



EPM

CEO WATER MANDATE REPORT

2016 - 2017

Medellín, August 2017



CEO WATER MANDATE REPORT Communication on Progress



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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 type 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.

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 national markets, and diversify its business portfolio.

In 2003, the EPM Group started its growth process in other Colombian regions and carried out its first international transaction in Central America, after continue its growth process in other countries of Latin America.

Conclusively, the EPM Group is currently a Multi-Latin business group comprising 48 companies, with a clear growth horizon towards 2030, focusing on being a reference of operational





excellence, reputation and transparency. It also aims at contributing to the well-being and equitable development in the territories where it operates by responsibly and comprehensively providing solutions in the fields of electric power, gas, water supply and sanitation.

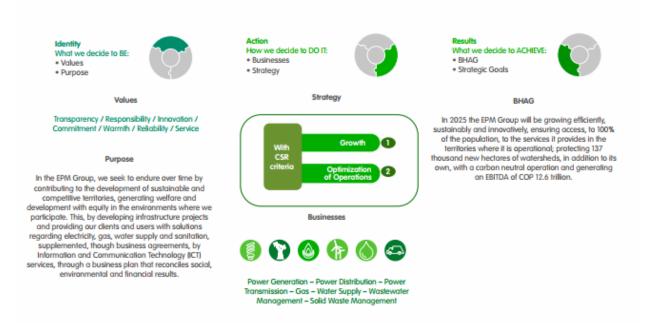
For the EPM Group, Corporate Strategic Planning is grouped in three dimensions: identity, action and results. Each of which contains two elements, as follows:

• 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.



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."





Mandatory Commitments: They are inherent to social order and the law. We assume that these are the basis of socially responsible management and transparency signal to society in general

Voluntary Commitments: They are facultative related to the corporate purpose and have favorable impacts on stakeholders.

Sustainability Interdependence: Set of economic social and environmental factors, that favor the continuation and development of a company in a mutually beneficial business relationship with society.

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 management

Throughout its existence, the environmental dimension has remained a constant in the daily practice of EPM, articulated to its business management in providing public services and accompanying its growth and consolidation as a business group. It is part of their corporate social responsibility. EPM performs a comprehensive environmental management, which include compliance with legislation and voluntary commitments subscribed, the sustainable use of natural resources, continuous improvement of environmental performance and promoting and strengthening environmental culture among others. These principles are stated in its Environmental Policy, which commits all companies that are part of today's EPM Group. In this context, the company performs multiple actions aimed at improving the environment, the responsible management of their impact and sustainable human development.

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.

MATERIAL ISSUES

Process to identify the materiality of the EPM Group.

Identification of subjects

In order to build the list of important subjects, 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 stakeholder participation is





heterogeneous because it corresponds to the engagement dynamic of each one of the companies, which are in different evolution stages.

These incomes were combined 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 subjects were contrasted with strategic planning elements of the EPM Group, and with relevant global subjects of sustainability in order to incorporate them, if they were not identified in prior steps, provided that they belong to our environment and our strategy.

The resulting list of issues and their corresponding actors was followed by subsequent processes of refining, revision, discussion and analysis, and by a pre-selection based on potential economic, environmental and social impacts for the EPM Group and the society.

Prioritization of topics

The prioritization was performed jointly with specialists of the organization by means of the prioritization criteria for material topics, an instrument designed by the company for estimating the value degree potentially generated or damaged by each subject for the EPM Group and its stakeholders.

Validation

The Sustainable Development Management Department refined the final result with expert criterion and based on the contributions received from the Management Committee (one of the Board of Directors support committees). The twelve material topics are reflected on the content of the Sustainability Report.

The materiality results are disclosed to the Strategic Corporate Planning and the Business Planning Departments in order to ensure the articulation with the strategic planning, feed the environmental analysis and the Business Plan.

The associated risks were identified for every material topic and for several relevant subjects, strengthening thus the organization's comprehensive risk management. This information can be broadened during the identification of the stakeholders.

The material topics are the axes upon which the engagement with all the stakeholders is managed by the business and support departments.

Material Topics

Notably, 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:





Table 1. Material Topics in the EPM Group.

