

Sustainability Report 2019



*Contribute to the harmony of life
for a better world*

Grupo·epm



**Our
Group**

Grupo·epm



2019 Management Report

Grupo·epm

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Letter from the CEO

Medellín, March 27, 2020

Board of Directors of EPM

Grupo EPM is an organization that understands its daily mission as an opportunity to interact with the people, listen to the community, and work with much dedication and commitment in innovative solutions to favor development, equity, and social welfare.

In this 2020, upon taking on the responsibility to direct this dear company from Medellín, Antioquia, and Colombia, expanded with the same organizational values and principles into several countries of Latin America, I confirm the great skills of its people, the esteem they feel for what they do, and the constant learning process that gives meaning to the service—the core of this business group—in each activity, each project, and each decision made.



Consequently, in the introduction of this 2019 Management Report, I would like to first show my appreciation to those who, at this company, make possible the reality of reaching every day so many homes, companies, and businesses, offering the highest-quality public utilities intended to open spaces for growth and opportunities, which results in social dynamics such as education, employment, healthcare, and civic culture. In short, the goal is to build the present and the future.

As a result, EPM always shows in its reports that what all this corpus of figures and results mainly reflects is the work of the people, their effort to improve every day and create a very positive symbiosis with the communities, which favors the comprehensive development of the current world.

I thus highlight that large-scale and technically-complex works, such as the Ituango hydroelectric project and the Aguas Claras wastewater treatment plant are conceived not only as accomplishments in the field of infrastructure, but also as actual alternatives to improve and significantly contribute to the growth of the community in every sense.

In this sense, the idea that I have about EPM is that of an organization that transforms the lives of the people and that opens doors for change and the construction of progress.

Evidence of this is the transfers to the Municipality of Medellín, the regional autonomous corporations, and other municipalities where the company is developing projects; these life-changing contributions result in quality of life.

The year 2019 will go down in the history of EPM as the period in which the company firmly made progress with the Ituango hydroelectric project in order to essentially reduce the risks for the communities downstream. After the contingency that started in 2018, the organization has worked tirelessly to, first of all, protect the lives of the people and, secondly and thirdly, preserve the environment, and recover the project.

During this period, very important achievements took place, such as closing the gates to stop the flow of water through the powerhouse and, in this way, drain the liquid from it and start the necessary works in the caverns and tunnels affected. The commissioning of the spillway as a canal to dispel the energy of the water contained in the reservoir is also highlighted. At this moment, we started a new phase that, with the purpose of further reducing the risks for the communities, consists in making progress with the works at the powerhouse and commissioning, as soon as possible, the intermediate discharge tunnel.

Moreover, the work at the Aguas Claras wastewater treatment plant, opened in 2019, continues responsibly to eliminate the odor affecting the neighboring community.

Taking an innovative perspective, the company continued making progress with the businesses, which has yielded results in nonconventional renewable energies, the modernization and expansion of the water supply and sewerage systems in several sectors of Valle de Aburrá, the connection of more homes in Medellín and Antioquia to the natural gas utility, and the management of significant aspects in solid waste. All the above is supported by truly relevant programs such as Unidos por el Agua (United for Water), Electrificación Rural (Rural Electrification), and Alumbrado Navideño (Christmas lighting), as well as programs related to sustainable mobility and prepaid services and many others described below.

In Medellín, Urabá, Eastern Antioquia, and the cities of Colombia and Latin America where we are present, 2019 was a year of accomplishments with Grupo EPM.

This is a financially sound organization, with a liquidity level that allows it to ensure the provision of public utilities and the compliance with the obligations acquired. In addition, the group has long-term sources of financing at its disposal, with credits already negotiated that allow it to meet the investment plan and cover the needs created by the Ituango hydroelectric project contingency.

We have analyzed the urgent topics and we are also starting to lay out ideas that we should elaborate from now in the teams. Thus, we designed a metaplan, which is the road map for the following months and years.

