



CEO WATER MANDATE REPORT  
Communication on Progress



**EPM**  
**CEO WATER MANDATE REPORT**

2017

Medellín 2018

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## INTRODUCTION

In order to achieve hydrological balance by/and ensuring water supply for public utilities provided by EPM, it is necessary to promote initiatives and projects contributing to the conservation of hydrographic basins, to water consumption management, and to appropriate management of the waste water in the system the company operates. These types of actions contribute to take care of water resources and balance the natural availability through its uses and management.

Water is an essential commodity for life and the development of society. EPM Group strongly believes that it must contribute to the protection of hydrographic basins that tribute into its dams and systems, working together with public and private organizations, as well as the general community, —as it is a shared responsibility— in order to ensure the sustainability of this resource and the territories where it is present.

In order to ensure the provision of public utilities related to water supply and hydroelectric power generation, it is necessary to protect the tributary hydrographic basins, seeking to mitigate and prevent the ecosystem deterioration process, mainly occurring as a consequence of anthropic activities that may cause medium and long-term water availability problems. EPM strongly believes that the efficient water use and saving in its processes, as well as the waste water treatment in the system that operates, contribute to the conservation of the basins and the sustainability of the water resource that they provide. That is the reason why it develops programs and projects related to basin conservation, to efficient water use and saving, to waste water management, and to promote the intelligent use of public utilities by its users and the community.

## 1. COMPANY PROFILE

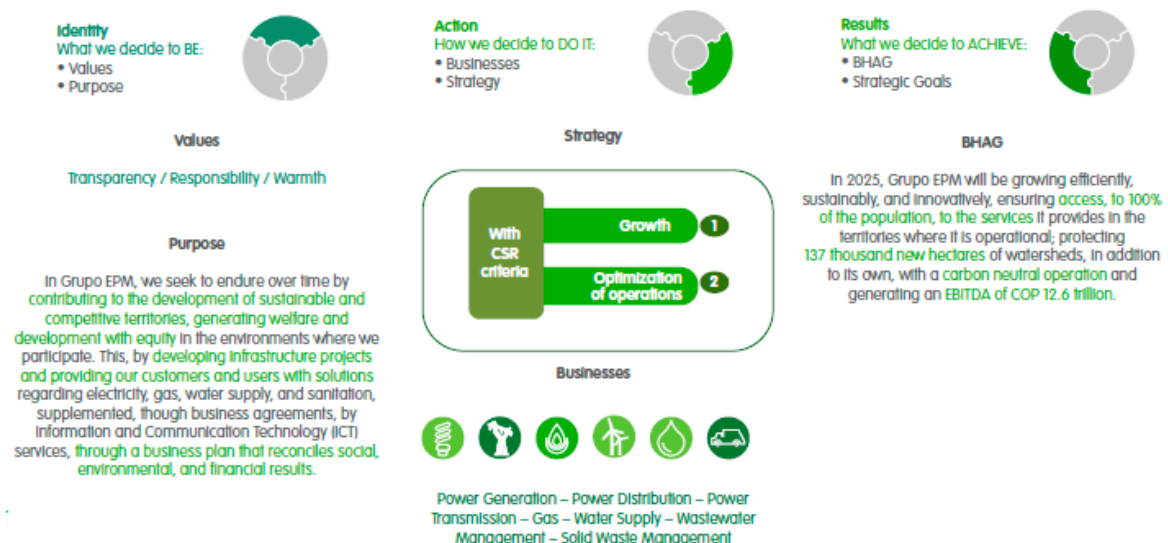
### • EPM Group – From local to multi-Latin

The EPM Group originated from EPM, a company of public nature owned by the Municipality of Medellín, which was incorporated in 1955 to provide the city's population with public utility services of water supply, electrical power, and telecommunications.

The EPM Group gradually broadened its coverage to 10 municipalities located in the geographical area known as Valle de Aburrá (Aburrá Valley), and it later reached other sub-regions of Antioquia's Region.

Its administrative and budgetary autonomy, its long-term vision, the quality of its services, the talent of its people, and the changes in the Colombian public utility legislation, allowed it to widen its horizon into other markets, and diversify its business portfolio.

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



Note: due to the contingency of the Ituango Hydroelectric Project in 2018, the EPM Group revised and adjusted its Strategic Direction. which we will present in the report that will be sent to the CEO Water Mandate corresponding to fiscal year 2018 and that will be sent in May 2019.

