects.
Investment	Investments respond to the construction needs for the fulfillment of the commercial plant.

### CGU Sanitation Ecosystems of Lerdo City

The impairment of its assets was calculated based on IAS 36 Impairment of assets, seeking to make sure that the value of the assets that are accounted for with report at December 31, 2016 reflects their recoverable value through their use or their sale.



**Value in use:** it was based on the most recent financial projections, estimating the cash flows that the Group expects to obtain from its assets for a period of 20 years.

The discount rate that was used for the valuation reflects the capital structure of the company, which considers the return that the owner would require from this type of investments, taking into account: the risk free rate, the corresponding economic sector, the market, the country where the investment is located and the indebtedness.

Value in use:	\$ 132,166,670	Mexican pesos
Carrying value of CGU:	\$ 205,254,651	Mexican pesos
Impairment value:	\$73,087,981	Mexican pesos
Impairment expense conversion rate 146.66		

The key assumptions used by the EPM Group in the determination of the value in use/fair value less costs of sale of the Lerdo City Sanitation CGU are the following:

Item	Key Assumption
Income	The service agreement entered into with the customer (Water Operator Entity) indicates that water will be delivered to him in accordance to the demand made by the Federal Commission of Electricity of the zone through its Combined Cycle Thermoelectric Plants (CCC) of Gomes Palacios and Guadalupe Victoria and thus there is not a minimum water consumption floor (demand risk). Since the water treated serves for the cooling of its turbines, there are periods, such as winter, where consumption is very low. The same occurs when they close any of their CCCs to enter into maintenance phases, since there is no consumption. The above sends us to an operation of 60 to 70 liters per second (LPS), while the installed capacity is of 210 LPS. This level of operation places us slightly below the breakeven. The contract has a term of 20 years and its expiration is in 15 years (2031). The income projection is conservative, considering the same percentage of operation, since there are no indications of the construction of a new CCC that will increase the demand for water.
Costs & Expenses	These are projected only with inflationary growth, since by maintaining the same level of operation, the variable costs remain the same (mainly Electric Power and Chemical Products). Maintenances are in accordance with the program of the bid.
Investment	The cash generating unit does not require any additional investments.

### Recovery of impairment of fixed assets and intangibles

#### EPM Water Provision CGU

The impairment of its assets was calculated mainly based on IAS 36, seeking to make sure that the value of the assets that are accounted for with report at December 31, 2016 reflects their recoverable value through their use or their sale.

**Value in use:** it was based on the most recent financial projections, estimating the cash flows that the Group expects to obtain from its assets for a period of 20 years.

The discount rate used for the valuation reflects the capital structure of the company, which considers the return that the owner would require to this type of investment, taking into account: the risk-free rate, the corresponding economic sector, the Market, the country where investment and debt are located.

In the income of the CGU, the adjustments for the implementation of the new tariff framework are considered, which implies an increase in the turnover of the UGE Provision of 46%.

Based on the above criteria, a reversal of the deterioration in the UGE Provision Aguas was identified in the amount of \$ 711,214. The carrying value of each asset was increased considering the lower of the Value in use of \$1,991,982 And the book value that was determined (net depreciation) in the amount of \$ 1,280,768 as if there had been no impairment loss in prior periods. This increase was recognized in the income statement immediately.

The key assumptions used by the EPM Group in the determination of the value in use/fair value less costs of sale of the EPM Water provision CGU are the following:

Item	Key Assumption
Business Plan Update	The plan of the CGU had changes as a result of the rate change with Resolutions CRA 688 of 2014 and CRA 735 of 2015 issued by the Potable Water and Sanitation Regulation Commission -CRA, which make the fulfillment of quality and coverage indicators mandatory and therefore the review of investments and operations and by review of demand projections.
Income	In the income of the CGU are considered the adjustments for the implementation of the new rate framework, which implies an increase in the invoice of the CGU Provision of 46%, given that a higher level of investments is recognized as a result of the requirements in respect to quality and coverage, increase that will be applied gradually until 2022. A review was made of the demand projection that showed a drop of approximately six million cubic meters for 2016, resulting from the penalizations to high consumption established by the government, to mitigate the effects of El Niño; this savings behavior by subscribers is maintained with time. The invoice also is impacted by the indexation for inflation and the vegetative growth of consumptions.
Costs and expenses	Costs and expenses respond to the needs of the business operation, taking into account, in addition, the disbursements of the prepaid water projects, massive change of meters and the entrance of subscribers from Valle de San Nicolas.
Investment	Investments respond to the needs of the market and to the fulfillment of the new regulation.

## Note 8. Investment in subsidiaries.

The detail of the subsidiaries of the Group At the date of the reporting period is the following:

Name of subsidiary	Location (country)	Main activity	Percentage of Ownership and Voting Rights		Percentage of non-controlling interest		Creation date
			2016	2015	2016	2015	
Energy Company of Quindío S.A. E.S.P. (EDEQ)	Colombia	Provides public utilities for electric power purchase, sale and distribution of electricity.	92.85%	92.85%	7.15%	7.15%	12/22/1988
Central Hidroeléctrica de Caldas S.A. E.S.P. (CHEC)	Colombia	It provides public energy services, operating power generation plants, transmission and subtransmission lines and distribution networks, as well as the commercialization, import distribution and sale of electricity.	80.10%	80.10%	19.90%	19.90%	9/9/1950
Electrificadora de Santander S.A. E.S.P. (ESSA)	Colombia	Provides public services of electrical energy purchase sale commercialization and distribution of electric energy.	74.05%	74.05%	25.95%	25.95%	9/16/1950
Centrales Eléctricas del Norte S.A. E.S.P. (CENS)	Colombia	Provides public services for electricity, purchase, export, import, distribution and sale of electric power construction and operation of generating plants, transmission line substations and distribution networks.	91.52%	91.52%	8.48%	8.48%	10/16/1952
Elektra Noreste S.A. (ENSA)	Panamá	Acquires energy, transports, distributes to customers, transforms voltage, installs, operates and maintains public lighting, authorized to carry out power generation up to a limit of 15% of maximum demand in the concession area.	51.16%	51.16%	48.84%	48.84%	1/19/1998
Hydroelectric Plant of Teribe S.A. (HET)	Panamá	It finances the construction of the Bonyic hydroelectric project required to meet the growth of the energy demand of the isthmus of Panama.	99.19%	99.19%	0.81%	0.81%	11/11/1994
Empresa Eléctrica de Guatemala S.A. (EEGSA)	Guatemala	Provides electricity distribution services.	80.90%	80.90%	19.10%	19.10%	10/5/1939
Management of Electrical Companies S.A. (GESA)	Guatemala	Provides advice and consulting to distribution companies and electricity transmission.	100.00%	100.00%	-	-	12/17/2004
Storage and Handling of Electrical Materials S.A. (AMESA)	Guatemala	Provides outsourcing services in the area of materials management.	99.94%	99.94%	0.06%	0.06%	3/23/2000
Comercializadora Eléctrica de Guatemala S.A. (COMEGSA)	Guatemala	Provides services of commercialization of electrical energy.	80.52%	80.52%	19.48%	19.48%	11/5/1998
Transportista Eléctrica Centroamericana S.A.	Guatemala	Provides services of Transmission of electrical energy.	80.90%	80.90%	19.10%	19.10%	10/6/1999
Energetic S.A. (ENERGY)	Guatemala	Provides services of construction and maintenance of projects and goods of the electric sector.	78.19%	78.19%	21.81%	21.81%	8/31/1999
Crediegsa S.A. (CREDIEGSA)	Guatemala	Provides recruitment services and other administrative services	80.90%	80.90%	19.10%	19.10%	12/1/1992
Distribuidora de Electricidad del Sur (DELSUR)	El Salvador	Transformation, distribution and commercialization of electricity supplying the south central zone of El Salvador in Central America.	86.41%	86.41%	13.59%	13.59%	11/16/1995
Innova Tecnología y Negocios S.A. Of C.V.	El Salvador	Provision of specialized services in electrical engineering and sale of electrical appliances to electricity users of DelSur.	86.41%	86.41%	13.59%	13.59%	10/19/2010
Parque Eólico Los Cururos Ltda.	Chile	Generation of electrical energy through all types of fuels and renewable energies such as wind, photovoltaic and biomass, transmission, purchase, sale and commercialization of electric energy.	100.00%	100.00%	-	-	8/26/2011

National Waters EPM S.A. E.S.P.	(1)	Colombia	Provides public utilities for water, sewage and sanitation, treatment and waste management complementary activities and engineering services specific to these public services.	99.99%	99.99%	0.01%	0.01%	11/29/2002
Agua Regionales EPM S.A. E.S.P.	(2)	Colombia	Ensure the provision of public residential water supply and sanitation services and compensate for the lag of the infrastructure of these services in the partner municipalities.	69.76%	75.45%	30.24%	24.55%	1/18/2006
Public Companies of Oriente Antioqueño S.A. E.S.P. (EPOs)	(3)	Colombia	It provides water and sewage services to the rural and suburban areas of the municipalities of Envigado, Rionegro and El Retiro in the so-called Valle de San Nicolás.	-	57.31%	-	42.69%	11/12/2009
Company of Aguas del Oriente Antioqueño S.A. E.S.P.		Colombia	Provides public utilities of water and sewerage, as well as other complementary activities specific to each of these public services.	56.01%	56.01%	43.99%	43.99%	11/22/1999
Regional de Occidente S.A. E.S.P.	(2)	Colombia	It provides residential public services for water, sewage and sanitation, as well as the complementary activities of each of these services and the treatment and use of the garbage.	-	62.11%	-	37.89%	12/26/2006
Aguas de Malambo S.A. E.S.P.	(4)	Colombia	Dedicated to guarantee the provision of public utilities for sewage and sanitation in the jurisdiction of the Municipality of Malambo Department of the Atlantic.	96.23%	88.73%	3.77%	11.27%	11/20/2010
Aquasol Pachuca S.A. Of C.V.	(5)	México	Dedicated to elaborate executive project of construction of a plant of treatment of waste water its equipment and put in operation in the city of Pachuca de Soto, to develop projects of potable water and plants.	-	57.60%	100.00%	42.40%	7/5/2004
Ecosistemas de Colima S.A. Of C.V.		México	Dedicated to elaborate executive project for the plant of treatment of residual waters, its construction equipment and putting into operation, conservation and maintenance stabilization of sludge in municipalities of the State of Colima.	79.99%	79.99%	20.01%	20.01%	2/14/2006
Ecosystems of Tuxtla S.A. Of C.V.		México	Dedicated to the construction, equipment, start-up, operation and maintenance of a waste water treatment system with the total private investment modality recoverable. Develop potable water projects and water treatment plants.	80.00%	80.00%	20.00%	20.00%	11/17/2006
Ecosistemas de Uruapan S.A. Of C.V.		México	Subsidiary dedicated to the provision of wastewater treatment services of the Municipality of Uruapan Michoacán includes construction, equipment, testing and commissioning, maintenance and maintenance of the plant.	80.00%	80.00%	20.00%	20.00%	11/18/2009
Ecosystem of Ciudad Lerdo S.A. Of C.V.		México	Subsidiary dedicated to the construction, equipment, commissioning, operation and maintenance for 20 years of a wastewater treatment system in the city Lerdo Durango, with the total private investment modality recoverable.	80.00%	80.00%	20.00%	20.00%	4/24/2007
Aquasol Morelia S.A. Of C.V.		México	Subsidiary dedicated to the construction of a wastewater treatment plant, as well as the equipment and commissioning of said plant located in the town of Atapaneo in the Municipality of Morelia Michoacán.	80.00%	80.00%	20.00%	20.00%	11/13/2003

Ecosystems of Celaya S.A. Of C.V.		México	Dedicated to the elaboration of the executive project for the wastewater treatment plant, as well as to the treatment, transportation and final disposal of solid waste and sludge in the plant of the city of Celaya state of Guanajuato.	80.00%	80.00%	20.00%	20.00%	12/5/2008
Ecosystem of Morelos S.A. Of C.V.	(5)	México	Dedicated to construction, electromechanical equipment, functional tests, capacity, commissioning, operation, conservation and maintenance of the wastewater treatment plant Acapantzingo Municipio Cuernavaca Morelos.	-	80.00%	100.00%	20.00%	11/17/2009
Hydraulic Developments of Tampico S.A. Of C.V.		México	Dedicated to the construction, equipment, extension, improvement, maintenance maintenance and operation of water supply systems and sewage services, collection, drainage and wastewater treatment works.	79.99%	79.99%	20.01%	20.01%	8/25/1995
Ecoagua de Torreón S.A. Of C.V.		México	Dedicated to providing services of operation of treatment of waste water from any source, be it municipal or domestic, as well as the activity related to the treatment of waste water.	80.00%	80.00%	20.00%	20.00%	10/25/1999
Corporate Engineering Projects S.A. Of C.V.		México	Provision of design, general or construction engineering services, professional and technical services tending to operate, manage, manage and generally carry out all the activities that are necessary for the development of activities of any commercial, industrial or commercial enterprise. Of services, in their modality of physical or moral person.	80.00%	80.00%	20.00%	20.00%	8/1/2008
Corporation of Administrative Personnel S.A. Of C.V.		México	Provision of professional services tending to operate, administer, direct and generally carry out all the activities that are necessary for the development of activities of any commercial, industrial or service company in its modality of natural or moral person, as well as Also the administration, selection, contracting and exchange of personnel that performs functions within the facilities of the requesting companies.	80.00%	80.00%	20.00%	20.00%	8/1/2008
Aguas de Antofagasta S.A.	(6)	Chile	Construction and operation of public services for the production and distribution of drinking water and	100.00%	100.00%	-	-	11/28/2003
Various Companies of Medellín S.A. E.S.P.	(7)	Colombia	Subsidiary dedicated to the provision of the public toilet service within the framework of the integral management of solid waste.	99.93%	99.93%	0.07%	0.07%	1/11/1964
EPM Inversiones S.A.	(8)	Colombia	Dedicated to the investment of capital in national or foreign companies organized as utilities.	99.99%	99.99%	0.01%	0.01%	8/25/2003
Maxseguros EPM Ltd.	(9)	Bermuda	Negotiation, contracting and management of reinsurance for policies that protect the patrimony.	100.00%	100.00%	-	-	4/23/2008
Panamá Distribution Group S.A. - PDG		Panamá	Capital investment in companies.	100.00%	100.00%	-	-	10/30/1998
Central American Electrical Distribution DOS S.A. - DECA II		Guatemala	It makes capital investments in companies engaged in the distribution and commercialization of electric power and in providing telecommunications services.	100.00%	100.00%	-	-	3/12/1999
Inmobiliaria y Desarrolladora Empresarial de America S.A. (IDEAMSA)		Guatemala	Subsidiary dedicated to investing in real estate.	80.90%	80.90%	19.10%	19.10%	6/15/2006
Promobiliaria S.A.	(10)	Panamá	Purchase, sell, construct, modify, manage, lease and generally enter into any contract for the disposition, improvement, use and usufruct of real estate not necessary for the operation of property of the companies that make up the EPM Group.	100.00%	100.00%	-	-	9/8/2015
EPM Latam S.A.		Panamá	Make capital investments in companies.	100.00%	100.00%	-	-	5/17/2007

Electricidad de Centroamérica Ltda. De C.V. (ELCA)	(11)	El Salvador	It makes investments in shares and other securities and advises the company DELSUR.	-	100.00%	-	-	12/9/1997
EPM Capital México S.A. Of C.V.	(12)	México	It develops infrastructure projects related to energy, lighting, gas, telecommunications, sanitation, potable water treatment plants, sewage treatment, wastewater treatment, buildings, as well as its operation, studies and services.	100.00%	100.00%	-	-	5/4/2012
EPM Chile S.A.	(13)	Chile	It develops energy projects, lighting, gas, telecommunications, sanitation, sewage treatment plants and sewage treatment, as well as providing such services and participating in all types of public and private tenders and auctions.	100.00%	100.00%	-	-	2/22/2013
Investments & Consulting South Water Services SpA		Chile	Participate in all types of competitions, bidding, auctions are public and / or private in the purchase of stakes in domestic or foreign companies. Carry out strategic alliances, joint venture partnerships and enter into business collaboration agreements to compete for tenders, obtain concessions and / or authorizations. Provide all types of advisory and services related directly or indirectly to the activities performed and in which society is involved.	100.00%	100.00%	-	-	12/16/2014
Intercontinental Technology S.A. Of C.V. TICSA	(14)	México	Dedicated to the study, development, promotion and execution of industrial projects, to the design, manufacture assembly and assembly of machinery technology development including commercial representation commercial and general trade.	80.00%	80.00%	20.00%	20.00%	7/28/1980
Autonomous Patrimony Social Financing	(15)	Colombia	To manage the resources and payments of the program of social financing created by EPM and UNE to facilitate to its clients the purchase of electrical appliances, gasodomá © cicos and products related to Information technology.	100.00%	86.68%	-	13.32%	4/14/2008
EV Alianza Energética S.A.	(16)	Panamá	Provision of energy efficiency services and all related services such as environmental services, marketing and financing of efficiency projects, as well as the provision of energy and technology solutions, production, transformation, purchase, sale and supply of energy, gas and related products Such as biogas; Consultancy services, studies, reports and projects relating to farms and previous services, as well as those relating to the environment and energy saving.	51.00%	-	49.00%	-	1/22/2016

- <sup>1</sup> In December 2015, EPM capitalized Aguas Nacionales EPM S.A. by \$250,000.
- <sup>2</sup> On December 23, 2015, in accordance with public deed No. 4934 of Notary Third of Medellín, the approval of the merger for absorption was approved whereby Aguas de Urabá S.A. E.S.P. absorbs Regional de Occidente S.A. E.S.P., as evidenced in minutes 17 and 16 of the general stockholders' meetings of the companies, respectively, entered into on October 23, 2015. Based on the merger commitment, it was established that for accounting purposes, the final operation is formalized based on the figures resulting from accounting of the two companies, as of the last day of the month when the solemnization of the respective deed takes place, that is as of December 31, 2015. Consequently, the operations of the Regional de Occidente S.A. E.S.P. (absorbed company) are made by Aguas de Urabá S.A. E.S.P. (absorbing company) as of January 1, 2016.
- <sup>3</sup> On February 5, 2016, according to public deed No. 0000196 of the Sole Notary of Apartado, the company changed its name from Aguas de Urabá S.A. E.S.P. to Aguas Regionales EPM S.A. E.S.P.
- <sup>4</sup> Subsidiary liquidated, according to act No. 012 of the General Assembly of Shareholders of January 29, 2016, registered in the Chamber of Commerce of Antioquia East on February 24, 2016 under the number 33233 of book IX.
- <sup>5</sup> In March and December 2016, EPM capitalized Aguas Malambo S.A. E.S.P. for \$9,000 and \$4,999, respectively.



- <sup>6</sup> Subsidiaries not consolidated at December 31, 2015 for loss of control See note 8.3.2. <sup>(6)</sup> Subsidiary acquired by the EPM Group on June 2, 2015 (see note 9 - business combinations).
- <sup>7</sup> And merged with Corvina S.A. In accordance with the provisions of Law 18,046 on joint-stock companies and in accordance with the approval of the Extraordinary Shareholders' Meeting held on November 27, 2015, a document reduced to public deed on November 30, 2015 in Notary No. 27 of Santiago de Chile under the repertoire N ° 35.919-2015. The merger was carried out by absorption or incorporation, in which Inversiones y Asesorías Corvina S.A. Was the absorbing company. Subsequently by reform of statutes assumes the company name of the company absorbed. In addition, the absorbing entity became the owner of the right to operate the sanitary concession of the Sanitary Services Company of Antofagasta S.A., located in the absorbed entity.
- <sup>8</sup> In December 2015, EPM Investments and EPM capitalized Empresas Varias de Medellin S.A. E.S.P. by \$35,445 and \$18, respectively.
- <sup>9</sup> In June 2016, EPM Investments S.A. returned contributions to EPM for \$165,000.
- <sup>10</sup> In May 2015, EPM capitalized Maxseguros EPM Ltda. For \$ 24,170.
- <sup>11</sup> Subsidiary incorporated on September 8, 2015 in the Republic of Panama, as per deed No 32.306 of the Fifth Public Notary of the Notary Circuit of Panama.
- <sup>12</sup> Subsidiary liquidated as per deed of liquidation registered on October 11, 2016 in book 3652, No. 32, Pages 163 to 168 of the Registry of Company, Registry of Commerce of the Department of Commercial Documents of San Salvador, Republic of El Salvador.
- <sup>13</sup> As proceeds of the liquidation a remaining balance of cash was received for \$2,322.30 that was received by EPM Latam S.A.
- <sup>14</sup> In May 2016, EPM Latam S.A. capitalized EPM Capital Mexico S.A. de C.V. by USD \$8,900,000.
- <sup>15</sup> In December 2015, EPM Latam S.A. and Panama Distribution Group S.A. - PDG, capitalized EPM Capital Mexico S.A. de C.V. by USD 33,000,000 and USD 17,500,000, respectively.
- <sup>16</sup> \$33,000,000 and USD \$17,500,000, respectively. In May 2016 EPM Latam S.A. capitalized EPM Capital Mexico S.A. de C.V. by USD \$8,900,000.
- <sup>17</sup> In October 2016, EPM capitalized EPM Chile S.A. for \$87,744 and in June and November of 2015 for 663,749 and \$221,120, respectively.
- <sup>18</sup> Subsidiary with branch in Colombia, registered at the Chamber of Commerce of Medellin on June 21, 2016, under the name of Ticsa Colombia
- <sup>19</sup> In November 2016, EPM increased its participation in the standalone trust for retirement from UNE EPM Telecomunicaciones S.A. as participating partner.
- <sup>20</sup> Subsidiary incorporated on January 22, 2016 in the Republic of Panama, as per deed No. 2890 of the Fifth Public Notary of the Notary Circuit of the Panama City. Additionally, the Subsidiary has a branch in Colombia, registered at the Chamber of Commerce of Medellin on July 8, 2016 under the name of EV Alianza Energetica S.A. Sucursal Colombia.

The financial information of the subsidiaries of the EPM Group that have significant non-controlling participations as of the date of the period reported is as follows:

2016	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Rendering of services	Result for the period	Other comprehensive income	Total comprehensive income	Cash flows
						Continuing operations			
Elektra Noreste S.A. (ENSA)	432,662	1,537,937	867,593	666,581	1,730,697	48,191	(84,676)	13,883	10,865
Empresa Eléctrica de Guatemala S.A. (EEGSA)	434,887	1,345,559	338,027	662,054	1,633,182	180,396	(66,681)	113,715	26,908
Electrificadora de Santander S.A. E.S.P. (ESSA)	226,040	1,123,487	279,694	501,626	1,052,899	87,327	(9,876)	77,451	46,903
Distribuidora Eléctrica del Sur S.A. de C.V. (DELSUR)	172,149	317,521	154,586	205,893	715,500	43,496	(19,947)	23,549	14,306
Central Hidroeléctrica de Caldas S.A. E.S.P. (CHEC)	214,039	809,952	127,844	392,748	673,293	70,585	(1,926)	68,659	60,450
Centrales Eléctricas del Norte de Santander S.A. E.S.P. (CENS)	164,812	715,492	182,738	473,573	614,046	29,887	(23,608)	6,279	30,050
Comercializadora Eléctrica de Guatemala S.A. (COMEGSA)	72,540	660	19,926	56	269,246	4,360	(5,913)	(1,553)	11,697
Empresa de Energía del Quindío S.A. E.S.P. (EDEQ)	58,814	181,259	37,713	36,883	229,928	35,600	(1,651)	33,949	19,099
Tecnología Intercontinental S.A. de C.V. (TICSA)	92,858	323,998	156,932	80,348	109,561	(12,703)	(50,537)	(63,240)	45,608
Transportista Eléctrica Centroamericana S.A. (TRELEC)	117,132	446,157	189,749	706	88,201	48,756	(14,206)	34,550	30
Aguas Regionales S.A. E.S.P. (antes Aguas de Urabá S.A. E.S.P.)	20,338	97,236	18,029	23,109	41,505	2,561	-	2,561	7,676
Other participations <sup>1</sup>	1,000,730	3,548,548	519,261	1,110,329	427,121	147,508	(65,499)	82,009	287,665

- Figures expressed in millions of Colombian pesos -

(1) Corresponds to investments in subsidiaries where the non-controlling participation is not significant and includes the following affiliates: Hidrocológica del Teribe S.A. (HET), Enérgica S.A., Credieegsa S.A., Aguas Nacionales EPM S.A. E.S.P., Empresa de Aguas del Oriente Antioqueño S.A. E.S.P., Aguas de Malambo S.A. E.S.P., Ecosistemas de Colima S.A. de C.V., Empresas Varias de Medellín S.A. E.S.P., Patrimonio Autónomo Financiación Social, EPM Inversiones S.A., Inmobiliaria y Desarrolladora Empresarial de América S.A., Innova Tecnología y Negocios S.A. de C.V., Ecosistemas de Tuxtla S.A. de C.V., Ecosistemas de Uruapan S.A. de C.V., Ecosistema de Ciudad Lerdo S.A. de C.V., Aquasol Morelia S.A. de C.V., Ecosistemas de Celaya S.A. de C.V., Desarrollos Hidráulicos de TAM S.A. de C.V., Ecoagua de Torreón S.A. de C.V., Proyectos de Ingeniería Corporativa S.A. de C.V., Corporación de Personal Administrativo S.A. de C.V. and EV Alianza Energética S.A.

In 2016 and 2015 there were no discontinued operations.

2015	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Rendering of services	Result for the period	Other comprehensive income	Total comprehensive income	Cash flows
						Continuing operations			
Elektra Noreste S.A. (ENSA)	486,523	1,439,286	802,684	691,391	1,651,377	137,243	112,502	197,439	6,759
Empresa Eléctrica de Guatemala S.A. (EEGSA)	454,217	1,360,908	227,024	847,904	1,551,638	159,944	135,286	295,230	15,975
Electrificadora de Santander S.A. E.S.P. (ESSA)	174,645	1,027,022	220,227	418,281	939,669	82,145	3,040	85,185	45,460
Distribuidora Eléctrica del Sur S.A. de C.V. (DELSUR)	201,266	318,589	172,015	213,340	810,508	40,143	27,866	68,965	23,399
Central Hidroeléctrica de Caldas S.A. E.S.P. (CHEC)	188,213	803,748	195,519	338,099	633,792	42,671	2,718	45,389	33,069
Centrales Eléctricas del Norte de Santander S.A. E.S.P. (CENS)	127,821	638,506	156,018	361,353	564,662	25,896	1,763	27,660	23,236
Comercializadora Eléctrica de Guatemala S.A. (COMEGSA)	98,147	987	41,285	58	358,843	6,316	14,683	20,999	6,714
Empresa de Energía del Quindío S.A. E.S.P. (EDEQ)	41,940	181,912	36,420	42,274	188,252	17,708	367	18,075	11,176
Tecnología Intercontinental S.A. de C.V. (TICSA)	219,474	195,378	204,798	24,415	146,587	12,727	8,324	21,051	3,407
Transportista Eléctrica Centroamericana S.A. (TRELEC)	65,153	377,161	99,006	766	91,985	45,292	75,389	120,682	59
Aguas de Urabá S.A. E.S.P.	30,933	66,078	14,405	19,410	28,503	519	-	519	4,207
Regional de Occidente S.A. E.S.P.	3,694	22,997	3,320	8,582	8,012	1,275	-	1,275	1,302
Other participations <sup>1</sup>	1,411,635	3,699,205	631,552	1,100,204	429,713	126,133	71,918	198,051	565,114

- Figures expressed in millions of Colombian pesos -

<sup>(1)</sup> Corresponds to investments in subsidiaries where the non-controlling participation is not significant and includes the following affiliates: Hidroecológica del Teribe S.A., Energica S.A., Crediegsa S.A. (CREDIEGSA), Aguas Nacionales EPM S.A. E.S.P., Empresas Públicas de Oriente Antioqueño S.A. E.S.P., Empresa de Aguas del Oriente Antioqueño S.A. E.S.P., Aguas de Malambo S.A. E.S.P., Aquasol Pachuca S.A. de C.V., Ecosistemas de Colima S.A. de C.V., Empresas Varias de Medellín S.A. E.S.P., EPM Inversiones S.A., Inmobiliaria y Desarrolladora Empresarial de América S.A. (IDEAMSA), Innova Tecnología y Negocios S.A. de C.V., Ecosistemas de Tuxtla S.A. de C.V., Ecosistemas de Uruapan S.A. de C.V., Ecosistema de Ciudad Lerdo S.A. de C.V., Aquasol Morelia S.A. de C.V., Ecosistemas de Celaya S.A. de C.V., Ecosistema de Morelos S.A. de C.V., Desarrollos Hidráulicos de TAM S.A. de C.V., Ecoagua de Torreón S.A. de C.V., Proyectos de Ingeniería Corporativa S.A. de C.V., Corporación de Personal Administrativo S.A. de C.V.

The profit and loss for the period, the dividends paid and equity assigned to the noncontrolling interests as of the date of the reporting period is the following:

Non-controlling interests	2016				2015			
	Equity	Result of the period	Other comprehensive income	Dividends paid	Equity	Result of the period	Other comprehensive income	Dividends paid
Elektra Noreste S.A. (ENSA)	213,133	48,133	(152)	30,764	210,842	41,480	-	-
Electrificadora de Santander S.A. E.S.P. (ESSA)	147,467	22,664	(2,563)	18,472	146,157	21,319	789	15,781
Empresa Electrica de Guatemala S.A. (EEGSA)	149,034	34,452	(541)	13,437	141,362	30,546	(210)	-
Central Hidroelectrica de Caldas S.A. E.S.P. (CHEC)	100,172	14,046	(383)	4,180	91,206	8,491	541	2,839
Transportista Electrica Centroamericana S.A. (TRELEC)	71,204	9,311	-	814	65,419	8,650	-	1,091
Tecnologia Intercontinental S.A. de C.V. (TICSA)	26,811	(3,932)	689	-	43,987	269	(2,174)	-
Centrales Electricas del Norte de Santander S.A. E.S.P.	18,997	2,535	(2,002)	2,272	21,114	2,196	150	3,213
Distribuidora de Electricidad del Sur S.A. de C.V. (DELSUR)	17,557	5,910	-	3,941	18,378	5,564	80	-
Aguas de Uraba S.A. E.S.P.	23,114	774	-	-	15,514	127	-	-
Comercializadora Electrica de Guatemala S.A. (COMEGSA)	10,163	833	-	638	11,037	1,206	-	2,752
Empresa de Energia del Quindio S.A. E.S.P. (EDEQ)	11,824	2,544	(118)	971	10,372	1,265	26	1,257
Regional de Occidente S.A. E.S.P.	-	-	-	-	5,603	483	-	-
Other uncontrolled shares (1)	13,986	4,476	(79)	2,543	30,928	3,184	314	3,254

- Figures expressed in millions of Colombian pesos -

### 8.1. Significant restrictions

As of December 31, 2015 y 2014, the Group does not have significant restrictions to access or use the assets, liquidate liabilities of the Group; the uncontrolled interests do not have either protective rights that could restrict the Group's capacity to access or use the assets and liquidate the liabilities of subsidiaries or restrict the dividends and other capital distributions.

### 8.2. Consolidated structured entities

As of December 31, 2015 and 2014 the Group owns as structured entity consolidated to the Stand-Alone Trust Fundación Social. The interest in that entity is of 86.68%, the value of total assets amounts to \$128,130 (2014: \$120,732), total liabilities are \$9,876 (2014: \$11,131) and the net profit and loss of the period is \$4,286 (2014: \$2,558). The Group does not have obligation to provide financial support to the Entity.

### 8.3. Loss of control of a subsidiary

At December 31, 2016, investments in subsidiaries Ecosistema de Morelos S.A. de C.V. and Aquasol Pachuca S.A. de C.V. were classified by the affiliate Tecnología Intercontinental S.A. de C.V. TICSA, as financial instruments measures with changes in profit and loss, transaction that was generated as consequence of the loss of control by the EPM Group on those entities.

The effect of the transaction in the result of the period is as indicated below:

Item	Ecosistema de Morelos S.A. de C.V. <sup>(1)</sup>	Aquasol Pachuca S.A. de C.V. <sup>(2)</sup>
Exchange Value <sup>(3)</sup>	5,688	-
Value of the net assets of the subsidiary <sup>(4)</sup>	(6,480)	37
<b>Loss from loss of control of subsidiaries</b>	<b>(792)</b>	<b>37</b>

- Figures expressed in millions of Colombian pesos -

- (1) It performs activities related to the construction, electromechanic equipment, operating tests, capacity, start up, operation, conservation and maintenance of the wastewater treatment plant Acapantzingo Municipality Cuernavaca Morelos.
- (2) Performs activities related to the preparation of the executive construction project of one wastewater treatment plant, its equipment and start up in the city of Pachuca de Soto. In addition, it may perform potable water and purification plants projects.
- (3) It corresponds to the fair value determined in the valuation made at the time of the classification of the investments as financial instruments.
- (4) As of the date of the transaction the value of the net assets of Aquasol Pachuca S.A. de DC.V. was negative.

The net effect as of the date of the transaction in the Consolidated statement of cash flows represents a decrease corresponding to the cash and cash equivalents that were held in the subsidiaries Ecosistema de Morelos S.A. de C.V. and Aquasol Pachuca S.A. de C.V. for \$8 and \$2, respectively.

## Note 9. Business combination.

The breakdown of the business combinations made by the Group as of the reporting period is as follows:

Year	Entity	Activity	Transaction date	interest acquired
2015	Aguas de Antofagasta S.A. - ADASA	Establishment, construction, and operation of public services for the production and distribution of drinking water and collection and disposal of wastewater through the exploitation of the sanitary concessions of the Company Concesionaria de Servicios Sanitarios S.A. - Econssa S.A., and the performance of other benefits related to these activities.	6/2/2015	100%

### Aguas de Antofagasta S.A.

On April 23, 2015, the EPM Group through its subsidiaries in Chile, Inversiones y Asesorías Hanover S.A. and Inversiones y Asesorías Pascua S.A. <sup>(2)</sup>, signed a contract for the purchase of 100% of the voting rights of Aguas de Antofagasta S.A., formalizing the transaction and acquiring the control of that company on June 2, 2015.

Aguas de Antofagasta S.A. is a joint stock company incorporated on November 28, 2003, with legal domicile established in the city of Antofagasta, Chile and with registration in the Registry of Reporting Entities of the Superintendency of Securities and Insurance of Chile. Its corporate object is the establishment, construction and exploitation of the public utilities of production and distribution of potable water and the collection and disposal of wastewater through the exploitation of the sanitary concessions of the Empresa Concesionaria de Servicios Sanitarios S.A. - Econssa S.A., and the performance of the remaining service related to those activities, all that in the manner and conditions established in Decreed with Force of Law number 382 and 70 of 1998 of the Ministry of Public Works and other relevant regulations.

On December 29, 2003, Aguas de Antofagasta S.A. executed with Empresa de Servicios Sanitarios de Antofagasta S.A. (now Empresa Concesionaria de Servicios Sanitarios S.A. -Econssa S.A.) the “Contract of Transfer of the Right of Exploitation of Sanitary Concessions”, for a term of 30 years as of the date of its execution.

Aguas de Antofagasta S.A. serves approximately 545,000 people and over 40 industrial customers in five (5) towns of the region (Antofagasta, Calama, Tocopilla, Taltal and Mejillones). The water market in Chile presents the following characteristics:

- Most companies providers of the services obtained positive operating profitabilities and profits on equity. Particularly Aguas the Antofagasta was rated with the best indicators of the industry in 2013.
- Chile has the largest copper production in the world (31.5%) and has the largest quantity of proven reserves of this mineral. In 2013 it reported a total of 124 initiatives and USD 71,327 million in investments.
- In this decade investments are projected for USD 2,000 million in desalinization plants for mining, agriculture and supply of potable water, of which USD 1,620 million correspond to the region of Antofagasta, originated in the scarcity of “fresh water” resources.
- Water is an unsubstitutable input for the industry and weighs only 4% of production costs. It is estimated that for one (1) ton of copper 60 m<sup>3</sup> of water are required.
- Aguas de Antofagasta constructed and operates the largest desalinization plant in Latin America, with a capacity of 730 liters per second and with an extension projected of 170 liters per second for 2016.

<sup>(2)</sup> As of December 31, 2015, the subsidiaries Investments and Asesorías Hanover S.A. and Inversiones y Asesorías Pascua S.A. were merged with Aguas de Antofagasta S.A. See Note 8 - investment in subsidiaries.



- The growth of the economy in the region has generated a fast growth of the urban population in the zone.
- The total demand of water of the mining companies during 2011 was of 12.6 m<sup>3</sup>/second.

With the acquisition of this company, the Group EPM explores the sector of water in Chile; it gives it greater knowledge of this sector and of new technologies for water supply and treatment solutions for the industry; for this reason new opportunities are opened for the EPM Group in the main mining zone of Chile, as follows:

- Access to desalination technology which will make viable the development of the sector in the medium and long term.
- In a region with the highest income per capita of Chile and of the highest development in the past few years.
- With increasing demand of water for the mining activity and residential sector.
- It enables new business associated to water supply and treatment for the mining sector or the operation of its own plants.

The detail of the new fair value of net assets as of June 2, 2015, and the goodwill is the following:

Concept	Chilean Pesos (CLP)	Millions of Colombian pesos
Property, plant and equipment	30,905,535,217	126,059
Intangibles	294,222,589,000	1,200,094
Non-current financial assets	2,482,613,696	10,126
Current financial assets	175,592,320	716
Other Current Assets	218,987,973	893
Accounts Receivable <sup>1</sup>	11,049,840,949	45,071
Inventory	919,871,469	3,752
Cash and cash equivalents	13,051,447,293	53,235
<b>Identifiable Assets</b>	<b>353,026,477,917</b>	<b>1,439,946</b>
Other non-current liabilities	2,006,040,455	8,182
Debts to pay	55,165,022,613	225,011
Contingent Liabilities <sup>2</sup>	1,211,645,220	4,942
Other Current Liabilities	7,445,667,666	30,370
Deferred tax liabilities	63,156,103,186	257,605
<b>Liabilities assumed</b>	<b>128,984,479,140</b>	<b>526,110</b>
<b>Total identifiable net assets at fair value</b>	<b>224,041,998,777</b>	<b>913,836</b>
Cash and cash equivalents	589,902,284,162	2,406,131
<b>Total fair value of the consideration transferred</b>	<b>589,902,284,162</b>	<b>2,406,131</b>
<b>(Goodwill) / gain on an advantageous purchase generated in the acquisition 2</b>	<b>(365,860,285,385)</b>	<b>(1,492,295)</b>

- Figures expressed in millions of Colombian pesos -

<sup>(1)</sup> The fair and gross value of the contractual amounts receivable and their composition as of the date of the transaction is the following:

	Chilean Pesos		Millions of Colombian pesos	
	Fair value	Gross contractual amounts receivable	Fair Value	Gross contractual amounts receivable
Trade debtors and other accounts payable	10,641,401,736	10,641,401,736	43,405	43,405
Accounts Receivable Related Entities	408,439,213	408,439,213	1,666	1,666
<b>Total Accounts payable</b>	<b>11,049,840,949</b>	<b>11,049,840,949</b>	<b>45,971</b>	<b>45,971</b>

As of the date of the transaction there was no uncertainty about the recoverability of the contractual amounts of accounts receivable.