Material topics	These are material topics because they have impact on		
AGU Water conservation	The survival and the supplies for productive processes.		
AYC Access and purchasability of the public utility services	The universalization services.		
BIO Biodiversity	The functional basis for the ecosystemic services that are necessary for the development of any human activity.		
CAL Quality and safety of the products and services	The competitiveness and the quality of life.		
CLI Quality of the work environment	The construction of coherence, trust; and on the productivity.		
CON Responsible contracting	The sustainability and competitiveness through the development of capabilities applied to the local corporate fabric.		
ECL Climatic strategy	The water shortage; floods and droughts; results of the productive activities.		
ENR Diversification of renewable energies	The access to sustainable energy sources; and on the dependence on the water resource.		
PSS Population without service	A basic lack, related to the business, of a very vulnerable population.		
RDH Human Rights	The feasibility of the activities and on people's dignity.		
TAR Fees and prices	The financial sustainability; the competitiveness; and the payment capacity.		
TRN Transparency and openness of the information	Less corruption and extra-costs; and more access to opportunities.		





Alignment Between Material Aspects and Sustainable Development Goals

In line with Sustaiable 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	
Access to and purchasability of public utilities	1 MO MAND MEALTH AND MEALENC AND AND MEALENC AND AND MEALENC AND AND AND AND AND AND AND AND AND AND
Biodiversity	6 CLEAN MATTER KAND SANTATION 13 CLIMATE 14 LIFE 14 LIFE 15 DIFE 01 LAND 15 DIFE 01 LAND
Quality of the CW-1V-2 occupational climate	8 BECENT MUDRA AND ELEMENTE ERRYTH
Quality and safety of products and services	9 INUSTIVE NOUNTER AND INFESTRUCTURE AND COMMONTES
Responsible contracting for local development	8 ACCENT MODEL AND ICOMMUNIC CARAVITIE ID REDUCTION ID
Water conservation	6 CLEAN WATER AND SAMUATION 13 CLIMATE 14 UFF 14 UFF 15 UFF 01 LAND 15 UFF 15 U



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8 DECENT WORK AND ECONOMIC GROWTH 5 GENDER 10 REDUCED MEQUALITIES 16 Respect for and Ô, promotion of Human E Rights 11 SUSTAL AND CI Diversification of ٩ renewable energies 13 CLIMATE ACTION 12 Climate strategy 99 3 GOOD HEALTH AND WELL-BEING 1 ND POVERTY 6 CLEAN WAT -∕η/•́ ٠ Unserved population 11 SUST AND CLEAN WATER AND SANITATION 6 Rates and prices ۵ Transparency and () disclosure of information for the stakeholders æ 17 Alliances to achieve the goals



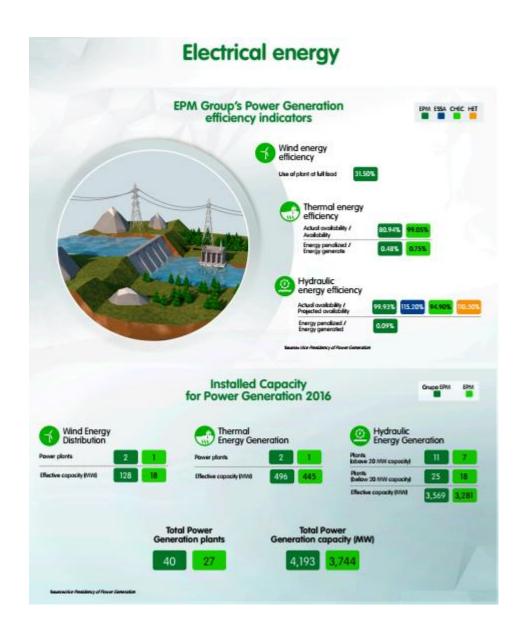


1. DIRECT OPERATIONS

1.1. 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:



• Sanitation:



See, http://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2017/06/our-group.pdf





1.2. Access and purchasing power 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.

Stakeholder's 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 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 and competitive territories. It is translated into high social value for the Group's companies and their stakeholders, and has important implications for building sustainable and competitive territories.

See, Access and purchasing power of public utilities, page 3

http://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2017/06/Material_aspects.pdf





1.3. 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 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 Mm³ 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 table shows the water consumed in our production processes by type of source.