We structured **seven focal points of Grupo EPM**, which are in line with the strategic planning, the strategic goals, and the strategic focal points that the company has been implementing. In these focal points, we can find elements related to the growth of the organization, the connection of the company and the city with the region, innovation, digital transformation, and the implementation of technology that will allow us to move forward as a more modern company.

Focal point 1: future services, smart cities, and fourth industrial revolution

As part of the fourth industrial revolution and smart cities, we will aim at improving the engagement with customers, offering them a better service, and migrating from analog processes through a technology-mediated transformation. Topics as important as mobility and air quality are included in this focal point.

Focal point 2: city/region

Our purpose is to align ourselves with a wider environment. We want that this company can be an increasingly integrating agent of the different regions of the country: Urabá, Eastern Antioquia, Lower Cauca, etc. The purpose of this focal point of Grupo EPM is that their contributions have optimal value.

Focal point 3: growth

This focal point seeks to adjust the corporate purpose of the organization to the technological transformations and the new business models offering more opportunities to the business group.

Focal point 4: socioeconomic benefits of public utilities

We want that the EPM customers have increasingly a better quality of life. We will work in coverage, quality, and purchasability. Therefore, our goal is that the public utilities bill becomes increasingly lighter in the market basket. Solutions such as prepaid water and energy and programs such as Paga a Tu Medida (Pay According to Your Needs), Unidos por el Agua, and Unidos por el Gas (United for Natural Gas) are part of the dynamics of this strategic focal point of the group.

Focal point 5: optimization of operations

We have different initiatives and projects whose purpose is to make the businesses of the organization much more profitable, in such a way that they give room to better indicators in the financial statements of the group. This focal point includes projects such as operational safety, cybersecurity, loss management, document management, and different water and basic sanitation projects that will be essential throughout this year.

Focal point 6: cultural evolution

The idea of this focal point is to project change on the people of the group to face the different transformations that take place today in the social and corporate environments. Matters including ethics, conversation, diversity, and conscious leadership are foundations of a process integrating all the focal points of the organization through culture.

Focal point 7: Ituango hydroelectric project

What this focal point proposes is the challenge of successfully completing the project and commissioning the first generating unit in December 2021. This point takes into account the legal, financial, social, environmental, and technical aspects that must be overcome.

This report is doubtlessly a tribute to those who have made it possible: workers at EPM, the very community that strongly encourages this business management, and those like the former CEO, Jorge Londoño De la Cuesta, and the board of directors that supported his management, who did their best effort to make Grupo EPM move forward, taking on challenges with intelligence and attitude of service.

I express my gratitude to the current board of directors and the mayor of Medellín, Daniel Quintero Calle, for being here with us, holding decisively the compass that will lead us toward the accomplishments of our dreams.

This is a teamwork whose purpose is rather clear: contribute to the harmony of life for a better world.

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



Álvaro Guillermo Rendón López
EPM's CEO

Strategic planning

In 2019, the strategic planning components were adjusted to place the purpose as the core element and integrate the sustainability model as a fundamental basis to build each strategic planning component.

Including the sustainability model in the corporate strategic planning of Grupo EPM in an explicit way strengthens the vision of a business management model that understands that economic growth should respect the social and environmental limits. Furthermore, the sustainability vision of Grupo EPM conceives the protection of and value creation for companies and the society from the core business activities, distancing itself from the philanthropic or welfarist approaches and without replacing the state or any other actor in their responsibilities.



The strategic planning consists of four components: purpose, identity, action, and results, which are shown in the following chart:



The **purpose** becomes the core of our corporate action; answers the question of **why we exist**; and represents the highest sense of contribution that Grupo EPM expects to give. It was defined with the participation of all the business group companies, involving all the organizational levels, based on the Theory U by Otto Scharmer, and through conversations and workshops. The process allowed us to go from an egosystemic approach to an ecosystemic approach, which implies a wider vision of the impacts and relationships of the organization.

The **purpose** of Grupo EPM is to **contribute to the harmony of life for a better world**. It is an invitation to live in harmony with oneself and with internal and external interactions and to recognize that we are one part that, along with others, contributes to a whole that is built on differences.