- 2 It includes significant provisions and contingent liabilities for a value of COP\$4,942 (CLP\$1,211,645,220) resulting from the provisions of the closing of working capital and legal litigations. The former originate in the obligation to return the working capital existing at the end of the term of the concession of the Sanitary Concession Transfer Contract entered into between Aguas de Antofagasta S.A. and Econssa Chile S.A., the latter are due to legal actions in which Aguas de Antofagasta S.A. was sued as a result of its operations. The working capital closing provision will be resolved at the expiration of the Sanitary Concession Transfer Contract, that is, on December 29, 2033; and the contingent liabilities, upon final judgment of the legal actions. As of the date of presentation the fair value of provisions and contingent liabilities is COP\$7,865 (CLP\$1,771,198,366). Changes have been recognized in the Profit and loss for the period. See Notes 25.1 Provisions and Contingent liabilities and assets.
- 3 The goodwill includes the value of expected synergies that will arise from the acquisition of this entity which corporate object is aligned with the execution of the strategy of the EPM Group of development of investment alternatives that leverage the objective of having future expansion options and increasing its participation in the Chilean market. The goodwill was assigned to the segments of water supply and sanitation.

As consequence of the mergers made on December 23, 2015 (see note 8 - investments in subsidiaries) and in accordance with the provisions of paragraph XIX of transitory article third of Law 20.780 (Tax Reform) and Article 31 No. 9 of DL 824 in its text in force as of 12/31/2014, the Company recognizes, for difference between the investment made in the acquisition of Aguas de Antofagasta S.A. and the latter's own tax capital, an amortizable expense for tax purposes for COP\$2,245,695 (CLP \$505,701,499,000) in 10 consecutive commercial periods as of the date of the merger (year 2015). The legal counsel of the Company estimate that the tax treatment indicated above is applicable in the terms established in the mentioned transitory regulation.

Costs were recognized for transaction for COP\$7,201 (CLP\$585,568,379) that have been recognized as expenses for the period and included in the line of administration expenses in the Income statement.

The income from the ordinary activities and result of Aguas de Antofagasta S.A. included in the consolidated financial statements are:

	2015
<b>From the acquisition date up to the reporting period</b>	
ordinary activities income	228,034
Utility or loss	71,466
<b>From the beginning of the annual reporting period up to the</b>	
ordinary activities income	379,698
Utility or loss	105,420

- Figures expressed in millions of Colombian pesos -

The cash flows analysis of the acquisition of Aguas de Antofagasta S.A. is:

	2015
Transferred consideration	(2,406,131)
Acquisition transaction costs (included in cash flows from operating activities)	(7,201)
Net cash acquired from the subsidiary (included in cash flow from investing activities)	53,235
<b>Net cash flow at the date of acquisition</b>	<b>(2,360,097)</b>

- Figures expressed in millions of Colombian pesos -

## Note 10. Investments in associates.

The detail of the associates of the EPM Group as of the date of the period reported is as follows:

Name of partner	Ubicación (país)	Main activity	Percentage of Ownership and Voting Rights		Creation date
			2016	2015	
Hidroeléctrica Ituango S.A. E.S.P.	Colombia	Promotion design construction operation maintenance and commercialization of energy at national and international level of the Hidroango Pescadero Hydroelectric Plant	46.45%	46.45%	6/8/1998
Rio Aures hydroelectric plant S.A. E.S.P.	Colombia	Generation and commercialization of electric power through a hydroelectric power station, located in the jurisdiction of the municipalities of Abejorral and Sonsón. Of the Department of Antioquia	42.04%	42.04%	5/14/1997
UNE EPM Telecomunicaciones S.A. (1)	Colombia	Provision of telecommunications services information and communication technologies information services and complementary activities.	50.00%	50.00%	6/23/2006
Inversiones Telco S.A.S. (2)	Colombia	Invest in companies whose social objects are based on the provision of business process outsourcing (BPO) services for companies, especially but not limited to telecommunications companies.	50.00%	50.00%	11/5/2013

The financial information of the significant associates of the EPM Group as of the date of the period reported is the following. All associates are accounted for by equity method in the consolidated financial statements:

2016	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Rendering of services	Result for the period	Other comprehensive income	Total comprehensive income	Cash flows
						Continuing operations			
UNE EPM Telecomunicaciones S.A.	1,422,244	5,958,503	1,476,685	3,994,087	5,145,816	(141,307)	(2,472)	(143,779)	-
Hidroeléctrica Ituango S.A. E.S.P.	4,087	72,572	1,100	26,078	-	(220)	-	(220)	-
Río Aures hydroelectric plant S.A. E.S.P.	1,712	4,731	50	93	-	19	-	19	-
Investments Telco S.A.S	128,662	52,789	59,503	2,587	390,748	2,676	-	2,676	-

- Figures expressed in millions of Colombian pesos -

2015	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Rendering of services	Result for the period	Other comprehensive income	Total comprehensive income	Cash flows
						Continuing operations			
UNE EPM Telecomunicaciones S.A.	1,543,170	5,985,708	1,832,819	3,826,050	5,324,514	(310,689)	-	(310,689)	233,870
Hidroeléctrica Ituango S.A. E.S.P.	4,970	52,343	1,119	24,323	-	(4,336)	-	(4,336)	-
Hidroeléctrica del Río Aures S.A. E.S.P.	1,688	3,906	203	-	-	(227)	-	(227)	-
Inversiones Telco S.A.S.	140,020	58,151	80,166	1,310	378,930	7,043	-	7,043	-

- Figures expressed in millions of Colombian pesos -

The financial information of these companies, the basis for applying equity method, is prepared under IFRS and adjusted to the Group's accounting policies.

The reconciliation of the summary financial information with the book value of associates in the consolidated financial statements is:

Associated	2016			2015		
	Investment value			Investment value		
	Cost	Impairment	Total	Cost	Impairment	Total
UNE EPM Telecomunicaciones S.A.	1,740,983	-	1,740,983	1,835,172	-	1,835,172
Hidroeléctrica Ituango S.A. E.S.P.	22,982	-	22,982	14,803	-	14,803
Hidroeléctrica del Río Aures S.A. E.S.P.	2,627	-	2,627	-	-	-
Inversiones Telco S.A.S.	59,681	-	59,681	58,344	-	58,344
<b>Total associated investments</b>	<b>1,826,273</b>	<b>-</b>	<b>1,826,273</b>	<b>1,908,319</b>	<b>-</b>	<b>1,908,319</b>

- Figures expressed in millions of Colombian pesos -

### Significant restrictions

As of December 31, 2016 and 2015, the EPM Group does not have significant restrictions in investments in associates related to the transfer of funds to the EPM Group in the form of dividends in cash or reimbursement of loans or advances made by the EPM Group.

## Note 11. Investment in joint ventures

The detail of joint ventures of the EPM Group as of the date of the period reported is the following:

Name of joint venture	Location (country)	Type of business	Percentage ownership		Creation date
			2016	2015	
Parques del Río S.A.S. <sup>1</sup>	Colombia	Construction, operation and support of project Parques del Río Medellín, as well as acting as urban manager of project.	33%	33%	12/26/2015

<sup>(1)</sup> Joint venture incorporated on November 26, 2015, with the participation of the municipality of Medellín, Interconexión Eléctrica S.A. E.S.P. (ISA), Empresa de Transporte Masivo del Valle de Aburrá Ltda. (Metro) and EPM. The strategic support of the participation of EPM in that company is based on the following aspects:

Apply the experience of EPM in developments of infrastructure at large scale.

EPM is qualified to participate by the POT.

The financial information of the Group's significant joint ventures at the date of the reporting period is as follows. All joint ventures are accounting for by equity method in the consolidated financial statements:

2016	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Rendering of services	Result for the period		Other comprehensive income	Total comprehensive income	Dividends received
						Continuing operations	Discontinued operations			
Parques del Río S.A.S.	282	-	1	-	-	(17)	-	-	(17)	-

- Figures expressed in millions of Colombian pesos -

2015	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Rendering of services	Resultado del periodo		Otro resultado integral	Resultado integral total	Dividends received
						operaciones continuadas	operaciones discontinuadas			
Parques del Río S.A.S.	97	-	-	-	-	(2)	-	-	(2)	-

- Figures expressed in millions of Colombian pesos -

At December 31, 2016 and 2015 the company Parque del Río S.A.S. is in the pre-operational phase, it does not require capitalizations and in case they are required they will have to be authorized by the Board of Directors. Consequently, because it is in the pre-operational phase it does not have operating income.

The financial information of these companies, base for application of equity method, is prepared under IFRS and adjusted to the Group's accounting policies.

The reconciliation of the financial information summarized with the carrying value of the joint ventures in the financial statements is:

Name of joint business	2016				2015			
	Investment value			Dividends	Investment value			Dividends
	Cost	Impairment	Total		Cost	Impairment	Total	
Parques del Río S.A.S.	93	-	93	-	99	-	99	-
<b>Total associated investment</b>	<b>93</b>	<b>-</b>	<b>93</b>		<b>99</b>	<b>-</b>	<b>99</b>	

- Figures expressed in millions of Colombian pesos -

### Significant restrictions

At December 2016 and 2015 the Group does not have significant restrictions in investments in joint ventures related to the transfer of funds to the Group in the form of dividends in cash, or reimbursement of loans or advances made by the Group.

## Note 12. Trade debtors and other accounts receivable

Details of trade and other receivables of the Group as of the reporting period are as follows:

Trade debtors and other accounts receivable	2016	2015
<b>Non-Current</b>		
Other loans	503,666	506,143
Debtors public services	310,621	280,689
Loans used	75,924	67,663
Dividends and receivables	-	196,288
Impairment of other loans	(1,411)	(22,193)
Impairment of public services	(72,672)	-
<b>Total non-current</b>	<b>816,128</b>	<b>1,028,590</b>
<b>Current</b>		
Debtors public services	2,284,095	2,183,798
Impairment of public services	(358,812)	(265,967)
Loans used	36,517	30,865
Impairment of employees loans	(136)	(136)
Construction contracts	(308)	280
Other loans	658,179	745,157
Impairment of other loans	(97,399)	(30,946)
<b>Total current</b>	<b>2,522,136</b>	<b>2,663,051</b>
<b>Total</b>	<b>3,338,264</b>	<b>3,691,641</b>

- Figures expressed in millions of Colombian pesos -

The non-current portion of the balance of accounts receivable from trade debtors and others, reflects a decrease of \$212,462, mainly by the variation of the account receivable from UNE resulting from the payment that was made by this company during 2016 and that amounted to \$196,288. Additionally, an increase is reflected in the "Impairment of public utilities" for \$72,672 originated by the decision to record in the assessed period, 1005 of the balance due by the customers of the product prepaid water and energy of EPM.

In the current portion the balance of accounts receivables from trade debtors and others, reflects an accumulated decrease for \$140,915 that is explained basically by the following reasons:

- There is a decrease in the balance of the trust of the affiliate Aguas Nacionales that went from \$145,066 in 2015 to \$7,332 in 2016.



- Increase in the balance of subsidies not offset of the energy service for a value of \$126,209 in EPM and affiliates of national energy, which may debtor is the Ministry of Mines and Energy.
- An increase of (\$137,105) in the impairment of receivables originated by events to be emphasized such as: change of model to calculate impairment of receivables, recording of the possible loss of receivables balances from the companies Electricaribe and Termocandelaria en EPM.

In the Group no customer represents more than 5% of the total balance of accounts receivable.

The EPM Group decided to adapt in advance the change of methodology suggested by IFRS 9 for the recognition of the losses for impairment of receivables. The model of Expected Loss corresponds to a forecast tool that projects the probability of default (non payment) in a lapse of one year. Each obligation is assigned an individual probability of non-payment that is calculated based on a probability model.

The Group measures the value adjustment for expected losses over the life of the asset using the simplified approach, which consists of taking the present value of the credit losses arising from all possible non-payment events at any time during the Life of the operation.

As of December 31, the analysis of age of financial assets at the end of the period reported that are in default but not impaired is:

	2016		2015			
	Gross accounting value	Value expected credit losses over the life time	Gross accounting value	Value expected credit losses over the life time		
				Issue	Adjustment	Restated
<b>Debtors public services</b>						
Not past due nor impaired	1,911,408	(66,172)	1,789,225	(2,230)	(72,097)	(74,327)
Less than 30 days	241,538	(21,280)	216,464	(2,655)	(3,309)	(5,964)
30-60 days	70,411	(18,337)	70,687	(1,865)	(13,954)	(15,819)
61-90 days	20,746	(4,635)	20,030	(6,860)	1,884	(4,976)
91-120 days	15,966	(21,598)	19,880	(4,606)	(2,976)	(7,582)
121-180 days	20,616	(10,187)	20,923	(7,690)	(2,010)	(9,700)
181-360 days	31,348	(23,548)	31,223	(17,119)	(5,586)	(22,705)
Greater than 360 days	282,683	(265,726)	296,053	(222,941)	(35,523)	(258,464)
<b>Total debtors public services</b>	<b>2,594,716</b>	<b>(431,483)</b>	<b>2,464,485</b>	<b>(265,966)</b>	<b>(133,571)</b>	<b>(399,537)</b>
<b>Other debtors</b>						
Not past due nor impaired	1,096,579	(3,873)	1,235,283	(18)	(4,359)	(4,377)
Less than 30 days	17,934	(1,697)	21,491	(825)	(314)	(1,139)
30-60 days	9,649	(2,774)	5,236	(133)	(466)	(598)
61-90 days	3,559	(2,042)	4,112	(4,555)	(109)	(4,664)
91-120 days	5,946	(3,631)	4,885	(1,065)	(128)	(1,194)
121-180 days	13,541	(11,361)	1,647	(316)	(340)	(657)
181-360 days	43,974	(32,287)	7,625	(5,357)	1,817	(3,540)
Greater than 360 days	82,796	(41,281)	69,830	(40,870)	(8,261)	(49,130)
<b>Total other debtors</b>	<b>1,273,978</b>	<b>(98,946)</b>	<b>1,350,109</b>	<b>(53,139)</b>	<b>(12,160)</b>	<b>(65,299)</b>
<b>Total debtors</b>	<b>3,868,694</b>	<b>(530,428)</b>	<b>3,814,594</b>	<b>(319,105)</b>	<b>(145,731)</b>	<b>(464,836)</b>

- Figures expressed in millions of Colombian pesos -

The change in the impairment of accounts receivable of the Group amounts to \$211,324 that is concentrated 91% in EPM and its national affiliates.

The reconciliation of expected credit losses of the portfolio is the following:

Movement expected credit losses	2016	2015
Book value as of January 1	(319,107)	(290,181)
Expected credit losses recognized during the period <sup>1</sup>	(101,327)	(49,080)
Utilizations during the period	4,506	13,940
Reversal of expected credit losses during the period	6,468	18,271
Credit losses expected as of January 1, 2016 (1)	(145,731)	-
Difference instead, conversion adjustment	(2,527)	-
Other changes	27,289	(12,057)
<b>Book value as of December 31</b>	<b>(530,429)</b>	<b>(319,107)</b>

- Figures expressed in millions of Colombian pesos -

The variation in the impairment of accounts receivable from the Group as consequence of the change of methodology has evidenced a higher value of the balance exposed since the receivables less than sixty days past due is included, as well as the receivables from the official sector and those balances corresponding to payment agreements (financing), entered into with customers. Additionally, EPM recorded the provisions of the balances of accounts receivable associated to the prepaid energy and water products of the year at 100.

Uses correspond to portfolio write-offs during the year.

The other changes correspond to the recognition in equity of the effect generated by the change of methodology for the recognition of the impairment and the inclusion of new items thereof.

The EPM Group writes down, against the impairment recognized in a corrective account and not directly, the values of the financial assets impaired in accordance with the following criteria:

After evaluating at the end of each month the impairment of receivables and the provision for doubtful accounts, impairment models are used that permit to find the irrecoverableness percentages for the accounting provisions, identifying the impaired receivables of domiciliary public utilities in default and those that do not deteriorate in order to exclude them from the calculation of the provision.

#### Instances responsible for the write-off

The Director of Institutional Finance, prior approval of the business and of Credit and Receivables Committee, must approve the write-off. The receivables write-off takes place when:

- The accounts receivable recorded do not present any certain rights, goods or obligations for the entity.
- The rights or obligations do not have proper documents and support that permit to carry out the relevant procedures for their collection or payment.
- It is not possible to make the collection of the right or obligation, by coercive or judicial jurisdiction.
- It is not possible to attribute legally to any person, legal or natural, the value of the receivables.
- Upon evaluation and establishment of the cost/benefit ratio, it is more onerous to carry out the collection process than the value of the obligation.
- When there has been an executive action of the invoice.

## Note 13. Other financial assets

The breakdown of other financial assets at the end of the period is:

Other financial assets	2016	2015
<b>Non-Current</b>		
<b>Derivatives designated as hedging instruments under hedge accounting</b>		
Swap Agreements	5,252	-
<b>Total derivatives designated as hedging instruments under hedge accounting</b>	<b>5,252</b>	<b>-</b>
<b>Financial assets measured at fair value through profit or loss for the period</b>		
Fixed income securities	1,325	995
Equity securities	43,798	22,293
Fiduciary Rights	381,781	335,682
<b>Total financial assets measured at fair value through profit or loss</b>	<b>426,904</b>	<b>358,970</b>
<b>Financial assets designated at fair value through changes in other comprehensive income</b>		
Heritage instruments	1,161,578	2,087,119
<b>Total financial assets designated at fair value through changes in other comprehensive income</b>	<b>1,161,578</b>	<b>2,087,119</b>
<b>Financial assets measured at amortized cost</b>		
Fixed income securities	7,201	11,457
<b>Total financial assets measured at amortized cost</b>	<b>7,201</b>	<b>11,457</b>
<b>Repurchase rights financial investments</b>		
Financial leasing	1,560	1,571
<b>Total other non-current financial assets</b>	<b>1,602,495</b>	<b>2,459,117</b>
<b>Current</b>		
<b>Derivatives designated as hedging instruments under hedge accounting</b>		
Futures Contracts	18	-
<b>Total derivatives designated as hedging instruments under hedge accounting</b>	<b>18</b>	<b>-</b>
<b>Financial assets measured at fair value through profit or loss for the period</b>		
Derivatives that are not under hedge accounting	-	11,776
Fixed income securities	657,426	257,875
Pledged investments	9,184	-
Investments received as collateral	642	-
Fiduciary Rights	4,824	28,299
<b>Total financial assets measured at fair value through profit or loss</b>	<b>672,076</b>	<b>297,950</b>
<b>Financial assets measured at amortized cost</b>		
Fixed income securities	83,484	212,793
Pledged investments	126	127
<b>Total financial assets measured at amortized cost</b>	<b>83,610</b>	<b>212,920</b>
<b>Repurchase rights financial investments</b>		
Financial leasing	2,390	646
<b>Total other current financial assets</b>	<b>758,094</b>	<b>511,516</b>
<b>Total other financial assets</b>	<b>2,360,589</b>	<b>2,970,633</b>

- Figures expressed in millions of Colombian pesos -

Conventional purchases and sales of financial assets are accounted for by applying the negotiation date.

### 13.1 Financial assets designated at fair value through the other comprehensive income:

The detail of equity investments designated at fair value through the other comprehensive income is as follows:

Equity investment	2016	2015
Isagén S.A. E.S.P. (1)	-	1,218,329
Electrical Interconnection S.A. E.S.P. (2)	1,123,803	831,029
Gasorient S.A.	18,224	18,224
Promioriente S.A. E.S.P.	11,459	11,459
Reforestadora Industrial de Antioquia S.A.	4,947	4,947
Electrificadora del Caribe S.A. E.S.P.	1,399	1,345
Gensa S.A. E.S.P.	607	594
Bucaramanga Transport Terminal S.A.	142	142
Comatrac S.A.	18	18
Other (3)	979	23,314
<b>Total</b>	<b>1,161,578</b>	<b>2,109,401</b>
Dividends recognized during the period related to investments that are recognized at the end of the period	35,107	93,457
<b>Dividends recognized during the period</b>	<b>35,107</b>	<b>93,457</b>

- Figures expressed in millions of Colombian pesos -

- (1) On September 6, 2016 EPM disposed of the investment in ISAGEN S.A E.S.P. For \$ 1,479,911: cost \$ 901,516 and valuation at fair value \$ 578,395, without effect in the Statement of Comprehensive Income section of the period, the previous as authorized by Agreement No. 002 of March 15, 2016. With this transaction, EPM received \$ 4,130 pesos per Each share and held 358,332,000 shares, which were acquired by Brookfield through a public offering of shares (OPA). Additionally, due to the transaction, the legal expense was incurred for \$ 46,040 detailed in note 30 administrative expenses, and the associated income tax was \$ 111,948 detailed in note 35 income tax.
- (2) As of December 31, 2016, the exchange price of Interconexión Eléctrica S.A. Closed at \$ 9,980 (2015 \$ 7,380).
- (3) Includes investments in Compañía de Alumbrado Eléctrico de San Salvador S.A., Compañía de Alumbrado Eléctrico de Santa Ana S.A., Duke Energy Guatemala y Cia. S.A., Fosfonorte S.A., Central de Abastos de Cúcuta, Hotel Turismo Juana Naranjo, Sin Escombros S.A.S. (Sinesco), Acerías Paz del Río S.A., Cenfer S.A, Unit of Transacciones S.A. de C.V.

Equity investments indicated in the preceding table are not maintained for negotiation purposes, instead, they are maintained with strategic medium and long term purposes. The Administration of the EPM Group considers that this classification for these strategic investments provides more reliable financial information that reflects immediately the changes in their fair value in profit and loss.

**Financial leasing as lessor:** the most significant financial leasing agreements are:

- Leasing of the Yopal 1 generation unit: the contingent installments are determined base don the producer Price index - PPI -, the purchase option will be the equivalent to the sum of twelve lease payments of the last year of execution of the contract.
- Leasing of storage tank located in Termobarranca: the contingent installments are determined base don the Market's Representative Rate (MRR). Upon expiration of the contract term of 10 years, this is be automatically renewed for annual periods save that any of the parties express its with not to renew it: the agreement does not contemplate the purchase option. Lessee: Technologicals.

As of December 31, future minimum payments for financial leasing, the present value of the minimum payments for financial leasing and the future payments for non-cancellable operating leasing are distributed as follows:

Financial leasing	2016		2015	
	Gross accounting value	Present value of minimum payments	Gross accounting value	Present value of minimum payments
One year	1,101	12	1,101	6
More than a year and up to five years	5,506	672	5,506	342
More than five years	1,340	888	2,441	1,230
<b>Total leases</b>	<b>7,947</b>	<b>1,572</b>	<b>9,048</b>	<b>1,578</b>
Less - value of unearned interest	6,375	-	7,470	-
<b>Present value of minimum lease payments receivable</b>	<b>1,572</b>	<b>1,572</b>	<b>1,578</b>	<b>1,578</b>

- Figures expressed in millions of Colombian pesos -

The Group has not recognized any provision for accumulated uncollectibility of the minimum lease payments receivable from financial leases. There are also no recognized unsecured residual values in financial leases.

## Note 14. Guarantees

The EPM Group has granted the following financial asset in guarantees: CDs which book value is \$133 (2015: \$132). The conditions for the use of the guarantees are: to cover contingencies for litigation process against the Municipality of Bucaramanga by the affiliate ESSA S.A. This guarantee is created and granted to Seguros del Estado. The Group has not received warranties in which it is authorized to sell or pledge them without a breach by the owner of the guarantee.

## Note 15. Other assets

Details of other assets at the end of the reporting periods is the following:

Concept	2016	2015
<b>Non-Current</b>		
Payments made in advance (1)	42,892	36,567
Benefits to Employees (2)	35,217	30,361
Deferred income from retro leaseback or leaseback operation (4)	23,634	24,309
Goods received in payment form	1,286	1,288
Advances to suppliers (3)	757	791
<b>Total other non-current assets</b>	<b>103,786</b>	<b>93,316</b>
<b>Current</b>		
Sales tax	71,883	103,633
Payments made in advance (1)	71,515	95,021
Advances to suppliers (3)	47,013	91,779
Other balances in favor of other taxes	13,520	5,341
Other advances or balances in favor of taxes and contributions	8,519	19,758
Tax on retained industry and trade	828	-
Benefits to Employees (2)	32	67
Industry and trade tax advance	12	80
<b>Total other current assets</b>	<b>213,322</b>	<b>315,679</b>
<b>Total other assets</b>	<b>317,108</b>	<b>408,995</b>

- Figures expressed in millions of Colombian pesos -

- (1) Includes in the non current portion the payments made by EPM in advance corresponding to the all risks insurance policies of the Hydroelectric Project Ituango for \$24,550 (2015: \$21,432) and extra-contractual civil liability insurance for \$418 (2015: \$609), both effective until March 15, 2020 which are being amortized. It also includes the premium on legal stability contracts for \$ 10,033 (2015: \$ 10,925) and leases for \$ 1,359 (2015: \$ 1,508).

In the current portion includes the value of the insurance policies of EPM, consisting of all risk policies for \$ 27,271 (2015: \$ 24,159), of which \$ 9,496 (2015: \$ 6,616) is from the Ituango Hydroelectric Project, and other insurance for \$ 17,099 (2015: \$ 46,842) of which \$ 14,866 relates to climate change insurance and advance payments for software support and maintenance and other services for \$ 9,131 (2015 \$ 4,218).

- (2) Corresponds to the benefits to employees recognized by the credits delivered at rates lower than those of the market.
- (3) See details of financial leasing agreements in Note 22 Other financial liabilities.
- (4) Corresponds to advances delivered to suppliers for contracts for the acquisition of goods or services that will be recognized as expense.



## Note 16. Inventories

Inventories at the end of the period were represented as follows:

Inventories	2016	2015
Materials for the rendering of services <sup>1</sup>	378,343	332,599
Merchandise in stock <sup>2</sup>	14,687	16,346
Goods in transit	831	2,306
<b>Total inventories</b>	<b>393,861</b>	<b>351,251</b>

- Figures expressed in millions of Colombian pesos -

- (1) Includes the materials for the rendering of services held by third parties. That are those delivered to contractors performing activities related to the provision of services.
- (2) Includes merchandise in stock that does not require transformation, such as power, gas and water meters, communication equipment, telephones and Supply goods, as well as those held by third parties.

Inventories were recognized for \$221,813 (2015: \$136,243) as cost of goods sold for the rendering of the service during the period. The inventory write-downs recognized as expense during the period ascended to \$1,609 (2015: \$564) and the reversals of write-downs were for \$468 (2015: \$-). As of December 31, 2016 and 2015 no costs or expenses were recognized for impairment or obsolescence of the items in inventories.

At December 31, 2016, the Group has committed inventories to guarantee liabilities for \$197.

## Note 17. Cash and cash equivalents

The composition of cash and cash equivalents at the end of the period is as follows:

Cash and cash equivalents	2016	2015
Cash on hand and in banks	874,277	1,013,965
Other cash equivalents	320,222	324,661
<b>Total cash and cash equivalents reported in the statement of financial position</b>	<b>1,194,499</b>	<b>1,338,626</b>
<b>Cash and cash equivalents reported in the statement of cash flows</b>	<b>1,194,499</b>	<b>1,338,626</b>
<b>Restricted cash</b>	<b>186,147</b>	<b>216,815</b>

- Figures expressed in millions of Colombian pesos -

- (1) Includes funds in \$7,820 (2015: \$82), funds of restricted use \$186,147 (2015: \$216,815) and cash equivalents \$126,255 (2015: \$107,764).

Treasury investments expire in a term equal or lower than three months from their acquisition date and earn market interest rates for this type of investments.

The Group has restrictions on cash and cash equivalents at fair value as of December 31 \$186,147 (2015: \$216,815).

Found	Destination	2016	2015
<b>Restricted features EPM array</b>			
<b>Conventions</b>			
Bogota Parks Convention of Rio	Transfer of utility networks for the development of the project called Parques del Rio Medellin.	26,521	25,472
Bogota Gallery Bolivar	To adapt the race 51 (Bolivar) enters the streets 44 (San Juan) and 57 (La Paz) and convert that segment to what will be called La Galeria Boivar.	16,167	6,753
Banco Bogota INCODER	Combine efforts and resources between EPM and INCODER to carry out the project "feasibility study for the construction of the irrigation and drainage district in part of the Urabáantioqueño region" with multi-pronged reach.	11,194	10,641
Framework Agreement Municipio Medellin No. 4600049285	Construction by EPM of platforms and other road elements in the city center, taking advantage of the project Center Parrilla, that is to say, the renovation of networks of aqueduct and sewage system	7,677	22,189
Ministry of Mines and Energy - Special Fund Development Fund	Cofinancing agreement for the construction, distribution infrastructure and connection to lower income users in the municipalities of Amagá, Santafé de Antioquia, Sopetrán, San Jerónimo and Ciudad Bolívar. Compressed Natural Gas and connection to users of Don Matías, Entrerrios, San Pedro, Santa Rosa and Yarumal. Agreement No 106: construction of the connection infrastructure for users of the Aburrá Valley, La Ceja, La Unión and El Retiro. Convention 179: includes the municipality of Sonsón.	5,003	4,781
Municipality of Medellin - Waters	Integral management of water for human consumption of the inhabitants of the municipality of Medellin.	3,124	6,038
Municipality of Guatapé and Cornare	To join efforts to improve the technical, economic and social conditions for the implementation of phase 1 of the project to improve the environmental and landscape infrastructure of the San Juan del Puerto Malecon, for the development of sustainable tourism in the Municipality of Guatape	2,213	-
Autonomous Corporation of Guatapé	To join efforts to improve the technical, economic and social conditions for the implementation of phase 1 of the project to improve the environmental and landscape infrastructure of the San Juan del Puerto Malecon, for the development of sustainable tourism in the Municipality of Guatape	2,011	-
Village Program	To take advantage of timber that completes its maturation cycle in the forests planted by EPM around its reservoirs to build social housing in the municipalities of Antioquia outside the Aburrá Valley and deliver them to families of limited resources, preferably in a displacement situation Forced or voluntary.	1,105	3,791

Inter-administrative Agreement Plaza del Tomatero in the Municipality of Peñol	Combine efforts to improve the technical, economic, environmental and social conditions to boost development and counteract the impact generated by Peñol municipality, the level of the Peñol-Guatape reservoir	1,052	-
Agreements rates of public lighting and grooming with municipalities	Agreement to manage the resources of territorial entities for the payment to municipalities with agreements to collect the rates of public lighting and toilet, are resources exempted from 4x1000.	676	51
Ministry of Mines and Energy	Contributions from the Ministry of Mines and Energy in accordance with the provisions of the FAER GGC 430 contract of 2015 for rural electrification works in the Municipality of Ituango	643	-
Convention points WE ARE	Provision of services for the operation of the key capabilities associated with the Item of the Large Scale Loyalty Program for the EPM Group.	577	-
Agreement Municipality of Itagüí Collector Ajizal	To manage and manage the resources destined by the Municipality of Itagui for the construction of the stabilization works of the channel of the creek the sesteadero for the collector Ajizal	356	-
Montreal Protocol Multilateral Fund	Collaboration agreement with the Ministry of Environment and Sustainable Development for the development of activities in the framework of the implementation in Colombia of the Montreal Protocol.	298	283
Thermal District	Agreement with the Ministry of Environment and Sustainable Development for the development of activities of the La Alpujarra Thermal District.	282	56
National Royalties Fund - Gas	Construction of the compressed natural gas distribution infrastructure and subsidies for the connection to users of strata 1 and 2 of the municipalities of El Peñol and Guatapé.	281	278
IDB Credit 2120	Disbursement for the construction of the sewage treatment plant (WWTP) Bello.	167	2,569
Municipio de Caldas	To manage the resources destined by the municipality, for the development of the project replacement and modernization of secondary networks of aqueduct and sewage and its complementary works.	163	-

Municipio de Barbosa - Subsidies	Agreement to partially subsidize the connection of users in strata 1 and 2.	56	54
Holy Spirit	EPM - Espirito Santo Liquidation	56	55
Municipio de Medellín - Land for sale	Acquisition of land identified and characterized within watershed protection zones that supply aqueduct systems in the municipality of Medellín.	53	49
Green Cuenca	To manage the resources assigned to fulfill the objectives of the Green Basin Corporation	32	2,072
Department of Antioquia, Construction Agreement via the Aro - Municipality of Ituango	Manage the resources provided by the Government of Antioquia to co-finance the construction of the Via El Aro - Connection Via Puerto Valdivia Dam site - Municipality of Ituango	5	-
IDEA agreement 4600003912	Inter-administrative agreement to join efforts for the design and construction of systems of generation and distribution of electric power in rural areas in the Department of Antioquia.	5	9,039
IDEA Agreement 4600003283	Combine efforts to build gas house connections in the different subregions of the Department of Antioquia under the "Gas without Borders" program.	3	6
Bogotá Anori Domiciliaria Agreement	To cover the execution of construction and interventory works in one hundred and seventy-three (173) residential installations and internal energy networks, for the electrification of houses in La Plancha, Chagualo Arriba, Chagualito, La Culebra and El Banco del Municipio Of Anorí.	2	2
IDEA Agreement 4600003541	To cover the cofinancing of up to 70% of the cost of home electrical installations in the different subregions of the Department of Antioquia.	1	1
Agreement Department of Antioquia	Joining efforts for institutional development, strengthening, transformation or creation of companies, in order to ensure the provision of public services of the municipalities of the department.	-	190

BBVA construction of electrical networks - Municipality San Luis	Construction of electricity networks in the villages of Bocanegra, El Jordan, La Mesa, El Olivo, Santo Tomas, El Pescado, Santa Rita, Arabia, La Arauca, La Garrucha, Palestine, Altavista and other five villages Municipality of San Luis Municipality Of Antioquia.	-	83
Order EPM-ECOP-70083600976-0	Management of EPM-Ecopetrol contract resources	-	36
BBVA FAER GGC 315 Trust Charge	Construcción de redes eléctricas en las veredas de Bocanegra, El Jordan, La Mesa, El Olivo, Santo Tomás, El Pescado, Santa Rita, La Arabia, La Arauca, La Garrucha, la Palestina, Altavista y otras cinco veredas Municipio de San Luis Municipio de Antioquia.	-	1
Conventional	Manejo de los recursos del contrato EPM-Ecopetrol	-	3,742
Sintraemdes Housing Fund	Aportes del Ministerio de Minas y Energía de acuerdo con lo establecido en el contrato FEAR GGC 315 de 2014 con destino a obras de electrificación rural en el Municipio de Anori.	-	574
<b>Sinpro Housing Fund</b>			
Sinpro Education Fund	To contribute to the acquisition of housing and the improvement of the same, of the beneficiary servers of the agreement signed between EPM and the unions.	16,426	22,622
Education Fund Sintraemdes	To contribute to the acquisition of housing and the improvement of the same, of the beneficiary servers of the agreement signed between EPM and the unions.	10,675	17,455
Sintraemdes Calamity Fund		1,956	1,419
Sinpro Calamity Fund	Promote the welfare of the servers to meet the needs of payment of tuition, texts and endowment required to advance their own studies and the family group.	1,905	1,448
Motorcycle Repair Fund	Promote the welfare of your servers to meet your urgent and unforeseen needs or those of your primary family group.	1,454	1,210

Guarantee	Promote the welfare of your servers to meet your urgent and unforeseen needs or those of your primary family group.	1,131	1,021
Fondo de Reparación de motos	Promote the well-being of the official workers who work in the regional market and use motorcycles of their property for the performance of their work.	349	270
Garantias			
International Energy Transactions	Guarantee corresponding to the "compensation" that must be made between the stock transaction invoice and the prepayments, seeking to make the actual payment to XM.	10,907	167
Fund Adapted Entity of Health and Fosyga Fund	Mechanism of control and follow up to the collection of contributions of the Contribution System of the General System of Social Security in Health.	5,480	861
Deposits Law 820	Guarantee required by the lessor to the tenant, for the payment of the public services. According to Article 15 of Law 820 of 2003 and Regulatory Decree 3130 of 2003.	53	45
<b>Total Resource Restricted EPM Matrix</b>		<b>130,059</b>	<b>145,324</b>
<b>ESSA Restricted Resources</b>			
Auto Insurance Agreement	Auto Insurance Agreement	5,485	5,276
San Gil public lighting	Resources of surpluses of public lighting of the municipality of San Gil.	1,883	496
BBVA guarantees 0408	XM bank account	1,753	3,758
FAER Conventions	Administration and execution of the resources of the financial support fund for the energization of the interconnected rural areas (FAER), assigned to rural electrification projects and standardization of electricity networks.	856	8,744
Puerto Wilches Barranca Line	Construction of a double circuit line Termobarranca Puerto Wilches 115 / 34.5 kv, a substation in Puerto Wilches 115 / 34.5 kV, and expansion of the Termobarranca substation.	550	532



Government of Santander Agreement - ESSA, Phase V	Construction of medium and low voltage networks, assembly of transformers and internal installations for the rural electrification of sidewalks in the department of Santander	435	427
PRONE - ESSA Agreement	Rural electrification agreement signed with the Ministry of Mines and Energy	95	576
Jesus Maria Convention	Construction of medium and low voltage networks, assembly of transformers and internal installations for the rural electrification of the sidewalks of the municipality of Jesús María, in Santander.	93	52
Public hearings	General management and execution of the resources of public hearings by ESSA, assigned to the projects of construction of medium and low voltage networks for rural electrification.	32	101
<b>Total restricted resources ESSA</b>		<b>11,182</b>	<b>19,962</b>
<b>EDEQ Restricted Resources</b>			
Housing Fund	Resources destined to improve the quality of life of its workers through the granting of credits destined to the purchase and improvement of housing.	2,577	2,262
Social Welfare and Training Fund	Resources designed to provide workers and their families access to higher education, health, well-being and recreation.	128	120
Motorcycle Background	Loans to employees to buy motorcycles	11	36
Domestic Calamity Fund	Resources destined for events caused by serious and unforeseen situations that affect the worker or his family.	9	13
<b>Total restricted resources EDEQ</b>		<b>2,725</b>	<b>2,431</b>
<b>CENS Restricted Resources</b>			
Contract FAER GGC 105 - 2013 signed between the Nation (Minminas) and CENS. (FAER Catatumbo III)	Execution of the rural electrification works in the municipalities of Convention, San Calixto, Cáchira, Hacarí, Ocaña, La Playa, Villa Caro, Teorama and La Esperanza in the department of Norte de Santander.	864	1,890
Convention CENS - Government of Santander	Execution of rural electrification works in the municipalities of Ábrego, El Carmen and El Tarra, in the department of Norte de Santander.	755	1,428
CENS Convention - Ecopetrol	Execution of the rural electrification works in the municipalities of Tibú and El Carmen, department of Norte de Santander.	445	542
Custody Account BBVA XM Banking Guarantees	Guarantee and TIES of compliance to cover projects of purchase of energy.	410	214
Fundescat	Execution of rural electrification works in the municipalities of Tibú and El Tarra, department of Norte de Santander	175	246

FAER Morales-Aguachica	Broaden the coverage, improve the quality and continuity of the electric power service and meet the demand for it in the areas of the National Interconnected System - SIN, located in the Market of Marketing of the network operator - power Administration, operation, maintenance and replacement of the rural electrification assets built with the resources of the rural electrification program of Catatumbo and province of Ocaña, stage 1, Norte de Santander.	87	435
Contract AOM		65	62
Revolving Housing Fund	Financing the value of housing for workers who do not own it.	40	358
FAER Convention 021 -003	General administration and execution of resources of the financial support fund for the energization of interconnected rural areas (FAER).	-	218
<b>Total restricted resources CENS</b>		<b>2,841</b>	<b>5,393</b>
<b><u>CHEC Restricted Resources</u></b>			
Housing Fund	Resources destined to improve the quality of life of its workers through the granting of credits destined to the purchase and improvement of housing.	2,220	2,148
Agreement Financing Plan	Resources allocated to the company's social financing plan.	959	928
Plant Maintenance Fund	Fund created to attend to the civil maintenance of the CHEC generation plants through a delegated management contract.	290	221
Building Maintenance Agreement	Account destined for the maintenance of the building.	116	64
Fund administration quality of life contract	Quality of life	86	-
Fund management environmental management	Environmental Management	25	-
<b>Total restricted resources CHEC</b>		<b>3,696</b>	<b>3,361</b>
<b><u>Restricted resources Aguas Regionales EPM</u></b>			
Agreement-San Jerónimo	Resources received in 2011 from the inter-administrative agreement 08-CF-124850 agreed between the Department of Antioquia and the municipalities of Santafe de Antioquia and San Jerónimo, as well as resources received in 2011	324	407
Housing Fund	Resources destined to improve the quality of life of its workers through the granting of credits destined to the purchase and improvement of housing.	230	268
Financial support 10005431-07-CF12-4842	Balance of the agreement signed with the department of Antioquia for the execution of works.	2	2
Inter-administrative co-financing agreement with the Department of Antioquia	For the formulation, feasibility and management of the drinking water project in the availability of other sources of abstraction for the subregion of Urabá Antioqueño	1	-
<b>Total restricted resources Regional Water EPM</b>		<b>557</b>	<b>677</b>
<b><u>Restricted resources</u></b>			
FL Bancolombia 6093-Clausura	Resources destined to the payment of the closing, closing and postclausura of prairie.	6,275	7,137
FL Green Zone Agreement 2014	Agreement of delegated administration with the Municipality of Medellín for the service of cut of green zones.	2,191	1,255
Conv. 18-897796-47 EDU	Agreement of delegated administration with the Municipality of Medellín, for the maintenance of green zones of the institutions of the Municipality and its 5 corregimientos.	210	78
FL BBVA 423 Conv.Poda-Tala	Delegated administration agreement with the Municipality of Medellín for the service of cutting green areas and pruning and cutting of trees.	30	146
FL West Inder	Agreement with the INDER for the washing of bridges and roofs of the stadium.	8	37
FL Conv zon verd 400054603	Agreement of delegated administration with the Municipality of Medellín for the service of cut of green zones.	2	51
FL West 127	Agreement of delegated administration with the Municipality of Medellín for the service of collection of debris.	-	27
<b>Total restricted resources Emissions</b>		<b>8,716</b>	<b>8,731</b>
<b><u>Miscellaneous Restricted Resources</u></b>			
Aguas Nacionales	Fondos PTAR Bello y Aguas de Atrato	24,879	29,348
Het	Various	1,492	1,588
<b>Total restricted resources</b>		<b>26,371</b>	<b>30,936</b>
<b>Total restricted resources EPM Group</b>		<b>186,147</b>	<b>216,815</b>

## Note 18. Equity

### 18.1 Capital

Its capital is not divided into shares.