## **Our Environmental and Corporate Social Responsibility -CSR- Policies**

### **Corporate Social Responsibility**

CSR is the thread that articulates and gives meaning to the business decisions of EPM in the perspective of creating social, environmental and economic value for its stakeholders.

EPM understands CSR as "mandatory or voluntary commitments EPM assumes in their engagement with stakeholders while preserving the central objective of sustainability."

### **CSR Policy**

Corporate Social Responsibility should be the policy framework within which the strategic objectives of the EPM Group develop, to contribute to sustainable human development through the generation of social, economic and environmental value, welcoming sustainability topics covered by local, national and global initiatives. A socially responsible business performance has an ethical foundation, based on the recognition of the impact that their decisions have on stakeholders

### **Environmental policy**

The EPM Group, as a provider of public services related to energy, water, sanitation and telecommunications, is aware of its interdependence with the environment; therefore, you should conduct a comprehensive environmental management proactively with criteria of business competitiveness and environmental, economic and social sustainability.

## 2. MATERIAL ISSUES

Some of the material issues identified by EPM Group for its sustainability report are related to the care of water in its operations and in the watershed supplying its reservoirs and systems:

### Alignment Between Material Aspects and Sustainable Development Goals

In line with Sustainable Development Goals - SDGs, 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.

Material aspect	SUSTAINABLE DEVELOPMENT GOALS
 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	   

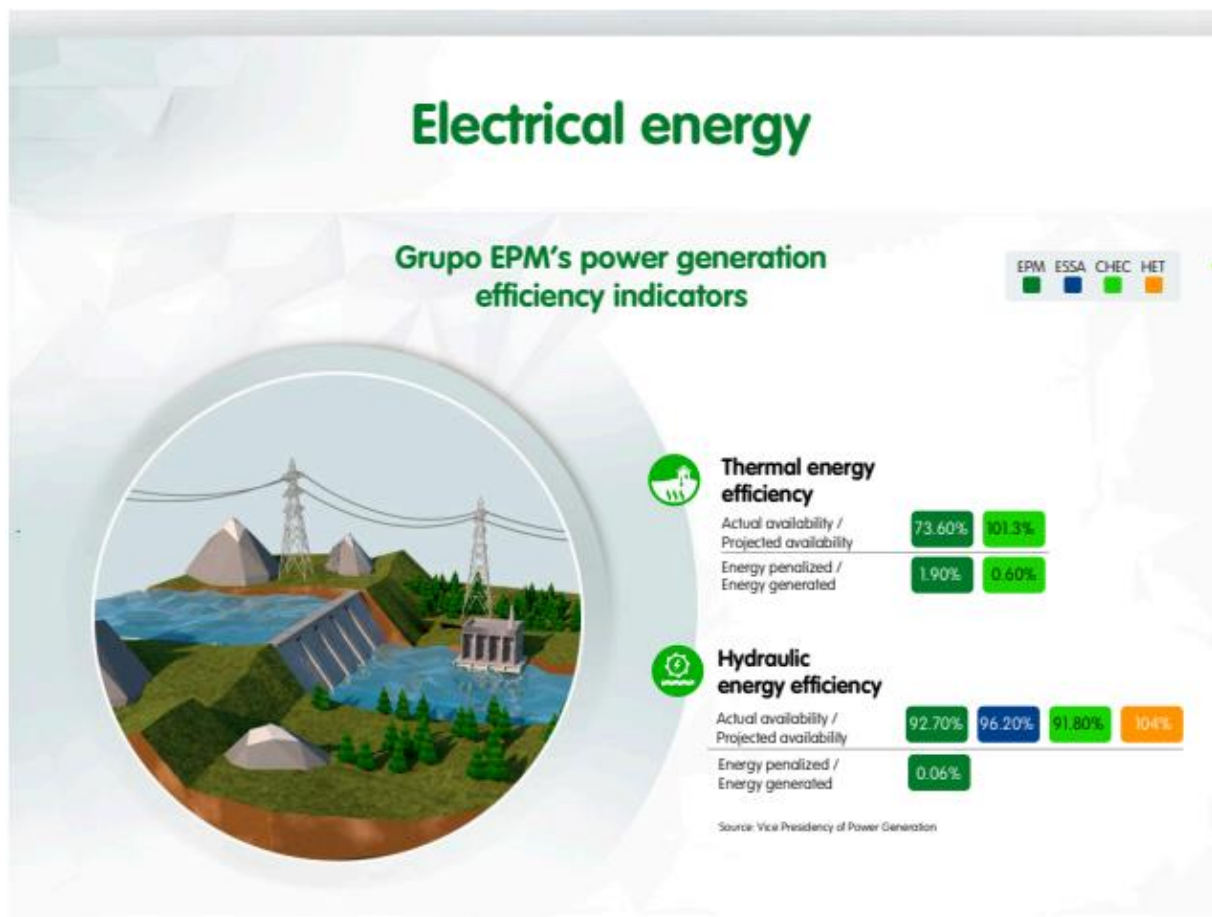
 Respect for and promotion of Human Rights	   
 Diversification of renewable energies	  
 Climate strategy	 
 Unserved population	    
 Rates and prices	 
 Transparency and disclosure of information for the stakeholders	
<p>17 Alliances to achieve the goals</p> 	