		20	14	2015 201		16	Variación	2016-2015	
Busi	ness	Surface	Water	Surface	Water	Surface	Water	Surface	Water
		water	Supply	water	Supply	water	Supply	water	Supply
Power Generat	ion	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	298,270	23	336,216	29	325,175	19	-3%	-36%
Nater Supply	Wastewater Management	N.R.	179	N.R.	210	0	257	N.A.	23%
and Sanitation	Solid Waste Management	N.R.	64	93	46	0	0	-100%	-100%
Total		16,184,891	472	15,704,162	578	16,312,468	445	4%	-23%

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.



The following table shows water recirculated or reused in some of our production processes

Volume in m ³ of recirculated/reused water - EPM Group							
Bu	siness	2015	2016	Variation			
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	3,654,858	1,540,958	-58%			
Water Supply and Sanitation	Wastewater Management	104	N.R.	N.R.			
Saniialion	Solid Waste Management	N.A.	N.A.	N.A.			
Total		28,264,547	32,720,174	16%			

- 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 Mm³ 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.

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 Mm3 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 Mm3 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 Mm3 in 2017. In 2016, the volume of losses was 88.5 Mm3. 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.

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.

• **EPM's facilities:** There was a significant reduction in water consumption at EPM's head office in Medellín, representing a reduction of 21.78% in water consumption in 2016.

• 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 m3 /year, equivalent to a decrease of 24%, compared to the previous year, which demonstrates the effectiveness of the programs, campaigns, and activities carried out.

See, Water Consumption in:

http://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2017/06/Material_aspects.pdf

1.4. Wastewater management

The EPM Group's companies implement some measures for managing wastewater discharges resulting from their activities and processes in which water consumption is involved. The main results of the management of EPM discharges, resulting from its processes, are summarized below:

The total discharge by the facilities of the Group's companies in 2016 totaled 125 Mm3, representing a 40% decrease compared to the previous year.

• The total discharge by EPM in 2016 totaled 123 Mm3, 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 en los sistemas operados por Aguas Regionales: SWMP in the systems operated by Aguas Regionales: 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.

The attached table present the wastewater discharges related to production processes by subsidiaries, and the domestic wastewater discharges by companies.





Wastewater discharges linked to production processes m ³ /year - EPM Group								
Comp	any	Type of Treatment	Destination	2014	2015	2016	Variation	
		None	Sewerage	2,256,485	2,591,476	3,885,934	50%	
EPM		None	Water flow	45,285	31,940	N.R.	0	
		Primary	Sewerage	N.R.	25,615	64,080	150%	
Aguas		None	Surface water	N.R.	575,026	460,921	-20%	
Regionales - Urabá		None	Sewerage	34	30	N.R.	0	
Aguas Regionales - West	DWTP*	None	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		Secondary	Water flow	43,402,626	43,207,801	41,472,009	-4%	
Aguas Regionales - Urabá	WWTP**	None	Sewerage	256	384	N.R.	0	
Aguas		None	Sewerage	N.R.	N.R.	N.R.	0	
Regionales - West			Water flow	N.R.	201,952	628,300	211%	
Emvarias		None	Sewerage	64,399	39,637	N.R.	0	
Emvarias		None	Surface water	N.R.	174,844	N.R.	0	
EPM La Sierra		Secondary (residual industrial)	Water flow	6,698	10,391	13,262	28%	
Thermal pow	ver	None (cooling)	Water flow	59,222,768	160,876,800	78,208,668	-51%	
Total				104,998,551	208,019,939	125,007,079	-40%	

 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' WWPSs.

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.

See, Wastewater Management in <u>http://www.sostenibilidadgrupoepm.com.co/wp-</u> content/uploads/2017/06/Material aspects.pdf

1.5. Water Risk management

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.

	Color					
Probability	Minimum	Smaller	Moderate	e Higher	Maximum	Color convention of the risk level
Very high			R9			of the fisk level
High	R10	R1,R27	R16,R21,R20	6 R7,R8,R11		Extreme
Intermediate		R18,R28		25 R4,R22,R29	R3,R13	High
Low		R17,R28	R12,R14	R15	R24	Moderate
Very low		R17,R20				Low
Risk profile						
0.67	0.607		gh defi	h priority for re nition of treatr I monitoring of	nent measur	

EPM Group's Risk Matrix

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.