### 18.2 Reserves

Of the accounts that make up equity, the reserves as of December 31, 2015 and 2014 consisted of the following:

Reserves	2016	2015
<b>Statutory reserves</b>		
Beginning balance	3,018,258	2,604,500
Constitution	231,982	741,053
Appropriation	(563,251)	(327,295)
<b>Total statutory reserves</b>	<b>2,686,989</b>	<b>3,018,258</b>
<b>Occasional reserves</b>		
Beginning balance	572,092	572,092
Constitution	7,336	-
<b>Total occasional reserves</b>	<b>579,428</b>	<b>572,092</b>
<b>Other reserves</b>		
Beginning balance	245,840	(37,020)
Constitution	92,532	282,860
<b>Total Other reserves</b>	<b>338,372</b>	<b>245,840</b>
<b>Total reserves</b>	<b>3,604,789</b>	<b>3,836,190</b>

- Figures expressed in millions of Colombian pesos -

The nature and purpose of equity reserves of the EPM Group are described below:

**Statutory reserves:** in compliance with Colombian tax provisions contained in Article 130 (reserve of 70% for excess of tax over accounting depreciation) and 211 of the Tax Code, EPM and the companies of the EPM Group that operate in Colombia have created the required reserves in order to be benefited by a special tax treatment and obtain a rationalization in the payment of the income and complementary tax.

For the affiliates of El Salvador, the legal reserve is established in accordance with the Commercial Code in effect, the companies must create annually a legal reserve of 7% of the net profits, with a minimum limit established of one fifth of their capital stock. Additionally, in accordance with the Income Tax Law, when the legal reserve decreases by any circumstance, such as capitalization, application to losses of previous periods or distribution, it will represent taxable income for the company for the amount that was deducted for income tax purposes in tax periods prior to that of its decrease, calculating it separately from the ordinary income, at the rate of 25%. For these purposes, the company will keep a record of the

creation of legal reserve and of the amount deducted for determination of the net or taxable income in each tax period.

For the affiliates of Guatemala according to the Commercial Code, all commercial companies must appropriate annual as minimum 5% of their net profits to create the legal reserve, which cannot be distributed expect at the liquidation of the company. However, this reserve can be capitalized when it is equal to or higher than 15% of the paid capital at the closing of the immediately preceding period, notwithstanding continuing to reserve the mentioned 5%.

For affiliates of other countries in which EPM Group operates the creation of legal reserve has not been established by Law.

**Occasional reserves:** in accordance with Decree 2336 of 1995, for the profits incorporated in profit and loss in the application of equity method applied under local regulations, EPM and the companies of the EPM Group that operate in Colombia have created these reserves to in order to comply with this Decree.

**Other reserves:** includes statutory reserves, for reacquisition of shares and quote-parts, equity funds and others that as of December 31 represent the net balance corresponding to the releases made by the Affiliates in those reserves that have already complied with the requirements to be released.

### 18.3. Retained profits

The movement of retained earnings during the period was:

Retained results	2016	2015
Saldo inicial	11,417,031	11,240,052
Reservation movement	222,874	(696,618)
Surpluses or dividends decreed	(816,521)	(56,139)
Transfer of other comprehensive income	466,447	-
Purchases and sales to non-controlling interests	(6,125)	-
Impact of adoption IFRS 9 as of January 1, 2016	(89,269)	-
Income tax related to transactions with owners	(5,085)	-
Effect on disposal with subsidiaries	4,298	-
Another movement of the period	42,136	45,960
<b>Total cumulative result</b>	<b>11,235,786</b>	<b>10,533,255</b>
<b>Net profit for the period</b>	<b>1,724,000</b>	<b>883,776</b>
<b>Total retained earnings</b>	<b>12,959,786</b>	<b>11,417,031</b>

- Figures expressed in millions of Colombian pesos -

Surplus paid during the year was \$816,521 (2015: \$991,139), \$445,375 Ordinary \$371,146 and Additional.

### 18.4. Non-controlling participations

The movement of the non-controlling interests at the cut-off date is:

Non-controlling interests	2016	2015
Beginning balance	843,974	736,370
Surpluses or dividends decreed	(78,031)	(168,405)
Participation in the result of the period	141,745	124,708
Participation in other comprehensive income	(5,150)	(484)
Effect by subsidiary disposition	(2,368)	-
Impact of adoption IFRS 9 as of January 1, 2016	(5,667)	-
Purchases and sales to non-controlling interests	29,774	-
Another movement of the period (1)	(120,816)	151,785
<b>Total</b>	<b>803,461</b>	<b>843,974</b>

- Figures expressed in millions of Colombian pesos -

- (1) It corresponds to the adjustment for currency conversion that originates between the balance sheet balances and the movements of the comprehensive income statement corresponding to the non-controlling participations.

## Note 19. Components of the other accumulated comprehensive income

The detail of the tax effect corresponding to each component of other comprehensive income of the consolidated statement of financial condition and the corresponding tax effect is the following:

Accumulated other comprehensive income	2016			2015		
	Gross	Tax effect	Net	Gross	Tax effect	Net
Reclassification of properties, plant and equipment to investment properties	13,439	(1,360)	12,079	3,739	(404)	3,335
New measurements of defined benefit plans	(13,770)	(1,180)	(14,949)	87,403	(52,946)	34,458
Equity investments measured at fair value through equity	1,834,037	(88,162)	1,745,875	1,858,063	(83,157)	1,774,906
Participation in other comprehensive income of	(925)	1,113	188			-
Cash flow hedges	(19,374)	11,113	(8,262)			-
Conversion of business financial statements abroad	705,285	-	705,285	860,895	-	860,895
<b>Total</b>	<b>2,518,692</b>	<b>(78,476)</b>	<b>2,440,216</b>	<b>2,810,100</b>	<b>(136,506)</b>	<b>2,673,594</b>

- Figures expressed in millions of Colombian pesos -

During the period, \$ 466,447 (2015 \$ 39,224) was reclassified, previously recognized in the other comprehensive income to the results of the period.

Below is a reconciliation of the opening and closing balances at the cut-off date for each component of the comprehensive income:

### 19.1 Component: reclassification of properties, plant and equipment to investment properties

The component of the other comprehensive incomes of equity investments measured at fair value through equity represents the accumulated value of profits or losses by the valuation at fair value less the values transferred to the accumulated profits when these investments have been sold. The changes in the fair value do not reclassify to the result of the period.

Reclassification of properties, plant and equipment to investment properties	2016	2015
Beginning balance	3,335	6,115
Net gains or losses on changes in the fair value of investment property	9,700	3,731
Associated income tax (or equivalent)	(956)	(401)
Other changes	-	(6,110)
<b>Total</b>	<b>12,079</b>	<b>3,335</b>

- Figures expressed in millions of Colombian pesos -

### 19.2. Component of new measurements of defined benefit plans

The component of new measurements of the defined benefit plans represents the accumulated value of the actuarial profits or losses, the returns of the assets of the plan and the changes in the effect of the asset's ceiling, excluding the values included in the net interest over the liability (asset) of net defined benefits. The net value of the new measurements is transferred to the accumulated profits and not reclassified to the results of the period. It includes the portion that corresponds to the EPM Group in its investments in associates and joint ventures.

Component new measurements of defined benefit plans	2016	2015
Beginning balance	46,232	51,047
Profit for the period for new measurements of defined benefit plans	(101,182)	20,322
Associated income tax (or equivalent)	40,118	(15,489)
Other changes	(117)	(9,648)
<b>Total</b>	<b>(14,949)</b>	<b>46,232</b>

- Figures expressed in millions of Colombian pesos -

### 19.3. Component: Equity investments measured at fair value through equity

The component of the other comprehensive incomes of equity investments measured at fair value through equity represents the accumulated value of profits or losses by the valuation at fair value less the values transferred to the accumulated profits when these investments have been sold. The changes in the fair value do not reclassify to the profit and loss for the period. It includes the portion that corresponds to the EPM Group in its investments in associates and joint ventures to the result of the period.

Equity investments measured at fair value through equity	2016	2015
Beginning balance	1,763,131	1,841,717
Net gains or losses on changes in the fair value of equity investments	538,676	6,959
Associated income tax (or equivalent)	(88,162)	(92,925)
Cumulative gains (losses) transferred to cumulative gains / losses for the period	(466,447)	-
Other changes - net	(1,322)	7,380
<b>Total</b>	<b>1,745,876</b>	<b>1,763,131</b>

- Figures expressed in millions of Colombian pesos -



#### 19.4. Participation in other comprehensive income of associates and joint ventures

The component of the other comprehensive income in the other comprehensive income of associates and joint ventures represents the accumulated value of the application of equity method to profit and loss of other comprehensive income of associates and joint ventures. The accumulated value of the gains or losses will be reclassified to the results of the period or to the accumulated profits, depending on the items that originated equity method, when these investments have been sold.

Participation in other comprehensive income of associates and joint ventures	2016	2015
Beginning balance	1,588	75
New measurements of defined benefit plans	(3,141)	-
Result for business conversion abroad	629	1,513
Associated income tax (or equivalent)	1,113	-
<b>Total</b>	<b>189</b>	<b>1,588</b>

- Figures expressed in millions of Colombian pesos -

#### 19.5. Component: cash flows hedging

The component of the other comprehensive income of cash flows hedging represents the accumulated value of the effective person of the profits or losses that arise from the changes in the fair value of entries hedged in a cash flows hedging. The accumulated value of profits or losses will be reclassified to the profit and loss of the period only when the transaction hedged affects the result of the profit and loss of the period or the highly probable transaction is not anticipated that it will occur, or is included, as part of its book value, in a non-financial hedged entry. It includes the portion that corresponds to the EPM Group in its investments in associates and joint ventures.

Cash flow hedges	2016	2015
Beginning balance	(0)	(10,996)
Gains or losses on changes in the fair value of hedging instruments	(19,375)	(7,789)
Associated income tax (or equivalent)	9,494	18,785
Other changes - net	1,619	
<b>Total</b>	<b>(8,262)</b>	<b>(0)</b>

- Figures expressed in millions of Colombian pesos -

#### 19.6 Component: profits or losses for conversion of business abroad

The component of conversion differences represents the accumulated value of the exchange differences that arise from the conversion to the currency of presentation by EPM Group of the results and of the net assets of the operations abroad, as well as of the profits or losses of hedging instruments that are designated in a hedging of net investment in a business abroad. The accumulated conversion differences reclassify to profit and loss for the period, partial or totally, when the operation is provided abroad. It includes the portion that corresponds to the EPM Group in its investments in associates and joint ventures.

Result for foreign business conversion	2016	2015
Beginning balance	859,308	368,466
Net foreign exchange differences on business conversion abroad	(152,394)	507,576
Other changes - net	-	(4,936)
Associated income tax (or equivalent)	(1,630)	(11,798)
<b>Total</b>	<b>705,284</b>	<b>859,308</b>

- Figures expressed in millions of Colombian pesos -

## Note 20. Credits and loans

The following is the detail of the books value of credits and loans:

Credits and loans	2016	2015
<b>Non-current</b>		
Other bonds and securities issued	5,849,555	5,963,779
Commercial banks loans	4,516,748	3,092,837
Multilateral banks loans	1,094,218	640,451
Development banks loans	842,053	-
Bonds and securities issued	652,047	683,567
<b>Total Credits and loans non current</b>	<b>12,954,621</b>	<b>10,380,634</b>
<b>Current</b>		
Commercial banks loans	645,090	1,067,512
Multilateral banks loans	570,337	1,050,265
Otros bonos y títulos emitidos	285,716	290,934
Bonds and securities issued	271,047	334,604
Development banks loans	121,197	1,082,093
Other loans	-	432,830
<b>Total Credits and loans current</b>	<b>1,893,387</b>	<b>4,258,238</b>
<b>Total credits and loans</b>	<b>14,848,008</b>	<b>14,638,872</b>

- Figures expressed in millions of Colombian pesos -

### Credits and loans

The detail of credits and loans of the entity is as follows:

Business	Entity / loan	Original Currency	Initial date	term	Nominal interest rate	2016				2015			
						IRR	Nominal value	Amortized cost value	Total Amount	IRR	Nominal value	Amortized cost value	Total Amount
CENS	BBVA Bank	COP	9/15/2016	10.00	IBR + 4.89%	12.41%	4,722	142	4,864	0.00%	-	-	-
CENS	BBVA Bank	COP	10/3/2016	10.00	IBR + 4.89%	12.40%	5,000	122	5,122	0.00%	-	-	-
CENS	BBVA Bank	COP	10/24/2016	10.00	IBR + 4.89%	12.39%	6,140	130	6,270	0.00%	-	-	-
CENS	BBVA Bank	COP	7/5/2016	0.50	DTF + 4.34%	12.00%	10,000	274	10,274	0.00%	-	-	-
CENS	Bank Davivienda	COP	11/17/2016	10.00	IBR + 4.89%	12.40%	3,877	56	3,933	0.00%	-	-	-
CENS	Bank Davivienda	COP	10/14/2016	10.00	IBR + 4.89%	12.40%	4,851	110	4,961	0.00%	-	-	-
CENS	Bank Davivienda	COP	9/16/2016	10.00	IBR + 4.89%	12.40%	5,156	139	5,295	0.00%	-	-	-
CENS	Bank Davivienda	COP	7/15/2016	10.00	IBR + 4.89%	12.39%	5,488	282	5,770	0.00%	-	-	-
CENS	Bank Davivienda	COP	8/18/2016	10.00	IBR + 4.89%	12.40%	6,198	246	6,444	0.00%	-	-	-
CENS	Bank Davivienda	COP	11/24/2016	10.00	IBR + 4.89%	12.40%	11,020	132	11,152	0.00%	-	-	-
CENS	Bank Davivienda	COP	12/5/2016	10.00	IBR + 4.89%	12.39%	14,210	119	14,329	0.00%	-	-	-
CENS	Bank Davivienda	COP	12/16/2016	10.00	IBR + 4.89%	12.39%	15,232	73	15,305	0.00%	-	-	-
CENS	Bank Davivienda	COP	6/16/2016	10.00	IBR + 4.89%	12.58%	40,000	(86)	39,914	0.00%	-	-	-
CENS	Bank of Bogota	COP	5/15/2014	7.00	IBR + 1.88%	8.92%	9,000	152	9,152	0.23%	10,000	23	10,023
CENS	Bank of Bogota	COP	12/18/2015	7.00	IBR + 1.88%	7.79%	10,000	(94)	9,906	0.54%	10,000	82	10,082
CENS	Bank of Bogota	COP	9/4/2012	7.00	IBR + 1.88%	7.73%	18,000	805	18,805	0.59%	24,000	280	24,280
CHEC	DAVIVIENDA	COP	11/23/2015	0.40	IBR + 2.34%	0.00%	-	-	-	8.33%	50,000	404	50,404
CHEC	BANCO AGRARIO- 611516350	COP	1/6/2016	10.00	DTF + 2.99%	9.76%	65,000	1,741	66,741	0.00%	-	-	-
CHEC	BBVA -611515806	COP	8/22/2014	10.00	IPC + 3.5%	9.32%	64,906	1,386	66,293	7.41%	67,000	14	67,014
CHEC	BBVA - 611516345	COP	12/28/2015	10.00	DTF + 2.99%	9.74%	60,000	282	60,282	8.21%	60,000	26	60,026
CHEC	CORPBANCA -611515807	COP	8/22/2014	10.00	IPC + 3.5%	9.32%	49,406	1,058	50,464	7.41%	51,000	9	51,009
CHEC	IPSE-661300007	COP	4/30/1993	24.00	5.84%	6.46%	133	6	139	6.46%	258	11	269
EDEQ	BBVA	COP	6/30/2015	1.25	DTF + 1.47%	0.00%	-	-	-	6.62%	875	1	876
EDEQ	BBVA	COP	7/28/2015	1.25	DTF + 1.47%	0.00%	-	-	-	1.44%	1,010	(15)	994
EDEQ	AGRARIAN	COP	6/25/2015	3.25	DTF + 1.65%	7.23%	5,774	74	5,848	6.51%	9,082	19	9,101
EDEQ	Davivienda	COP	11/12/2015	7.00	DTF + 2.66%	9.57%	7,344	138	7,482	7.69%	7,415	2	7,417
EDEQ	AV VILLAS	COP	6/23/2016	7.00	DTF + 4.78%	12.73%	3,000	10	3,010	0.00%	-	-	-
ESSA	Bank of Bogota	COP	5/20/2013	7.00	IBR + 1.88%	8.57%	4,900	113	5,013	6.89%	6,300	43	6,343
ESSA	Bank of Bogota	COP	3/28/2016	7.00	IBR + 1.88%	9.35%	7,000	16	7,016	0.00%	-	-	-
ESSA	Bank of Bogota	COP	8/28/2016	12.00	IBR + 4.5%	12.25%	8,000	66	8,066	0.00%	-	-	-
ESSA	Bank of Bogota	COP	12/5/2016	12.00	IBR + 4.5%	12.23%	8,000	108	8,108	0.00%	-	-	-
ESSA	Bank of Bogota	COP	4/14/2016	7.00	IBR + 1.88%	9.45%	8,500	178	8,678	0.00%	-	-	-

ESSA	Bank of Bogota	COP	4/16/2014	7.00	IBR + 1.88%	12.23%	9,000	229	9,229	6.81%	10,000	120	10,120
ESSA	Bank of Bogota	COP	10/13/2016	12.00	IBR + 4.5%	8.94%	9,000	247	9,247	0.00%	-	-	-
ESSA	Bank of Bogota	COP	4/30/2015	7.00	IBR + 1.88%	9.37%	13,000	161	13,161	6.70%	13,000	162	13,162
ESSA	Bank of Bogota	COP	2/16/2016	7.00	IBR + 1.88%	9.16%	13,000	278	13,278	0.00%	-	-	-
ESSA	Bank of Bogota	COP	1/27/2016	7.00	IBR + 1.88%	12.25%	15,000	81	15,081	0.00%	-	-	-
ESSA	Bank of Bogota	COP	12/14/2016	12.00	IBR + 4.5%	9.50%	15,000	278	15,278	0.00%	-	-	-
ESSA	Bank of Bogota	COP	4/10/2014	7.00	IBR + 1.88%	8.90%	16,200	482	16,682	6.81%	18,000	233	18,233
ESSA	Bank of Bogota	COP	7/1/2016	12.00	IBR + 4.5%	12.23%	20,000	601	20,601	0.00%	-	-	-
ESSA	Bank of Bogota	COP	4/11/2013	7.00	IBR + 1.88%	8.79%	25,550	748	26,298	6.92%	32,850	377	33,227
ESSA	Bank of Bogota	COP	11/11/2016	12.00	IBR + 4.5%	12.23%	35,000	560	35,560	0.00%	-	-	-
ESSA	Bank of Bogota	COP	2/26/2013	7.00	IBR + 1.88%	8.66%	72,800	1,419	74,219	6.96%	95,200	452	95,652
ANTOFAGASTA	Bank of the State	CLP	10/23/2014	5.00	TF + 1.9%	1.04%	25,853	238	26,091	3.98%	33,230	(29)	33,200
ANTOFAGASTA	Bank of the State	CLP	11/14/2015	10.00	TF + 2.9%	1.51%	174,691	3,351	178,042	4.67%	189,323	(165)	189,158
ANTOFAGASTA	Bank of the State	CLP	9/4/2015	2.00	TAB + 0.25%	4.51%	611,580	1,268	612,848	5.52%	606,737	914	607,652
ANTOFAGASTA	Scotiabank	CLP	9/4/2015	2.00	TAB + 0.25%	4.51%	611,580	1,268	612,848	5.52%	606,737	915	607,653
ANTOFAGASTA	BICE-BCI Bank	CLP	6/1/2016	-	0.41%-0.39%	0.00%	8,183	-	8,183	0.00%	-	-	-
DEL SUR	Bank Davivienda	USD	8/26/2013	10.00	3.7%	1.02%	65,641	18	65,659	1.02%	76,768	(3,197)	73,571
DEL SUR	Bank Davivienda	USD	10/7/2015	10.00	4.2%	1.02%	45,011	471	45,481	1.02%	47,242	3,884	51,126
DEL SUR	Bonds	USD	8/17/2010	10.00	Min 5% - Max 8%	1.52%	63,015	413	63,428	1.52%	66,139	413	66,551
EEGSA	Banco Industrial, S.A.	GTQ	10/29/2012	10.00	PPA + 6.56%	6.96%	169,771	(1,172)	168,599	6.97%	204,890	(1,558)	203,332
EEGSA	Banco G & T Continental, S.A.	GTQ	10/29/2012	10.00	PPA + 6.56%	6.97%	110,321	(778)	109,542	6.97%	133,100	(1,041)	132,059
EEGSA	Banco Reforador, S.A.	GTQ	10/29/2012	10.00	PPA + 6.56%	6.98%	44,010	(300)	43,710	6.98%	53,778	(410)	53,368
EEGSA	Banco Internacional, S.A.	GTQ	7/29/2011	10.00	PPA + 6%	7.65%	9,401	(69)	9,332	7.65%	11,670	(99)	11,572
EEGSA	Banco Agromercantil de Guatemala, S.A.	GTQ	10/29/2012	10.00	PPA + 6.56%	6.98%	59,823	(424)	59,399	6.98%	72,202	(574)	71,628
EEGSA	Banco Industrial, S.A.	USD	12/8/2014	10.00	PPA + 1.56%	4.48%	75,004	2	75,006	4.44%	78,737	(45)	78,692
EEGSA	Banco Internacional, S.A.	USD	12/9/2014	10.00	PPA + 1.5%	4.54%	9,000	(0)	9,000	4.50%	9,448	(5)	9,443
EEGSA	Banco de Desarrollo Rural, S.A.	USD	12/10/2014	5.00	PPA + 1.2%	4.85%	30,002	(2)	30,000	4.82%	31,495	(18)	31,477
EEGSA	Bank of Central America, S.A.	USD	12/8/2014	10.00	PPA + 1.5%	4.54%	30,002	(1)	30,001	4.51%	31,495	(18)	31,476
ENSA	Senior Bonds	USD	7/10/2006	15.00	TASA FIJA + 7.6%	8.16%	300,071	5,959	306,030	8.16%	314,947	5,558	320,505
ENSA	Corporate Bonds	USD	10/20/2008	10.00	LIBOR + 2.375%	3.46%	60,014	597	60,611	3.46%	62,989	705	63,695
ENSA	Bonds (Private Placement)	USD	12/13/2012	15.00	TASA FIJA + 4.73%	4.96%	240,057	(2,813)	237,244	4.96%	251,958	(3,190)	248,768

ENSA	National Bank of Panama	USD	12/22/2015	1.00	LIBOR + 2%	0.00%	-	-	-	1.40%	85,036	-	85,036
ENSA	National Bank of Panama	USD	12/22/2016	0.08	LIBOR + 1.45%	1.45%	51,012	65	51,077	0.00%	-	-	-
ENSA	National Bank of Panama	USD	12/27/2016	0.08	LIBOR + 1.45%	1.45%	60,014	(54)	59,961	0.00%	-	-	-
ENSA	Davivienda	USD	12/21/2016	0.08	LIBOR + 1.4%	1.40%	90,021	35	90,056	0.00%	-	-	-
ENSA	Banistmo	USD	12/4/2016	0.08	LIBOR + 1.45%	1.45%	45,011	44	45,054	0.00%	-	-	-
TICSA	Bank of the Bajío (Ecosystem of Tuxtla)	MXN	7/31/2013	14.67	TIIE + 2.75%	9.08%	65,740	(5,048)	60,692	6.99%	85,928	(16,915)	69,013
TICSA	Bank of America	MXN	7/23/2015	1.00	TIIE + 1.75%	6.11%	60,345	-	60,345	0.00%	40,507	-	40,507
TICSA	Banobras (Ecoagua de Torreon)	MXN	9/1/2001	15.50	8.28%	11.22%	815	4	819	11.22%	3,826	(25)	3,802
TICSA	FIDE (Aguasol Morelia)	MXN	12/9/2015	3.00	0%	8.69%	829	(9)	820	0.00%	-	-	-
TICSA	Interactions (Ecoagua de Torreón (F / 851))	MXN	5/1/2011	8.00	TIIE + 3.9%	11.22%	10,709	(382)	10,327	12.12%	13,407	(881)	12,526
TICSA	Interactions (Lerdo Ecosystem)	MXN	8/1/2007	15.33	TIIE + 3%	7.68%	29,025	(196)	28,829	7.76%	42,384	(1,951)	40,433
TICSA	Santander	MXN	6/10/2016	1.00	TIIE + 3.5%	6.76%	2,112	10	2,122	0.00%	-	-	-
TICSA	Santander (Ecosystem of Celaya)	MXN	6/14/2016	14.00	TIIE + 2.15%	10.09%	18,101	(322)	17,779	0.00%	-	-	-
TICSA	Santander (Aguasol Morelia)	MXN	6/14/2016	7.00	TIIE + 2.15%	9.46%	45,001	(540)	44,461	0.00%	-	-	-
TICSA	Santander (Ecosystem of Colima)	MXN	6/14/2016	10.00	TIIE + 2.15%	9.41%	53,568	(1,028)	52,541	0.00%	-	-	-
TICSA	Banobras (Aguasol Morelia S.A. of C. V.)	MXN	10/17/2013	15.42	11.47%	0.00%	-	-	-	8.85%	3,261	(87)	3,175
TICSA	Banobras (Aguasol Morelia S.A. of C. V.)	MXN	10/1/2006	10.58	9%	0.00%	-	-	-	12.98%	6,547	(46)	6,501
TICSA	Banobras (Aguasol Morelia S.A. of C. V.)	MXN	11/7/2012	9.83	8.16%	0.00%	-	-	-	11.09%	17,243	(290)	16,953
TICSA	Banorte (Ecosystem of Celaya S. of C. V.)	MXN	5/1/2011	16.25	TIIE + 4%	0.00%	-	-	-	8.26%	21,467	250	21,718
TICSA	Interactions (Ecosystem of Colima S.A. of C. V.)	MXN	8/31/2005	21.00	TIIE + 4%	0.00%	-	-	-	11.28%	3,559	(622)	2,938
TICSA	Interactions (Intercontinental Technology S. A. P. I.)	MXN	2/1/2012	11.92	TIIE + 4.07%	0.00%	-	-	-	8.61%	12,270	839	13,109
TICSA	Interactions (Ecosystem of Colima S.A. of C. V.)	MXN	8/31/2005	21.00	TIIE + 3%	0.00%	-	-	-	7.36%	28,716	7,694	36,410
	PPA and Other Adjustments					0.00%	-	-	(14,236)	0.00%	-	-	(20,303)
<b>Total</b>							<b>14,666,655</b>	<b>195,589</b>	<b>14,848,008</b>		<b>14,439,032</b>	<b>220,143</b>	<b>14,638,872</b>

- Figures expressed in millions of Colombian pesos -

Interest paid on loan operations was for 2016 of \$ 1,041,381 (2015: \$ 786,061).

The difference in net assumed change associated with debt was for 2016 of \$ 275,822 (2015: - \$ 1,405,635)

The information of the bonds issued is as follows:

Subseries	Original Currency	Initial date	Term	Nominal interest rate	2016				2015				Awarded amount								
					IRR	Nominal value	Amortized cost value	Total Amount	IRR	Nominal value	Amortized cost value	Total Amount	2016	2015	2014	2013	2012	2011	2010	2009	2008
A10a	COP	11/20/2008	10	IPC + 7.12%	12.71%	174,410	4,553	178,963	9.71%	174,410	5,776	180,186	174,410	174,410	174,410	174,410	174,410	174,410	174,410	174,410	141,450
A10a	COP	1/22/2009	10	IPC + 5.8%	12.39%	138,600	2,321	140,921	9.31%	138,600	2,209	140,809	138,600	138,600	138,600	138,600	138,600	138,600	138,600	138,600	-
A10a	COP	12/5/2013	10	IPC + 4.52%	11.12%	96,210	(881)	95,329	8.09%	96,210	(750)	95,460	96,210	96,210	96,210	96,210	-	-	-	-	-
A10a	COP	3/20/2015	10	IPC + 4.52%	10.94%	130,000	(175)	129,825	7.93%	130,000	90	130,090	130,000	130,000	130,000	130,000	-	-	-	-	-
A12a	COP	12/14/2010	12	IPC + 4.2%	10.67%	119,900	(377)	119,523	7.66%	119,900	(469)	119,431	119,900	119,900	119,900	119,900	119,900	119,900	119,900	-	-
A12a	COP	7/30/2014	12	IPC + 4.17%	10.73%	125,000	(290)	124,710	7.66%	125,000	(129)	124,871	125,000	125,000	125,000	-	-	-	-	-	-
A12a	COP	3/20/2015	12	IPC + 3.92%	10.22%	120,000	(356)	119,644	7.27%	120,000	(336)	119,664	120,000	120,000	-	-	-	-	-	-	-
A15a	COP	4/21/2009	15	IPC + 6.24%	12.60%	198,400	4,399	202,799	9.50%	198,400	4,823	203,223	198,400	198,400	198,400	198,400	198,400	198,400	198,400	198,400	198,400
A20a	COP	12/14/2010	20	IPC + 4.94%	11.33%	267,400	(788)	266,612	8.33%	267,400	(722)	266,678	267,400	267,400	267,400	267,400	267,400	267,400	267,400	-	-
A20a	COP	12/5/2013	20	IPC + 5.03%	11.55%	229,190	(2,393)	226,797	8.50%	229,190	(1,788)	227,402	229,190	229,190	229,190	229,190	-	-	-	-	-
A20a	COP	7/30/2014	20	IPC + 4.5%	11.01%	250,000	(723)	249,277	7.94%	250,000	(208)	249,792	250,000	250,000	250,000	-	-	-	-	-	-
A20a	COP	3/20/2015	20	IPC + 4.43%	10.78%	260,000	(446)	259,554	7.75%	260,000	(327)	259,673	260,000	260,000	-	-	-	-	-	-	-
A5a	COP	12/5/2013	5	IPC + 3.82%	10.71%	41,880	(186)	41,694	7.73%	41,880	(306)	41,574	41,880	41,880	41,880	41,880	-	-	-	-	-
A5a	COP	3/20/2015	5	IPC + 2.72%	9.12%	120,000	(519)	119,481	6.26%	120,000	(759)	119,241	120,000	120,000	-	-	-	-	-	-	-
A6a	COP	12/14/2010	6	IPC + 3.25%	10.00%	-	-	-	8.05%	112,700	(702)	111,998	112,700	112,700	112,700	112,700	112,700	112,700	112,700	-	-
A6a	COP	7/30/2014	6	IPC + 3.57%	10.31%	125,000	57	125,057	7.25%	125,000	(127)	124,873	125,000	125,000	125,000	-	-	-	-	-	-
C10a	COP	1/22/2009	10	10.8%	10.81%	74,700	7,566	82,266	10.81%	74,700	7,537	82,237	74,700	74,700	74,700	74,700	74,700	74,700	74,700	74,700	74,700
C10a	COP	11/20/2008	10	13.8%	13.79%	58,000	857	58,857	13.82%	58,000	826	58,826	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000
International bond	USD	7/29/2009	10	7.63%	8.16%	1,500,355	35,420	1,535,775	8.16%	1,574,735	32,297	1,607,032	1,500,355	1,574,735	1,196,230	963,415	884,115	971,350	956,990	1,022,115	-
International bond	COP	1/31/2011	10	8.38%	8.70%	1,250,000	82,054	1,332,054	8.70%	1,250,000	79,058	1,329,058	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	-	-	-
International bond	COP	9/10/2014	10	7.63%	7.73%	965,745	16,169	981,914	7.73%	965,745	15,502	981,247	965,745	965,745	965,745	-	-	-	-	-	-
<b>TOTAL</b>						<b>6,244,790</b>	<b>146,261</b>	<b>6,391,051</b>		<b>6,431,870</b>	<b>141,496</b>	<b>6,573,366</b>	<b>6,357,490</b>	<b>6,431,870</b>	<b>5,553,365</b>	<b>3,854,805</b>	<b>3,278,225</b>	<b>3,365,460</b>	<b>2,101,100</b>	<b>1,666,225</b>	<b>199,450</b>

- Figures expressed in millions of Colombian pesos -

The exchange rate used was the closing TRM of each period

The detail of the national bonds issued by the Group is as follows:

Subseries	Original Currency	Initial date	Term	Nominal interest rate	2016				2015				Awarded amount								
					IRR	Nominal value	Amortized cost value	Total Amount	IRR	Nominal value	Amortized cost value	Total Amount	2016	2015	2014	2013	2012	2011	2010	2009	2008
National bond	COP	11/20/2008	10	IPC + 7.12%	12.71%	174,410	4,553	178,963	9.71%	174,410	5,776	180,186	174,410	174,410	174,410	174,410	174,410	174,410	174,410	174,410	141,450
National bond	COP	1/22/2009	10	IPC + 5.8%	12.39%	138,600	2,321	140,921	9.31%	138,600	2,209	140,809	138,600	138,600	138,600	138,600	138,600	138,600	138,600	138,600	-
National bond	COP	12/5/2013	10	IPC + 4.52%	11.12%	96,210	(881)	95,329	8.09%	96,210	(750)	95,460	96,210	96,210	96,210	-	-	-	-	-	-
National bond	COP	3/20/2015	10	IPC + 4.52%	10.94%	130,000	(175)	129,825	7.93%	130,000	90	130,090	130,000	130,000	130,000	-	-	-	-	-	-
National bond	COP	12/14/2010	12	IPC + 4.2%	10.67%	119,900	(377)	119,523	7.66%	119,900	(469)	119,431	119,900	119,900	119,900	119,900	119,900	119,900	119,900	-	-
National bond	COP	7/30/2014	12	IPC + 4.17%	10.73%	125,000	(290)	124,710	7.66%	125,000	(129)	124,871	125,000	125,000	-	-	-	-	-	-	-
National bond	COP	3/20/2015	12	IPC + 3.92%	10.22%	120,000	(356)	119,644	7.27%	120,000	(336)	119,664	120,000	120,000	-	-	-	-	-	-	-
National bond	COP	4/21/2009	15	IPC + 6.24%	12.60%	198,400	4,399	202,799	9.50%	198,400	4,823	203,223	198,400	198,400	198,400	198,400	198,400	198,400	198,400	198,400	-
National bond	COP	12/14/2010	20	IPC + 4.94%	11.33%	267,400	(788)	266,612	8.33%	267,400	(722)	266,678	267,400	267,400	267,400	267,400	267,400	267,400	267,400	-	-
National bond	COP	12/5/2013	20	IPC + 5.03%	11.55%	229,190	(2,393)	226,797	8.50%	229,190	(1,788)	227,402	229,190	229,190	229,190	229,190	-	-	-	-	-
National bond	COP	7/30/2014	20	IPC + 4.5%	11.01%	250,000	(723)	249,277	7.94%	250,000	(208)	249,792	250,000	250,000	250,000	-	-	-	-	-	-
National bond	COP	3/20/2015	20	IPC + 4.43%	10.78%	260,000	(446)	259,554	7.75%	260,000	(327)	259,673	260,000	260,000	-	-	-	-	-	-	-
National bond	COP	12/5/2013	5	IPC + 3.82%	10.71%	41,880	(186)	41,694	7.73%	41,880	(306)	41,574	41,880	41,880	41,880	41,880	-	-	-	-	-
National bond	COP	3/20/2015	5	IPC + 2.72%	9.12%	120,000	(519)	119,481	6.26%	120,000	(759)	119,241	120,000	120,000	-	-	-	-	-	-	-
National bond	COP	12/14/2010	6	IPC + 3.25%	10.00%	-	-	-	8.05%	112,700	(702)	111,998	112,700	112,700	112,700	112,700	112,700	112,700	112,700	-	-
National bond	COP	7/30/2014	6	IPC + 3.57%	10.31%	125,000	57	125,057	7.25%	125,000	(127)	124,873	125,000	125,000	125,000	-	-	-	-	-	-
National bond	COP	1/22/2009	10	10.8%	10.81%	74,700	7,566	82,266	10.81%	74,700	7,537	82,237	74,700	74,700	74,700	74,700	74,700	74,700	74,700	74,700	74,700
National bond	COP	11/20/2008	10	13.8%	13.79%	58,000	857	58,857	13.82%	58,000	826	58,826	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000
<b>TOTAL</b>						<b>2,528,690</b>	<b>12,618</b>	<b>2,541,308</b>		<b>2,641,390</b>	<b>14,640</b>	<b>2,656,030</b>	<b>2,641,390</b>	<b>2,641,390</b>	<b>2,141,390</b>	<b>1,641,390</b>	<b>1,144,110</b>	<b>1,144,110</b>	<b>1,144,110</b>	<b>644,110</b>	<b>199,450</b>

- Figures expressed in millions of Colombian pesos -

The exchange rate used was the closing TRM of each period



The detail of the international bonds issued by the Group is as follows:

Subseries	Original Currency	Initial date	Term	Nominal interest rate	2016				2015				Awarded amount										
					IRR	Nominal value	Amortized cost value	Total Amount	IRR	Nominal value	Amortized cost value	Total Amount	2016	2015	2014	2013	2012	2011	2010	2009	2008		
International bond	USD	7/29/2009	10	7.63%	8.16%	1,500,355	35,420	1,535,775	8.16%	1,574,735	32,297	1,607,032	1,500,355	1,574,735	1,196,230	963,415	884,115	971,350	956,990	1,022,115	-	-	
International bond	COP	1/31/2011	10	8.38%	8.70%	1,250,000	82,054	1,332,054	8.70%	1,250,000	79,058	1,329,058	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	-	-	-	-	-	-
International bond	COP	9/10/2014	10	7.63%	7.73%	965,745	16,169	981,914	7.73%	965,745	15,502	981,247	965,745	965,745	965,745	-	-	-	-	-	-	-	-
<b>TOTAL</b>						<b>3,716,100</b>	<b>133,643</b>	<b>3,849,743</b>		<b>3,790,480</b>	<b>126,857</b>	<b>3,917,337</b>	<b>3,716,100</b>	<b>3,790,480</b>	<b>3,411,975</b>	<b>2,213,415</b>	<b>2,134,115</b>	<b>2,221,350</b>	<b>956,990</b>	<b>1,022,115</b>	-	-	

- Figures expressed in millions of Colombian pesos -

The exchange rate used was the closing TRM of each period

Subseries	Original Currency	Initial date	Term	Nominal interest rate	2016				2015				Awarded amount												
					IRR	Nominal value	Amortized cost value	Total Amount	IRR	Nominal value	Amortized cost value	Total Amount	2016	2015	2014	2013	2012	2011	2010	2009	2008				
Preferred bonds	Dollar	10/7/2006	15	7.60%	8.16%	300,071	306,030	606,101	8.16%	314,947	320,505	635,452	-	-	-	-	-	-	-	-	-	-	-	223,879	
Corporate Bonds	Dollar	10/20/2008	10	Libor 3 meses más 2.375% anual	3.46%	60,014	60,611	120,625	3.46%	62,989	63,695	126,684	-	-	-	-	-	-	-	-	-	-	-	44,872	-
Preferred bonds	Dollar	6/12/2012	15	4.73%	4.96%	240,057	237,244	477,301	4.96%	251,958	248,768	500,726	-	-	-	-	-	141,458	-	-	-	-	-	-	
<b>TOTAL</b>						<b>600,142</b>	<b>603,885</b>	<b>1,204,027</b>		<b>629,894</b>	<b>632,968</b>	<b>1,262,862</b>	-	-	-	-	<b>141,458</b>	-	-	-	-	-	<b>44,872</b>	<b>223,879</b>	

- Figures expressed in millions of Colombian pesos -

The exchange rate used was the closing TRM of each period

Tipo de bono	Moneda Original	Fecha inicial	Plazo	Tasa de interés nominal	2016				2015				Monto adjudicado												
					TIR	Valor nominal	Valor costo amortizado	Valor Total	TIR	Valor nominal	Valor costo amortizado	Valor Total	Monto adjudicado a 2016	Monto adjudicado a 2015	Monto adjudicado a 2014	Monto adjudicado a 2013	Monto adjudicado a 2012	Monto adjudicado a 2011	Monto adjudicado a 2010	Monto adjudicado a 2009	Monto adjudicado a 2008				
CERTIFICADOS DE INVERSION - CIDELESUR1 (Scottialversiones, BVES)	Dólar	16 de Agosto de 2010	10 años	-	6.21%	63,015	63,428	126,443	8.16%	66,139	66,551	132,690	-	-	-	-	-	-	-	-	-	-	-	40,194	-
<b>TOTAL</b>						<b>63,015</b>	<b>63,428</b>	<b>126,443</b>		<b>66,139</b>	<b>66,551</b>	<b>132,690</b>	-	-	-	-	-	-	-	-	-	-	-	<b>40,194</b>	-

-Cifra en millones de pesos colombianos-

La tasa de cambio usada fue la TRM de cierre de cada periodo

In 2016, the EPM group obtained the following new loans:

-On December 29, 2015, the company signed a USD1 billion credit agreement with a group of seven international banks, which will be used to finance the company's 2016 budget and investment plan. The loan was granted with a term of five years, with payment of single capital at maturity, without the requirement of guarantees, prepaid, with a Libor rate + 1.40%, and may be disbursed in a period of 18 months. The banks participating in this credit operation were Bank of America N.A., HSBC Securities (USA) Inc., Bank of Tokyo-Mitsubishi, Sumitomo Mitsui Banking Corporation, Citigroup Global Markets, JP Morgan Securities and Mizuho Bank. In 2016, disbursements of this loan were made for \$ 1,745,425 (USD560 million). On April 26, 2016 the company signed a credit agreement for USD111 million with the Brazilian Development Bank - BNDES, which will be used to finance the turbines and

generators of the Ituango hydroelectric project. The loan was granted with a term of twenty-three points five years (23.5), a grace period of 5.5 years, and a period of availability of 9.5 years, with a fixed rate of 4.887%, to be amortized every six months.