### 3. DIRECT OPERATIONS

#### 3.1. Water in our operations and the services we provide

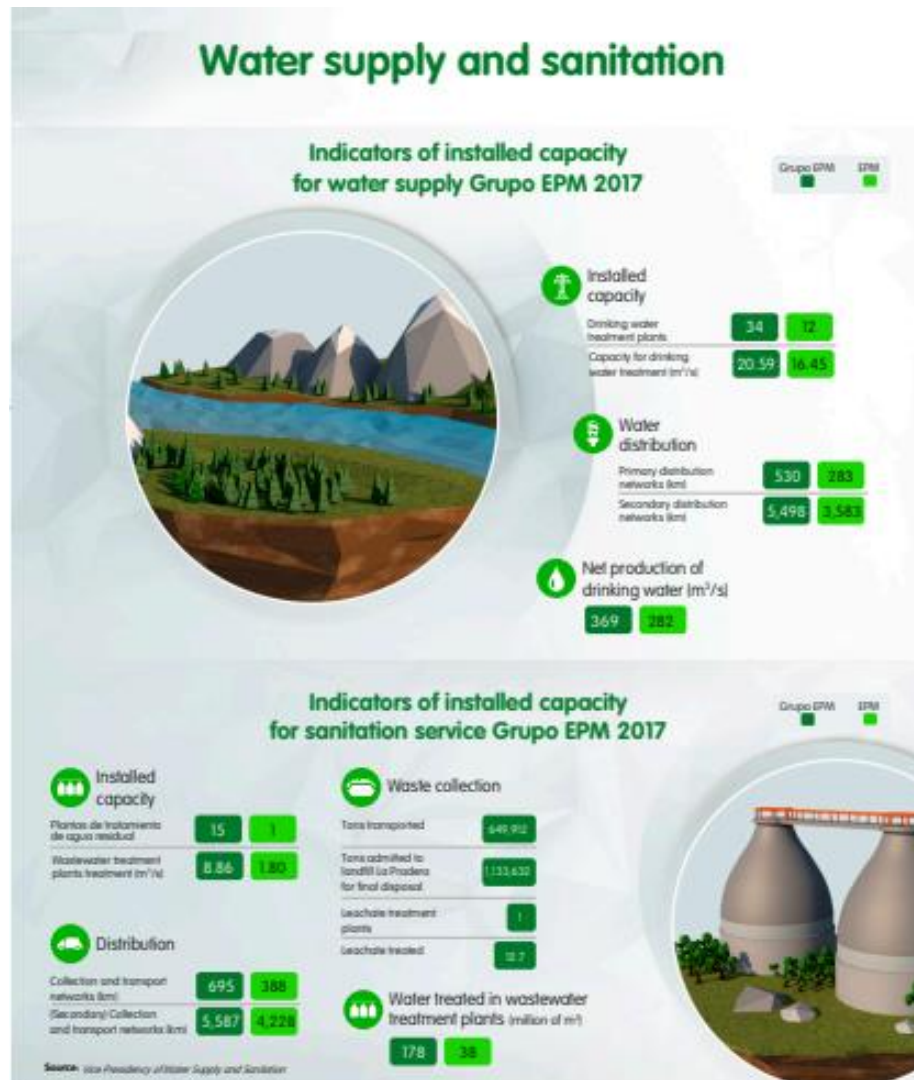
This chapter provides information on the operations and services provided by Group EPM that are more intensive in the use and management of water, this realizes the importance of water protection for the Group.