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 Anthropic	Shortage of or difficulty in accessing natural resources for the provision of services.						
24	Natural and Anthropic	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 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 8:

- Evaluation of the supply/demand/infrastructure for catchment for the period 2016-2050.
- The Strategic Environmental management includes integrated watershed management and environmental services, provides water care initiatives, such as watershed management, linkage to BanCO2 program, support to Cuenca Verde Corporation. See, Water Care in page 155, <u>http://www.sostenibilidadgrupoepm.com.co/wpcontent/uploads/2017/06/Material_aspects.pdf</u>
- The EPM Group is currently updating its climate strategy and its action plan 2030.
- Realization of the first phase of the adaptation plan for the Group EPM.
- EPM participates in building risk maps of water quality, which should be updated annually by the health authority.
- To manage the risk related to water availability associated with climate change, EPM has designed a model that simulates the hydraulic generation in terms of rainfall with Monte Carlo simulations, including the price of energy, and EPM losses for low hydrology. To evaluate the alternatives, the cost of risk is modeled with possible coverage.
- EPM operates a hydro meteorological network in watersheds to power generation and supply water, which seeks to provide timely and reliable hydrologic and climate information, to the





decision-making in the phases of power generation projects, operation of plants, commercialization of electric energy, and to perform assessments and environmental monitoring. Operation of these stations comprises from capture, processing and data analysis for hydrologic and hydraulic assessments and flow forecasts. In addition, EPM performs bimonthly monitoring to the flow and quality of water and supply sources for aqueduct and semiannually monitoring to the water quality for reservoirs generation, in compliance with the Environmental Management Plans.

• In addition, EPM establishes scenarios related to availability of water at processes level, like risks from raw water withdrawal process. With the methodology of Integrated Risk Management, scenarios related to water quantity and quality at different levels of management are analyzed.

1.6. 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 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.

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

2. SUPPLY CHAIN AND WATERSHED MANAGEMENT

2.1. 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 2016 - 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.

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

Definition of 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 epriodo and 10-year projections were established.

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, CHEC, EDQ, ESSA and Aguas Regionales.

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.





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 158 (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 CO2 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.

See, Page 155 a 159 Water Conservation. <u>http://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2017/06/Material_aspects.pdf</u>



Goals and achievements

Goals for 2016	Achievements for 2016	Compliance
Non-revenue water management: 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 ³ .	Under the development of the non-revenue water program, EPM aims to reduce water losses to a volume between 85 and 90 Mm ³ in 2017. In 2016, the volume of losses was 88.5 Mm ³ .	Total
Proper management of wastewater in water purification plants: Implementing solutions for sludge management in every water purification plant in the Valle de Aburrá by December 2016.	Transaction minutes were defined with the affiliate company, Ticsa, for the implementation of treatment systems. Detailed designs of treatment systems.	Partial
SWMP (Sanitation and Wastewater Management Plan): Reducing the pollutant load discharged into Medellin River in 2017 to 37,785 BOD5 tons and 19,287 TSS tons through the SW/MP-related works.	81.97% progress in the execution of the works of the Aguas Claras WWTP. Construction of 56.8 km of wastewater collection and transportation networks.	Partial
Water protection: 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).	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 Guadalupel; 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.	Total



CEO WATER MANDATE REPORT Communication on Progress



Challenges

Challenges	Extent	Compliance year	Compliance indicator
Non-Revenue Water Management: To obtain a better control of non-revenue water in 2017 through the non-revenue water management, in order to control technical and commercial losses. Volume losses at the water losses socioeconomic level range in EPM system is estimated between 85 and 90 million of m ³ .	EPM	2017	In 2015, the volume of losses was 91.7 million of m ³ .
Wastewater properly management in water purification plants: to implement solutions for sludge management in every water purification plant of the Valle de Aburrá by December 2016.	EPM	2016	Quantity of DWTP with dumping management solution.
Reduction of Medellin River pollutant load in 2017 to 37,785 BOD5 ton and 19,287 TSS ton through the SWMP associated works.	EPM	2017	BOD5 tons per year TSS tons per year
Water protection: implementing watersheds protection initiatives within priority conservation areas; 4,645 ha equally to 5% of identified priority areas. (EPM, CHEC, Aguas de Urabå).	EPM Group	2016	Protected hectares. Percentage of priority areas with conservations initiatives.
Conservation areas: total area where protection and maintenance actions are done in supply basins of interest to the EPM Group and some of its companies (EPM, CHEC, Aguas de Urabă).	EPM Group	2016	Protected hectares. Conserved total area (water protection plus maintenance).
Engagement in the recovery of the "Reserva Protectora de Manantiales, Cerro Alux" with the support of CONAP, (2016-2020).	Eegsa	2016	Development of at least one project in favor of the "Reserva Protectora de Manantiales, Cerro Alux" protection and conservation.