- On May 26, 2016, the capital of the Treasury loan with BNP Paribas was paid for \$ 581,384 (USD190 million).
- On August 4, 2016, EPM signed a USD300 million credit agreement with the Canadian Export Credit Agency Export Development Canada (EDC). 45% of the credit resources, USD135 million, will be used to partially finance the investments required by the Ituango project and 55% of the credit resources, USD165 million, will be used to finance the 2016-2022 investment plan. The loan was granted with a term of five years, with payment of single capital at maturity, with a Libor interest rate + 1.40% and a disbursement period of 12 months. During 2016 no disbursements were made for this credit.
- On October 3, 2016, EPM signed a USD200 million loan agreement with CAF - Latin American Development Bank, whose resources will be used to partially finance the Company's investment plan. During 2016 no disbursements were made for this credit.

During 2016, disbursements of IDB 2120 have been made to finance the Bello NPP for \$ 238,010, equivalent to USD78 million (2015: \$ 239,057).

- In the third quarter of 2016 EPM Matriz made a prepayment of transitional loans worth \$ 580,000 million: Banco de Bogotá was paid a total of \$ 300,000 million and Banco BBVA \$ 280,000 million.
- On December 14, 2016, \$ 112.7 billion of capital was paid due on the maturity of local bonds IPC tranche 1 awarded on December 14, 2010.
- On December 27, 2016, the prepayment of the capital of the Local Club Credit a value of \$318,286 million as follows: to Banco Davivienda is paid the total of \$154,286 million, to BBVA \$102,857 million, to Helm Bank \$20,000 million and to Banco Corpbanca \$42,143 million.
- Aguas de Uraba and Aguas de Occidente were merged on January 1, 2016 changing their name to Aguas Regionales, the company created assuming the total of the credits.
- Empresa de Energía de Quindío (EDEQ) acquired a new financial obligation With Banco AV Villas valued at \$ 3,000 disbursed on June 23, 2016, for a term of 7 years and an interest rate of DTF + 4.78%.

Norte de Santander Power Plant (CENS) contracted seventeen loans, as follows:

With Empresas Varias de Medellín it disbursed a transitory credit on February 1, 2016 for a value of \$10,000 at a term of 1 year and a DTF +3.30%, principal paid at expiration.

With Banco Davivienda it disbursed 9 credits, on June 16, 2016 for a value of \$40,000 at a term of 10 years, 2 years of grace and a rate of IBR+ 4.89%; on July 15 for a value of \$5,488 at a term of 10 years, 2 years of grace and a rate of IBR+ 4.89%; on August 18 for a value of \$6,198 at a term of 10 years, 2 years of grace and a rate of IBR+ 4.89%; on September 16 for a value of \$5,156 at a term of 10 years, 2 years of grace and a rate of IBR+ 4.89%; on October 14 for a value of \$4,851 at a term of 10 years, 2 years of grace and a rate of IBR+ 4.89%; on October 24 for a value of \$6,140 at a term of 10 years, 2 years of grace and a rate of IBR+ 4.89%; on November 17 for a value of \$3,877 at a term of 10 years, 2 years of grace and a rate of IBR+ 4.89%; on November 24 for a value of \$11,020 at a term of 10 years, 2 years of grace and a rate of IBR+ 4.89%; on December 05 for a value of \$14,210 at a term of 10 years, 2 years of grace and a rate of IBR+ 4.89%; on December 15 for a value of \$15,232 at a term of 10 years, 2 years of grace and a rate of IBR+ 4.89%.

With BBVA it disbursed a treasury credit on July 5 for a value of \$10,000 a term of 6 months and a rate of DTF+ 4.34%, principal payable at expiration.

- Central Hidroeléctrica de Caldas (CHEC) obtained a commercial line loan with Banco Agrario disbursed on January 6 for a value of \$65,000 at a term of 10 years and a rate of DTF + 2.99% and 2 years of grace period of principal.

- Electrificadora de Santander (ESSA) disbursed 10 loans with Banco de Bogota, as follows: January 27, 2016 for a value of \$15,000 at a term of 7 years and a rate of IBR+ 1.88%; on February 16 for a value of \$13,000 at a term of 7 years and a rate of IBR+ 1.88%; on March 28 for a value of \$7,000 at a term of 7 years and a rate of IBR+ 1.88%; on April 14 for a value of \$8,500 at a term of 7 years and a rate of IBR+ 1.88%; on July 01 for a value of \$20,000 at a term of 12 years and a rate of IBR+ 4.50%; on August 19 for a value of \$8,000 at a term of 12 years and a rate of IBR+ 4.50 %; on October 13 for a value of \$9,000 at a term of 12 years and a rate of IBR+ 4.50%; on November 11 for a value of \$35,000 at a term of 12 years and a rate of IBR+ 4.50%; on December 5 for a value of \$35,000 at a term of 12 years and a rate of IBR+ 4.50%; on December 5 for a value of \$8,000 at a term of 12 years and a rate of IBR+ 4.50%; and on December 14 for a value of \$15,000 at a term of 12 years and a rate of IBR+ 4.50%.
- TICSA in June 2016 closed a credit operation with Banco Santander to improve the company's indebtedness profile. The amount of \$832.4 million Mexican pesos (US\$ 46.2 million). This transaction consisted in the re-profiling of the debt for a value of MXN \$582.5 million corresponding to the plants Morelia, Celaya and Colima. In addition, the financial conditions were improved, in respect to the rate and term and increase of the medium life of the credit by 3 years.
- Empresa de Distribución de Energía del Noreste de Panama (Ensa) received 4 credits in 2016 disbursed in the month of December as follows: on December 4 a value of \$45,916 (USD 15 million) at a rate of Libor + 1.45% with a term of one month; on December 21, a value of \$89,642 (USD 30 million) at a rate of Libor + 1.45% at a term of one month; on December 22 a value of \$50,815 (USD 17 million) at a rate of Libor + 1.45 at a term of one month and on December 27 a value of \$59,932 (USD 20 million) at a rate of Libor + 1.45% at a term of 1 month.

**Conversion to dollar denominated loans:** some of the IDB credits have the possibility of converting currencies, which allows the conversion into Colombian pesos of the balance in dollars, eliminating the exchange risk of the balance presented. EPM made the following conversions in 2016:

On March 31, EPM applied a currency conversion to BID 1664 for USD153.8 million.

On August 23, EPM applied a currency translation to BID 2120 for USD154.3 million

#### **Debt Covenant / EBITDA**

EPM has active a financial covenant, measured in the ratio long term financial debt to EBITDA, Calculated on the basis of the consolidated figures of the EPM Group , of maximum 3.5 times, in the credit contracts: French Development Agency - AFD, Inter American Development Bank - BID 1664, and Guarantee from Japan Bank for International Cooperation -JBIC a credit with the Japanese commercial bank. In addition, it has agreed this credit, but inactive, to count with double degree of investment, in the international bond issue with expiration in 2019.

As of December 2016 the result of the indicator is 3.69 times. This result is due to the emergence of conjunctural circumstances that affected the EBITDA of the Generation Energy business line during the last quarter of 2015 and the first two quarters of 2016, due to the materialization of the "El Niño" climatic phenomenon, in addition to macroeconomic aspects that affected The long-term debt denominated in dollars during 2015.

Contractually, one of the schemes to avoid that this fact will become a nonfulfillment is that the banks grants a waiver.

EPM must report on compliance with this indicator as follows: to the Japan Bank for International Cooperation (JBIC) on a quarterly basis, to the French Development Agency (AfdF) every six months and to the Inter-American Development Bank (IDB) annually. The three entities are waived for the results of December 2016. For the periodicity of measurement, the AFD waivers like IDB cover the 2017 period, while JBIC will review quarterly the fulfillment of this indicator. The latter explains the reclassification to current liabilities of the balance of the Japanese commercial bank credit with guarantee Of JBIC for \$ 372,104.

It should be noted that the fact that EPM exceeds the covenant debt / EBITDA agreed does not generate a direct activation of the declaration of default by the banks, nor of payment in advance, because it is an action contractually subject to the decision of the bank (S) to exercise that declaration and in addition to having remedial periods agreed in the contracts to address any breach.

During the accounting period, the EPM Group has not defaulted in the payment of the principal and/or interest of its loans.

## Note 21. Creditors and other accounts payable.

Creditors and other accounts payable consist of:

Creditors and other accounts payable	2016	2015
<b>Non-Current</b>		
Creditors	146,722	175,415
Deposits received under guarantee	105,319	188,662
Resources received in administration	34,273	33,044
Insurance and reinsurance operations	24,048	-
Construction contracts	17,308	18,207
Acquisition of goods and services	2,121	9,252
Advances and advances received	-	20,037
<b>Total creditors and other non-current accounts payable</b>	<b>329,791</b>	<b>444,617</b>
<b>Current</b>		
Acquisition of goods and services	1,573,205	1,561,932
Creditors	493,194	534,615
Deposits received under guarantee (1)	118,794	22,578
Advances and advances received	51,594	22,821
Construction contracts	26,152	29,991
Resources received in administration	25,627	23,024
Other accounts payable	24,691	3,545
Insurance and reinsurance operations	8,998	-
Assigned grants	4,247	100,754
Commissions payable	2,110	2,110
<b>Total creditors and other accounts payable current</b>	<b>2,328,612</b>	<b>2,301,370</b>
<b>Total creditors and other accounts payable</b>	<b>2,658,403</b>	<b>2,745,987</b>

- Figures expressed in millions of Colombian pesos -

- (1) In Guatemala the General Law of Electricity establishes that every new user must deliver to the distributor a payment guarantee. This guarantee may be given in monetary form or through a bond and will be calculated for each user category as the amount equivalent to two average monthly invoices of a typical user of his same category. EEGSA collects from its customers such guarantees and records the amounts received as "Deposits from Consumers". According to the provisions of the General Law of Electricity, Decree No. 93-96 of November 15, 1996, article 94, from that date until March 10, 2007, the deposits received from customers earned actual interest of 5% annually. As of March 11, 2007 the deposits received must be refunded adding to the capital the active average monthly weighed interest rate of the banking systems. It also establishes that, upon termination of the contract, the distributor must make a liquidation that includes the initial amount of the guarantee plus the total of the interest earned and capitalized each year less the debts outstanding and costs that the user would have caused.

As of December 31, 2006, EEGSA records a provision for the amount of the interest originated by the payment guarantees.

The deposits received from consumers, plus the interest earned and less any debt outstanding for past services, are reimbursable to the users when they cease to use the electric energy service provided by EEGSA. The latter has classified these deposits as current liabilities on the basis that it does not have legal rights to defer this payment in a period in excess of one year. However, the company does not anticipate making significant payments in the coming year, in accordance with the estimates and recurrence of the retirement of customers, in addition to the premise of the going concern within the financial statements, EEGSA has a provision to respond to the events that may arise, which covers the interest earned at the closing of the year.

As of December 31, 2016 the amount of the deposits from consumers was \$86,501 (2015: \$86,053).

In the Group the term for payment to suppliers is 30 calendar days, with exceptions that are documented in the processes and determined among others, by the type of obligation and contract.

#### Defaults

During the accounting period, the Group has not failed to pay the principal and / or interest of creditors and other accounts payable.

## Note 22. Other financial liabilities

The other financial liabilities consist of:

Other financial liabilities	2016	2015
<b>Non-Current</b>		
Financial leasing	196,308	197,214
Pension bonds (1)	336,483	351,903
Derivatives for the purpose of hedging cash flows (see note 23)	2,032	-
<b>Total other non-current financial liabilities</b>	<b>534,823</b>	<b>549,117</b>
<b>Current</b>		
Financial leasing	906	1,190
Pension bonds (1)	289,136	237,288
Derivatives for the purpose of hedging cash flows (see note 23)	68,919	68,919
<b>Total other current financial liabilities</b>	<b>358,961</b>	<b>238,478</b>
<b>Total other financial liabilities</b>	<b>893,784</b>	<b>787,595</b>

- Figures expressed in millions of Colombian pesos -

Conventional purchases and sales of financial liabilities are accounted for applying the negotiation date.

The Group has not designated financial liabilities at fair value with changes in profit and loss.

<sup>1</sup>The variation was generated by the amortized cost and the payments made during the period.

## 22.1. Financial leasing

At the reporting date, the carrying amount of property, plant and equipment under finance lease is as follows:

2016	Land and buildings	Communication and computer equipment	Machinery and equipment	Total Assets
Cost	223,369	2,380	2,063	227,811
Accumulated depreciation	(66,857)	(1,375)	(1,011)	(69,243)
<b>Total</b>	<b>156,512</b>	<b>1,005</b>	<b>1,052</b>	<b>158,569</b>

- Figures expressed in millions of Colombian pesos -

2015	Land and buildings	Communication and computer equipment	Machinery and equipment	Total Assets
Cost	200,057	4,368	2,063	206,488
Accumulated depreciation	(60,926)	(2,921)	(946)	(64,793)
<b>Total</b>	<b>139,131</b>	<b>1,447</b>	<b>1,117</b>	<b>141,695</b>

- Figures expressed in millions of Colombian pesos -

The most significant financial leasing agreement is the real estate property called “Edificio Empresas Publicas de Medellin”. The agreement has a term of 50 years counted as of December 2001, automatically renewable for an equal term if none of the parties expresses otherwise. The value of the rent is \$1,500 monthly, which will be adjusted each year by the Consumer Price Index (CPI):

At the date of the cut, the minimum future payments and the present value of the minimum lease payments are as follows:

Financial leasing	2016		2015	
	Minimum payments	Present value of minimum payments	Minimum payments	Present value of minimum payments
At one year	18,000	17,181	22,365	17,543
At more than one year and up to five years	72,000	55,613	91,124	56,050
More than five years	540,000	124,420	600,909	136,669
<b>Total leasing</b>	<b>630,000</b>	<b>197,214</b>	<b>714,398</b>	<b>210,262</b>
Less - value of interest not earned	(432,786)	-	(449,975)	-
<b>Present value of minimum payments for leasing</b>	<b>197,214</b>	<b>197,214</b>	<b>264,423</b>	<b>210,262</b>

- Figures expressed in millions of Colombian pesos -

The expense for contingent leasing of financial leasing recognized in the profit and loss of the period was \$16,407 (2015: \$15,115).

## 22.2. Defaults

During the accounting period the Group EPM has not defaulted in the payment of principal and/or interest of its loans.



## Note 23. Derivatives and hedging

The company has the following types of cash flow hedges:

Classification of Hedging	Description	Risk covered	Trench	Item covered	Carrying value of item hedged	Carrying value of hedging instrument	Changes in fair value of hedging instrument in the period	Changes in fair value of item hedged in the period	Inefficacy of hedging recognized in profit and loss of period	Efficacy of hedging recognized in other comprehensive income	Reclassification from other comprehensive income to profit and loss for period 1
Cash flow hedging											
Swaps	Cross Currency Swap	Exchange rate USD / COP and interest rate Libor/fixed of debt service	Total Credit Club Deal	Credit in US Dollars	1,686,230	70,951	70,951	5,833	N.A	70,951	498
Futures	Derivex	Sale price in Energy Exchange	N.A.	Sales of Energy Highly Probably Item	N.A.	18	18	N.A	N.A	282	264

Figures in millions of Colombian pesos -

<sup>1</sup> The reclassification of other comprehensive income to income for the period affected the difference in exchange for swap instruments, corresponding to the difference in interest and capital of the right and for the futures contract instruments affected the sales of Energy in the bag.

### Hedging cash flow

The characteristics of the main cash flow hedging instruments which is under a hedge accounting in the following:

#### Swaps:

Characteristics	Trench 2	Trench 2	Trench 3	Trench 4	Trench 5	Trench 6	Trench 7	TrenchS	Trench 9	Trench 10	Trench 11	Trench 12
Credit	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal	Club Deal
Date	24-May-16	24-May-16	26-May-16	3-Jun-16	3-Jun-16	7-Jun-16	8-Jun-16	20-Jun-16	8-Jul-16	12-Jul-16	21-Jul-16	8-Aug-16
Entity	Bank of America Merrill Lyrth	JP Morgan	JP Morgan	Bank of America Merrill Lynch	JP Morgan	Bank of America Merrill Lynch	JP Morgan	Bank of America	BNPParibas	BNP Paribas	BNP Paribas	BNP Paribas
								Merrill Lynch				
Nominal	USD 50,000,000	USD 50,000,000	USD 50,000,000	USD 50,000,000	USD 50,000,000	USD 50,000,000	USD 50,000,000	USD 60,000,000	USD40,000,000	USD 50,000,000	USD 30,000,000	USD 30,000,000
Exchange Rate	3,058	3,058	3,053	3,025	2,997	2,945	2,907	2,976	2,965	2,907	2,924	2,990
Obligation COP	152,900,000,000	152,900,000,000	152,650,000,000	151,250,000,000	149,850,000,000	147,250,000,000	145,350,000,000	178,560,000,000	118,600,000,000	145,350,000,000	87,720,000,000	89,700,000,000
EPM pays	IBR+ 2.1077	IBR+ 2.17										
			IBR + 2.17	IBR + 2.16	IBR + 2.20	IBR + 2.25	IBR + 2.19	9.30%	8.42%	8.55%	8.48%	8.44%
EPM receives												
	LIBOR 6 months+ 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140	LIBOR 6 months + 140
Periodicity	Biannually	Biannually	Biannually	Biannually	Biannually	Biannually	Biannually	Biannually	Biannually	Biannually	Biannually	Biannually
Effective date	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16	12-Jul-16
Expiration date	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20	29-Dec-20

## Implicit Derivatives

The Group has not entered into contracts containing embedded derivatives.

## Note 24. Employee benefits

The item of employee benefits recognized recognized at the reporting date have the following composition:

Employee benefits	2016	2015
<b>Non-Current</b>		
Post-employment benefits	744,047	546,062
Long Term Benefits	80,196	191,041
Termination benefits	2,205	75
Other benefits	173	-
<b>Total non-current employee benefits</b>	<b>826,621</b>	<b>737,178</b>
<b>Current</b>		
Short-term benefits	117,763	104,769
Post-employment benefits	101,722	73,172
Termination benefits	-	-
<b>Total benefits to current employees</b>	<b>219,485</b>	<b>177,941</b>
<b>Total</b>	<b>1,046,106</b>	<b>915,119</b>

- Figures expressed in millions of Colombian pesos -

### Current

#### 24.1. Post-employment benefits

It covers plans of defined benefits and the defined contributions plans detailed below:

##### 24.1.1. Defined benefits plans

Planes de beneficios definidos	Pensions <sup>1</sup>		Retroactive benefits <sup>2</sup>		Subsidio servicios públicos <sup>3</sup>		Other defined benefit plans <sup>4</sup>		Total	
	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015
<b>Present value of defined benefit obligations</b>										
Beginning balance	936,716	992,517	122,552	119,658	34,513	35,107	24,270	15,287	1,118,051	1,162,569
Cost of the present service	6,671	6,615	4,705	4,782	193	85	3,233	2,432	14,802	13,914
Interest income or (expense)	64,235	60,650	8,752	7,370	2,490	2,304	446	218	75,923	70,542
New Measurements	-	-	-	-	-	-	355	-	355	-
Assumptions by experience	48,138	4,092	10,809	5,315	7,353	(65)	30	110	66,330	9,452
Financial Assumptions	58,709	(36,221)	2,576	(1,654)	3,223	(964)	7	(865)	64,515	(39,704)
Past service cost	1,138	-	-	-	-	337	-	276	1,138	613
Exchange rate difference	31,173	762	-	-	(660)	-	(833)	-	29,680	762
Contributions made to the plan	(23,597)	-	(1,524)	-	(1,164)	-	(150)	-	(26,435)	-
Payments made by the plan <sup>4</sup>	(77,694)	(99,513)	(14,123)	(12,919)	(1,733)	(2,547)	(3,624)	(1,581)	(97,174)	(116,560)
Business Combinations	-	8,124	-	-	-	-	-	-	-	8,124
Other changes	(234)	(209)	-	-	-	256	-	8,393	(234)	8,440
<b>Present value of obligations as of December 31</b>	<b>1,045,255</b>	<b>936,817</b>	<b>133,747</b>	<b>122,552</b>	<b>44,215</b>	<b>34,513</b>	<b>23,734</b>	<b>24,270</b>	<b>1,246,951</b>	<b>1,118,152</b>
<b>Fair value of plan assets</b>										
Beginning balance	375,616	416,580	-	-	-	-	-	-	375,616	416,580
Contributions made to the plan	4,396	-	-	-	-	-	-	-	4,396	-
Payments made by the plan <sup>4</sup>	(60,090)	(51,584)	-	-	-	-	-	-	(60,090)	(51,584)
Interest income	27,141	26,683	-	-	-	-	-	-	27,141	26,683
Actuarial gains or losses:	5,949	(9,035)	-	-	-	-	-	-	5,949	(9,035)
Expected return on plan (excluding interest income)	12,478	(610)	-	-	-	-	-	-	12,478	(610)
Exchange rate difference	36,128	-	-	-	-	-	-	-	36,128	-
Other changes	(436)	(5,263)	-	-	-	-	-	-	(436)	(5,263)
<b>Fair value of plan assets December 31</b>	<b>401,182</b>	<b>376,771</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>401,182</b>	<b>376,771</b>
<b>Surplus or (deficit) of the defined benefit plan</b>	<b>644,073</b>	<b>560,046</b>	<b>133,747</b>	<b>122,552</b>	<b>44,215</b>	<b>34,513</b>	<b>23,734</b>	<b>24,270</b>	<b>845,769</b>	<b>741,381</b>
Adjustment to surplus by asset limit	-	-	-	-	-	-	-	-	-	-
<b>Net Asset or (liability) of the defined benefit plan</b>	<b>644,073</b>	<b>560,046</b>	<b>133,747</b>	<b>122,552</b>	<b>44,215</b>	<b>34,513</b>	<b>23,734</b>	<b>24,270</b>	<b>845,769</b>	<b>741,381</b>
Other defined benefit items	-	405	-	-	-	-	-	-	-	405
<b>Total defined benefits</b>	<b>644,073</b>	<b>560,451</b>	<b>133,747</b>	<b>122,552</b>	<b>44,215</b>	<b>34,513</b>	<b>23,734</b>	<b>24,270</b>	<b>845,769</b>	<b>741,786</b>

- Figures expressed in millions of Colombian pesos -

- (1) Includes for the EPM Group the retirement pension plans that each company is in charge of, in accordance with the regulations of each country. Includes contributions to social security and burial allowance.
- (2) Includes for the EPM Group the plans corresponding to retroactive severance pay. This is recognized and paid based on the latest salary earned by the number of years of employment, in accordance with the terms established in the collective bargaining agreements in effect of each company or the labor regulations of the country.
- (3) The public utility benefit is a plan consisting of a total or partial discount on the monthly value payable of the public utility of energy and in some companies also with discount in the water and telephone services, in the following companies of the Group: Central Hidroeléctrica de Caldas S.A. E.S.P., Centrales Eléctricas del Norte de Santander S.A. E.S.P., Electrificadora de Santander S.A. E.S.P., and Elektra Noreste S.A. In Electrificadora de Santander S.A. E.S.P., the benefit is granted to former employees whose time of services as of the date of retirement was minimum 15 years of employment. The benefit for public utilities is supported in the collective bargaining agreements in effect on those dates.
- (4) Correspond to the education aid that by law is granted to the children of retired persons who depend economically from the latter up to 25 years of age.

No risks have been identified for the EPM Group, generated by post-employment benefit plans, or modifications, or reduction or assessments that have an impact on the present value of the obligation.

The weighted average of the duration in years, of the obligations by defined benefit plans at the cut-off date, is presented below:

Benefit	2016		2015	
	From	To	From	To
EPM Pension	8.7	11.9	7	11
EPM Educational Aid	6.2	8.3	4	8.7
Related searches	11	12.7	11	13
Other defined benefit plans	2	5.7	1.0	8

The Group does not have restrictions on the actual realization of the surplus for the defined benefits plan.

The Group did not make contributions for defined benefits during the period.

<sup>5</sup> The fair value of the plan assets is made up as follows:

Assets that support the plan	2016		2015	
	% participation	Fair value	% participation	Fair value
Cash and cash equivalents	4.03%	16,154	0.88%	3,626
<b>Heritage instruments</b>				
Financial sector	0.23%	927	0.52%	2,160
Service sector	0.01%	43	-	-
Real sector	-	7	-	-
Government Sector	0.01%	43	0.00%	-
<b>Total equity instruments</b>	<b>0.25%</b>	<b>1,020</b>	<b>0.52%</b>	<b>2,160</b>
<b>Debt instruments</b>				
AAA	74.11%	297,316	74.06%	305,716
AA	4.74%	19,020	7.26%	29,977
TO	0.44%	1,773	0.00%	-
BB and minor	-	-	-	-
Unrated	12.56%	50,371	8.22%	33,925
Investment Funds (1)	2.51%	10,058	1.40%	5,800
<b>Total debt instruments</b>	<b>94.36%</b>	<b>378,538</b>	<b>90.94%</b>	<b>375,418</b>
<b>Other assets</b>	<b>1.36%</b>	<b>5,470</b>	<b>7.66%</b>	<b>31,618</b>
<b>Total assets that support the plan</b>	<b>100%</b>	<b>401,182</b>	<b>100%</b>	<b>412,822</b>

- Figures expressed in millions of Colombian pesos -

- (1) Includes in EPM open-ended collective investment funds with no agreement of permanence of \$ 3,747 and International Exchange Trade Fund (ETF) that replicates the Capitalization Stock Index (COLCAP) in the amount of \$ 6,311.
- (2) The main actuarial assumptions used to determine the obligations under the defined benefit plans are as follows:

Assumptions	Colombia			
	2016		2015	
	From	To	From	To
Discount rate (%)	5.80%	7.31%	6.00%	7.75%
Annual salary increase rate (%)	3.50%	7.09%	3.00%	4.00%
Real rate of return on plan assets	6.50%	6.50%	3.61%	3.61%
Rate of future increase in annual pension	3.50%	6.39%	3.00%	4.00%
Annual inflation rate (%)	3.50%	5.89%	3.50%	3.50%
Survival tables	Rentistas válidos 2008			

	Panamá			
	2016		2015	
	From	To	From	To
	4.35%	4.35%	4.39%	4.90%
	4.00%	4.00%	4.00%	5.50%
	0.00%	0.00%	5.25%	5.25%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%
	Tabla de mortalidad de la población urbana República de Panamá 2005-2010			

Assumptions	Guatemala			
	2016		2015	
	From	To	From	To
Discount rate (%)	6.70%	6.70%	7.40%	7.40%
Annual salary increase rate (%)	4.50%	4.50%	0.00%	0.00%
Rate of future increase in annual pension	0.00%	0.00%	0.00%	0.00%
Annual inflation rate (%)	4.00%	4.00%	4.00%	4.00%
Survival tables	Tabla RP-2000			

	México			
	2016		2015	
	From	To	From	To
	6.00%	6.00%	6.75%	6.75%
	0.00%	0.00%	5.58%	5.58%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%

Assumptions	El Salvador			
	2016		2015	
	From	To	From	To
Discount rate (%)	6.00%	6.00%	6.00%	6.00%
Annual salary increase rate (%)	1.50%	1.50%	1.50%	1.50%
Rate of future increase in annual pension	0.00%	0.00%	0.00%	0.00%
Annual inflation rate (%)	3.00%	3.00%	3.00%	3.00%
Survival tables	Tabla CSO-80			

	Chile			
	2016		2015	
	From	To	From	To
	1.34%	1.34%	4.60%	4.60%
	6.20%	6.20%	6.30%	6.30%
	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.00%	0.00%

The following table shows the effect of a variation of more than 1% and less than 1% in the salary increase, in the discount rate and in the increase in the benefit over the obligation for post-employment defined benefit plans:

Assumptions	Increase in the discount rate by +1%	Decrease in the discount rate by -1%	Increase in salary increase by +1%	Decrease in salary increase by -1%	Increase in salary increase by +1%	Decrease in salary increase by -1%
Bed And Breakfast	499,453	593,781	-	-	99,087	98,243
Retroactive Leave	90,971	102,927	106,595	87,459	-	-
Other post-employment benefits	180	186	-	-	187	180
<b>Total post-employment benefits</b>	<b>590,604</b>	<b>696,894</b>	<b>106,595</b>	<b>87,459</b>	<b>99,274</b>	<b>98,423</b>

- Figures expressed in millions of Colombian pesos -

The methods and assumptions used to prepare the sensitivity analysis of the Present Value of the Obligations (DBO - Defined Benefit Obligations) was made using the same methodology that for the actuarial calculation as of December 31, 2016 and 2015: Projected Unit Credit (PUC) method. The sensibility does not present limitations, or changes in the methods and assumptions used to prepare the analysis of the current period.



### 24.1.2. Defined contribution plans

The Group made contributions to defined contribution plans recognized in the income statement as an expense of \$ 17,603 (2015: \$ 16,670), as a cost of \$ 37,264 (2015: \$ 33,135) for a total of \$ 54,867 (2015: \$ 49,806).

### 24.2. Long-term employee benefits:

Benefits Long term	Seniority bonus (1)		Other long-term benefits		Total	
	2016	2015	2016	2015	2016	2015
<b>Present value of obligations for other long-term benefits</b>						
Beginning balance	68,316	55,932	173	-	68,489	55,932
Cost of the present service	5,479	4,328	212	122	5,691	4,450
Interest income or (expense)	4,865	3,398	98	46	4,963	3,444
New Measurements	-	11	-	-	-	11
Assumptions by experience	7,414	10,681	104	81	7,518	10,762
Demographic assumptions	174	-	-	-	174	-
Financial Assumptions	1,549	(2,119)	36	(23)	1,585	(2,142)
Past service cost	567	2,814	(31)	-	536	2,814
Exchange rate difference	(1,134)	204	1,087	-	(47)	204
Payments made by the plan (3)	(8,559)	(7,355)	(173)	(53)	(8,732)	(7,408)
Other changes	19	422	-	-	19	422
<b>Present value of obligations as of December 31</b>	<b>78,690</b>	<b>68,316</b>	<b>1,506</b>	<b>173</b>	<b>80,196</b>	<b>68,489</b>
<b>Surplus or (deficit) for long term benefits</b>	<b>78,690</b>	<b>68,316</b>	<b>1,506</b>	<b>173</b>	<b>80,196</b>	<b>68,489</b>
Adjustment to surplus by asset limit	-	-	-	-	-	-
<b>Net asset or liability for long-term benefits</b>	<b>78,690</b>	<b>68,316</b>	<b>1,506</b>	<b>173</b>	<b>80,196</b>	<b>68,489</b>

- Figures expressed in millions of Colombian pesos -

(1) Includes for the EPM Group the plans corresponding to seniority bonus. It is granted according to the years of service of the employee, it is recognized and paid in accordance with the terms established in the collective bargaining agreements in effect of each company or the labor regulations of the country.

The Group has not identified risks generated by long-term benefit plans, or modifications, reductions or settlements that impact the present value of the obligation.

The weighted average duration in years, of the obligations for long-term benefit plans at the cut-off date, is as follows:

Benefit	2016		2015	
	From	To	From	To
Seniority bonus	4.8	11	5.4	9
Cessation	4.8	11	4	8.7

The Group does not expect to contribute to the plan for the next annual period.

The main actuarial assumptions used to determine the obligations under the long-term employee benefit plans are as follows:

Assumptions	Colombia				Guatemala			
	2016		2015		2016		2015	
	From	To	From	To	From	To	From	To
Discount rate (%)	4.80%	7.10%	6.50%	7.90%	6.70%	6.70%	7.50%	7.50%
Annual salary increase rate (%)	3.50%	7.09%	3.00%	5.00%	4.50%	4.50%	4.50%	4.50%
Annual inflation rate (%)	3.50%	5.89%	3.50%	3.50%	4.00%	4.00%	4.00%	4.00%
Survival tables	Valid Rentistas 2008				Table RP-2000			

The following table shows the effect of a variation of more than 1% and less 1% in the salary increase, in the discount rate and in the increase in the benefit over the obligation for long-term benefits:

Assumptions	Increase in the discount rate by + 1%	Decrease in the discount rate by - 1%	Increase in salary increase by + 1%	Decrease in salary increase by - 1%	Increase in profit increase by + 1%	Decrease in increase in profit by - 1%
Seniority bonus	63,370	71,471	71,206	63,554	-	-
Other long term benefits	943	1,069	1,066	945	-	-
<b>Total long-term benefits</b>	<b>64,313</b>	<b>72,540</b>	<b>72,272</b>	<b>64,499</b>	-	-

- Figures expressed in millions of Colombian pesos -

The methods and assumptions used to prepare the sensibility analysis of the Present Value of Obligations (DBO - Defined Benefit Obligations) was made using the same methodology as for the actuarial calculation as of December 31, 2015: Forecasted Credit Unit (FCU). The sensibility does not present any limitations, or changes in the methods and assumptions used to prepare the analysis of the current period.