- **Power Generation:**





- **Water supply and sanitation**



See, [https://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2018/06/Our\\_Group.pdf](https://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2018/06/Our_Group.pdf)

### 3.2. Access and purchasing power of public utilities.

Availability of public services through conventional and alternative solutions that promote human development and the development of territories.

Purchasability refers to the options and solutions available for users and customers to have the possibility to permanently enjoy public utilities, meeting their tastes, preferences and needs and taking into account their ability and willingness to pay. Purchasability solutions are as follows: Paga a tu medida (Pay according to your needs), Prepaid Services, Financing of bills and the Loyalty and Rewarding Program of the EPM Group, “Somos.”

Access implies service availability, in compliance with regulations and standards, through infrastructure solutions such as rural electrification, Energía para el Retorno (Energy for the Return), Gas sin fronteras (Gas Without Borders), Dignifying Homes, public standpipes and community meters, which also aim at providing the service to populations living in areas with technical or legal restrictions for its provision.

Also, EPM Foundation runs a program called Agua para la Educación, Educación para el Agua (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.

The Universalization, understood as purchasability and access solutions, is a focus of the CSR policy. It is included in the social dimension of the BHAG approved by the Board of Directors of EPM; it is at the core of the business and is the essential contribution of the EPM Group to build sustainable territories.

<https://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2018/06/Sustainability-report-2017.pdf> (page 287)

### 3.3. Water Consumption

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.

During 2017, 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:

#### Management in 2017

The water consumed by the Grupo EPM's companies comes mainly from surface sources and supply systems, and it is used in production processes, domestic uses, and cooling systems.

Below there is a list of the most relevant data related to the group's water consumption and the programs and initiatives associated with the efficient use of water during 2017:

- 22,573 Mm<sup>3</sup> was the total water consumption; 90.33% corresponds to EPM.
- 99.72% of the total consumption corresponds to surface water.
- 98.21% of the surface water was used in power generation.
- 1.78% of the surface water was used in water supply.

- 0.26% of the total consumption corresponds to seawater.

The group reported 38% rise in the total water consumption, mainly explained by the increase in the generation of energy, which meant the use of 6,000 Mm<sup>3</sup> of water more than in 2016 and the increase of 76.6 Mm<sup>3</sup> in the supply of water due to the inclusion of the consumption by Aguas de Antofagasta in this report. Savings in water consumption were achieved thanks to the implementation of the following programs:

- Savings of 2.9 Mm<sup>3</sup> in the water consumed by the DWTPs of EPM, thanks to the use of recirculated water from backwashing. This value is comparable to the total amount of water treated in the Barbosa and Aguas Frías water purification plants for one year. The amount of recirculated water depends on the quality of the sources and it should not affect the quality of the drinking water produced in the plant.
- Reuse of 29.5 Mm<sup>3</sup> of water for power generation.
- The program for the reduction of non-revenue water reached a volume of losses of 86.6 Mm<sup>3</sup>, thus achieving the goal set for 2017. The loss rate per billed user was 6.26 m<sup>3</sup>/user/month, which makes EPM a national benchmark in the management of non-revenue water, considering the regulatory standard.
- Implementation of programs and initiatives for efficient use of water in EPM, CENS, ESSA, CHEC, and Delsur facilities.

See, Water Consumption in:

<https://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2018/06/Sustainability-report-2017.pdf> (page 410)

### 3.4. Wastewater management

Grupo EPM's companies take measures for managing effluents\* resulting from their activities and processes. Also, the group manages the wastewater produced in its own facilities and that collected from its users through the sanitation service, thus avoiding the direct discharge, without treatment, of millions of m<sup>3</sup> of wastewater to water sources and soils.

The main results of the management of EPM discharges, resulting from its processes, are summarized below:

- The total discharge from the production processes of the Grupo EPM's companies in 2017 was 51.6 Mm<sup>3</sup>, representing a 59% decrease compared to the previous year.
- Effluents from users of the public sewerage service are treated in the WWTPs operated by Grupo EPM. The volume of treated wastewater discharged was 39.35 Mm<sup>3</sup>, 98% of this value corresponds to the El Retiro and San Fernando plants.