See, water conservation in page 149 a 154, http://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2017/06/Material_aspects.pdf



Watershed of the La Fe reservoir



Watershed of the Riogrande II reservoir





2.2. Supply Chain

EPM do not know the exposure of their suppliers to water-related risks. However, progress has been made on the issue due to the work that has been done in two fronts that leverage the relationship, strengthening and development of EPM suppliers and contractors

✓ Strengthening and development of suppliers: 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.

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.

Prequalification and classification of supplier's methodology: EPM is working on the design and development of a methodology for the prequalification of suppliers using criteria that allow for a comprehensive assessment and classify them into different levels in order to make recruitment processes more efficient, mitigate risks, propose action plans and leverage decision-making in the supply chain. This methodology assesses 10 dimensions, such as: Strategic Management, Human Resource Management, Quality Management, CSR Management, among others. One of them is the CSR dimension that assess social and environmental aspects of suppliers and one of the criteria to be evaluated is related to the care of resources and environment.

See, material aspects, trengthening and development of suppliers page 144, <u>http://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2017/06/Material_aspects.pdf</u>

3. COLLECTIVE ACTION

3.1. Stakeholders 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:



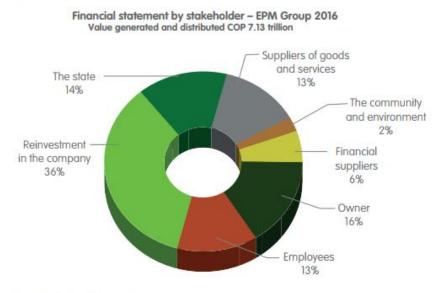


Dialogues with EPM's stakeholders: On April 29, 2016, with on-site attendance and television broadcast, EPM's CEO presented a public balance of the EPM Group's sustainability management at the event "Sustainability: Dialogue and Public Accountability." Viewers interacted with questions via telephone 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"

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

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



Source: Vice Presidency of Corporate Finance





3.2. Commitment to sustainability initiatives

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. We highlight:

- ✓ Water Fund: It continues with the active participation of EPM in Cuencaverde Corporation, was established on October 24, 2013, in order to manage and invest financial resources to protect, maintain and preserve environmental services, especially water, in the supplying watersheds of the Riogrande II and La Fe reservoirs, leading suppliers of water for the inhabitants of the Aburrá Valley and the watersheds themselves. It is a public-private partnership with the following partners: Municipality of Medellín, EPM, Cornare, Postobón, Nutresa Group, AMVA, Coca Cola–Femsa, and the Latin American Water Funds Partnership.
- ✓ Involvement in BanCO2 Project, 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.
- ✓ Round tables with environmental and municipal authorities, in order to strengthen relations with municipal offices and environmental authorities, and to promote the positive impact on the communities provided with public utilities. The round tables are spaces for dialog and work on topics such as: guidelines for fishing management at the dams, agreements to promote the benefits of the natural gas service, optimization and opportunity in environmental procedures, and impact of the projects, among others. The round tables with the following organizations stood out: Municipality of Medellin, Municipality of Envigado, Cornare, Corantioquia, and Corpourabá.
- ✓ In 2016, Eegsa one of our subsidiaries 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

See also, **Stakeholders**/ page 12, Joint Responsibility with the Environment: <u>http://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2017/06/Stakeholders.pdf</u>





4. 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.

5. COMMUNITY ENGAGEMENT

Access and purchasing power 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.

✓ Dignifying Homes

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.

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.

✓ 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.

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.

✓ 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.





✓ Prepaid water program, EPM innovates to serve people

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 prepayment meter in commodatum, installation at no cost and social support, among other conditions that allow customers to continue accessing the service.

The EPM connected in Prepaid Water, 8,923 homes, with an investment of COP 9.896 billion, and benefited 40,153 people with this solution.

See, Material aspects, Access and purchasing power of public utilities, page 3 http://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2017/06/Material_aspects.pdf

6. TRANSPARENCY

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 visión

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.

See, material aspects, **Transparency and disclosure of information for the stakeholders**, page 255 a 259, <u>http://www.sostenibilidadgrupoepm.com.co/wp-content/uploads/2017/06/Material_aspects.pdf</u>