### 24.3. Short-term benefits

The composition of short term benefits is as follows:

Short-term benefits	2016	2015
Cessation	35,651	31,010
Holiday bonus	28,225	25,376
Holidays	21,676	20,425
Other premiums, salaries and social benefits	10,624	10,430
Bonuses	7,751	6,694
Payroll payable	8,282	6,314
Interest on layoffs	5,213	4,200
Christmas bonus	207	184
Premium services	134	136
<b>Total short-term benefits</b>	<b>117,763</b>	<b>104,769</b>

- Figures expressed in millions of Colombian pesos -

## Note 25. Taxes, contributions and rates

The detail of taxes, contributions and rates, other than income tax, is as follows:

Taxes, contributions and fees	2016	2015
Withholding tax and stamp duty	84,457	76,645
Tax of industry and commerce	35,639	32,844
Value added tax	17,500	26,166
Rates	14,329	12,602
Contributions	4,918	3,118
Taxes, contributions and taxes abroad	4,248	537
Other national taxes	3,261	7,028
Sanctions	124	139
Unified property tax	85	85
Registration tax	29	-
Royalties and monetary compensations	23	205
Other municipal taxes	5	24
Audit fee	-	1
Motor vehicle tax	-	26
<b>Total Taxes, contributions and current rates</b>	<b>164,618</b>	<b>159,420</b>
<b>Total Taxes, contributions and fees</b>	<b>164,618</b>	<b>159,420</b>

- Figures expressed in millions of Colombian pesos -

## Note 26. Provisions, contingent assets and liabilities

### 26.1. Provisions

The reconciliation of provisions is as follows:

Concept	Dismantling or restoration	Onerous contracts	Litigation	Business combination	Other provision	Total
Beginning balance	39,222	162,046	194,342	152,591	80,856	629,057
Additions	18,492	-	28,509		95,647	142,648
Uses (-)	(3,379)	(20,851)	(5,144)	(333)	(43,733)	(73,440)
Reversals, unused amounts (-)	(612)	-	(51,698)	(416)	(5,396)	(58,122)
Effect of loss of control	-	-	2		-	2
Adjustment for changes in estimates	2,198	(5,348)	(26,650)	326	(6,147)	(35,621)
Exchange Rate Differences	(607)		(137)		(2,762)	(3,506)
Other changes	5,439	5,337	8,049	(4,755)	(327)	13,743
<b>Closing Balance</b>	<b>60,753</b>	<b>141,184</b>	<b>147,273</b>	<b>147,413</b>	<b>118,138</b>	<b>614,761</b>
Non Current	47,818	105,144	106,469	18,647	57,474	335,552
Current	12,935	36,040	40,804	128,766	60,664	279,209
<b>Total</b>	<b>60,753</b>	<b>141,184</b>	<b>147,273</b>	<b>147,413</b>	<b>118,138</b>	<b>614,761</b>

- Figures expressed in millions of Colombian pesos -

### 26.1.1 Dismantling or restoration:

The EPM Group has the obligation to incur dismantling or restoration costs of its facilities and assets, in the following events:

- Removal of transformers that contain PCB (polychlorinated biphenyls), the group has agreed to dismantling these assets from 2008 to 2026, supported on resolution 222 of December 15, 2011 from the Ministry of Environment and Sustainable Development and the Stockholm Convention of May 22, 2008. It applies in Colombia, Panama and El Salvador.
- In the sanitation service, for the disposal of solid waste. It is a land in which cells are built for the deposit of waste, it being necessary to restore that land through a series of activities intended to make the closing, decommissioning and post-commissioning thereof. The obligation starts from the time when the landfill is in optimum conditions for the final disposal and goes until the regulating entity, by means of resolution, decrees the termination of the closing, decommissioning and post-commissioning phase.
- Dismantling of a coal mine located in the Municipality of Amagá, Department of Antioquia, Colombia, with Resolution 130 AS-1106242 of October 21, 2011 issued by the competent environmental authority (Corantioquia), the component Environmental project of the closure of the mines of coal of the mining title and for this are carried out contracts of construction of civil works, several, of urbanism and monitoring in the mines of coal of the mining title, code RPP 434 of the area of Amagá. The Group, through EPM, has committed to the dismantling of these assets from 2013 to 2016. At present, EPM is in the final stretch of the actions contemplated in the aforementioned resolution and awaiting a pronouncement from (Corantioquia) In this regard, which could imply more monitoring. However, it is clear that independent of this pronouncement, EPM must carry out the necessary actions for the delivery of the title, which include legal, technical processes and the structuring of decision-making schemes.
- The closing and abandonment plan of the Eolic Park Los Cururos in Chile, contemplates the dismantling of facilities such as wind turbines, substation and civil works, among others. Two years after the closing of the eolic park a closing and abandonment plan will be delivered to the competent authority, in accordance with the legal requirements in effect
- Environmental provision is presented in the construction of infrastructure projects, it arises as a legal obligation derived from the granting of the environmental license to compensate for the loss of biodiversity during the construction phase, as well as compensation for the subtraction of reserve areas, Closed species and forest use; Obligations that are formalized, through the resolutions of ANLA (National Environmental Licensing Authority), CAR - Regional Autonomous Corporation and / or MADS - Ministry of

Environment and Sustainable Development. Executions of biotic environmental compensations of the project extend beyond the time in which the asset begins to operate technically, being necessary to implement the figure of the provision with the intention that such expenditures remain as greater value of the construction in progress. The company is committed to compensate for the loss of biodiversity, subtraction and closures from 2016 to 2019 according to the resolutions: Res. 1313/2013 ANLA, Res. 519/2014 ANLA, Res LA. 0882/04/08/2014 ANA, Res. 1166/2013 MADS, Res. 1852/2013 CAR, Res. 2135/2014 CAR, Resolution 1189/22/07/2104 MADS, Res. 1120907 / 17-03-2015 CORNARE , Res. 141011206 / 16-10-2014 CORANTIOQUIA, Res LA. EIA1-9872 04/21/2014 CVS, among others

The provision is recognized for the present value of the costs expected to pay the obligation using estimated cash flows. The major assumptions considered in the calculation of the provision are: estimated costs, CPI and discount rate calculated with reference to the market returns of the bonds issued by the National Government. As of this date no future events have been evidenced that could affect the calculation of the provision.

### 26.1.2 Contracts for valuable consideration

As of December 31, 2016, the Group has recognized \$ 141,184 (2015: \$ 162,045) for the fuel supply and transportation contract signed between EPM and TGI- Gas International Carrier S.A. E.S.P., which unavoidable costs of complying with the obligations exceed the economic benefits that are expected to be received from them. This contract was established with the objective of supporting the Termosierra plant and obtaining the income from the reliability charge established by the Energy and Gas Regulatory Commission.

The major assumptions considered in the calculation of the provision are: costs associated to the agreement with the mentioned conditions, utilization factor or suspension of payments for maintenance of the agreement, Libor rate, discount rate calculated with reference to the market returns of the bonds issued by the National Government, the Market's Representative Exchange Rate and macroeconomic scenario projected.

The main hypothesis used on the future events are: from 2016 to 2020 the following assumptions are maintained: Suspension of the contract for 30 days every year and utilization of the contract only for 15 days each year for generation for the Termosierra plant and the rest of the time would be paid without using the contract (only fixed costs).

### 26.1.3 Litigations

With this provision the EPM Group covers the estimated losses probable related to labor, civil, administrative and tax litigations (through administrative and government channels) that arise in the operations of the Group companies. The major assumptions considered in the calculation of the provision are: Average CPI to actual data in previous years and projected data in future years, discount rate calculated with reference to the market returns of the bonds issued by the National Government, estimated value to be paid and the estimated payment date for those litigations that their occurrence exceeds 50% probability. As of this date no future events have been evidenced that may affect the calculation of the provision.

In the variations presented by the litigation, EPM highlighted the recovery of the litigation 14001154 with the plaintiff Germán Guillermo Márquez Vargas caused by a favorable decision to the Company and litigation 14000735 with Carmen María Alzate Rivera for a ruling in the second instance that decreased the Value of the claim initially requested by the applicant.

In order to lessen the uncertainty that may arise with respect to the estimated date of payment and the estimated value to be paid in litigation or a lawsuit, in the Group the following aspects are considered:

**For the affiliates in Colombia:** There are business rules based on statistical studies with which the average length of the proceedings per share were obtained and also the application of the jurisprudence to the maximum ceilings that it defines for the value of the extra-equity or intangible claims when they exceed their amount, as described below:

## Average duration of processes per action:

### Administrative and fiscal

Action	Average years
Abbreviated	4
Compliance Action	4
Group Action	6
Popular Actions	4
Harmful Conciliation	2
Constitution of civil party	4
Contractual	13
Demarcation and demarcation	5
Executive	5
Singular executive	3
Expropriation	4
Incident of integral reparation (penal)	2
Imposition of easement	4
Nullity of administrative acts	5
Nullity and restoration of right	10
Nullity and reinstatement of labor law	11
Ordinary	7
Ordinary of Membership	5
Criminal Accusatory (Law 906 of 2004)	4
Partitioning processes	4
Protection of Consumer Rights	6
Police complaints	3
Claim	7
Direct repair	12
Verbal	5

### Labor Processes

Action	Average years
Solidarity	3.5
Pension	3.5
Extra hours	3.5
Reimbursement	4
Salary Scale Leveling	3.5
Related searches	3.5
Re liquidation Social benefits	3.5
Work accident compensation	4
Return Health-Pension Contributions	4

### Application of jurisprudence

Typology: The values of claims for compensation of off-balance damages will be recorded according to the following typology:

- Moral prejudice.
- Damage to health (physiological or biological damage), resulting from bodily or psychophysical injury.
- Damage to the life of relationship.
- Damage to constitutional and conventional property.



The values of other off-balance-sheet claims not recognized by the case-law will not be recorded, unless the claim can be inferred that, despite being otherwise denominated, it corresponds to one of the accepted typologies. Neither will claims for off-balance compensation for damages to property.

Quantification: The amount of the off-balance sheet claims will be recorded uniformly as follows, regardless of its typology:

**For direct victim 1000 Minimum Monthly Legal Wages in Effect**

**For indirect victim 50 Minimum Monthly Legal Wages in Effect**

- **For affiliates in Chile:** As refers to the probable payment date of the lawsuits, the type of process and the previous cases are taken into consideration; in this sense the labor process since it is verbal and has only two hearings, has a maximum term of six months, save specific cases where there are problems to notify the complaints. In civil judgments, since it is a process of broad knowledge and the available instances, may last minimum two years, and thus the time estimated in the judgments that currently is processing the affiliate Aguas de Antofagasta S.A., considering their progress status, should be up to 2019.
- **Quantification:** In order to determine the amount of the judgments in principle the amount of the claim by the plaintiff is considered, since the law cannot be applied in that sense, amount that will vary depending on the Court and the cause to claim. Additionally in the civil judgments, the amounts of the indemnifications will depend on the
- **For the affiliates in Panama:** in respect to the estimated payment date, each case is assessed in particular with external legal advisors, for which the average term of similar processes is taken into consideration.
- **Quantification:** The estimated value payable of a litigation is determined by taking as a base the amount of the claim by the plaintiff and an analysis of the specific condition that motivates the complaint to be able to determine the recognition of a possible damage. For this purpose the company has available the valuation by external legal counsel of each company and in certain cases with the support of insurance advisors in case that an actuarial valuation is required.
- **For the affiliates of El Salvador:** the estimated date of payment for administrative or legal processes is estimated based on the average term of the processing of similar processes, obtained from statistical data throughout 20 years of operation of the affiliates.
- **Quantification:** The estimated value payable of litigation is determined taking as a base the amount of the initial claim of the complaint presented against the company.
- The detail for each type of action is the following:

#### Labor Court Actions:

Action	Average years	Maximum estimated value payable
Legal Labor Process of Restitution and Back Wages	5 years	The amount that is established in the initial claim by the worker if decided in favor of the worker, the salaries not earned up to the date of pronouncement of the last ruling, not exceeding the salary of 55 calendar days.
Legal Labor Process Indemnification for Termination without Cause	5 years	The amount that is established in the initial claim by the worker and if it is ruled in favor of the worker, the salaries not earned up to the date of pronouncement of the latest decision are added, not exceeding the salary of 55 days of salary.

**Legal Administrative Actions:**

Action	Average Years	Maximum estimated value payable
Illegal Acts by the Public Administration	6 years	The amount that is established in the initial claim, which is usually that resolved by the Administrative Entity against the Affiliate, or the amount required by the Municipal Mayor's Offices

**Action at Administrative Instances:**

Action	Average Years	Maximum estimated value payable
Municipal Administrative Procedures	2 years	The amount that is established in the initial claim by the Municipality.
Administrative Regulatory Procedures	6 months	The amount that is established in the initial claim by the worker

The following are the litigations recognized:

Entity	Third Party	Claim	Value
EPM	Consorcio Dragados Porce II	To pay to the plaintiffs, among others, the sums of money that result from the return of all the compensation illegally deducted by EPM in the contracting process No. CD002376.	15,181
	Germán Guillermo Márquez Vargas	Project Riogrande II, compensation to the community for not having acquired the mine deposits Versalles mine.	9,444
	Carmen María Álzate Rivera	To pay the damages derived from the increase of the flow of the River Guatapé to 42 families.	7,531
	Fiduciaria Colpatria S.A.	Free payment warrant against EPM and in favor of Fiduciaria Colpatria S.A. Acting as spokesperson for the Autonomous Heritage FC - ENERTOTAL.	4,251
	Velpa Soluciones Integrales S.A.	Impossibility of contracting with the State for a period of 5 years, product of the decision taken in the contracting process No. 2009 - 0974.	4,130
	Trainco S.A.	The nullity of resolutions Nos. 62.862 of 02/18/1997 and 65774 of 04/18/97 were declared invalid and through which the contract No. 9 / DJ-637/27 was unilaterally settled.	4,008
	Giovanny Alberto Vargas Castro	Moral damages due to landslide that was presented on 03/24/2006, in the village of La Loma in the township of San Antonio de Prado.	2,946
	Construciviles Ltda.	Breach of contract 1 / DJ-1680/41 whose purpose was to build two water storage tanks.	2,239
	Francisco Javier Casas Berruecos	Paid direct and direct victim relationship life damages.	2,034
	Various	Other processes of less than \$ 2,034 million pesos.	39,258
<b>Total EPM</b>			<b>91,022</b>

CENS	Chivor S.A. E.S.P.	That decree the termination of the contract of energy supply by CENS with the consequent condemnation to compensation of the corresponding damages.	14,052
	Luis Alberto Peña Villamizar Y Otros	They request the cancellation of legal and conventional social benefits between the period in which they were recognized the retirement pension and on August 31, 2009, the recognition of the additional allowance of June or fourteen month, compensation	2,844
	Elsa Reyes de Buitrago y Otros	Indexing of the first pension allowance, indexation of the same and recognition of interests at the maximum legal rate.	1,979
	William Alexis Ramírez y otros	Cesar in the charge for public lighting to the municipality of Cúcuta, reimbursement of the balances for public lighting to the municipality, payment of contractual and extracontractual damages. Pretense: \$ 928,023,004.78 Incentive: 15% of the value	1,244
	Jesus Efraín Ibarra Ochoa y otros	That the pension compatibility between the retirement pension recognized by CENS and the old-age pension recognized by the ISS pensions Colpensiones be declared.	889
	José Francisco -Arango -Bautista y Otros	To condemn those responsible for the damages suffered by virtue of the traffic accident occurred on November 2, 2012 on the road leading from Aguachica to Gamarra and consequently the following amount is recognized: \$ 722,162,659.24	734
	Carmen Alicia Rodriguez y Otros	Indexing of the first pension allowance, indexation of the same and recognition of interests at the maximum legal rate.	715
	Ismael Cruz Cardozo y Otros	To declare to the nation Ministry of Defense National Army and to CENS S.A E.S.P. Jointly and severally, administratively and patrimonially responsible for the damages of the material and moral order and damage in the life of relationship, caused to the	617
	Ermelina Pérez de Rivera y Otros	Recognition of payment of contributions to social security (12% on the pension allowance), and also to refund the contributions left to be paid from the pension sharing date.	527
	Yesid Jaines y Otros	Readjustment pension according to article 1 of Act 71 of 1988, pay retroactive to the amounts left to cancel, the respective indexation and default interest.	419
	Luis Alberto Peña Villamizar	That the monies that were deducted illegally from his liquidation, due to salaries and social benefits caused in the period between December 1, 2008 and the date of withdrawal of the company, be canceled.	350
	Jesús Alejandro Sinisterra	To cancel the monies that were deducted illegally from his liquidation, in terms of wages and social benefits caused in the period between May 18, 2009 and the date of retirement of the company.	207
	Cesar Augusto Labastidas Arias	Recognition of an employment contract to work continuously from December 11, 2001 until January 9, 2006.	200
	Melba Sofía Nieto	It requests recognition and payment of the pension adjustment established in article 116 of law 6 of 1992 and its regulatory decree 2108 of the same year.	162
Otros	Labor groups are grouped for \$ 1,281,797,918 and administrative for \$ 336,711,911	1,619	
<b>Total CENS</b>			<b>26,558</b>

CHEC	José Gustavo Morales Guarín and others (41)	Compensation for damages	7,190
	Albeiro Valencia y otros (26)	Compensation for damages	4,165
	Jairo Castaño Hoyos y otros	Compensation for damages	2,571
	Norma Cecilia Osorio Montoya	Compensation for damages	1,821
	Lucía Mery Cárdenas	Compensation for damages	1,751
	Juan Alberto Betancur Soto	Compensation for damages	1,588
	Cartones y Papeles del Risaralda	Compensation for damages	1,583
	Sor Piedad Valencia García y otros	Full compensation for work accident damages Solidarity	1,108
	José Ancizar Trejos Henao y otros	Compensation for damages	1,023
	Compañía de Seguros Positiva S.A.	Compensation for damages	982
	John Fredy Venegas	Compensation for damages	981
	Aldibey Tapiero Cruz	Non-contractual civil liability	965
	Jesus María Osorio Giraldo	Compensation for damages	955
	José Fernando Jiménez Vélez	Payment professional fees	949
Others	Various	10,494	
<b>Total CHEC</b>			<b>38,126</b>
EDEQ	Donaldo Fabián Santander	That he be jointly and severally liable for the payment of any and all of the various damages caused to the claimants, due to the serious injuries suffered by Mr. DONALDO FABIÁN SANTANDER in events that occurred on July 11, 2012 in La Vereda la Palmera, jurisdiction of the Municipality of Salento (Q.) and when he performed his own work as linero.	2,197
	María Amparo Fernández Gil	That he be jointly and severally liable for payment of all damages, owing to the death of Mr. Otaño Sánchez.	2,008
	Paola Andrea Giraldo Cadrasco y otros.	Compensation for damages caused by the death of Wilmer Marín Marulanda due to an electric discharge from high voltage rope.	1,741
	Fanny Henao Cuervo	Compensation for damages caused by the death of a worker hired by a contractor engineer of Edeq in an accident occurred in the development of electrical works.	1,706
	Sorleny Gamba Aldana y otros	Statement of employer guilt in the work accident suffered by Mr. Golver Enrique Rincón Yate in events occurred on October 10, 2007 when he was doing electrical work in the circuit Baraya el Cusco, in the service of the contractor Julio César Arcila Espinosa and, consequently, Condemns the payment of full and ordinary compensation for damages.	1,229
	Luz Enidh Londoño Patiño	That it be declared to Edeq S.A. E.S.P. And to the Previsora SA, administratively and jointly and severally liable, for the damages derived from the death of Mr. Jorge Eliecer Quintero Ospina, which took place on September 30, 2011, by the sector of race 18 with 11th street of Armenia, Quindío.	995
	Leonilde Jiménez Chala	Compensation for the death of Mr. Sergio Antonio Zuluaga, which occurred as a consequence of the fall of the second floor of a building located in the La Lorena neighborhood of the city of Armenia. The death was caused by the fall, but the plaintiff attributed it to an electric shock. The autopsy report says that death occurred because of the fall.	835
	Sandra Liliana Palacio Castaño	Indemnification for easement of electric power conduction in the San Juan de Carolina Estate, of the Municipality of Salento.	800
	José Anibal Gallego Peláez	Declaration of Extracontractual Civil Liability for the material and moral damages derived from the injuries suffered by Mr. José Anibal Gallego Peláez in events that occurred on April 12, 2003 at the Antonio Nariño School in Pueblo Tapao.	572
	José Hugo Pinzón y Otros	Death of Mr. Alexander Pinzón Esquivel on 11-07-2011 when the advance of construction work in a work that was carried out in Cra 22 No. 15-45, Urbanization the Alamos of Armenia, a steel rod that manipulated makes contact with A primary line of electrical energy which generates an electric shock that causes death.	515
	Sandra Milena Sánchez	That it be declared administratively responsible to Los Codemandados for the acts and omissions that caused the death of Mr. Otaño Sánchez, and that as a consequence of said statement, the Co-claims are ordered to pay damages that occur according to the established amounts In the Petition; In addition, it requests a condemnation in costs to the demands.	491
	María Lindelia Vargas Molina	Compensation for damages caused by the death of a worker hired by a contractor engineer of Edeq in an accident occurred in the development of electrical works.	458
	Hugo de Jesús Marín García	The plaintiff claims payment of 200 s.m.l.m.v. For moral damages, plus future loss of earnings, without calculating.	347
	Erick Alex Aguirre	Compensation for injuries caused by electric shock of internal transformer of Edificio Pardo Cruz Armenia.	229
Constructora Buendía Ltda.	Claim for the largest amount of underground work in the center of Armenia in the reconstruction process - the plaintiff was hired by the NGO Chamber of Commerce with resources from FOREC.	105	
<b>Total EDEQ</b>			<b>14,228</b>

ESSA	Municipio de Bucaramanga	Nullity of resolutions No. 35 of December 18, 2008, issued by the Secretary of Finance and Tax of the Municipality of Bucaramanga, with which modified the Private Declaration of Industry and Commerce of the year 2006 of the taxpayer.	4,507
	Municipio de Bucaramanga	Nullity of resolutions No. 34 of December 18, 2008, issued by the Secretary of Finance and Tax of the Municipality of Bucaramanga, with which modified the Private Declaration of Industry and Commerce of the year 2006 of the taxpayer.	3,446
	Hernán Uribe Niño	Work accident claim, which generated certificate of disability due to non-compliance with prevention measures and health standards by ESSA.	1,071
	Eduardo Portilla Plata	That ESSA be declared extra-contractually liable for the damages caused to the claimant.	969
	Juan Gabriel Henao	Work accident claim, which generated certificate of disability due to non-compliance with prevention measures and health standards by ESSA.	880
	Edwin Anaya Nieves	That ESSA be declared extra-contractually liable for the damages caused to the claimant.	806
	Concepción Rueda	It is administratively declared responsible for ESSA for the death of Mr. Luis Alberto González, consequently, full compensation for the moral and material damages caused to his spouse and children.	704
	Alberson Carmona Castaño	Solidarity responsibility labor contract.	422
	Municipio de Bucaramanga	Resolution 869 of June 16, 2011, issued by the Municipal Treasury of Bucaramanga, by means of which an official review liquidation was made to the taxpayer ELECTRICADORA DE SANTANDER for the taxable year 2008.	351
	Ludy Bueno y Alberto Guerrero Hernandez	Compensation for material, moral, caused damages.	350
	Pablo Arturo Niño Lopez	Demand for salary readjustment and relinquishment of the integral salary.	323
	Martha Cecilia Rodríguez Ardila y Otros	The plaintiffs request that ESSA be held liable for all of the damages caused to the claimants by the acts in which Mr. Hugo Feliz Duarte Rojas was killed.	319
	José Milton Salazar Sierra	If ESSA is declared S.A. E.S.P. Responsible for pecuniary damages caused to the claimant, as a result of the failure of the service for omission and partial permanent occupation of the property of his property.	247
	Municipio de Bucaramanga	Inapplication for illegality of article 68 of the agreement No. 039 of 1989, by which the municipal statute of the tax of industry and commerce and warnings is issued	171
Otros	Other processes.	755	
<b>Total ESSA</b>		<b>15,321</b>	

ENSA	Yaneth E. Cristóbal	Ordinary civil procedure for personal involvement.	945
	Alex Montenegro y otros	Civil process for development of the Llano Bonito substation project.	367
	Electrical Technology	Civil process for discount made on your billing.	19
	Leandro Carasquilla	Civil liability for damages in equipment.	8
<b>Total ENSA</b>			<b>1,339</b>
DELSUR	Otras Contingencias Legales	Other legal claims.	454
	Contingencia Tarifa SPE 2006-2007	Claim for overcharges	285
	Getcom Internacional, S.A de C.V.	Electric Power Charges.	144
	Salvaplastic, S.A. de C.V.	Compensation for damaged appliances.	79
	Lactosa, S.A. de C.V.	Compensation for damaged appliances.	79
	Luis Fernando Gómez Gallegos	Removal of electrical infrastructure.	47
	Agepym	Claim by rate classification.	34
	Otras Contingencias Comerciales	Other commercial pretensions.	30
<b>Total DELSUR</b>			<b>1,152</b>
Other subsidiaries	Emvarias		4,178
	Aguas Nacionales		1,265
	Empresas Publicas de Oriente		129
	Regional de Occidente		28
	Aguas de Antofagasta		996
<b>Total other subsidiaries</b>			<b>6,596</b>
<b>Total Litigation</b>			<b>194,342</b>

- Figures expressed in millions of Colombian pesos -

#### 26.1.4 Joint Ventures

It corresponds to contingent considerations related to the acquisition of the subsidiaries Espiritu Santo Energy S. de R.L. and Empresas Varias de Medellín S.A. E.S.P. - EMVARIAS, the balance as of December 31, 2016 amounted to \$ 129,076 (2015: \$ 135,123) and \$ 18,337 (2015: \$ 17,468), respectively.

The main assumptions considered in the calculation of the provision associated to Espiritu Santo Energy S. de R.L. are: estimated date of occurrence of milestones associated to the contingent payment, probability of occurrence associated, and additionally the discount of the flows of payments was considered applying a discount rate (Libor Rate) in accordance with the risk of the liability. As of this date no future events have been evidenced that may affect the calculation of the provision.

The main assumptions used in the future events of the contingent consideration related to the acquisition of EMVARIAS are: ongoing litigation against EMVARIAS at the date of the transaction, definition of the year of materialization of each litigation, definition of the related value To each of the disputes, estimate of future contingent expenses related to the litigation estimated for each year and fixed TES rate to **discount future** contingent expenditure flows. To date, there have been no future events that could affect the calculation of the provision.

#### 26.1.5 Other provisions

Includes in the affiliate Aguas Nacionales EPM S.A. E.S.P. provisions for \$6,680 related to some controversies that presented the Consortium CICE to the Committee of Controversies and Claims for Contracts. The major assumptions considered in the calculation for each type of provision are the same that are applied to the litigations. As of this date no future events have been evidenced that may affect the calculation for the provision.

The Group maintains other provisions for events such as: employer's policy, multiplier points, Somos program, technical reserve and provision for high-cost and catastrophic diseases, compensation to customers for non-compliance with the quality of service standards, which are regulated by the Authority National Public Services of Panama (ASEP), provision for compliance with the indicators of quality and energy not served.



The main assumptions considered in the calculation for each type of provision are:

**Employer policy:** Awarded to EPM servers as an extralegal benefit. An aggregate deductible was contracted from November 1, 2016 through December 31, 2018, for \$ 5,500. The main assumptions considered in the calculation for each type of provision are: discount rate TES fixed rate, estimated value to be paid and estimated date of payment. To date, there have been no future events that could affect the calculation of the provision.

**Multiplying points:** For every point 1.0% of the Minimum Monthly Legal Salary in Effect (MMLSE) will be recognized. One point for an immersion - study of foreign language - is equivalent to 3% of the MMLSE of the period to be provisioned. A percentage of 90% of the points corresponds to claim in cash at the time the points are earned. The remaining 10% is estimated for immersion.

**Program Somos:** The program operates under the modality of accumulation of points. According to the statistics' behavior the points are accounted for with a probability of 80% redemption.

**Technical reserve:** The base to calculate the reserve is that corresponding to all the authorization of services issued and that on the closing date in which the reserve is going to be calculated have not been collected, except those that correspond to authorizations with over twelve months of issue or those that after at least 4 months of having been issued, there is evidence that they have not been used.

**High cost and catastrophic diseases:** The base for calculation of said provision is that corresponding to the analysis of the entire population served of affiliates and beneficiaries of the Entidad Adaptada de Salud (EAS) of EPM, that suffer any of the authorized pathologies.

**Delay transmission projects:** This provision is due to the payment of guarantees by EPM for the non - entry into operation of the Bello - Guayabal - Ancón and Nueva Esperanza projects.

For other provisions, the main assumptions considered in the measurement are: It is estimated that the life expectation, estimated payment date, estimated payment value, discount rate calculated with reference to the market returns of bonds issued by the National Government

As of this date no future events that could affect the calculation of provisions have been evidenced.

#### 26.1.6 Estimated payments

The estimate of the dates on which the Group considers that it will have to face the payments related to the provisions included in the Consolidated statement of financial position as of the report date, is the following:

Concept	Dismantling or restoration	Onerous contracts	Litigation	Business combination	Others	Total
2017	14,678	16,646	48,404	119,583	58,978	258,289
2018	13,575	10,209	38,799	10,709	3,387	76,679
2019	5,601	2,065	3,140	11	2,870	13,687
2020 and others	25,645	55,079	70,448	6,629	7,306	165,107
<b>Total</b>	<b>59,499</b>	<b>83,999</b>	<b>160,791</b>	<b>136,932</b>	<b>72,541</b>	<b>513,762</b>

- Figures expressed in millions of Colombian pe:

#### 26.2. Contingent liabilities and assets:

The breakdown of liabilities and contingent assets is as follows:

Type of contingency	Contingent liabilities	Contingent assets	Net
Litigation	716,410	200,491	(515,919)
Guarantee	233,630	133	(233,497)
Others	52,054	-	(52,054)
<b>Total</b>	<b>1,002,094</b>	<b>200,624</b>	<b>(801,470)</b>

- Figures expressed in millions of Colombian pesos -

The Group has litigations or procedures that are currently in process with the legal, administrative and arbitration bodies. Taking into consideration the reports from the legal counsel it is reasonable to estimate that those litigations will not affect significantly the financial position or solvency, even assuming an unfavorable conclusion of any of them.

As of December 31, 2016, the net estimated value determined by the experts payable by the Group in respect to the contingent liabilities and assets is of \$801,470.

The detail of contingent liabilities and assets are indicated below:

#### Contingent liabilities:

In respect to the uncertainty of the estimated payment date and the estimated value payable, for the contingent liabilities the same business rules indicated in note 26.1.3. Litigations apply.

Company	Third Party	Claim	Value
EPM	Federación Nacional de Cafeteros	Recognition and payment of investments made by the Colombian National Coffee Growers Federation in electrical infrastructure works.	99,643
	Compañía Minera La Cuelga Ltda.	Compensation for all economic damages caused to La Cuelga Mining Company, which have their origin in the works of execution, filling of the reservoir and start-up of the Porce III hydroelectric project.	32,284
	ALOS Transporte S.A.	EPM be ordered to enable and classify Alos Conveyors within the contracting process PC-2009-0480, provision of the ground transportation service.	21,110
	Juan Carlos Cárdenas Arboleda	EPM and other entities shall be held liable for damages caused to the claimants by landslides in calle Vieja in the neighborhood of La Gabriela de Bello on December 5, 2010 and be ordered to pay damages.	19,284
	Transportadora de gas Internacional TGI S.A. E.S.P. - TGI S.A. E.S.P.	That it will be declared that contract ESTF -026-2008 binding on the parties is valid; that the charges will be those established in the contract and that they will be subject from the modifications established by the GREG.	13,590
	Aura De Jesús Salazar Mazo	Violate and jeopardize the collective right to destroy, interrupt and cut the ancestral horseshoe roads that lead from the village of Alto Chiri in the municipality of Briceño to the district of Toledo.	8,855
	Oscar Antonio Giraldo Avendaño	That EPM and other entities will be declared responsible for damages caused to the plaintiffs for landslide in Calle Vieja of the neighborhood La Gabriela Bello on Dec. 5/10.	6,194
	Industrias Lehner S.A.	That it will be declared that in the performance of contract No SCN-32253 an economic unbalance was produced between the performance by the parties and unfavorable to the contractor.	6,108
	CONINSA S.A.	That it will be declared that EPM incurred in a breach of contract No. 2/DJ-2183/43 and its additional covenants, for	5,557

Company	Third Party	Claim	Value
		the failure to pay the damages suffered, originating an economic unbalance by not having timely recognized the value of the higher costs suffered by the Consortium.	
	Alba Nancy Madrigal Maya	EPM and other entities of damages caused to the plaintiffs by landslide in calle Vieja of the district La Gabriela Bello in dec 5/10 are declared responsible.	5,463
	Doris Elena Quintero Cortés	EPM and other entities shall be held liable for damages caused to the claimants by landslides in calle Vieja in the neighborhood of La Gabriela de Bello on December 5, 2010 and be ordered to pay damages.	5,218
	Varios administrativos: Velpa Soluciones S.A., Alejandra Betancur Giraldo, Mateo Aristizábal Tuberquia, entre otros	Processes of less than \$ 5,218 million pesos.	144,822
	Demandas laborales	Reimbursements, salary levels, overtime, conventional benefits, among others.	10,795
	Municipios de Medellín y Yumbo	Industry and trade, special contributions.	4,552
<b>Total EPM</b>			<b>383,475</b>
Aguas Nacionales	Sintransmedes	Protect the public equity of the district, the administrative morality and the access to the efficient rendering of the public utility.	184,832
	Conjunto Residencial Tarento	Enforcement of guarantee: Monetary recognition for the damages caused in the strong rains that occurred in the month of March 2006, that caused a flood in the residential complex, where a works contract was underway where we were making the works audit.	7,864
	Maité Valderrama Forero	It binds Aguas Nacionales EPM for enforcement of guarantee by means of writ of March 2, 2012. Object of the Action repair of the damages caused by the floods in the neighborhood of Carmen Fontibon Bogota of March 17, 2006.	218
	Seguros Comerciales Bolívar S.A.	A pecuniary award for damages caused to one of the Insurer's customers due to a downpour that occurred in March 2006 that caused flooding.	552
	Maria Ismenia Rozo Ruiz	Monetary acknowledgment for the damages caused in a downpour that occurred in March 2006, which caused flooding in the Barrio El Carmen de Fontibón.	143
	Víctor Manuel Díaz Restrepo	Declaration of veneration of the collective rights of the administrative morality, the public equity, the access to public utilities and that the provision will be efficient and timely and to the Free Competition by effects of the subscription of contracts of operation-management that were took place with EAAB.	13
	Matilde Andrade de Palacios and others	To declare administrative and jointly responsible without dividing quotas of all the damages suffered by the plaintiffs because of the reckless and irresponsible conduct that caused the accident decisively.	2,213

Company	Third Party	Claim	Value
	CODECHOCO	That the company be sanctioned for the inadequate disposal of solid waste in the Marmolejo de Quibdó dump.	306
	Rosalba Valoyes Palomeque	That based on article 90 of the Constitution, the municipality of Quibdo, Aguas Nacionales EPM S.A. ESP, INGECOR S.A.S. will be declared administratively and jointly responsible for all damages caused by the injuries to Ms. Rosalba Valoy Palomeque.	561
	Higinio Mena Córdoba	That based on art. 90 of the CN, declare administrative and jointly responsible to the municipality of Quibdó, Aguas Nacionales EPM S.A. ESP and EPO in Liquidation for all damages and losses caused by the injuries to Mr. Higinio Mena Córdoba	278
	Adrián Heber Murillo Ortiz	That the Municipality of Quibdo, Aguas del Atrato and Aguas Nacionales EPM S.A. E.S.P, be declared administratively responsible without quota division of participation for all immaterial damages of a moral type, of alteration to the conditions of existence and material in the modality of consequential damage suffered by all plaintiffs, caused by the negligent, imprudent and irresponsible conduct that originated in a determinant manner the accident that caused damages to Mr. ADRIAN HEBER MURILLO ORTIZ occurred on May 30, 2014.	1,263
	Carlos Martínez Pino	That the Municipality of Quibdo, Aguas Nacionales EPM S.A. E.S.P, Aguas del Atrato and Empresas Públicas de Quibdo en Liquidation, be declared civil and administratively responsible for the damages caused (injuries) to Mr. Carlos Martínez Pino, when the latter fell the in a sewer located in the neighborhood of Medrano Las Brisas Sector, Municipality of Quibdo.	38
	Consorcio CICE	Recognition of the excess financial costs in the performance of the contract of the WWTP of Bello.	52,054
	EEAAB	Recovery for payment by EAAAB of the judgment of direct repair of Clara Marina Pintor for damages in the execution of works of those that National Water was the works auditor.	20
<b>Total Aguas Nacionales</b>			<b>250,355</b>
Emvarias	Beatriz Elena Restrepo Rendón	Solidarity with CORPRODEC	20
	Francelly Zulieth Duque López	Liability for solidarity with Coomultreevv contract 140 of 2010.	20
	Fabiola Londoño Higueta	Liability for solidarity with Coomultreevv cctocontrato 140 of 2010.	20
	Juan Guillermo Gonzalez Velasquez	Labor liability for solidarity with Coomultreevv cctocontrato 129 of 2010.	20
	Martha Cecilia Echavarría Rojas	Liability for solidarity with Coomultreevv cctocontrato 140 of 2010.	20
	Iván de Jesús Grisales Cano	Labor responsibility for solidarity with Came 093.	20
	Luz Dary Echavarría Rojas	Work responsibility with Coomultreevv	20
	Jesús Alberto Cifuentes Ospina	Partial nullity of Resolution No. GNR 47228 of February 20, 2014, by means of which Colpensiones recognizes an old-age pension.	20
	APEV Laura Chica Valencia	Pension substitution.	20

Company	Third Party	Claim	Value
	Luis Fernando Hernández	Direct repair by pruning and cutting.	9,070
	Superintendencia de Servicios Públicos Domiciliarios	Non-compliance with the standard.	200
	Superintendencia de Servicios Públicos Domiciliarios	Non-compliance with the standard.	3
<b>Total Emvarias</b>			<b>9,453</b>
Aguas de Malambo	T & A Proyectos Ltda.	That an order to pay be issue against Aguas de Malambo S.A. E.S.P. and in favor of T&A Proyectos Ltda., for the sums of money represented in the Invoice No. 0175 of 01/08/2013 and minutes of execution of works No. 8 of 15/03/2013 to 28/03/2013 of the Works Contract No. 022-2012-AM, as well as the default interest applicable.	565
	Delfidia Matilde Pertuz Pedroza	Direct recovery for administrative liability of damages of a material and immaterial nature for the accident suffered by the later, on August 13, 2015, on occasion of a fall sufered by her when walking by Calle 4 2 between carreras 4 South and 5 South of the Municipality of Malambo - Atlantico, for bad management of waste water that caused a crater and subsiding of the mentioned street.	26
<b>Total Aguas de Malambo</b>			<b>591</b>
CENS	Orlando Emiro Conteras Velasco and others	That it be declared that the claimants are entitled throughout their entire pension life, to the pension being adjusted according to the parameters indicated in article 1 of Law 71 of 1988 and not to those established in article 14 of Law 100 of 1993 .	1,800
	Geomara Carreño and others	That the defendant entities and legal entities are declared, are administrative, patrimonial and civilly responsible for the damages and damages caused to the accusers by the injuries suffered by the minor Frayner Fernando Arango Carreño, when being imprisoned by a pole of the electrical energy system .	1,215
	Jeison Orlando Ortiz Vargas and others	That CENS and the Municipality of Aguachica- Municipal Planning Secretary of Aguachica (Cesar) be administratively responsible for the total damages caused to the plaintiffs for the death of Mr. Fabio Alberto Ortiz Valenzuela.	736
	German Francisco Silva Colmenares y German Francisco Silva Bermúdez	That CENS be declared responsible for the fire that occurred in the farm called the Danube, in which 4 horses were killed and a cédbreira was burned and that is condemned to the sum of: emergent damages: \$ 96,050,739 and \$ 361,754,533. Loss of income: \$ 181,531,530. Moral damage: \$ 50,000,000	711
	Julio Cesar Peña Villamizar and others	Condemn CENS to pay the sum of 800 SMLMV for moral damages in favor of the plaintiffs and 8 SMLMV for material damages, as well as the costs of the process.	559
	Luis Freddy Vergel Torrentes	That it be condemned to CENS responsible for the fire caused in the haciendas La Tora and the Azufrada, ordering him the payment of the damages of the following way: -For emergent damages an approximate value of \$ 231,324,485. - Loss of income taxed at \$ 170,973,000.	447