- The total flow discharged by EPM in 2017 was 46.3 Mm<sup>3</sup>, corresponding to 89.6% of the group's total discharges.
- Grupo EPM's effluents in 2017 decreased by 59% compared to the previous year, mainly due to a reduction in water discharges from the La Sierra thermal power plant, as a result of a lower energy generation, and the EPM's WWTP, representing an 8% decrease in its effluents.
- La Sierra power plant had a 96% decrease in effluents of water used for cooling purposes, caused by the decrease in power generation.
- 76.2% of the Grupo EPM's total discharges come from WWTPs; 8.28%, from DWTPs; and 6.5%, from the La Sierra thermal power station.

See, Wastewater Management in <https://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2018/06/Sustainability-report-2017.pdf> (page 416)

### 3.5. Water Risk management

Framework:

In Grupo EPM, Comprehensive Risk Management (CRM) is structured based on several elements, among which the CRM policy stands out as a statement on the commitment of senior management to risk management and mitigation. In order to obtain a complete picture of the risks to which the group is exposed, these are identified in the different management levels within the organization, and different reporting lines are defined based on to their criticality. Another of the fundamental elements for this management is the existence of the Comprehensive Risk Management process officially defined in the organization's process model and its associated organizational structure.

As part of the CRM process, a "toolbox" has been developed for the identification and qualitative and quantitative assessment of risks, all under the corporate methodology of comprehensive risk management that takes as reference the best national and international practices, including the ISO 31000.

## Risk matrix – Grupo EPM.

	Probability	Consequence					Color convention of the risk level
		Minimum	Smaller	Moderate	Higher	Maximum	
2017	Very high			9	7		Extrem
	High		26, 27, 28	8, 21			
	Intermediate		1, 18	5, 16, 22	4, 11	13	High
	Low		14, 17, 20	12, 23, 25	15, 19, 24, 29	3	Moderate
	Very low						Low

### Risk index



\*The risk profile for Grupo EPM 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.

## Emerging Risks

### Emerging risks

During the process of updating the 2017 group's risk matrix, we observed that the following risks remain emerging as they are relatively new, with a high degree of uncertainty and a tendency to increase their risk level.

Emerging risks			
N°	Risks	Main potential impacts	Main improvement actions
8	Shortage of or difficulty in accessing natural resources for the provision of services or future growth of businesses	<p>Generation:</p> <ul style="list-style-type: none"> <li>• Failure to seize the installed capacity of power plants.</li> <li>• Decrease in the possibility of developing new projects with the optimum capacity.</li> <li>• Decrease in income from electricity generation.</li> <li>• Decrease in transfers.</li> </ul> <p>Water supply:</p> <ul style="list-style-type: none"> <li>• Decrease in water yield.</li> <li>• Loss of regulation capacity.</li> <li>• Increase in the amount of sediments and algae.</li> <li>• Increase in operating costs.</li> <li>• Loss of collection in rate.</li> <li>• Rationing in the circuits served.</li> <li>• Negative impact on the water quality of the water source.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation of the supply/demand/ infrastructure for catchment for the period 2016-2050.</li> <li>• Inter-institutional working groups on water quality.</li> <li>• CuencaVerde project. Actions for water protection in watersheds and dialogues for the custody of water in eastern Antioquia.</li> <li>• Agreements with regional environmental corporations.</li> <li>• Evaluation of gas supply backup mechanisms.</li> <li>• Forest conservation.</li> <li>• Restoration and reforestation.</li> <li>• Sustainable practices and uses.</li> <li>• Watershed modeling.</li> </ul>

### Emerging risks

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Emerging risks			
N°	Risks	Main potential impacts	Main improvement actions
24	Natural disasters affecting the operation of Grupo EPM	<ul style="list-style-type: none"> <li>• Personal injuries/death of employees and contractors.</li> <li>• Property damage.</li> <li>• Financial losses.</li> <li>• Interruptions in the provision of the service.</li> <li>• Negative impact on reputation and image.</li> <li>• Generation of environmental impacts.</li> <li>• Negative impact on communities or infrastructure.</li> <li>• Fines and lawsuits.</li> </ul>	<ul style="list-style-type: none"> <li>• Business continuity initiative.</li> <li>• Management of climate change mitigation and adaptation.</li> </ul>

I

See, Risk Matrix - Grupo EPM, <https://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2018/06/Sustainability-report-2017.pdf> (page 27)

### 3.6. Water Care Culture

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, 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.

It is worth highlighting some EPM Foundation programs such as: Water for Education, Water Education and the Water Museum.



## 4. SUPPLY CHAIN AND WATERSHED MANAGEMENT

### 4.1. Water Conservation

Protection and improvement of hydrographic basins and the environmental services they provide are crucial to ensure the protection of water resources, the sustainability of territories, and the quality of life of the communities benefiting from such services.

The environmental conditions of basins have a direct effect on water supply sources of reservoirs and other systems. In order to contribute to improve these conditions and prevent the risks associated with water resource availability to the population served, the EPM Business Group undertakes—freestanding and with other participants—programs and projects such as the comprehensive management of water resource and biodiversity, erosion control, environmental sanitation, environmental management in reservoirs, forest management, restoration, fauna management, environmental awareness and monitoring.

#### Management in 2017

EPM Business Group companies made alliances with public and private actors to protect supply hydrographic basins of interest to hydroelectric power generation, water supply, and the sustainability of the territories where they are located.

The EPM Group also defined the Water Protection Indicator, which is part of the Social and Environmental Dimension of the EPM Business Group BHAG. Similarly, goals for development initiatives watershed protection for 2016-2019. Also 10-year projections were established.

- Commitment to the progress towards compliance with the water protection goal established in the BHAG of Grupo EPM, which implies developing, by 2025, different initiatives to influence the protection of 137,000 hectares in the watersheds supplying our systems and reservoirs.
- Protection of water resources in the basins of Porce (Riogrande, Aburrá, Porce-Alto, Nechí rivers), Nare (La Fe and Negro-Nare rivers), Cauca (influence areas of the Ituango Project), Chinchiná, the basins supplying Aguas de Urabá, among others, with an impact on 22,575 hectares through the development of the following strategies:
  - ✓ Forest conservation (public and private protected areas, BanCO2): 8,028 hectares.
  - ✓ Restoration and reforestation: 5,061 hectares.
  - ✓ Sustainable practices and uses (silvopastoral and agroforestry systems, live fences and barriers, isolated trees, good agro-environmental practices, erosion control, rural basic sanitation systems): 1,837 hectares.
  - ✓ Environmental offset and new protected areas (purchase of lands for offset and new areas for the protection of reservoirs): 7,649 hectares.
- Conservation and restoration of our own areas: we protect over 55,918 hectares of forests and natural ecosystems owned by the Grupo EPM's companies in protected areas of our systems and reservoirs.

Some programs and initiatives developed in this period by the EPM Business Group companies for basin conservation are:

See, Water Conservation. <https://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2018/06/Sustainability-report-2017.pdf> (page 406).



Waterfall in the Guadalupe river basin “El Salto del río Guadalupe”.



Watershed of the La Fe reservoir

## 4.2. Supply Chain

EPM does not know the exposure of its suppliers to the risks related to water. However, progress has been made in the matter due to the work done for the strengthening and development of EPM suppliers and contractors, in the following matters:

### Environmental aspects

In our procurement process, preliminary studies are carried out to identify the relevant aspects to be considered, among others the regulatory ones that must be met, such as some environmental requirements, permits and licenses, depending on the type of good or service that is contracted. Likewise, environmental issues related to the application of good practices are included.

The methodological guide for the performance of the contractors establishes a systemic and systematic process that allows the performance assessment of the contractor. The results of this evaluation will be considered in future processes to ensure the acquisition of goods and services with quality and opportunity in the economic, social and environmental dimensions

### Strengthening suppliers and contractors

The registration process of suppliers and contractors in the information system allows EPM to track their implementation of economic, social and environmental practices through the information provided in their certifications, their financial information and their CSR practices. In addition, the acceptance of the code of conduct of the registered suppliers establishes criteria



and commitment in legal, ethical, environmental, social and governance aspects that allow generating a shared commitment in the extended value chain of the EPM Group.

We also have a diagnostic survey that allow us to identify gaps at the economic, social and environmental levels to mitigate risks, propose improvement plans and support the decision-making.

Based on these sources, we define the problems that will be addressed in the event, "Encuentro Saber +", which takes place every two years with suppliers and contractors. In 2017, the 2nd edition was held, which included talks related to air quality and care, applied research as a strategy for the integral management of water resources in EPM and various topics related to environmental management.

## 5. COLLECTIVE ACTION

Grupo EPM 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 and conditions of life of the surrounding communities.

During 2017, the group participated in the institutional coordination for the ecological restoration of the Medellín-Aburrá River and its tributaries.