Company	Third Party	Claim	Value
	Carlos Augusto Rangel Álvarez and others	Conventional Benefits	331
	Carlos Augusto Ropero Gaona	That it be declared that CENS has violated fundamental rights of the actor, due to the company's disengagement with violation of due process to which it was submitted from February 7 and 18, 2013 and the consequent refund.	286
	Manuel Jesús Navarro Andrea Yisela Olivos Sánchez Deimar Javier Valderrama Olivos Manuel Stiven Navarro Olivos	To declare administrative and extracontractual responsibility to CENS for the damages caused to the plaintiffs on the occasion of the death of the minor Katherine Dayana Olivos Sánchez, which occurred on May 11, 2013 in Cúcuta.	274
	Condominio Banco Santander	Declare the nullity of resolutions 442275 of 11/24/06 and 443833 of 03/01/07 issued by CENS, by way of restoration of the right to comply with resolution 44038 of 09/10/06.	240
	SYM Ingeniería Ltda. e Inecel Ltda.	That it be declared to CENS responsible extracontractual and administratively for declaring the inability of the plaintiffs to contract with the State and as a consequence of the above, economic damages for loss of opportunity in the amount of \$ 177,622,565	209
	Oscar Sánchez Molina Parra	It is stated that the accident suffered by the complainant was caused by CENS S.A. E.S.P. As an employer. To condemn to pay the material, moral, material loss, loss of profit, emergent damages and physiological damages caused by the work accident, as well as to the payment of the indemnity established in the collective agreement in force at the date of the work accident. Additionally, it claims payment of interest arrears.	176
	Álvaro Ascanio Ropero And others	It requests the recognition and payment of the pension established in article 63 of the Collective Labor Convention of CENS, ordinary and additional allowances that have been caused, interest arrears and indexation.	175
	Agrícola de la Llana LTDA	To declare CENS civilly responsible for the material and moral damages suffered by the plaintiff company, that was forced to eradicate 145 African palms and permanently clear the area occupied by the energy networks that are in the properties of the farm Los Pampanos and El Delirio located in the Municipality of Tibu.	155
	Doris Rangel Sierra	Conventional Benefits	106
	Otros	Other	807
<b>Total CENS</b>			<b>8,227</b>
<b>CHEC</b>	Honorio Herrera López	That CHEC will be administrative and materially responsible for the damages caused to the group of plaintiffs generated by the water release of the San Francisco Lake.	11,000
	Municipio de Salamina	Value of the energy failed to generate and commercialize.	4,806



Company	Third Party	Claim	Value
	AES Chivor & Cía S.C.A. E.S.P.	Indemnification for damages.	3,924
	María Marleny Montoya De García	For damages of a material and immaterial damages.	3,283
	Mauricio Vélez Giraldo	Damages	2,175
	Heriberto García Giraldo	Damages	1,916
	Lucía Mery Cárdenas	For moral damages	1,655
	José Gustavo Morales Guarín and other 40	For moral damages	1,362
	Positiva Compañía de Seguros SA	Refund of mathematical reserve of capital created.	994
	Oscar Nicolás Osorio Ciro	Claims for moral damages.	917
	Jesus María Osorio Giraldo	Claims for moral damages.	797
	Alba Lucía Huertas Bohórquez	For moral damages.	644
	Andrés Mauricio Arenas Bolívar	Indemnification for injuries.	589
	Alfredo Carvajal Gonzáles	Claim for moral damages	483
	Unidad Administrativa De Gestión Pensional Y Contribuciones Parafiscales De La Protección Social	To declare the partial nullity of the official assessment No. RDO 513 of March 28, 2014	350
	Others	Other processes	791
<b>Total CHEC</b>			<b>35,686</b>
EDEQ	Danielly Arcila de Gil and others	That the defendants will be declared responsible for administrative, extracontractual, joint and material damages for the injuries suffered by Ms. Danielly Arcila de Gil, which are consequence of the fallsufferend by an iron hook thaforms a part of the coupling box, which is made of concrete and that belongs to the Municipality of Armenia the Empresas Publicas de Armedia E.S.P. and the Empresa de Energia del Quindío S.A. E.S.P. Public Utility Company - EDEQ	2,816
	Donaldo Fabián Santander	That the defendant will be jointly ordered to the payment of all each an all the damages of various kinds caused to the plaintiffs, because of the serious injuries duffered in event occurred on July 11, 2012 in the Village of Palmera, jurisdiction of the Municipality of Salento (Q) and when they performed the tasks proper of their job as lineman.	2,341
	María Amparo Fernández Gil	The it will be ordered jointly to the payment of all damages, because of the death of Mr. Otalvaro Sanchez.	2,172
	Paola Andrea Giraldo Cadrasco and others.	Indemnification of damages caused for the death of Wilmer Marin Marulanda on occassion of the electric shock from a high voltage cable.	1,705

Company	Third Party	Claim	Value
	Willson Grisales Henao and others	Declaration of employer fault in the work accident suffered by Mr. Wilson Grisales Henao in events occurred on October 17, 2012 when he was performing electrical tasks in the farm La Montaña, village Pekin municipality of Quinbaya by the contractor EDEQ INGELEL S.A.S., therefore it orders to the payment of the full and ordinary indemnification for damages. EDEQ is jointly sued.	1,380
	Luz Enidith Londoño Patiño	That EDEQ S.A. E.S.P. and Previsora S.A. be declared administratively and jointly responsible for the damages derived from the death of Jorge Eliecer Quintero Ospina, that took place on September 30, 2011 in Armenia, Quindio.	1,059
	Leonilde Jimenez Chala	Indemnification for the death of Mr. Sergio Antonio Zuluaga, as consequence of the fall from the 2nd floor that according to the plaintiff he attributes it to an electrical shock.	892
	Jhon James Montoya Marín and others	That the defendant entity be declared administratively responsible for the damages caused to Mr. Jhon James Montoya Marin and Others as consequence of an electrical shock caused by a electrical conduction cable.	639
	José Anibal Gallego Peláez	Declaration of extracontractual Civil Liability for material and moral damages derived from the injuries suffered by Mr. Jose Anibal Gallego Pelaez in events occurred on April 12, 2003 in the school Antonio Nariño of Pueblo Tapao.	587
	Sandra Milena Sánchez	That the co-defendants will be declared administrative responsible for the events and omissions that caused the death of Mr. Otalvaro Sanchez, and that as consequence of that declaration the Co-defendants will be convicted.	524
	Leonardo Castaño López	That it will be declared that Mr. Leonardo Castaño Lopez was dismissed without a cause and therefore it is entitled to the indemnifications that situation involves.	419
	Jhon Jairo Rendón Londoño	A complaint is filed against Instelec and jointly against EDEQ for the presumptive dismissal without a cause of Jhon Jairo Rendon Londoño and the payment of indemnification for termination without a cause, moral damages, severance pay and court fees is requested.	15
	Reinel Giraldo	Complaint filed by Reinel Giraldo against EDEQ and Colpensiones to be granted payment of the 14th month pension payment.	7
	Francisco Luis Uribe Delgadillo	Complaint filed by Francisco Luis Uribe Delgadillo against EDEQ and Colpensiones to be granted payment of the 14th month pension payment.	7
	Jairo Moncada Galvis	Complaint filed by Jairo Moncada Galvis against EDEC and Colpensiones to be granted payment of the 14th month pension payment.	5
<b>Total EDEQ</b>			<b>14,568</b>
ESSA	TOMON Ltda.	It is requested that the existence of a strategic alliance contract between Essa and the Temporary Union "San Gil enlightened" be declared,	8,344
	TOMON Ltda. (AD-Excludendum)	The Santander Electrificador, TOMON LTDA and electric utilities, shall be jointly and severally liable to pay San Gil ill. S., Emergent damages and loss of profits for breach of contract.	8,344
	José Manuel Hernández Reyes	That Electrificadora de Santander SA ESP be declared responsible for material and moral damages caused for failure or lack of the service or of the administration on occasion of the undue and permanent location of the electric	4,100

Company	Third Party	Claim	Value
		interconnection tower in the property located at Transversal 25 No. 1-160 neighborhood Ruitoque Bajo of Floridablanca.	
	Helena Morales Pabón Blanca Amelia Morales Castillo and others	Declarar administrativamente responsable a Essa por los perjuicios morales y a la vida de relación ocasionados por el deceso de Joselin Morales Pabón ocasionado por electrocución	2,476
	Gerson Emanuel Duarte Pabón	That Essa will be declared responsible for the damages caused to Gerson Duarte and its Family Group (4 people) for the damages derived from the improper location of energy networks that caused the electrocution of the plaintiff on July 30, 2011 when working in the property located at Calle 10 with Carrera 14 No. 10-37 neighborhood San Antonio de Piedecuesta. That Essa will be ordered to pay for the material and moral damages derived from this event.	2,470
	Ana Aydee Prada Ochoa	Payment of compensation for the death of Mr. Alirio Silva in an accident at work in the municipality of San Joaquín	1,582
	Carlos Enrique Perez	To declare administratively responsible to Essa for material and immaterial damages for failure of the service that originated the death for electrocution of Carlos Yovani Perez Diaz.	1,500
	Promotora Agrotropical Colombia S.A.S.	That the non-fulfillment be declared of commercial offer No. on-013-2008 of October 3, 2008 and Essa be ordered to pay the corresponding damages.	1,064
	Lida Consuelo Becerra Cartagena and others	To declare administratively responsible to Essa for material and immaterial damages for lack in the service by negligence in the acting by Essa that led to the death of Rodrigo Becerra Zarate.	789
	Gloria Edilse Gómez	That Essa will be declared administratively responsible for the death by electrocution of Omar Mendez Lozano and be ordered to pay moral and material damages.	788
	Carlos Eduardo Solano Socorro Camacho	To declare Essa administratively responsible for material and immaterial damages caused by the death by electrocution of Mauricio Solano Camacho.	684
	Luis Ernesto Acevedo Silva	That Essa will be declared responsible for injuries, after effects, loss of work capacity and other damages suffered by Luis Ernesto Acevedo by the fall caused by colliding against the pole located near Balcon del Tejar.	508
	Ana Mercedes Leal and others	To declare Essa jointly responsible for the damages caused by the death in work accident of Oscar Alberto Camacho Lean worker of MECM	503
	Carlos Abel Pérez Mantilla and others	That Electrificadora de Santander SA ESP be declared responsible for moral damages for the death by electrocution of Brayan Alexis Perez Velandia.	499
	Osmel Rodriguez	Work accident	460
	Otros	Other Processes	6,351
<b>Total ESSA</b>			<b>40,462</b>
ADASA	Superintendency of Sanitary Services (SISS)	Penalization process for deficiency in the quality of the Potable Water during the months of November and December 2015.	74
	Superintendency of Sanitary Services (SISS)	Penalization process for deficiency in the continuity and mandatory nature of the Potable Water distribution service.	74

Company	Third Party	Claim	Value
	Superintendency of Sanitary Services (SISS)	Penalization process for deficiency in the continuity of the Potable Water supply service in certain sectors of Antofagasta.	74
	Superintendency of Sanitary Services (SISS)	Penalization process for nonfulfillment in time and manner of the instructions issued and notified by SISS.	74
	Superintendency of Sanitary Services (SISS)	Penalization process for having incurred in infractions that entail deficiencies in the Potable Water supply service in the locations of Antofagasta and Calama.	74
	Superintendency of Sanitary Services (SISS)	Penalization process for having incurred in infractions that entail the fulfillment of the obligation to establish the reading of meters in a cycle of 33 days.	74
	Rubén Tapia con Aguas Antofagasta S.A.	Civil complaint of indemnification of damages in vehicle caused by works on the public roads.	54
	Humberto Rojo Vásquez and other	Civil complaint of indemnification of damages for logging Potable Water	211
	Inmobiliaria vistas Antofagasta	Civil complaint of indemnification of damages breakage of matrix.	224
<b>Total ADASA</b>			<b>933</b>
ENSA	Autoridad Nacional de los Servicios Públicos	To guarantee obligations	45,011
	Compañías generadoras	To guarantee obligations	178,106
	Empresa de Transmisión Eléctrica S.A.	To guarantee obligations	3,766
	Empresa de Transmisión Eléctrica S.A.	To guarantee obligations	5,475
	Ente Operador Regulador de El Salvador	To guarantee obligations	1,272
	Autoridad Nacional de los Servicios Públicos	To guarantee obligations	21,185
	Others	Other Processes	3,529
<b>Total ENSA</b>			<b>258,344</b>
<b>Total contingent liabilities</b>			<b>1,002,094</b>

- Figures in millions of Colombian pesos

## Contingent Assets:

### Litigation

Third Party	Claim	Value
<b>EPM</b>		
Ministry of Environment and Territorial Development	Declaration of nullity invoked, declare that within the costs related to the construction and operation of the Porce III Hydroelectric Project, EPM may include costs related to readjustments and other concepts.	4,295
Electrical Interconnection S.A. E.S.P. ISA	It is civilly responsible for not recognizing EPM's share of the remuneration that ISA received between 1995 and 1999, for the line modules that correspond to assets of use of the STN in the substations Playas and Guatapé.	2,846
Poblado Club Campestre Ejecutivo S.A.	Responsibility for the damage of the EPM owned collector, which collects and transports wastewater from the sanitary basin of the La Honda stream in the municipality of Envigado.	2,651
Municipality of Envigado	Declare the inapplicability of Decree 259 of August 14, 2002 of the Municipality of Envigado, "By means of which urbanistic sanctions are established", as it is contrary to the Political Constitution, the Law and the Public Utilities Regime.	768
Seguros Generales Suramericana S.A.	Payment warrant is filed against Suramericana de Seguros S.A. And in favor of EPM, plus default interest since September 23, 2002.	653
Society Vélez Arango y Cía. SCA	Expropriation servitude of two farms: the tank the pines and the tank of pumping located a lot of greater extension identified M.I. 017-512 and 017-513 of the Vélez Arango Society required for the Valle San Nicolás aqueduct project.	413
Other administrative staff: Caridad Marín Vélez, Leonardo Ramírez Montoya, among others	Processes of less than \$ 413 million pesos.	533
Municipality of Bello	Integral nullity of the complex administrative act contained in Resolutions 2717 of 2009 and 0531 of 2010. PTAR Bello.	96,110
Municipality of Bello	Reimbursement of monies paid by EPM for the purpose of determining and liquidating the goodwill effect, PTAR Bello.	89,917
SENA	Nullity in payment of contributions	268
<b>Total EPM</b>		<b>198,454</b>

**Guarantee**

The Group has granted the following guarantees:

Entity	Third Party	Claim	Value
ESSA	Seguros del Estado	Constituted and granted with the purpose of covering litigious (tax) proceedings against the Municipality of Bucaramanga	133
<b>Total ESSA</b>			<b>133</b>
<b>Total contingent assets - guarantees</b>			<b>133</b>

**Estimated payments and collections**

The estimate of the dates on which the EPM Group considers that it will have to face the payments related to the contingent liabilities or will receive the collections for the contingent assets included in this note of the consolidated statement of financial condition At the cut-off date, is as follows:

Year	Contingent liabilities	Contingent assets
2016	421,784	2,199
2017	47,047	-
2018	7,740	-
2019 and others	404,627	-
<b>Total</b>	<b>881,198</b>	<b>2,199</b>

- Figures expressed in millions of Colombian pesos -

**Note 27. Other liabilities.**

The composition of other liabilities is as follows:



Other passives	2016	2015
<b>Non-Current</b>		
Assets received from customers or third parties	36,030	39,805
Transfer of assets and financial guarantees	34,096	33,626
Government Grants	26,018	27,957
Other deferred receivables	21,298	20,989
Revenue received in advance	16,202	9,569
Collection for third parties (1)	10	10
<b>Subtotal other non-current liabilities</b>	<b>133,654</b>	<b>131,956</b>
<b>Current</b>		
Collection for third parties (1)	109,338	97,798
Revenue received in advance	76,026	110,772
Other deferred receivables	2	-
Government Grants	558	504
<b>Subtotal other current liabilities</b>	<b>185,924</b>	<b>209,074</b>
<b>Total</b>	<b>319,578</b>	<b>341,030</b>

- Figures expressed in millions of Colombian pesos -

- (1) Corresponds to collection in favor of third parties for public lighting agreements, collection of receivables, sanitation service, taxes, among others.

### 27.1 Government grants

The detail of government subsidies as of the report date was:

Subsidies	2016	2015
Beginning balance	28,461	18,586
Granted during the period	255	5,862
Recognized in income for the period	(1,152)	(1,230)
Difference instead, conversion adjustment	(988)	5,243
<b>Closing Balance</b>	<b>26,576</b>	<b>28,461</b>
<b>Non-Current</b>	<b>26,018</b>	<b>27,957</b>
<b>Current</b>	<b>558</b>	<b>504</b>
<b>Book value at 31 December</b>	<b>26,576</b>	<b>28,461</b>

- Figures expressed in millions of Colombian pesos -

The EPM Group received during the period grants from the Inter American Development Bank -IADB- for the financing program to medium and small companies; by Financiera del Desarrollo -FINDETER- as favorable rate credit for the construction of water and sewer infrastructure; by Fondo para la Reconstrucción del Eje Cafetero -FOREC- for the reconstruction of power networks as a consequence of

the earthquake the coffee growing area; by the Fondo Financiero para Proyectos de Desarrollo - FONADE - for the promotion of telecommunications in rural schools and by the Oficina Electrificación Rural (Panama) and by the Fondo de Inversión Nacional en Electricidad y Telefonía (El Salvador) for the construction of rural electric infrastructure.

The EPM Group has not failed to comply with any of the conditions related to the grants.

## 27.2 Income received in advance

The detail of the income received in advance of the EPM Group as of the reporting date is the following:

Revenue received in advance	2016	2015
<b>Non-Current</b>		
Other income received in advance	11,175	3,853
Sale of energy service	4,220	4,547
Leases	807	1,997
Customer Service	-	(828)
<b>Total income received in advance</b>	<b>16,202</b>	<b>9,569</b>
<b>Current</b>		
Sale of energy service	56,155	32,958
Sale of fuel gas service	8,746	9,530
Customer Service	7,246	51,669
Other income received in advance	2,688	15,346
Sale of cleaning services	677	677
Leases	483	575
Sale of sewerage service	31	17
<b>Total income received in advance</b>	<b>76,026</b>	<b>110,772</b>
<b>Total revenue received in advance</b>	<b>92,228</b>	<b>120,341</b>

- Figures expressed in millions of Colombian pesos -

## Note 28. Deferred regulatory accounts

The balance of the deferred regulatory accounts as of the date of presentation of the financial statements corresponds to the local regulatory framework of application to the subsidiary Elektra Noreste S.A. - ENSA, established by the National Authority of Public Utilities of Panama (ASEP). This entity is the one in charge of regulating and establishing the final rates that the Company bills to its customers. The company keeps its accounting records in accordance with the uniform accounts system established by the ASEP for electric companies.

The regulated system under which the company operates permits that any excess or deficiency between the estimated cost of energy considered in the rate and the actual cost incurred by the Company will be included as a compensatory adjustment, to be recovered from or refunded to the customers, in the next rate review. Any excess in the cost of energy charged to customers is accumulated as credit balance in deferred regulatory account in the balance sheets of the company and entails a reduction in the next rate review to be applied to customers. Likewise, any deficient in the cost of energy charge to customers is accumulated as debit balance in deferred regulatory account in the balance sheets of the company and entails an increase in the next rate review to be recovered from the customers.

The movement of the regulatory accounts is as follows:

Regulatory accounts	Assets (Liability)	
	2016	2015
Beginning balance	(59,891)	60,603
Recognized in income for the period	72,160	(97,720)
Effects on exchange rate / discount rate	3,544	11,260
Other concepts	-	(34,034)
<b>Closing Balance</b>	<b>15,813</b>	<b>(59,891)</b>

- Figures expressed in millions of Colombian pesos -

Balances associated to deferred regulatory accounts in accordance with the regulation must be recovered or refunded in the two following months.

The movement of the deferred tax associated to the regulatory accounts is the following:

Deferred tax associated with regulatory accounts	Assets (Liability)	
	2016	2015
Beginning balance	17,967	(18,181)
Increases	(21,792)	29,316
Effect on foreign currency translation	(919)	(3,378)
Other movement	-	10,210
<b>Closing Balance</b>	<b>(4,744)</b>	<b>17,967</b>

- Figures expressed in millions of Colombian pesos -

## Note 29. Income

The detail of income from ordinary activities is as follows:

Ordinary activities income	2016	2015
Sale of goods	36,156	20,159
Provision of services		
Power supply <sup>(1)</sup>	11,706,597	11,400,232
Service of aqueduct <sup>(2)</sup>	808,527	581,285
Fuel Gas Service	802,268	699,005
Sanitation service <sup>(2)</sup>	537,383	502,797
Toilet service	178,602	147,739
Other services	114,592	105,392
Construction contracts	114,563	158,330
Insurance and reinsurance services	9,186	6,744
Computer Services	333	371
Returns <sup>(3)</sup>	(76,987)	(47,147)
<b>Total provision of services</b>	<b>14,195,064</b>	<b>13,554,748</b>
Leases	62,954	57,472
Income from sale of assets	42,112	28,708
<b>Total</b>	<b>14,336,286</b>	<b>13,661,087</b>

- Figures expressed in millions of Colombian pesos -

- <sup>(1)</sup> During The year presented two relevant situations that affected the commercial operation of energy:
- El Niño event in Colombia caused an increase of the average exchange price between the months of January and April, therefore, an increase in the income of generators.
  - In EPM, in the first half of the year, the unavailability of the Guatapé power plant due to the fire of the power cables was present.
- <sup>(2)</sup> For the subsidiaries in Colombia, a tariff change was presented with Resolutions CRA 688 of 2014 and CRA 735 of 2015 issued by the Commission for Regulation of Drinking Water and Basic Sanitation - CRA, which obligate the fulfillment of quality and coverage indicators and therefore Review of investments and operations in the two segments. (See Note 7 Impairment of Assets).
- <sup>(3)</sup> Includes the return of the charge for reliability tied to the lowest power generation for \$ 33,144 (2015:\$ -).

The EPM Group does not have ordinary income pledged, contingencies that have not been recognized affecting income, or firm commitments with customers for the provision of future services from which it is estimated that losses will be generated.

### 29.1 Construction contracts

The Group recognized revenue from ordinary activities for asset-building agreements within the scope of IAS 11 Construction Contracts at the Cut-Off Date \$ 114,563 (2015 \$158,330).

The method applied to determine the degree of progress of the previous construction contracts is the proportion of the costs of the contract incurred in the work already performed as of this date, in relation to the total estimated costs for the contract.

The Group recognized the following values in the period for the agreements in effect at the cut-off date described in the previous paragraph:

2016	Costs incurred plus profits recognized	Pending outstanding amounts	Expected losses	Total balance of the statement of financial position	Advances received from customers for construction contracts	Withholdings on payments
Convenios Municipio de Medellín	5,739	-	-	-	-	-
Convenio Electrificadora de Santander	3,545	-	-	-	-	-
Convenio Ministerio de Minas y Energía	1,325	-	-	-	-	-
Convenio Aguas 3 Municipio de Medellín	1,321	-	-	-	-	-
Convenio Aguas 7 Municipio de Medellín	833	-	-	-	341	-
Convenio Municipio de Caldas	584	-	-	-	174	-
Convenio Aguas 5 Municipio de Medellín	-	-	-	-	2,385	-
Convenio Aguas 6 Municipio de Medellín	-	-	-	-	6,803	-
Convenio Gobernación Urabá	-	-	-	-	1,000	-
Convenio Municipio de El Peñol	-	-	-	-	1,046	-
Convenio Municipio de Guatapé	-	-	-	-	3,118	-
Convenio Cornare	-	-	-	-	1,106	-
Convenio Aguas 8 Municipio de Bolívar	-	-	-	-	16,514	-
CENS - Contrato FAER GGC-105	998	-	-	864	864	-
CENS - Convenio Fundescat	115	-	-	133	133	-
CENS - Convenio Ecopetrol	105	-	-	444	444	-
CENS - Contrato Gobernacion	901	-	230	594	364	-
CENS - Contrato FAER GGC-313	351	-	-	87	87	-
Chec- Construcción subestación Armenia	23	-	-	-	1	-
Edeq - Parque del Café	280	-	-	-	-	-
Edeq - Movimiento De Infraestructura Eléctrica	57	-	-	-	-	-
Essa - FAER 302 de 2014	5,052	-	-	-	-	-
Essa - FAER 301 de 2014	2,070	-	-	-	-	-
Essa - PRONE 294 de 2014	944	-	-	-	-	-
Essa - PRONE GGC 383	340	-	-	-	95	-
Essa - CAFAR 44 2015	5,868	-	-	-	764	-
Essa - Gobernacion-ESSA Fase V	-	-	-	-	435	-
Essa - FAER 014	146	-	-	-	-	-
Essa - FAER GGC 426 2015	1,737	-	-	-	7,607	-
Essa - Audiencias Publicas	36	-	-	-	32	-
Ticsa - PEMEX Tampico	53,754	2,832	-	-	-	-
Ticsa- Gilbane Alberichi Piedras Negras	4,336	-	-	-	-	1,741
Ticsa - CBI Nava	8,209	-	-	-	-	-
Ticsa - PTAR's Tuchtlán y Páso el Limón	4,158	459	-	-	-	-
Adasa-contratos de construcción	502	-	-	-	-	-
Other construction contracts Group	11,237	-	-	-	145	-
<b>Total</b>	<b>114,563</b>	<b>3,292</b>	<b>230</b>	<b>2,123</b>	<b>43,459</b>	<b>1,741</b>

- Figures expressed in millions of Colombian pesos -

2015	Costs incurred plus profits recognized	Pending outstanding amounts	Expected losses	Total balance of the statement of financial position	Advances received from customers for construction contracts	Withholdings on payments
EPM Convenio Aguas 3 Municipio de Medellín	1,486	-	-	-	-	-
EPM Convenio Aguas 5 Municipio de Medellín	-	-	-	-	3,912	-
EPM Convenio Aguas 6 Municipio de Medellín	-	-	-	-	11,269	-
EPM Convenio Aguas 7 Municipio de Medellín	525	-	-	-	1,734	-
EPM Convenio Barbosa	15	-	-	-	1	-
EPM Convenio CM Caldas	-	-	-	-	381	-
EPM Convenio Electrificadora de Santander	3,323	-	-	-	-	-
EPM Convenio Empresas Varias de Medellín	209	-	-	-	-	-
EPM Convenio FAER 2 - Electrificación rural	-	-	-	-	646	-
EPM Convenio Municipio de El Peñol	-	-	-	-	1,000	-
EPM Convenio Municipio de Guatapé	-	-	-	-	1,000	-
EPM Convenio Cornare	-	-	-	-	1,106	-
EPM Convenio Aguas 8 Municipio Bolívar	-	-	-	-	16,850	-
EPM Otros convenios	-	-	-	-	245	-
CENS Contrato FAER GGC-105	4,356	-	-	-	1,821	-
CENS Convenio Fundescat	1,700	-	-	-	237	-
CENS Convenio Ecopetrol	2,548	-	-	-	411	-
CENS Contrato Gobernación	8,089	-	822	-	1,270	-
CENS Contrato FAER GGC-313	675	-	-	-	115	-
TICSA Plantas de tratamiento de aguas de Tuxtlán y Paso El	35,586	2,951	-	-	-	-
TICSA Planta de tratamiento de aguas de PEMEX Ciudad	44,816	44,816	-	-	-	-
TICSA Planta de tratamiento de aguas para Gilbane Alberichi en planta de Piedras Negras	40,683	-	-	-	5,470	-
<b>Total</b>	<b>144,011</b>	<b>47,767</b>	<b>822</b>	<b>-</b>	<b>47,468</b>	<b>-</b>

- Figures expressed in millions of Colombian pesos -

## 29.2 Leasing as Lessor

The most significant operating lease agreements are for the electrical infrastructure for the installation of telecommunications networks by the telecommunications operators. The contingent quotas of these leases are determined based on the updating of the IPP and IPC variables as well as the updating of the lease payments. The lease contracts contemplate the option of being renewed by mutual agreement between the parties and do not contemplate the purchase option.

The value of non-cancellable operating lease payments are:

Leases	2016	2015
	Non-cancellable operating leases	Non-cancellable operating leases
One year	41,765	18,523
More than a year and up to five years	15,976	35,041
More than five years	14,151	25,829
<b>Total leases</b>	<b>71,891</b>	<b>79,393</b>
Less - value of unearned interest	6,375	-
<b>Present value of minimum lease payments receivable</b>	<b>78,267</b>	<b>79,393</b>

- Figures expressed in millions of Colombian pesos -

The Group does not have recognized any provision for accumulated uncollectibility of minimum payments of rent receivable for financial leasing, and there are no residual values not guaranteed recognized in financial leasing.

Contingent lease income recognized in income for the period is \$ 16,854 (2015: \$ 15,463), of which \$ 16,067 (2015: \$ 14,853) are operating leases.



The Group as lessor, has not contracts that adopt the legal form of a lease but that in essence do not correspond to it.

### Note 30. Other income

The breakdown of other income, which is part of income from ordinary activities, is as follows:

Other income	2016	2015
Reversal loss for property, plant and equipment deterioration (1)	685,550	-
Compensation (2)	480,621	2,706
Recoveries (3)	179,588	111,784
Other income	73,245	59,409
commissions	43,502	38,230
Reversal impairment loss intangible assets (1)	25,664	-
Achievements	7,664	8,620
Valuation of Investment Property	7,077	9,819
Reversal loss due to impairment of accounts receivable	6,468	18,271
Government Grants	4,017	9,428
Margin in the commercialization of goods and services	2,303	2,357
Fee	1,342	3,053
Sale of sheets	848	640
Leftovers	35	67
Photocopying	1	-
<b>Total Other Income</b>	<b>1,517,925</b>	<b>264,384</b>

- Figures expressed in millions of Colombian pesos -

- (1) Corresponds to the reversal of impairment in the Water Supply segment of EPM, detailed in Note 7 Impairment of assets.
- (2) Includes \$ 472,098 of compensation for lost profits and emerging damages recognized in EPM for the loss of the Guatapé plant.
- (3) Corresponds to recoveries of provisions of litigations in EPM.

### Note 31. Costs for rendering of services

The detail of the costs for rendering services is as follows:

Costs for provision of services	2016	2015
Cost of public goods and services for sale (1)	6,723,659	6,562,089
Impairment of property, plant and equipment (2)	819,813	8,526
Depreciations	700,213	647,896
Personal services	622,874	541,357
Orders and contracts for other services (3)	553,687	509,904
Consumption of direct inputs (4)	479,571	338,187
Orders and contracts of maintenance and repairs (3)	331,763	315,629
Materials and Other Operating Costs	203,719	216,281
Impairment of intangible assets (5)	165,689	8,437
Licenses, contributions and royalties	133,299	110,649
General	105,935	89,236
Insurance	85,771	51,056
Fee	82,508	69,185
Amortization	82,136	35,234
Taxes and rates	63,933	60,707
Leases	42,402	32,158
Traded goods	22,813	22,353
Public services	21,471	21,085
Cost of losses in the provision of the aqueduct service	5,376	3,877
Insurance and reinsurance	5,074	-
Exhaustion	4,961	1,475
Value reduction inventories	468	564
<b>Total cost of providing services</b>	<b>11,257,135</b>	<b>9,645,885</b>

- Figures expressed in millions of Colombian pesos -

1. Includes the value of the purchases of energy in block and in the exchange, connection cost, use of lines, networks and ducts, cost of commercialization and distribution of natural gas, among other costs. The increase in those costs in respect to the previous period is due mainly to the increase in the prices of energy purchased in the exchange, STN, STR and SDL (National and Regional Transmission Systems and Local Distribution System) charges for higher sales to the NRM (non regulated market) and changes in the calculation according to the regulation; caused by the difficult climatic conditions (descent of water resources and low levels of reservoirs), especially during the first four months of 2016, when the phenomenon of El Niño became more acute and the unavailability of the Guatapé hydroelectric power plant since February 15, 2016, however, its operation began between April and June.
2. In 2016 corresponds to the impairment of recognized value on the property, plant and equipment of the cash generating units of the subsidiaries Parque Eólico Los Cururos Ltda. And Hidroecológica del Teribe S.A. (HET) for \$ 215,156 and \$ 39,991, respectively. In addition, it includes the deterioration in the Sanitation segment of EPM for \$ 564,429. See detail in note 7. Impairment of assets.

3. Includes the value of maintenance and repairs orders and contracts of buildings, machinery and equipment, land, network lines and ducts, plants and other services such as cleaning, surveillance, security, taking readings, and installations, among others.
4. It includes the cost of chemical products, fuel gas, energy, ACPM and fuel oil, which basically increased due to the higher consumption of gas and ACPM for power generation in the EPM's La Sierra thermoelectric plant in the first four months Of 2016 and due to restrictions and deviations, due to the generation of energy with liquid fuels throughout the system, associated to the market conditions caused by the Niño phenomenon. El Niño and the unavailability of the Guatapé hydroelectric power station of EPM.
5. Corresponds to the impairment recognized on intangible assets and commercial credits originated in the investments in the affiliates Tecnología Intercontinental S.A. de C.V. TICSA and Parque Aeólico Los Cururos Ltda. for \$82,254 and \$19,093 respectively. In addition, it includes impairment of other intangible assets in the segment of Sanitation of EPM for \$64,090. See detail in Note 7. Impairment of assets.

## Note 32. Administration expenses

The breakdown of administrative expenses is as follows:

Administration fees	2016	2015
<b>Personal expenses</b>		
Wages and salaries	326,694	292,621
Social Security Expenses	93,863	95,343
Pension expenditure	40,961	38,928
Other long-term benefits	20,342	40,276
Employee Interest Rate Benefits	6,407	4,597
Other post-employment benefit plans other than pensions	5,269	3,217
Termination benefits	636	525
<b>Total staff costs</b>	<b>494,172</b>	<b>475,507</b>
<b>General expenses</b>		
Taxes, contributions and fees <sup>1</sup>	318,533	240,178
Fees, fees and services	102,770	143,483
Depreciation of property, plant and equipment	66,574	56,141
Other overheads	57,230	57,324
Maintenance	57,060	52,152
Legal expenses	49,098	12,447
Amortization of intangibles	38,517	54,235
Other miscellaneous provisions	36,143	8,117
Provision for contingencies	35,264	57,092
Social assets	33,471	86,869
Intangibles	24,638	24,062

Publicity and propaganda	18,410	21,445
Promotion and dissemination	16,550	16,035
Surveillance and security	15,246	13,777
Studies and projects	13,184	11,874
Public services	12,882	10,832
Lease	11,731	10,926
General Insurance	11,615	10,765
Toilet, cafeteria, restaurant and laundry services	9,459	8,372
Communications and transportation	8,844	6,876
Licenses and safe-conducts	6,216	5,842
Provision for onerous contracts	5,329	21,185
Materials and supplies	5,249	5,230
Loss for construction contracts	230	822
Others	30,141	27,862
<b>Total overheads</b>	<b>984,384</b>	<b>963,943</b>
<b>Total</b>	<b>1,478,556</b>	<b>1,439,450</b>

- Figures expressed in millions of Colombian pesos -

- <sup>1)</sup> It includes the tax on wealth settled in EPM and the national subsidiaries, based on equity held at January 1, 2015 at a rate of 1.15%. The declaration of said tax was filed in May 2015/2016 and its payment was made in two equal installments in May and September of the same year, its value amounted to \$ 95,617,84,315. It also includes the valorization contribution paid by EPM for the rectification and paving of the El Limón-Anorí road, in accordance with Resolution 2016060005142 of the Government of Antioquia for \$ 78,696
- <sup>(2)</sup> Includes the expense corresponding to 10% of the net proceeds from the sale made by EPM of ISAGEN S.A. shares. E.S.P. According to Law 226 of 1995 for \$ 46,040 detailed in note 13 Other financial assets.

#### Leases as lessee

The most significant operating leasing agreements are the leasing of premises for the customer service offices, information technology leasing (PCs, portable computers, printers, accessories, servers, videoconference equipment, fax, network equipment), implied leasing of machinery in the operation of waste disposal and the leasing vehicles required in the operational activities of the companies. The leasing agreements contemplate the renewal option by mutual agreement between the parties and do not contemplate the purchase option. In general, the rent payments of agreements are updated by the Producer Price Index -PPI- or the Consumer Price Index -CPI- as the case may be; there are some agreements for which the price update is made by negotiation between the parties.

As of the date of the cut, the future non-cancellable minimum future operating lease payments are as follows:

Leases	2016	2015
	Non-cancellable operating leases	Non-cancellable operating leases
At one year	28,004	24,741
At more than one year	65,208	37,302
Up to five year	44,841	70,163
<b>Total arrendamientos</b>	<b>138,053</b>	<b>132,206</b>

- Figures expressed in millions of Colombian pesos -

Total non-cancelable future sub-lease payments of assets acquired under operating leases was \$ 11 (2105: \$ 116). Contingent operating lease expense recognized in income for the period amounted to \$ 18 (2015: \$ 15).

Operating lease payments recognized as expenses for the period are \$ 15,539 (2015: \$ 43,084).

The Group, as a lessee, does not have contracts that take the legal form of a lease but which in essence do not constitute it.

### Note 33. Other expenses

The detail of other expenses is as follows:

Other expenses	2016	2015
Loss on asset retirement	32,118	21,015
Loss on changes in the fair value of investment property (See Note 5)	29,206	28
Contributions in non-corporate entities	19,901	28,493
Arbitral awards and extrajudicial conciliation	17,192	7,507
Other ordinary expenses	10,179	20,497
Loss on sale of assets	6,356	3,729
Donations	532	430
Other provisions for tax liabilities	341	155
Judgments	43	-
Assets and liabilities transferred by companies to publicly-traded entities	-	703
<b>Total</b>	<b>115,868</b>	<b>82,557</b>

- Figures expressed in millions of Colombian pesos -

## Note 34. Financial income and expenses

### 34.1 Financial income

The detail of financial income is as follows:

Financial income	2016	2015
<b>Interest income:</b>		
Bank deposits	67,061	28,091
Interest income from financial assets at amortized cost	5,201	4,855
Interest income on financial assets at fair value through equity	-	-
Interest of debtors and arrears	168,073	87,178
Financial leasing	-	-
Monetary readjustment performance	16	19
Valuation benefit of financial instruments at fair value	19,243	81,938
Valuation of financial instruments at amortized cost	28,875	40,347
Usefulness in rights in trust	43,670	14,750
Investments at amortized cost	-	-
Profit on trading and sale of investments at amortized cost	-	-
Others	9,793	6,414
<b>Total financial income</b>	<b>341,932</b>	<b>263,592</b>

- Figures expressed in millions of Colombian pesos -

### 34.2 Financial expenses

The detail of financial expenses is as follows:

Financial expenses	2016	2015
<b>Interest expense:</b>		
Interest on obligations under financial leasing	33,596	32,430
Other interest expense	109,023	59,738
<b>Total interest</b>	<b>142,619</b>	<b>92,168</b>
Total interest expense on financial liabilities that are not measured at fair value through profit or loss	686,787	625,923
commissions	11,744	5,348
Other financial expenses	148,015	123,237
<b>Total financial expenses</b>	<b>989,165</b>	<b>846,676</b>

- Figures expressed in millions of Colombian pesos -



## Note 35. Exchange difference, net

The effect of transactions in foreign currency is the following:

Difference, net	2016	2015
<b>Income for difference in exchange</b>		
<u>Own Position</u>		
For goods and services and others	43,562	63,711
By liquidity	1,383	171,023
Accounts Receivable	65,949	1,278,252
Other adjustments for difference in exchange	40,066	61,198
<u>Financial Services</u>		
Gross income	581,686	167,425
<b>Total income for difference in exchange</b>	<b>732,646</b>	<b>1,741,609</b>
<b>Expenses for difference in exchange</b>		
<u>Own Position</u>		
For goods and services and others	(10,952)	(83,573)
By liquidity	(30,399)	(34,109)
Accounts Receivable	(163,587)	(507,424)
Other adjustments for difference in exchange	(29,689)	(87,205)
<u>Financial Services</u>		
Gross expenditure	(252,120)	(1,573,060)
<b>Total expense per difference in exchange</b>	<b>(486,747)</b>	<b>(2,285,371)</b>
<b>Difference, net</b>	<b>245,899</b>	<b>(543,762)</b>

- Figures expressed in millions of Colombian pesos -

The rates used for the conversion of foreign currency in the consolidated financial statements are:

Currency	Currency Type	Direct USD conversion at 31 December		Closing exchange rate as of December 31		Average exchange rate	
		2016	2015	2016	2015	2016	2015
United States Dollar	USD	-	-	3,000.71	3,149.47	3,009.86	3,244.20
Quetzal	GTQ	7.52	7.63	398.84	412.65	400.97	426.11
Mexican Peso	MXP	20.60	17.27	145.65	182.35	146.66	189.98
Chilean Peso	CLP	669.78	709.22	4.48	4.44	4.51	4.61

## Note 36. Effect by interest in equity investments

The effect by participation in equity investments is as follows:

Interest in equity investment	2016	2015
Dividends and shares (1)	35,107	93,264
Total effect for equity investments	(62)	-
<b>Total efecto por participación en inversiones patrimoniales</b>	<b>35,045</b>	<b>93,264</b>

- Figures expressed in millions of Colombian pesos -

1. Includes investment dividends classified as financial instruments (see note 13. Other financial assets) and associates in 2015 (see note 10. Investments in associates).