Along with the environmental entities, the group monitored the damages to the supply sources of the aqueduct system in the metropolitan area.

It participated in more than 40 environmental committees, signing agreements with families and institutions to develop conservation actions and to preserve ecosystems of interest in the basins of the Grande-Chico, Guadalupe, and Porce rivers, as well as in Serranía de Abibe in areas of influence of Corpourabá.

The group also developed projects of environmental conservation, sustainable use of natural resources, and ecotourism in eastern Antioquia.

It strengthened initiatives for the conservation of the basins of the Chinchiná river and the Campoalegre river and the streams of the municipality of Marsella.

The group continues to engage families in all its areas of influence in Santander, Antioquia, and the coffee region in the conservation of ecosystems through the BanCO2 program.

See also, Joint Environmental Initiatives, <https://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2018/06/Sustainability-report-2017.pdf> (page 281)

## 6. PUBLIC POLICY

- ✓ **Global Compact:** EPM is adhered to the Global Compact and as such not only does its annual progress report but actively participates in the Colombian node of the Covenant, which is actively involved in promoting the achievement of the Millennium Development Goals and any of the objectives of Sustainable Development future.
- ✓ **Union and Inter-Institutional Management:** EPM Group finds a unique opportunity to interact with other companies, under an atmosphere of collegiality, in the active participation in unions and related associations. Through the unions, collective actions are promoted which positively impact sectorial public policy and the sustainability of all actors in the extended chain of public services. It also seeks that these actions generate value for all stakeholders and lead to competitiveness and the development of the country.
- ✓ **Relations with the State:** the EPM Group builds up its relationship with the State (Congress and national and local governments) based on ethical principles and in accordance with its Corporate Responsibility and Communication policies, which are guided by transparency criteria and values, and following relationship plans with every stakeholder (Congress and governments), which prioritize the general benefit.
- ✓ **Through the public utilities guilds of which it is a member,** and in some cases acting individually due to direct concern, EPM proactively participates in the regional or national regulative and legislative activities related to important issues for the sector, in order to reach an optimal regulation that refers to global interests and value generation for all stakeholders.
- ✓ **Monitored the regulations:** the company permanently monitored the regulations that have an impact on the public utilities sector, classifying it according to the impact on EPM and the Group. In the cases on which a regulation required observations by EPM, they were timely made before the competent authority, always taking care of the balance of interests among the stakeholders within the framework of our sustainability policy.

## 7. COMMUNITY ENGAGEMENT

### Access and purchasing power of public utilities

Availability of residential public utilities through conventional and alternative solutions that promote human and territories development.

Purchasability is related to options and solutions available so that customers and users have the opportunity to permanently enjoy residential public utilities, satisfying their likes, preferences, and needs, and taking into account their capacities and disposition.

Access implies availability of the service, considering the regulation and standards, through infrastructure solutions. Specific characteristics of unserved populations such as settlements outside the areas in the land use plans or high-risk areas are taken into account, in order to find solutions, either from the own capabilities of EPM or in coordination with other entities.

Universalization, understood as access and purchasability solutions, is a focus of the CSR policy. It is defined in the social dimension of the MEGA approved by the Board of Directors. Moreover,

it is in the business core and is the essential contribution of the EPM Group to the construction of sustainable territories.

For the universalization of Public Services, there are actions such as:

- Habitable Homes
- Pay According to Your Needs
- Public power stacks and community meters
- Unserved population
- Prepaid services

See, Access and purchasing power of public utilities.

<https://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2018/06/Sustainability-report-2017.pdf> (page 287).

## 8. TRANSPARENCY

Grupo EPM's 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.

Below are the most relevant actions on the subject:

### Information for stakeholders

Grupo EPM 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.

### Transparency practices

To preserve trust and credibility of all its stakeholders, Grupo EPM incorporates in its management clear rules regarding organizational culture standards and principles, and its mechanisms for engagement, interaction, and verification of objective and goal accomplishment.

This set of actions raise stakeholders' awareness so that they become responsible, engage, get to know and exercise their rights and obligations, actively promote integrity, and fight corruption.

Grupo EPM aims to be a corporate benchmark in transparency practices by including international standards in its compliance management, actively participating in collective actions that generate high impact on society, and managing best transparency practices.

See, transparency and disclosure of information for stakeholders  
<https://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2018/06/Sustainability-report-2017.pdf> (page 511).