## Note 37. Income tax

### 37.1 Tax provisions

- Tax provisions applicable and in effect, establish the following:
- The nominal rate of income tax was 25% for the parent company and the subsidiaries of Colombia. The nominal income tax rate for CREE equity is 9% and a 6% surcharge for 2016 that applies to taxpayers whose annual CREE tax return yields a profit equal to or greater than \$ 800 million pesos. For Guatemalan subsidiaries, the tax is determined by the profit-making regime (by 2016 a rate of 25% on taxable income determined on the basis of net income) or by the optional simplified regime on income Profit activities (rate of 5% up to Q 30, 000 gross income and 7% for more than Q 30, .000 and 10% for capital gains); For the subsidiaries of El Salvador 30% for companies with taxable income greater than US \$ 150, 000 and 25% for those that do not exceed said cap; For the subsidiaries of Panama and Mexico a tax rate of 30% and for the subsidiaries of Chile a tax rate of 24%
- Domiciliary public utilities in Colombia are excluded from determining the income tax by the system or presumptive income calculated based on the net tax equity of the immediately preceding year; for the calculation of the Income Tax for Equality CREE they do not have that exclusion.
- During 2016 Law 1819/2015 was enacted in Colombia modifying the tax rates in effect, which generated a great impact on the determination of the deferred tax of the parent and its national affiliates.
- The Parent of the EPM Group uses the tax deduction called “Special deduction for investment in productive fixed assets”, equivalent to 40% of the investments made during the tax year. This benefit continues for the Parent Company as a result of the public stability agreement signed with the National Government in 2008.

### 37.2 Reconciliation of effective rate

The reconciliation between the applicable tax rate and the effective rate and the composition of the income tax expense for periods 2016 and 2015 is the following:

Income tax and complementary	2016	%	2015	%
<b>Result before taxes</b>	3,093,962		2,582,392	
<b>Theoretical tax</b>				
<b>Plus entries that increase the income</b>	997,681	32%	932,567	36%
Wealth / equity tax	84,312	3%	95,617	4%
Dividends effectively received from controlled entities	427,190	14%	548,068	21%
Non-deductible provisions	84,039	3%	124,670	5%
Other - Provisions and non-deductible expenses	402,140	13%	164,211	6%
<b>Less entries that decrease the income</b>	1,836,954	59%	1,975,044	76%
Deduction real productive fixed assets	725,851	23%	544,437	21%
Dividends not taxed	330,842	11%	425,143	16%
Excess of tax depreciation and amortization	429,516	14%	252,394	10%
Remainder of companies liquidation	-	0%	14,651	1%
Non taxed recoveries	80,520	3%	76,495	3%
Differences IFRS vs. GAAP	(32,764)	(1%)	557,536	22%
Payment against provisions	8,586	0%	50,034	2%
Others not taxed	223,109	7%	37,436	1%
Tax effects of foreign companies	71,294	2%	16,919	1%
<b>Net ordinary income of period</b>	<b>2,254,689</b>	<b>73%</b>	<b>1,539,915</b>	<b>60%</b>
Less exempt income	51,502	2%	25,444	1%
Less compensation for losses, excess of presumptive income	28,472	1%	24,836	1%
More special rents	-	0%	170	0%
Others	-	0%	(18,139)	(1%)
<b>Net taxable income</b>	<b>2,174,715</b>	<b>70%</b>	<b>1,471,666</b>	<b>57%</b>

Income tax rate (average)	27,08%		27,08%	
CREE tax rate	9%		9%	
CREE surtax rate	6%		5%	
Capital gains tax rate	10%		10%	
Income tax	418,429	14%	547,068	21%
CREE tax	167,370	5%	146,864	6%
CREE surtax	121,620	4%	81,415	3%
Casual Income Tax	2,587	0%	572	0%
Less tax discounts	67,523	(2%)	92,877	4%
Rent adjustment	32,576	1%	(106,043)	(4%)
<b>Current tax and CREE</b>	<b>675,059</b>	<b>22%</b>	<b>576,999</b>	<b>20%</b>
<b>Detail of current and deferred expense</b>				
Current tax, CREE and surtax	675,059	22%	576,999	20%
Deferred tax	(25,930)	(1%)	(123,180)	(5%)
<b>Income tax</b>	<b>649,129</b>	<b>21%</b>	<b>453,819</b>	<b>15%</b>

- Figures in millions of Colombian pesos -

### 37.3 Income tax recognized in profit or loss

The most significant components of the income tax expense as of the report date are:

Income tax	2016	2015
<b>Current income tax</b>		
Income (income) from current income tax	652,138	653,224
Adjustments recognized in the current period related to current income tax from previous periods	23,025	(75,138)
Tax benefits of tax losses, tax credits or temporary differences used in the period	(104)	(1,087)
<b>Total current income tax</b>	<b>675,059</b>	<b>529,354</b>
<b>Deferred tax</b>		
Deferred tax expense (income) related to the origin and reversal of temporary differences	122,224	(69,623)
Deferred tax expense (income) related to changes in tax rates or laws (1)	(108,850)	(3,843)
Tax benefits of tax losses, tax credits or temporary differences used in the period	(5,674)	679
Other - mergers business reorganization	(33,631)	(50,393)
<b>Total deferred tax</b>	<b>(25,931)</b>	<b>(123,180)</b>
<b>Income tax</b>	<b>649,128</b>	<b>406,174</b>

- Figures expressed in millions of Colombian pesos -

- (1) The expense (income) for deferred tax related to the changes in the tax rates was originated by the Amendment that incorporated Law 1819 of December 29, 2016, rates applicable from January 2017. The rates used to determine the deferred tax are:

40% for 2017 (34% rent and 6% surcharge), which varied from the previous year's 42%, for the short-term items that are reversed during 2017. For generation, a 39% rate is used. The legal stability contract.

37% for 2018 (33% rent and 4% surcharge), which varied from the previous year's 43%, for the long-term items that revert during 2018.

33% for 2019, which varied from 34% in the previous year, this for the long-term items that revert during 2019 and following.

For property, plant and equipment, the current rate was used considering the year in which the difference is expected to be reversed, based on the remaining useful life of each asset.

For the case of assets whose profit is expected to be realized for an occasional gain, a rate of 10% is used.

27% for the temporary differences generated in the Chilean subsidiaries, 30% for the Panama subsidiaries and 25% for the other subsidiaries in Central America.

The rates used to determine the deferred tax are:

Year	2016	2017	2018	2019	2020
Rent	25%	34%	33%	33%	33%
CREATE	9%	-	-	-	-
About rate	6%	6%	4%	-	-
<b>Total rate</b>	<b>40%</b>	<b>40%</b>	<b>37%</b>	<b>33%</b>	<b>33%</b>

The Energy Generation segment of EPM has a 33% complementary and income tax rate, stabilized for 20 years under the legal stability contract EJ-04 of March 31, 2008, modified by ANY OTHER EJ -01 June 4, 2010.

#### 37.4 Temporary differences that do not affect the deferred tax

Deductible temporary differences and tax losses and credits not used, for which the Group has not recognized assets for deferred taxes, are detailed below:

Item	2016	2015
At more than one year and up to five years	-	21,078
More than five years	-	97,079
Without limit of time	4,820	46,179
Tax losses not used	4,820	164,336
At more than one year and up to five years	-	41,379
Tax credits not used	-	41,379
<b>Total</b>	<b>4,820</b>	<b>205,715</b>

- Figures in millions of Colombian pesos -

The temporary differences deductible and the losses and tax credits not used, correspond to tax losses not used by Aguas de Urabá S.A. E.S.P. for \$ 0 (2015 \$1,806), Aguas de Malambo S.A. E.S.P. for \$4,820 million (2015 \$3,414), EPM Capital México S.A. DE C.V. for \$0 (2015 \$31,415), Ecosistemas de Colima S.A. DE C.V. for \$0 (2015 \$17,538), Ecosistemas de Uruapan S.A. DE C.V. for \$0 (2015 \$1,137), Ecosistemas de Celaya S.A. DE C.V. for \$0 (2015 \$628), Desarrollos Hidráulicos de TAM S.A. DE C.V. for \$0 (2015 \$67,439), Empresas Varias de Medellín E.S.P. for \$0 (2014 \$40,959) and tax credit not used by Empresas Públicas de Medellín E.S.P. for \$0 (2015 \$41,379).

The value of the asset or liability of current income tax is the following.

	2016	2015
<b>Activo o pasivo por impuesto sobre la renta corriente</b>		
<b>Total pasivo impuesto sobre la renta</b>	<b>(132,305)</b>	<b>(213,359)</b>
Impuesto sobre la renta	(80,054)	(208,618)
Impuesto CREE y sobretasa	(52,251)	(4,741)
<b>Total activo impuesto sobre la renta</b>	<b>139,582</b>	<b>290,255</b>
Saldos a favor por renta	139,582	290,255
<b>Total activo (o pasivo) impuesto sobre la renta</b>	<b>7,277</b>	<b>76,896</b>

- Cifras en millones de pesos colombianos -

### 37.5 Income tax recognized in other comprehensive income

The detail of the tax effect corresponding to each component of “other comprehensive income” of the Consolidated Statement of comprehensive income is the following:

Other comprehensive income of the statement of comprehensive income	2016			2015		
	Gross	Tax effect	Net	Gross	Tax effect	Net
<b>Items that will not be reclassified after the period result</b>	758,655	688,049	1,446,705	-	-	-
Non-current assets held for sale or for distribution to owners	9,700	(956)	8,744	-	-	-
Reclassification of properties, plant and equipment to investment properties	(36,473)	17,771	(18,702)	3,731	(402)	3,329
New measurements of defined benefit plans	619,039	(136,639)	482,400	21,304	(15,489)	5,815
Equity investments measured at fair value through equity	22,731	(1,605)	21,127	5,227	(92,925)	(87,698)
Credit risk of liabilities measured at fair value	23	(16)	7	-	-	-
Participation in other comprehensive income of associates and joint ventures	(25,899)	8,217	(17,682)	-	-	-
<b>Items that may be reclassified after the period result</b>	<b>(17,682)</b>	<b>(17,682)</b>	<b>(17,682)</b>	<b>-</b>	<b>-</b>	<b>-</b>
Cash flow hedges	(18,466)	10,258	(8,208)	(7,790)	18,785	10,995
Conversion of business financial statements abroad	2	-	2	509,353	-	509,353
<b>Total</b>	<b>1,311,630</b>	<b>567,398</b>	<b>1,896,710</b>	<b>531,825</b>	<b>(90,031)</b>	<b>441,794</b>

- Figures expressed in millions of Colombian pesos -

### 37.6 Deferred tax

The detail of the deferred tax is:

Deferred tax	2016	2015
Deferred tax assets	188,293	170,421
Deferred tax liabilities	(2,488,658)	(2,675,635)
<b>Net deferred tax</b>	<b>(2,300,365)</b>	<b>(2,505,214)</b>

- Figures expressed in millions of Colombian pesos -

#### a) Deferred tax assets



Deferred tax asset	Initial balance	Differences in Conversion	Net changes included in profit and loss	Changes included in OCI	Recognized directly to equity	Final balance
<b>Current assets</b>						
Cash and cash equivalents		1,084	(358)			726
Accounts receivable	30,610	(31,554)	11,123		6,292	16,471
Intangibles	206	7	(71)			142
Other assets	(8)	10,231	(5,143)			5,080
<b>Non-current assets</b>						
Investments in subsidiaries	9,365	(1,884)	5,648			13,129
Investments in associates		(4)		(1)		(5)
Properties, plant and equipment	(30,524)	26,513	11,035			7,024
Intangibles	5,066	12,012	(9,906)			7,172
Accounts receivable	231	(5,577)	6,257			911
Financial instruments	(2,284)	6,593	(3,588)			721
<b>Current liabilities</b>						
Credits and loans	1,860	9,214	(7,738)			3,336
Employee benefits	2,258	(1,373)	(12)	(26)		847
Provisions	5,654	658	1,446			7,758
Other liabilities	7,486	(7,158)	10,577			10,905
<b>Non-current liabilities</b>						
Credits and loans	36,151	(37,808)	(621)			(2,278)
Employee benefits	11,607	(5,687)	(482)	(438)		5,000
Provisions	7,272	(932)	2,919			9,259
Other liabilities	(4,715)	6,050	267			1,602
Tax losses and credits not used	90,186	6,948	3,359			100,493
Deferred tax asset	170,421	(12,667)	24,712	(465)	6,292	188,293

- Figures in millions of Colombian pesos

## b) Deferred tax liabilities

Deferred tax asset	Initial balance	Differences in Conversion	Provisions	Net changes included in profit and loss	Changes included in OCI <sup>3</sup>	Recognized directly to equity	Reclassified from equity to profit & loss	Final balance
<b>Current assets</b>								
Cash and cash equivalents	(4,710)	4,710		(3)				(3)
Accounts receivable	(90,230)	(12,918)		140,867		24,901		62,620
Intangibles	4,520	(4,645)		530				405
Other – loans between related parties	(25,809)	12,320		19,612				6,123
Other assets	-	(4,763)		4,710				(53)
<b>Non-current assets</b>								
Investments in subsidiaries	(38,051)	38,051						
Investments in associates	(4,344)	5,135			(1)			790
Investments in joint ventures	(2,792)	2,792						
Properties, plant and equipment	(2,761,141)	52,262	61	(39,180)	(956)			(2,748,954)
Intangibles	(58,563)	3,882		28,266				(26,415)
Accounts receivable	92,306	45,106		(163,301)		19,602		(6,287)
Financial instruments	146,545	(47,054)	93,194	(14,417)	(89,705)			88,563
<b>Current liabilities</b>								
Credits and loans	244,770	(68,154)		82,573				259,189
Derivatives	(3,828)	1		38,176				34,349
Employee benefits	105,907	(101,666)		(22,183)				(17,942)
Provisions	10,093	29,957		40,950				81,005
Other liabilities	(77,993)	11,707	6	51,058				(15,222)
<b>Non-current liabilities</b>								
Credits and loans	(72,332)	10,638		(66,662)	(318)			(128,674)
Derivatives	6,651			(41,001)	11,345		248	(22,757)
Employee benefits	133,494	(4,270)		2,689	32,701			164,616
Provisions	(35,231)	53,713		(65,351)	(2,322)			(49,191)
Other liabilities	(281,971)	90,590		6,938				(184,443)
Tax losses and credits not used	37,067	∴ (20,391)		(3,053)				13,623
Deferred tax liability	(2,675,635)	97,003	93,261	1,218	(49,256)	44,503	248	(2,488,658)
Total deferred tax asset/liability	(2,505,214)	84,336	93,261	25,930	(49,721)	50,795	248	(2,300,365)

Figures in millions of Colombian pesos

- (1) It represents the effect on the income tax of the accumulated value of profits or losses by the valuation at fair value less the values transferred to accumulated profits when these investments have been sold. The changes in the fair value do not reclassify to the results of the period. It includes the portion that corresponds to it for the application of equity method to the investments in associates and joint business., the effects of the disposal of the shares of ISAGEN although generate tax effects in the OCI, did not generate effect on the deferred tax.

It incorporates the accumulated value of the income tax related to actuarial profits or losses, the returns of the assets of the plan and the changes in the effect of the asset ceiling, excluding the values included in the net interest over the liability (asset) of net defined benefits. The net value of new measurements is transferred to the accumulated profits and does not reclassify to profit or loss. It includes the portion that corresponds to the Group in its investments in associates and joint business.

It includes the income tax associated to the accumulated value of the effective portion of the profits or losses that arise from the changes in the fair value of entries covered in a cash flow hedging. The accumulated value of profits or losses will reclassify to profit or loss of the period only when the transaction covered affects the profit and loss of the period or the highly probable transactions is not anticipated that it will occur, or is included as part of its carrying value, in a non financial entry covered. It includes the portion that corresponds to the Group in its investments in associates and joint business.

It contains the income tax that is generated by the change attributable in the fair value less the values transferred or the accumulated profits when these assets are liquidated, derecognized or transferred to another classification of properties, plant and equipment. The changes in the fair value do not reclassify to profit or loss of the period.

- (2) Includes the change in the investments of Mexico, Ecosistema de Morelos S.A. de C.V. and Aquasol Pachuca S.A. de C.V. that at December 31, 2016 are not consolidated because they are no longer classified as subsidiaries but as financial instruments, since the EPM Group at that date lost the control on those entities. In addition, the effects by the liquidation of Empresas Publicas de Occidente and the merger of Aguas de Uraba and Regional de Occidente are included.

### 37.7 Temporary differences

Temporary differences associated with investments in subsidiaries, associates and joint ventures, for which no deferred tax liabilities have been recognized, amount to \$ 511,827 (2015 \$ 223,908).

The most significant items on which temporary differences result are the following:

In current assets, the largest deferred tax impact is presented in the accounts receivable in relation to the portfolio provisions due to the difference in the purging of the portfolio provision under the tax standard and the impairment of receivables under IFRS. It is important to emphasize that in 2016 an adjustment was made to the impairment of receivables IFRS using the expected credit loss approach, the calculation with this methodology accumulated at January 1, 2016 was recognized affecting the account of retained profits, in the same manner was recognized the deferred tax associated to this entry. Also, Temporary differences are presented by the effect of the amortized cost valuation of short-term loans between economic associates.

In non-current assets, the greater impacts on deferred tax arise due to temporary differences in plant and equipment ownership, as a result of asset purchase transactions between EPM Group companies, which involves the generation of unrealized profits and the valuation at cost Amortized from long-term receivables.

As refers current liabilities, the items that impact the calculation of the deferred tax are For the most part, the liquidation of the provision corresponding to quotas, pension bonds, actuarial calculation in pensions and the pension commutation of EADE and lower amortization of actuarial calculation in pensions of Emvarias and, Credits and loans for the amortized cost valuation of bonds, securities issued, loans and short-term loans.

In other non-current liabilities, the most significant amounts in the deferred tax were generated by temporary differences in the amortized cost valuation of loans and long-term loans. Likewise, temporary differences of liabilities for employee benefits of the long-term such as retirement pensions, shares, pension bonds and actuarial calculation of retroactive layoffs and interest on layoffs.

In the entries that do not have future tax consequences, such as the case of liabilities for taxes and financial returns generated in the assets of the plan, EPM, CHEC and Emvarias, since they are exempt income, no deferred tax was generated.

Temporary differences on which no deferred tax was generated were, inter alia, investments in subsidiaries, associates and joint ventures, in accordance with paragraph 39 of IAS 12; As well as in items that do not have future tax consequences, such as tax liabilities and financial income generated in the plan assets, since these are EPM, CHEC and Embryos because they correspond to exempt income. New regulations

#### Tax reform Colombia

During 2016, the National Government presented to the Congress of the Republic a tax reform project, whose purpose according to the explanatory memorandum is to establish a more equitable, efficient and simple tax system.

The initiative is based on the report presented by the commission of experts that was created to study the Colombian tax system and propose improvements to its structure, in addition to the economic pressures resulting from the decline in oil revenues, a panorama of uncertainty given by the Increased volatility in financial markets and slowing the Chinese economy, which negatively impacted the nation's current income.

Under this scenario and after exhausting the stages that for the creation of the Law demand the Colombian norms, on December 29, 2016, Law 1819 of 2016 was sanctioned "By means of which a structural tax reform is adopted, they are strengthened Mechanisms for combating tax evasion and tax avoidance, and other provisions. "

Thus, among the main modifications, we can mention:

#### **- General rate of income tax and complementary**

Income tax and income tax for equity - CREE - are unified as follows:

2017: 34% and surcharge 6%

2018: 33% and surcharge 4%

2019 and following: 33%, a surtax disappears.

The surcharge is subject to the advance mechanism and applies for the portion of taxable base that exceeds eight hundred million pesos.

#### **Presumptive income**

The presumptive rent in 2016 was 3% and for 2017 and following, it will be 3.5%.

Exoneration is maintained in the determination of presumptive income for public utility companies.

#### **Sales tax**

In 2016 the VAT rate was 16% and from 2017 the general VAT rate will be 19%.

In contracts signed with Public Entities, the current rate is maintained at the date of award, for contracts signed before January 1, 2017, the rate increases once they are added.

It incorporates the right to take as a deduction the VAT paid on the acquisition or importation of capital goods.

Express references are made to the International Financial Reporting Standards for the determination of tax bases. The general firmness of tax declarations increases from two (2) to three (3) years. For taxpayers subject to the transfer pricing regime it will be six (6) years. The same term will apply when offsetting tax losses.

Article 130 is derogated, whereby the appropriation of profits for reserve purposes is avoided.

New rules are established on the subject of depreciation related to the annual deduction rate.

The tax on carbon is created, which consequence will be evidenced in the prices of the goods acquired by the company affected by this tax.

Rules are defined for the withholding on dividends.

- A limit of twelve (12) years is established for the offset of tax losses.
- Adoption of international mechanism against erosion of tax base and the transfer of benefits, incorporation of the Regime of Controlled Companies from Abroad (ECE), limitation to payments for royalties with related parties located abroad and free trade zones, implementation of the legal form of non cooperating jurisdictions, of low or no taxation and preferential tax regimes, modifications to the transfer pricing regime and rules on effective beneficiary.
- Rules are defined related to the territoriality, tax base and sole national form for the fulfillment of obligations on the subject of industry and commerce tax.

### **Tax Reform Chile:**

Law 20,780 on tax reform contemplates a gradual implementation, with full effectiveness on January 1, 2017.

- Progressive increase of First Category Tax, from the current 20% to 25% or 27%, according to the tax regime adopted by the company:
- Allocation regime with a rate of 25% on the income obtained in each tax year, immediately attributed to the shareholders ("Regime A").
- Partial integration regime with a rate of 27% on the income obtained ("Regime B"): in "). In this, it will be allowed to defer the payment of the final taxes that affect the shareholders until the effective withdrawal or distribution of the profits of the company. Only 65% of taxes paid by the company can be used as credit, unless the shareholder is domiciled in a country with an agreement.
- Additional Dividend Tax: The rules regarding withholding obligations are modified.
- Regime A, the withholding of the Additional Tax will only be made for withdrawals or distributions and remittances that are imputed to the "D" fund (profits that have not paid final taxes).
- Regime B, the retention will be made for distributions or remittances corresponding to rents affected to Additional Tax.
- Capital Gain: Elimination of the Single Tax.
- Currently, the capital gain obtained on the sale of shares in Chilean companies can benefit from a single tax of 20%.

The Tax Reform eliminates this reduced rate and taxes the capital gain with final taxes beginning in 2017. For such effects, the option of taxing is granted based on income earned or accrued. In the case of non-residents, the Additional Tax of 35% would apply.

## Note 38. Information to be disclosed on related parties

EPM, the parent company of the EPM Group, is an industrial and commercial enterprise of the State, decentralized of the municipal order, whose only owner is the Municipality of Medellín. Its capital is not divided into shares.

As related parties of the EPM Group are considered the subsidiaries, associates, joint ventures, including the subsidiaries of the associates and joint ventures, key management personnel, as well as the entities on which the key management personnel may exercise control or joint control and the post-employment benefit plans for benefit of the employees.

Balances and transactions between related parties of the EPM Group have been eliminated in the process of consolidation and are not disclosed in this note. Following is presented the total value of the transactions carried out by the Group with its associates and other related parties during the corresponding period:

Transactions and balances with related parties	Revenue <sup>(1)</sup>	Costs / Expenses <sup>(2)</sup>	Amounts receivable <sup>(3)</sup>	Amounts payable <sup>(4)</sup>	Guarantees and guarantees received <sup>(5)</sup>
<b>Associates:</b>	-	-	-	-	-
2016	160,422	380,936	47,851	71,439	-
2015	323,072	129,063	259,257	478,945	-
<b>Key management personnel of the company or its parent company:</b>					
2016		16,010	958	675	410
2015	-	12,865	344	2,062	475
<b>Other Related Parties:</b>					
2016	110,653	252,122	264,885	408,671	-
2015	534,728	962,920	503,991	664,817	-

- Figures expressed in millions of Colombian pesos -

- (1) The income generated from transactions with associates corresponds to the sale of services related to information technologies and communications, information services and complementary activities related and/or associated thereto. The income generated with other related parties corresponds mainly to the sale of energy, rendering of public and financial services.
- (2) Corresponds to costs and expenses originated in transactions with purchase of energy, acquisition of goods and services, included the services related to the communications and complementary activities, with associates and other related parties.
- (3) The Group maintains accounts receivables with its related parties derived from the sale of energy, rendering of public services, sales of services associated to information technologies and communications, information services among others. The EPM Group makes the rating of its receivables under criteria that permit to prioritize the management of their recovery through its own divisions or collection agencies. The collection applies according to the billing cycle in respect to domiciliary public utilities.
- (4) The payment policy, in most cases, is of 30 days following the filing of the invoice.
- (5) The guarantees and endorsements correspond to mortgage guarantees on housing loans granted to key management personnel.

The transactions between the EPM Group and its related parties were made in conditions equivalent to those that exist in transactions between independent parties, as refers to their object and conditions.

### Transactions and balances with related government entities

The total of financial surpluses paid to the Municipality of Medellín to December 2016 was \$ 816,521 (2015 \$ 991,139).

### Remuneration to the Board of Directors and key personnel of the Group:

The remuneration of the members of the Board of Directors and of the key personnel of the management of the Group is the following:

Concept	2016	2015
Salaries and other short-term benefits to employees	22,132	25,847
Other long-term employee benefits	334	1,158
Pensions and other post-employment benefits	1,623	596
Contract termination benefits	137	68
<b>Remuneration to key management personnel</b>	<b>24,226</b>	<b>27,669</b>

- Figures expressed in millions of Colombian pesos -

The amounts disclosed are those recognized as cost or expense during the period report for compensation of key personnel of EPM Group.

## Note 39. Capital management

The capital of the EPM Group includes indebtedness through the capital market, commercial bank, development banks, central bank and multilateral bank, at a national and international level.

EPM Group manages its capital in order to plan, manage and assess the obtaining of financial resources in the national and international financial markets, for strategic investments, investment projects, through the different options that optimize the cost, that guarantee the maintenance of adequate financial indicators and adequate credit rating and minimize the financial risk. For the above, the following capital management policies and processes have been defined.

**Financial management:** Financial management corresponds to the performance of all long term credit operations, in order to guarantee the timely availability of the resources required for the normal operation of the company and to materialize the investment and growth decisions, optimizing the financing costs.

The Group has not made any changes to its objectives, policies and capital management processes during the period ended December 31, 2016 and 2015.

In order to face the changes in the economic conditions, the Group implements proactive management mechanisms for their financing, enabling up to where it is viable different financing alternatives, in such a way that at the time that the performance of any long term credit operation is required, there will be access to the source that has availability at each time of competitive market conditions and as timely as necessary.

Following we present the values that the EPM Group manages as capital:



	2016	2015
Bonds and loans	14,848,009	14,638,872
<b>Total debt</b>	<b>14,848,009</b>	<b>14,638,872</b>
<b>Total capital</b>	<b>14,848,009</b>	<b>14,638,872</b>

- Figures expressed in millions of Colombian pesos -

## Note 40. Financial risk management objectives and policies

The Group is exposed to the financial risk, which is defined as the possibility of occurrence of an event that affects negatively the financial results, among which is the market risk, liquidity risk, credit risk and operating risk.

The market risk refers to the changes or volatility of market variables that can generate economic losses. The market variables refer to exchange rates, interest rates, securities, commodities, among others; and their changes may impact, for example, the financial statements, cash flow, financial indicators, contracts, project viability and investments.

The credit risk refers to the possible default of payment obligations by third parties derived from contracts or financial transactions performed.

The liquidity risk is the scarcity of funds and inability to obtain the resources at the time they are required to cover the contractual obligation and carry out investment strategies. The scarcity of funds leads to the need to sell assets or contract financing operations in unfavorable market conditions.

Finally, the operating risk, from a financial standpoint, is defined as deficiencies or failures in the processes, technology, infrastructure, human resources or occurrence of unforeseen external events.

The objective of the Integral Risk Management Office is to lead the definition and implementation of the strategy for an integral risk management, in order to achieve an adequate protection and assurance of the goods, resources and interest of the EPM Group.

The Group has as policy to carry out the management of the risks that have an incidence on its activity and environment, by adopting the best practices and international standards of Integral Risk Management (IRM), as a way to facilitate the achievement of the purpose, strategy, objective and business goals, both of statutory and legal origin. It has an information system that facilitates the integral management of risks, guarantees confidentiality, availability and reliability of information and permits to make analysis and monitoring of risks and improvement plans. It has implemented an internal risk management system and has in place a methodology for the identification, analysis, evaluation, control and monitoring of risks, among which are those associated to money laundering and financing of terrorism, that permits to reduce vulnerability, and propose and implement efficient mechanism for the proper performance of business, processes, projects and contracts. As valuation criteria the Group has valuation tables of the consequences of the materialization of risks and of the probability tables, which are applicable in the different management levels defined in the methodological guide for integral risk management.

The integral risk management monitoring and review activity is aligned with the process of follow up of the management established in the Group, in order to propose and implement improvement actions. The monitoring and review scheme established assesses, among others, the following aspects:

- The implementation strategy of the integral risk management.
- The changes in the internal and external context that imply making adjustments in the treatment of risks identified or those that generate new risks.
- The variation of the risks in terms of frequency, probability and consequence.

- The valuation criteria of probability and consequence of risks.
- The establishment and efficacy of treatment plans.

The Group manages the financial risks associated to the different management levels, for which it identifies the risks within market, liquidity and credit congregators that are classified in the category of financial risks and quantifies their impact and implements strategy for their mitigation.

#### 40.1. Market risk

It is the risk that the fair value of the future cash flows of a financial instrument may fluctuate due to changes in market prices. The Group has identified that financial instruments affected by market risk include:

- Cash and cash equivalents
- Investments at fair value through profit or loss.
- Investments measured at fair value through equity.

The sensitivity analyzes included in the following sections correspond to the financial situation as of December 31, 2016:

- Cash and cash equivalents
- Investments at fair value through profit or loss.

The methodology used for the measurement of market risk is the Value at Risk, consisting of the quantification of the maximum loss that the portfolio could present in a month with a confidence level of 95%. For the quantification of the VaR, the methodology defined by the Financial Superintendency is used in the Basic Financial Accounting Circular (CE100 of 1995)

#### 40.2. Interest Rate Risk

It is the risk that the fair value or future cash flows of a financial instrument may fluctuate as a result of changes in market interest rates. The Group has identified that financial instruments affected by interest rate risk include:

- Cash and cash equivalents
- Investments at fair value through profit or loss.
- Financial liabilities measured at amortized cost. Credits and loans
- Financial liabilities measured at fair value with changes in other comprehensive income- derivative instruments.

The concentration of interest rate risk appears when there are large individual exposures and when there are significant exposures to counterparties whose probability of default is determined by factors such as the economic sector, currency and credit ratings. Interest rate risk management seeks to preserve capital and maintain or increase profitability. The EPM Group has defined policies on risk in interest rates, through the identification of risks, the determination of the position of rates and the simulation of possible hedging strategies. This supports the decision making, which are oriented to maintain the position or cover it, and subsequently an analysis of the results of the strategies executed is performed.

#### Analysis of sensitivity to interest rates

The following table indicates the sensitivity to a possible reasonable change in the interest rates on accounts payable and loans, without considering the effect of hedge accounting. Keeping all other variables constant, the pre-tax profit / loss and EPM Group's equity would be affected by changes in variable interest rates as follows:

	Increase / decrease in basic points	Financial effect	
		In profit before tax	In the Equity
<b>2016</b>			
<b>Financial assets measured at fair value through profit or loss</b>			
Investments at fair value through profit or loss	100	37,421	29,937
	(100)	(33,904)	(27,123)
<b>Financial liabilities measured at amortized cost</b>			
Credits and loans	100	(104,981)	(83,984)
	(100)	104,981	83,984
<b>Financial liabilities measured at fair value with changes in other comprehensive income</b>			
Credits and loans	100	-	104,821
	(100)	-	43,772
<b>2015</b>			
<b>Financial assets measured at fair value through profit or loss</b>			
Investments at fair value through profit or loss	1	(120)	(96)
	(1)	119	95
<b>Financial liabilities measured at amortized cost</b>			
Credits and loans	100	(82,449)	(65,960)
	(100)	82,449	65,960

- Figures expressed in millions of Colombian pesos -

The EPM Group considers that the sensibility analysis is representative in respect to the exposure of the interest rate risk.

#### 40.3. Exchange rate risk

The exchange rate risk is the risk that the fair value or the future cash flows of a financial instrument may fluctuate as consequence of the exchange rate variations.

The Group has identified that financial instruments affected by the exchange rate risk include:

- Cash and cash equivalents
- Investments at fair value through profit and loss
  - Financial liabilities: measured at amortized cost-credits and loans
  - Financial liabilities measured at fair value with changes in other comprehensive income-derivative instruments.

The exchange risk exposure refers, first, to the financing activities in a currency different from the functional currency and with the hedging operations contracted.

The Group manages its exchange rate risks through hedging operations in a medium term horizon. It is the Group's policy not to close speculative hedging operations, and thus the conditions of the derivative hedging instrument reply the underlying conditions in order to maximize the efficacy of the hedging.

The Group covers its exposure to fluctuations in the exchange rate using different hedging instruments among which are worth mentioning swaps, forwards and options at different terms.

#### Sensitivity analysis to exchange rates

The following table indicates the sensibility in respect to a possible reasonable change in exchange rates of \$100 pesos in the currency against the United States dollar not considering the effect of the hedging accounting. The impact originates by the change in monetary and non-monetary assets. Maintaining the rest variables constant the profit/loss before taxes and equity of the Group would be affected by changes in the exchange rates as follows:

	Increase / decrease in basic points	Financial effect	
		In profit before tax	In the Equity
<b>2016</b>			
<b>Financial assets measured at fair value through profit or loss</b>	100	16,650	13,320
	(100)	(17,420)	(13,936)
<b>Financial liabilities measured at amortized cost</b>			
Credits and loans	100	(261,459)	(209,167)
	(100)	261,459	209,167
<b>Financial liabilities measured at fair value with changes in other comprehensive income</b>			
Derivatives	100	191,085	152,868
	(100)	9,633	7,707
<b>2015</b>			
<b>Financial assets measured at fair value through</b>	100	2,724	2,179
	(100)	(2,724)	(2,179)
<b>Financial liabilities measured at amortized cost</b>			
Credits and loans	100	(32,821,687)	(26,257,350)
	(100)	32,818,934	26,255,947

- Figures expressed in millions of Colombian pesos -

The Group considers that the sensibility analysis is representative in respect to the exposure of the exchange rate risk.

#### 40.4. Credit risk

The credit risk is the risk that one of the counterparts does not comply with the obligations derived from a financial instrument or purchase contract and that this will translate in a financial loss. The Group has identified that the financial instruments affected by the credit risk include:

- Cash and cash equivalents
- Other financial assets
- Accounts Receivable
- Other accounts receivable

Credit risk management by type of financial instrument is detailed below, is considered representative in respect to the credit risk exposure:

##### Cash and cash equivalents and investments at fair value through profit and loss

For credit risk management, the Group assigns limits by issuer, by counterpart and by intermediary taking into account the financial, risk and fundamental analysis of the entities, emphasizing on equity support of shareholders. The methodology considers the characteristics proper of the investments portfolio and the regulations applicable. The credit risk concentration is limited since it is due to the provisions of the business rules manual for treasury operations. The description of the factors that define the risk concentration is detailed below:

- The limits are updated quarterly based on the latest financial statements available of the entities analyzed.
- When the value of the consolidated investment portfolio exceeds the equivalent of 10,000 minimum monthly legal salaries in effect (MMLSE), no more than 20% of this value should not be concentrated in a single issuer, counterpart or intermediary with the exception of securities issued by governments that comply with the regulations in effect.

- Stock market intermediaries, other than the monitored banking institutions, may act as counterparts to perform operations, but cannot be considered as admissible issuers.
- Stock broker companies that act as counterpart of the treasury operations must have at least the second risk rating in strength or quality in the portfolio administration.
- Stock broker companies supported by banks, that is, bancarized counterparts, must have a minimum equity of 30,000 MMLSE.

Finally, the actions to avoid risk concentration are intended to establish, analyze, follow up and control the limits, for which they control the limits in effects and the status of utilization thereof. On the other hand, the justifications related to the need to override the limits temporarily are submitted to approval.

**Accounts receivable measured at amortized cost and other accounts receivable:**

The Group is exposed to the risk that customers/users of public utilities and others incur in default in the payment of the utilities.

Accounts receivable from public utility debtors are classified in two large groups: those originated by default in the payment and the other group corresponds to financing or payment agreements with customers that are made as strategy for recovery of receivables or for obtaining new customers.

The Group assesses at the end of each balance sheet period the performance and value of accounts receivable to determine if there is any objective evidence that the receivables are impaired and identify the possible impact on future cash flows.

The criteria used to determine if there is objective evidence of a loss for impairment are:

- Failure of customers to pay.
- It is known or evidenced that the client enters into business restructuring processes or in insolvency or liquidation.
- There are social alterations, of public order, natural disasters, or there are sociodemographic characteristics that according to the experience are directly correlated with the non payment of the collection accounts.

In order to avoid an excessive concentration of risk of non-payment, the EPM Group has developed and put into operation various strategies that allow it to mitigate such risk, among which are:

- Persuasive collection by making telephone calls and sending letters to customers with the support of specialized collection agencies.
- Segmentation of clients that allow identifying those of greater risk, by their value, to perform with them personalized collection activities.
- Possibility of making payment agreements or partial payments that lead to the recovery of the exposed capital.
- Compensation of accounts receivable against accounts payable by the EPM Group with suppliers.
- When the previous strategies do not generate satisfactory results, we proceed with actions of coercive collection by suspending and cutting the service.
- If the previous strategies do not give satisfactory results, the collection of the portfolio is proceeded through the judicial process.
- It is also intended to expand the portfolio of products to customers in such a way as to facilitate payment of debt, eg energy and pre-paid water.

As mentioned, the EPM Group makes payment or financing agreements, which are carried out as a portfolio recovery strategy or for linking new clients. These give rise to fixed or determinable payments and are included in current assets, except those with a maturity of more than 12 months from the date of generation of the balance sheet, in which case they are classified as non-current assets.

The Group considers that the value that best represents the exposure to credit risk at the end of the period, without considering any guarantee taken or other credit enhancements, is:

Concept	2016	2015
Deposits		
Cash and cash equivalents	1,194,499	1,338,626
Other financial assets	758,094	511,516
Accounts Receivable*	431,483	265,967
Other accounts receivable*	98,945	53,140
<b>Maximum exposure to credit risk</b>	<b>2,483,021</b>	<b>2,169,249</b>

- Figures expressed in millions of Colombian pesos -

\* Corresponds to the value of the receivables provision

#### 40.5. Liquidity risk

It refers to the possibility that there would be insufficiency of resources for the timely payment of operations and commitments of the entity, and that because of this the Group would be forced to obtain liquidity in the market or to liquidate investments in an onerous manner. It is also understood as the possibility of not finding buyers for the portfolio securities.

The Group has identified that the financial instruments affected by the liquidity risk include:

- Non derivative financial assets
- Debt financial assets with variable interest rate
- Debt financial instruments with fixed interest rate

In order to control the liquidity risk comparisons of figures are made of benchmark indicators and of liquidity levels at different time horizons. As of that analysis, investment strategies are performed that do not affect the liquidity of the Group taking into account the cash budget and the market risk analyses to consider the diversification of the sources of funds, the capacity to sell assets and the creation of contingency plans.

In general, the main aspects that are taken into account in the analysis are:

- a. **Liquidity of securities:** the characteristics of the issuer, amount of the issue and negotiation volume are analyzed.
- b. **Market liquidity:** the market's general behavior is analyzed and forecasts of rates are made in order to infer their future behavior.
- c. **Portfolio liquidity:** cash flows are coordinated in order to determine investment strategies in accordance with the future requirements of liquidity and diversification is sought to avoid the concentration of securities by issuer, rates and/or terms.

The following table shows the analysis of contractual expirations remaining for financial liabilities and assets not derivative:



	Average effective interest rate	Less than 1 year	From 1 to 2 years	From 2 to 3 years	From 3 to 4 years	More than 4 years	Total contractual obligation
<b>2016</b>							
Non-derivative financial assets	6.95%	586,383	12,000	4,000	4,000	10,000	616,383
Financial instruments of debt with variable interest rate	6.57%	648,489	642,132	1,772,787	2,254,792	3,193,987	8,512,187
Fixed interest rate debt financial instruments	7.62%	127,366	179,610	1,696,665	184,625	3,966,226	6,154,492
<b>Total</b>		<b>1,362,238</b>	<b>833,742</b>	<b>3,473,452</b>	<b>2,443,417</b>	<b>7,170,214</b>	<b>15,283,062</b>
<b>2015</b>							
Non-derivative financial assets	6.33%	257,729	1,141	-	-	-	258,870
Financial instruments of debt with variable interest rate	6%	1,721,547	1,652,473	744,878	617,741	3,934,598	8,671,236
Fixed interest rate debt financial instruments	7%	156,099	101,810	162,572	1,754,437	3,845,882	6,020,800
<b>Total</b>		<b>2,135,375</b>	<b>1,755,424</b>	<b>907,450</b>	<b>2,372,178</b>	<b>7,780,480</b>	<b>14,950,906</b>

- Figures expressed in millions of Colombian pesos -

The values included in the above tables for financial assets and liabilities not derivative may change in view of changes in the variable interest rate with respect to the interest rate estimated at the end of the reporting period. The Group considers that the cash flows cannot occur earlier than indicated above.

The following table shows the analysis of contractual expirations remaining for financial liabilities derivatives:

	Less than 1 year	From 1 to 2 years	From 2 to 3 years	From 3 to 4 years	Total contractual obligation
<b>2016</b>					
Forward Contracts					
Swap Agreements	(106,920)	(69,509)	(69,563)	185,020	(60,973)
Futures Contracts	18				18
<b>Total</b>	<b>(106,902)</b>	<b>(69,509)</b>	<b>(69,563)</b>	<b>185,020</b>	<b>(60,954)</b>
<b>2015</b>					
Swap Agreements	(7,061)	-	-	-	(7,061)
<b>Total</b>	<b>(7,061)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(7,061)</b>

- Figures expressed in millions of Colombian pesos -

The main method for the measurement and follow up of the liquidity is the projection of the cash flow that is carried out in the companies of the Group and is consolidated in the cash budget. Derived from this a daily follow up is made of its cash position and projections of the latter are continuously made in order to:

- Follow up the liquidity needs related to the operating and investment activities associated to the acquisition and disposal of long term assets.
- Pay, prepay, refinance and/or obtain new credits, in accordance with the cash flows generation capacity in the Group.

These projections take into account the debt financing plans of the Group, the compliance of ratios, the compliance with the organizational objectives and the regulations applicable.

Finally and as part of the strategy to remedy the current ratio at December 2016 equal to 0.94 which is framed within Prudent management of liquidity risk, the Group seeks to ensure that sufficient cash is maintained through the availability of financing with compromised credit alternatives. As far as the Group is concerned, in 2016 it has duly approved and renewable credit lines with local banks for approximately

\$2.5 trillion pesos, an available space to place in the local bond market of \$ 1.5 trillion, a credit agreement for USD300 million with the export credit agency Export Development Canada (EDC), a credit agreement for USD200 million with CAF - Latin American Development Bank, And a US \$ 1 billion credit agreement signed with a group of 7 international banks, at a term of five years of which USD440 million are pending to be disbursed.

## Note 41. Measurement of fair value on a recurring and non-recurring basis

The methodology established in IFRS 13 Fair value measurement specifies a hierarchy in the valuation techniques based on whether the variables used in the determination of the fair value are observable or not. The EPM Group determines the fair value on a recurring and non-recurring basis, as well as for disclosure purposes:

- Based on the prices quoted in active markets for assets or liabilities identical to those that the EPM Group can access on the measurement date (level 1).
- Based on valuation techniques commonly used by market participants that use different variables of the prices quotes that are observable for assets or liabilities, directly or indirectly (level 2).
- Based on internal cash flow discount valuation techniques, using variables estimated by the company not observable for the assets or liabilities, in lieu of variables observed in the market; and in some cases, the cost is taken as an estimate of the fair value. This applies when recent information available is insufficient to measure it, or if a wide range of possible measures exists of the fair value and the cost represents the best estimate of the fair value within that range (level 3).

During 2016 and 2015 in the EPM Group no transfers have been made between the fair value hierarchy levels, either for the transfers into and out of the levels.

### Valuation techniques and variables used by the EPM Group in the measurement of the fair value for recognition and disclosure:

**Cash and cash equivalents:** includes the cash on hand and in banks and the high liquidity investments, easily convertible into a determined amount of cash and subject to insignificant risk of changes in their value, with an expiration of three months or less from the date of their acquisition. The EPM Group uses as valuation technique for this entry the market approach; these entries are classified in level 1 of the fair value hierarchy.

**Investments at fair value through profit and loss and through equity:** includes the investments that are made to optimize the liquidity surpluses, that is, all those resources that are not immediately allocated to the performance of the activities that constitute the corporate object of the companies. The EPM Group uses as valuation technique the market approach; these entries are classified in level 1 of the fair value hierarchy.

**Derivative instruments - Swaps:** The EPM Group uses derivative financial instruments, such forwards, futures, swaps and options to cover financial risks, mainly the risks of interest rate, exchange rate and commodities prices. Such derivative financial instruments are recognized initially at their fair value as of the date when the derivative agreement is executed, and subsequently they are again measured at their fair value. The EPM Group uses as valuation technique for the swaps the discounted cash flow, in an income approach. The variables used are: Swap curve of interest rates for rates denominated in US dollars, to discount cash flow in US dollars; and Swap Curve of external interest rate for rates denominated in pesos, to discount cash flows in pesos. These entries are classified in level 2 of the fair value hierarchy.

**Investment properties:** these are properties (land or buildings, considered in their entirety or in part, or both) that are held (by the company in its own name or through a financial leasing) to earn income, for capital appreciation or both, instead of:

- Their use in the production or supply of goods or services, or for administrative purposes; or
- Their sale in the ordinary course of the operations.

The EPM Group uses two valuation techniques for these entries. Within the market approach, it uses the comparative or market method, which consists in deducting the price by comparison of transactions, supply and demand and appraisals of similar or comparable properties, prior adjustments of time, conformation and location. The entries that are valued with this technique are classified in level 2 of the fair value hierarchy. Within the cost approach, the residual method is used that is applied only to the buildings and is based on the determination of the updated construction cost, less the depreciation for age and conservation condition. These entries are classified in level 2 of the fair value hierarchy.

The following table shows for each of the fair value hierarchy levels, the assets and liabilities of the EPM Group, measured at fair value on a recurring basis as of December 31, 2016 and 2015, as well as the total value of the transfers between level 1 and level 2 occurred during the period:

Measurement of fair value on a recurring basis 2016	Level 1	Level 2	Total
<b>Assets</b>			
<b>Negotiable or designated at fair value</b>			
Cash and cash equivalents	1,194,499	-	1,194,499
Investments at fair value through profit or loss	712,375	-	712,375
	<b>1,906,874</b>	<b>-</b>	<b>1,906,874</b>
<b>Derivatives</b>			
Swaps	-	1,686,230	1,686,230
		<b>1,686,230</b>	<b>1,686,230</b>
<b>Liabilities</b>			
<b>Loans</b>			
Commercial Banking Loans		5,161,838	5,161,838
Multilateral bank loans		1,664,555	1,664,555
Other bonds and securities issued		6,135,271	6,135,271
Bonds and securities issued		923,094	923,094
Development bank loans		963,250	963,250
		<b>14,848,008</b>	<b>14,848,008</b>
<b>Total</b>	<b>1,906,874</b>	<b>16,534,238</b>	<b>18,441,112</b>

- Figures expressed in millions of Colombian pesos -

Measurement of fair value on a recurring basis as at 31 December 2015	Level 1	Level 2	Total
<b>Assets</b>			
<b>Designated at fair value</b>			
Cash and cash equivalents	1,338,061	-	1,338,061
Investments at fair value through profit or loss	281,163	-	281,163
	<b>1,619,224</b>	-	<b>1,619,224</b>
<b>Other equity investments</b>			
Investments at fair value through equity	2,056,204	-	2,056,204
	<b>2,056,204</b>	-	<b>2,056,204</b>
<b>Derivatives</b>			
Swaps	-	11,776	11,776
	-	<b>11,776</b>	<b>11,776</b>
<b>Liabilities</b>			
<b>Loans</b>			
Commercial Banking Loans		4,160,348	4,160,348
Multilateral bank loans		1,690,716	1,690,716
Development bank loans		1,082,094	1,082,094
Bonds and securities issued		1,018,171	1,018,171
Other bonds and securities issued		6,254,713	6,254,713
Related Lending		432,830	432,830
		<b>14,638,872</b>	<b>14,638,872</b>
<b>Total</b>	<b>3,675,428</b>	<b>14,650,648</b>	<b>18,326,076</b>

- Figures expressed in millions of Colombian pesos -

As of December 31, 2016 and 2015 there were no inter-level transfers.

The book value and the estimated fair value of assets and liabilities of the EPM Group that are not recognized at fair value in the consolidated statement of financial condition, but require their disclosure at fair value, as of December 31, 2016 are:

Measurement of fair value on a recurring basis 2016	Level 3	Total
<b>Liabilities</b>		
<b>Loans</b>		
Commercial Banking Loans	5,161,838	5,161,838
Multilateral bank loans	1,664,555	1,664,555
Other bonds and securities issued	6,135,271	6,135,271
Bonds and securities issued	923,094	923,094
Development bank loans	963,250	963,250
	<b>14,848,008</b>	<b>14,848,008</b>
<b>Total</b>	<b>14,848,008</b>	<b>14,848,008</b>

- Figures expressed in millions of Colombian pesos -

Measurement of fair value on a recurring basis 2015	Level 3	Total
<b>Liabilities</b>		
<b>Loans</b>		
Commercial Banking Loans	4,160,348	4,160,348
Multilateral bank loans	1,690,716	1,690,716
Development bank loans	1,082,094	1,082,094
Bonds and securities issued	1,018,171	1,018,171
Other bonds and securities issued	6,254,713	6,254,713
Related Lending	432,830	432,830
<b>Total</b>	<b>14,638,872</b>	<b>14,638,872</b>

- Figures expressed in millions of Colombian pesos -

## Note 42. Service concession contracts

As of the cut-off date, the Group manages as concessionaire several concessions that contain provisions for the construction, operation and maintenance of facilities, as well as the provision of public services such as water supply, collection and treatment of waste water, in accordance with the regulations of application.

The remainder of the concessions where the Group acts as operator is detailed below:

Company / Agreement	Activity	Country	Period of concession	Initial remaining period
EPM - Municipality of Caldas	The Municipality undertakes to make available and facilitate the use of networks and other infrastructure for the provision of aqueduct and sewerage services.	Colombia	30 years (extendable)	12 years
EPM - Municipality of Sabaneta	The Municipality undertakes to make available and facilitate the use of networks and other infrastructure for the provision of aqueduct and sewerage services.	Colombia	10 years (extendable)	8 years
EPM - Municipality of La Estrella	Execution of works and provision of water supply and sewerage services.	Colombia	10 years (extendable)	8 years
EPM - Municipality of Envigado	Provision of the aqueduct and sewer service.	Colombia	10 years (extendable)	1 year
EPM - Municipality of Itagüí	Construction of the aqueduct and sewerage networks for the provision of the service in the assigned districts.	Colombia	30 years (extendable)	1 year
EPM - Municipality of Bello	Execution of works and provision of the aqueduct and sewer service.	Colombia	10 years (extendable)	6 years
EPM - Municipality of Copacabana	The Municipality commits to the execution of works for the supply of drinking water, sewage and provision of such services.	Colombia	20 years (extendable)	14 years
EPM - Municipality of Girardota	Provision of the aqueduct and sewer service.	Colombia	20 years (extendable)	16 years
EPM - Municipality of Barbosa	The Municipality undertakes to make available and facilitate the use of networks and other infrastructure for the provision of aqueduct and sewerage services.	Colombia	30 years (extendable)	11 years



Aguas Regionales - Municipality of Apartadó	Provision of the aqueduct and sewer service	Colombia	30 years	21 years
Aguas Regionales- Municipality of Carepa	Provision of the aqueduct and sewer service	Colombia	30 years	21 years
Aguas Regionales - Municipality of Chigorodó	Provision of the aqueduct and sewer service	Colombia	30 years	21 years
Aguas Regionales - Municipality of Mutatá	Provision of the aqueduct and sewer service	Colombia	30 years	21 years
Aguas Regionales - Turbo Township	Provision of the aqueduct and sewer service	Colombia	30 years	21 years
Aguas Regionales - Municipality of Santa Fe de Antioquia	Provision of the aqueduct and sewer service	Colombia	30 years	21 years
Aguas Regionales - Municipality of San Jerónimo	Provision of the aqueduct and sewer service	Colombia	30 years	21 years
Aguas Regionales - Municipality of Sopetrán	Provision of the aqueduct and sewer service	Colombia	30 years	21 years
Aguas Regionales - Municipality of Olaya	Provision of the aqueduct and sewer service	Colombia	30 years	21 years
Aguas de Oriente - Municipality of El Retiro	Operate and maintain the networks and other infrastructure received within the concept of an adequate provision of the Aqueduct and Sewerage service	Colombia	No explicit duration	N.A.
Aquasol Morelia - Morelia	Sewage treatment	México	20 years	18 years
Hydraulic developments of Tampico - Tampico	Sewage treatment	México	24 years	23 years
Ecosystem of Celaya - Jumapa of Celaya	Sewage treatment	México	20 years	15 years
Ecosystem of Colima - Municipality of Colima and Villa de Álvarez	Sewage treatment	México	34 years	25 years
Ecosystem of the City of Lerdo - City Council of the Municipality of Lerdo	Sewage treatment	México	20 years	12.5 years
Ecoagua de Torreón - Municipal water and sanitation system of Torreón	Sewage treatment	México	20 years	4.6 years
Ecosystem of Tuxtla - Municipal water and sewage system	Sewage treatment	México	20 years	17 years
Ecosystem of Uruapan - Municipality of Uruapan	Sewage treatment	México	15 years	14 years
ADASA - Company Concessionary of Sanitary Services S.A. - Econssa Chile S.A.	Establishment, construction and operation of public services for the production and distribution of drinking water and collection and disposal of wastewater.	Chile	30 years	17 years

### **Service concession agreements for the rendering of the water and sewage service**

The concession agreements between companies of the Group domiciled in Colombia with the municipalities provide the conditions under which the water and sewage networks are managed, operated and maintained for the provision of the potable water and wastewater treatment services to its inhabitants, in the terms, conditions and rates established by the Potable Water and Water Sanitation Regulation Commission - CRA (for its initials in Spanish).

The agreements indicate the following rights and obligations for the Group companies as operator in the service concession agreement:

- Right to receive from the municipality all the water and sewage networks and to have exclusivity as operator of the system.
- Obligation to make exclusive use of aqueduct and sewerage networks for the purposes for which they are intended, to maintain them and to return them under the conditions of use in which they were received.
- Some concession agreements have the option of being renewed automatically for equal periods unless one of the parties declares the intention not to continue with it.
- The concession agreements do not establish the obligation to construct elements of property, plant and equipment.

Upon termination of the concession, the Group companies must return the aqueduct and sewage networks without any consideration to the municipalities. There have been no changes in the terms of the concession agreement during the period.

For these agreements, the intangible asset model (see note 6 - Other intangible assets) applies.

### **Concession agreements of services for the construction and operation of wastewater treatment plants - PTAR-**

The concession agreements between companies of the EPM Group domiciled in Mexico with municipal waste and sanitation organizations establish the conditions how the wastewater treatment plants are constructed, operated and maintained, the term and the dates and basis on which the rates are revised.

The agreements indicate the following rights and obligations for the companies of the EPM Group as operator in the service concession agreement:

Temporary and free use of the land through the applicable legal form, for the operation and construction of the plant.

Deliver water treated pursuant to the environmental regulations.

Upon termination of the agreement, train the personnel indicated by the Assignor for the operation, conservation and maintenance of the wastewater treatment plant; deliver the inputs, spares and tools for the operation of the plant for a period of time.

Upon termination of the concession, the companies of the EPM Group must return the wastewater treatment plans without any consideration to the municipal water and sanitation organizations. There have been no changes in the terms of the concessions agreement during the period.

For this agreement, the financial asset model is applicable. See Note 12 - Trade debtors and other receivables.

## Note 43. Operation segments

### 43.1 Information by segments

For management purposes, the EPM Group is organized in segments on the basis of its products and services, and it has the following eight operating segments on which information is presented:

- Electric Power Generation Segment, which activity consists in the production of energy and commercialization of large blocks of electric power, based on the acquisition or the development of a portfolio of energy proposals for the market.
- Electric Power Distribution Segment, which activity consists in transporting electric power through a set of lines and substations, with their associated equipment, that operate at voltages of less than 220 KV, the commercialization of energy to the end user of the regulated market and the performance of related and/or complementary activities. It includes the Regional Transmission System (RTS), the Local Distribution System (LDS), the public lighting service and the rendering the associated services.
- Electric Energy Transmission Segment, which activity consists in the transportation of energy in the National Transmission System -NTS-, made up by the set of lines, with their corresponding connection equipment, that operate at voltages equal to or higher than 220 KV. The National Transmitter (NT) is the legal person who operates and transports electric energy in the NTS or has constructed a company which object is the performance of that activity.
- Gas Segment, which activity consists in the conduction of gas from the door of the city to the end user, through medium and low pressure pumps. It includes the sale of gas through different systems, among them the distribution by a network, natural vehicle gas, natural compressed gas and service stations.
- Water Supply Segment, which activity consists in conceptualizing, structuring, development and operating systems to supply water; it includes carrying out the commercial management of the service portfolio related to the supply of water for different uses, in addition to the use of the productive chain, specifically in the production of energy, and the supply of crude water.
- Sanitation Segment, which activity consists in conceptualizing, structuring, development and operating systems of wastewater and handling of solid waste; it includes carrying out the commercial management related to these services and the use of the biosolids and other byproducts from the treatment of wastewater and the handling of solid waste.
- ICT Segment, which activity consists in the rendering of services associated to information and communications technologies, information services and the complementary activities related and/or connected to such services.
- Others Segment, that corresponds to the remaining activities that are not included within the above mentioned segments; it includes: Entidad Adaptada de Salud - EAS and Unidad de Servicios Médico y Odontológico (medical and dental services), billing and collection services for third parties, income received from investment properties (rent), social financing, EATIC Laboratory tests, rendering of specialized transportation service.

The Company has not added operating segments to form this eight reportable segments; however, the Company carries out the activity of commercialization of energy, which consists in the purchase of electric power in the wholesale market and its sale to other market agents, or to the end users regulated or not regulated; therefore, the Company includes the information of this activity in the corresponding segments that contain this activity.

Management supervises the operating results of the operating segments separately in order to make decisions on the assignment of resources and assess their return. The return of the segments is assessed on the basis of profit or loss for operations before tax and of discontinued operations and is measured uniformly with the loss or profit for operations of the consolidated financial statements.

Transfer pricing between the operating sectors are agreed as between independent parties (arm's length principle) in a similar way that they are agreed with third parties.

2016	Power Generation	Distribution Electric Power	Electric Power Transmission	Gas	Water Supply	Sanitation	TIC	Other Segment	Total Segments	Intersegment Transactions	Conciliatory Matters	Consolidated
External Customer Revenue	2,971,861	9,397,389	64,632	813,403	1,541,928	846,463	-	99,545	15,835,221	(2,101,070)	18,702	13,752,853
Inter-segment revenues	962,239	958,754	61,984	24,218	16,166	27,878	-	43,652	2,094,891	-	-	2,094,891
<b>Total net income</b>	<b>3,934,100</b>	<b>10,356,143</b>	<b>226,616</b>	<b>837,621</b>	<b>1,558,094</b>	<b>874,341</b>	<b>-</b>	<b>143,197</b>	<b>17,930,112</b>	<b>(2,101,070)</b>	<b>18,702</b>	<b>15,847,744</b>
Costs and expenses without depreciation, amortization, provisions and impairment	(2,733,181)	(8,340,792)	(10,501)	(716,080)	(466,274)	(494,153)	-	(146,405)	(13,007,386)	2,098,945	(472,736)	(11,381,177)
Depreciation, amortization and provisions	(577,904)	(451,186)	(510,141)	(24,990)	(132,806)	(713,853)	-	(13,549)	(1,965,302)	-	(2,756)	(1,968,058)
Impairment of goodwill	(2,795)	-	-	-	-	-	-	-	(12,795)	-	(71,349)	(84,144)
Other income	34,239	35,891	16,508	190	216	10,828	-	190	98,062	-	332,301	430,363
Interest expenses	(227,290)	(277,327)	(210,781)	(50,752)	(94,340)	(63,739)	-	(13,669)	(748,195)	272,623	(353,834)	(829,406)
Financial expenses (other than interest)	(22,505)	(37,004)	(838)	(1,436)	(17,845)	(64,978)	-	(1,288)	(145,894)	752	(14,403)	(159,545)
<b>Total financial expenses</b>	<b>(249,795)</b>	<b>(314,331)</b>	<b>(21,916)</b>	<b>(52,188)</b>	<b>(112,185)</b>	<b>(128,717)</b>	<b>-</b>	<b>(14,957)</b>	<b>(894,089)</b>	<b>273,375</b>	<b>(368,237)</b>	<b>(988,951)</b>
Interest income	138,047	102,942	518	47,022	18,000	59,981	-	24,389	390,899	(271,212)	120,648	240,335
Financial income	210,633	56,576	2,919	1,693	10,477	52,318	-	3,614	338,230	(37)	65,687	403,880
<b>Total financial income</b>	<b>348,680</b>	<b>159,518</b>	<b>3,437</b>	<b>48,715</b>	<b>28,477</b>	<b>112,299</b>	<b>-</b>	<b>28,003</b>	<b>729,129</b>	<b>(271,250)</b>	<b>186,336</b>	<b>644,215</b>
Equity in earnings of associates and joint ventures	-	-	-	-	-	-	(70,430)	(101)	(70,531)	-	-	(70,531)
Other gains and losses	666	2,576	666	-	5	-	-	(831)	3,082	-	31,963	35,045
<b>Gain or loss before taxes and discontinued operations of the segment</b>	<b>744,008</b>	<b>1,447,818</b>	<b>63,796</b>	<b>93,269</b>	<b>875,527</b>	<b>(339,255)</b>	<b>(70,430)</b>	<b>(4,452)</b>	<b>2,810,281</b>	<b>1</b>	<b>(345,776)</b>	<b>2,464,506</b>
<b>Total assets without investments in associates and joint ventures</b>	<b>17,334,842</b>	<b>12,417,727</b>	<b>1,469,025</b>	<b>1,050,600</b>	<b>5,308,301</b>	<b>3,737,070</b>	<b>-</b>	<b>689,247</b>	<b>42,006,810</b>	<b>(4,789,048)</b>	<b>3,894,329</b>	<b>41,112,091</b>
Investments in associates and joint ventures accounted for using the equity method	-	-	-	-	-	-	1,800,664	-	1,800,664	-	25,700	1,826,365
<b>Total Assets</b>	<b>17,334,842</b>	<b>12,417,727</b>	<b>1,469,025</b>	<b>1,050,600</b>	<b>5,308,301</b>	<b>3,737,070</b>	<b>1,800,664</b>	<b>689,247</b>	<b>43,807,475</b>	<b>(4,789,048)</b>	<b>3,920,030</b>	<b>42,938,457</b>
Total assets and balances Deferred regulatory account debits	17,334,842	12,433,540	1,469,025	1,050,600	5,308,301	3,737,070	1,800,664	689,247	43,823,288	(16,060,889)	15,916,711	42,954,270
<b>Total liabilities</b>	<b>9,639,307</b>	<b>7,502,503</b>	<b>807,278</b>	<b>649,957</b>	<b>2,645,688</b>	<b>1,562,840</b>	<b>-</b>	<b>344,277</b>	<b>23,151,850</b>	<b>(4,789,048)</b>	<b>4,803,419</b>	<b>23,166,221</b>
Total liabilities and balances deferred regulatory receivables	9,639,307	7,507,247	807,278	649,957	2,645,688	1,562,840	-	344,277	23,156,594	(4,789,047)	4,803,418	23,170,965
<b>Non-current assets additions</b>	<b>1,806,036</b>	<b>1,331,295</b>	<b>299,669</b>	<b>58,127</b>	<b>292,399</b>	<b>581,462</b>	<b>-</b>	<b>12,909</b>	<b>4,381,897</b>	<b>-</b>	<b>-</b>	<b>4,381,897</b>

- Figures expressed in millions of Colombian pesos -

2015	Power Generation	Distribution Electric Power	Electric Power Transmission	Gas	Water Supply	Sanitation	TIC	Other Segment	Total Segments	Intersegment Transactions	Conciliatory Matters	Consolidated
External Customer Revenue	2,872,327	8,666,546	137,851	708,452	602,863	810,894	-	85,586	13,884,219	(1,589,489)	27,790	12,322,520
Inter-segment revenues	517,329	887,470	54,079	35,496	16,075	40,750	-	33,541	1,584,680	-	-	1,584,680
<b>Total net income</b>	<b>3,389,656</b>	<b>9,554,016</b>	<b>191,930</b>	<b>743,648</b>	<b>618,878</b>	<b>851,644</b>	<b>-</b>	<b>119,127</b>	<b>15,468,899</b>	<b>(1,589,489)</b>	<b>27,790</b>	<b>13,907,200</b>
Costs and expenses without depreciation, amortization, provisions and impairment	(2,354,390)	(7,782,611)	(78,924)	(672,682)	(394,921)	(499,073)	-	(103,736)	(11,886,337)	1,590,240	(175,994)	(10,472,091)
Depreciation, amortization and provisions	(274,911)	(408,029)	(26,263)	(20,440)	(98,390)	(92,327)	-	(7,931)	(927,571)	-	(4,045)	(931,616)
Impairment of goodwill	-	-	-	-	(18)	-	-	-	(18)	-	-	(18)
Other income	128,176	399,184	6,089	15,772	104,477	87,576	-	372	741,646	-	832,538	1,574,184
Interest expenses	(227,559)	(229,180)	(3,849)	(29,384)	(50,608)	(52,455)	-	(4,601)	(597,636)	210,996	(331,451)	(718,091)
Financial expenses (other than interest)	(736,453)	(319,417)	(764)	(2,087)	(22,195)	(87,913)	-	(5,226)	(1,373,811)	541	(835,661)	(2,208,931)
<b>Total financial expenses</b>	<b>(964,012)</b>	<b>(548,598)</b>	<b>(4,613)</b>	<b>(31,471)</b>	<b>(272,559)</b>	<b>(140,368)</b>	<b>-</b>	<b>(9,827)</b>	<b>(1,971,448)</b>	<b>211,537</b>	<b>(1,167,112)</b>	<b>(2,927,023)</b>
Interest income	45,454	18,763	968	36,939	23,680	35,088	-	13,274	274,166	(210,989)	56,946	120,123
Financial income	5,592	12,786	327	324	27,012	79,303	-	3,908	239,252	(1,300)	72,941	310,893
<b>Total financial income</b>	<b>61,046</b>	<b>231,549</b>	<b>1,295</b>	<b>37,263</b>	<b>50,692</b>	<b>114,391</b>	<b>-</b>	<b>17,182</b>	<b>513,418</b>	<b>(212,289)</b>	<b>129,888</b>	<b>431,017</b>
Equity in earnings of associates and joint ventures	-	-	-	-	-	-	(161,270)	5	(161,265)	-	-	(161,265)
Other gains and losses	63	135	63	-	-	(1)	-	-	260	-	93,004	93,264
<b>Gain or loss before taxes and discontinued operations of the segment</b>	<b>(13,652)</b>	<b>1,445,647</b>	<b>89,577</b>	<b>72,090</b>	<b>8,159</b>	<b>321,842</b>	<b>(161,271)</b>	<b>15,192</b>	<b>1,777,584</b>	<b>(1)</b>	<b>(263,932)</b>	<b>1,513,651</b>
<b>Total assets without investments in associates and joint ventures</b>	<b>16,201,926</b>	<b>12,362,311</b>	<b>1,162,767</b>	<b>879,564</b>	<b>4,745,406</b>	<b>4,491,785</b>	<b>-</b>	<b>698,494</b>	<b>40,542,252</b>	<b>(6,205,823)</b>	<b>5,671,306</b>	<b>40,007,736</b>
Investments in associates and joint ventures accounted for using the equity method	-	-	-	-	-	-	1,893,516	-	1,893,516	-	14,902	1,908,418
<b>Total Assets</b>	<b>16,201,926</b>	<b>12,362,311</b>	<b>1,162,767</b>	<b>879,564</b>	<b>4,745,406</b>	<b>4,491,785</b>	<b>1,893,516</b>	<b>698,494</b>	<b>42,435,768</b>	<b>(6,205,823)</b>	<b>5,686,208</b>	<b>41,916,153</b>
Total assets and balances Deferred regulatory account debits	16,201,926	12,380,278	1,162,767	879,564	4,745,406	4,491,785	1,893,516	698,494	42,453,735	(17,512,116)	6,992,502	41,934,121
<b>Total liabilities</b>	<b>9,310,036</b>	<b>7,566,980</b>	<b>517,977</b>	<b>503,837</b>	<b>2,568,531</b>	<b>1,761,479</b>	<b>-</b>	<b>308,095</b>	<b>22,536,935</b>	<b>(6,205,823)</b>	<b>6,774,962</b>	<b>23,106,073</b>
Total liabilities and balances deferred regulatory receivables	9,310,036	7,626,870	517,977	503,837	2,568,531	1,761,479	-	308,095	22,596,825	(6,205,823)	6,774,962	23,165,964
<b>Non-current assets additions</b>	<b>1,589,293</b>	<b>1,061,596</b>	<b>354,111</b>	<b>79,964</b>	<b>145,967</b>	<b>465,620</b>	<b>-</b>	<b>84,179</b>	<b>3,780,730</b>	<b>-</b>	<b>-</b>	<b>3,780,730</b>

- Figures expressed in millions of Colombian pesos -



## 43.2 Information by geographic area

### Revenues from external customers

Country	2016	2015
Colombia (country of domicile of EPM)	10,764,878	8,983,629
Guatemala	1,949,804	1,906,994
Panamá	1,768,797	1,691,887
El Salvador	717,452	811,561
Chile	445,899	276,260
México	188,557	204,122
Ecuador	5,826	28,646
Bermuda	9,498	7,171
International intersegment eliminations	(2,966)	(3,070)
<b>Total countries other than Colombia</b>	<b>5,082,866</b>	<b>4,923,571</b>
<b>Total Consolidated Income</b>	<b>15,847,744</b>	<b>13,907,200</b>

- Figures expressed in millions of Colombian pesos -

The information on revenues is based on the location of the customer. In the EPM Group no customer generates more than 10% of the revenues.

### Non-current assets

Country	2016	2015
Colombia (country of domicile of EPM)	25,609,323	22,848,463
Chile	3,463,597	3,746,815
Panama	1,970,997	1,955,793
Guatemala	1,773,058	1,728,725
El Salvador	310,184	307,086
Mexico	52,737	244,952
<b>Total countries other than Colombia</b>	<b>7,570,572</b>	<b>7,983,371</b>
<b>Total non-current assets</b>	<b>33,179,895</b>	<b>30,831,834</b>

- Figures expressed in millions of Colombian pesos -

For these purposes, the non-current assets include properties, plant and equipment, intangible assets and investment properties including the assets for acquisition of subsidiaries and goodwill.

## Note 44. Facts occurred after the period being reported

### Spinoff of Parque Eólico Los Cururos Ltda.


In an extraordinary meeting of the Directors of EPM CHILE S.A. of February 2, 2017, it was agreed to spin off the transmission and generation assets of Parque Eólico Los Cururos Ltda., to comply with the definition of Supreme Decree No. 23 T from the Ministry of Energy that establishes the obligation for all the operating companies or owners of the trunk transmission systems to incorporate a company for the transmission line of business as a closed joint stock company (S.A.).

The division of Parque Eólico Los Cururos Ltda. originated two companies, one of them Parque Eólico Los Cururos Ltda., a legal continuation company and a new joint stock company, that will be called "EPM Transmision Chile S.A." This new company will have as shareholders the current stockholders of Parque Eólico Los Cururos S.A., that is EPM Chile S.A. and EPM Inversiones S.A. maintaining their percentage of interest. The assets associated to the new transmission company are transferred to EPM Transmision Chile S.A., which value at December 31 2016 and January 31, 2017 amounted to USD6,048 (in thousands) and USD\$6,036 (in thousands), respectively, as evidenced in the public deed of division of Parque Eólico Los Cururos Ltda., dated February 2, 2017 and under repertory No. 4359-2017.

After the date of presentation of the consolidated financial statements and before the date of authorization of their publication, there were no other relevant events that imply adjustments to the figures.

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## INDEPENDENT AUDITOR'S REPORT

To the Board of Directors of  
EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P.:

### Identification of the financial statements subject to audit

We have audited the financial statement consolidated of EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P. and subsidiaries, which comprise the consolidated statements of financial position as of December 31 2016, and the related the consolidated statements of income and other comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows consolidated for the year then ended, and a summary of significant accounting policies and other explanatory information. The financial statements as of December 31, 2015, included for comparative purposes only, was audited and we have expressed an unqualified opinion dated on March 31, 2016.

### Responsibility of the Company's management for the financial statements

Management is responsible for the preparation and fair presentation of the accompanying financial statements in accordance with International Financial Reporting Standards, and for such internal control relevant to the preparation and fair presentation of the financial statements that are free from material misstatements, whether due to fraud or error; select and apply the appropriate accounting policies; and make accounting estimates that are reasonable in the circumstances.

### Auditor's Responsibility

Our responsibility is to express an opinion on the accompanying financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing accepted in Colombia. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

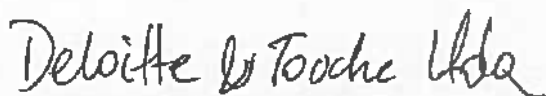
We believe that the audit evidence that we have obtained is sufficient and appropriate to provide a basis for my audit opinion.

**Opinion**

In our opinion, the accompanying financial statements referred above, taken from the accounting books, present fairly, in all material respects, the financial position of EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P. as of December 31, 2016, the results of its operations and its cash flows for the year then ended in conformity with International Financial Reporting Standards.

**Emphasis of Matter Paragraphs**

1. As described in note 20 of the attached financial statements, during 2016 EPM obtained the waivers from the financial entities related to the compliance with the financial covenant, in accordance with the provisions of the contracts with multilateral banks, measured in the long-term financial debt to EBITDA ratio at December 31, 2016, except for the obligation with the financial entity Bank of Tokyo-Mitsubishi for \$372,104 million, on which it made the reclassification of the total financial debt from long term to short term in accordance with the provisions of the International Financial Reporting Standards.
2. Without modifying our audit opinion, we draw attention to Note 12 to the financial statements, the Company applied earlier IFRS 9 Financial Instruments (revised in July 2014), which generated an impact by the effect on the change of the policy for measuring the value correction for expected credit losses on the accounts receivable, in the accumulated results at December 31, 2016 for \$94,936 million and in the result of the period, net for \$94,859 million.



DELOITTE & TOUCHE LTDA.  
March 14, 2017.

## Certification of the Legal Representative and Accountant of EPM

March 14<sup>th</sup>, 2017

Board of Directors  
Empresas Públicas de Medellín E.S.P.

The undersigned, Legal Representative and Accountant of Empresas Públicas de Medellín E.S.P, certify that the balance of the consolidated financial statements of Empresas Públicas de Medellín E.S.P and their subsidiary companies up to December 31<sup>st</sup>, 2016 and 2015, were made in accordance with the International Financial Reporting Standards (IFRS) and that the information reflects the financial, economic, social and environmental situation and operation of Empresas Públicas de Medellín E.S.P and subsidiary companies in a reliable manner; furthermore, they note that, for its preparation, the claims appearing on the aforementioned consolidated financial statements were verified, regarding:

- a) All the transactions that have been made in the covered years have been accurately registered on the respective period, pursuant to the appropriate acknowledgement of the proper quantities and accounts, and measured by the reasonable costs and appropriately revealed.
- b) All the assets, liabilities and net equity of the consolidated financial statements reflect the existence of rights and obligations of Empresas Públicas de Medellín E.S.P and its subsidiary companies.
- c) The accounting notes were prepared with clarity and in accordance with the International Financial Reporting Standards (IFRS).



Jorge Londoño De la Cuesta  
CEO



John Jaime Rodríguez Sosa  
Director of Accounting and Costs  
Professional License: 144842-T

*estamos ahí.*