The **identity** refers to **what we decided to be** and covers the elements that describe our corporate philosophy. It includes the code of ethics of the group, which, in turn, comprises the principles of action and values.

The **five principles of action** that guide the group are to fulfill our commitments, have the society as our main interest, give a fair treatment, care for the environment and resources, and serve.

The **values** are responsibility, transparency, and warmth.



The **action** defines **what and how we decide** to accomplish our purpose in line with our identity. This component encompasses the corporate strategy, the competitive strategy, and the support strategies.

The **corporate strategy** is defined as the optimization of operations and growth following corporate social responsibility criteria.

The essential statement of the **competitive strategy** is “businesses creating value for their stakeholders” and it is expressed in each business as described below:

- Power generation: make the business profitable through safe operations and incorporate nonconventional renewable energies through strategic alliances.
- Power transmission: make the business profitable through safe operations.
- Power distribution: make the business profitable through safe operations, grow organically in the current markets, and incorporate solutions of energy distributed and for new uses, through strategic alliances.
- Natural gas: make the business profitable through safe operations and grow organically in the current markets.
- Water supply and wastewater management: make the business profitable through safe operations and grow organically in the current markets.
- Solid waste management: make the business profitable through safe operations, grow organically in the current markets, and incorporate new lines of business through strategic alliances.

The **support strategies** correspond to the actions developed in each functional area of the organization to provide the businesses with competitive power according to the business models and plans of each of them.

The **results** guide us to **where we decided to get**. They are the achievements expected regarding the Sustainable Development Goals (SDGs); the big hairy audacious goal (BHAG) in social, environmental, and financial terms; and the strategic goals.

Services to our customers and users

Engagement with our customers and users

— Improvement of the customer and user experience

We set the following challenges that ensure a better experience: strengthen the customer experience model that we have implemented since 2014, create initiatives to *minimize customer effort* in the interactions through the customer service channels, and, finally, get closer to the customers and communities to get to know them, understand them, and teach them the *good use and benefit of public utilities*.

— Strengthening of the customer and user experience model

Considering the average of customer experience results in companies, negative critical incidents should not exceed 22%. In the last assessment conducted in 2019, EPM obtained 21.3% negative experiences.

Through the company Ipsos Napoleón Franco, EPM conducted five assessments by applying 20 thousand surveys. It is worth highlighting that the recommendation index reached by EPM in 2019 is 54.4, above the reference of 50 in the market. Likewise, 21.3% of customers and users (one point below the reference) expressed that they experienced one negative critical incident with any of the transactions assessed. Due to this, their dissatisfactions were managed with the areas involved.

With the purpose of boosting the actions that create value to the customers and redesigning the moments that negatively impact their experience to transform them into pleasant moments, the processes and formalities for the connection to the energy and water supply services were simplified, eliminating 40% of the requirements; the connection to the natural gas service was standardized; and the options to simplify the demonstration of the connection to the property were increased from two to 10. In addition, an agreement was entered into with the National Registrar's Office of Civil Status to perform biometric validation (eliminating copy of identification document requirements) and share information online. Finally, tests with customers were conducted to perceive their experience with the new initiatives before launching them to the market, and support and orientation concerning the improvement of the experience were provided through different service channels.

— Initiatives oriented to reduce customer and user effort

During the year, EPM received around six million transactions nationwide through all the channels, of which 4% were through digital media and self-service modules, such as online requests, complaints, and claims; the EPM application; and the Ema chatbot.

Aiming to migrate commercial operations to a digital management by leveraging technology, in order to improve performance and customer experience, during 2019, progress was made with the following:

Development of the electronic form for construction companies: five water supply transactions are in process of stabilization.

Improvement of the website functions: with the purpose of improving the customer interaction with the website, some functionalities were improved, so that customers can send their requests, complaints, and claims and query formalities and services.

Commissioning of an artificial intelligence system (EMA chatbot): the chatbot provides online service to customers and users in three transactions, namely query of amounts payable, request of bill copies, and query of formalities. In total, 101,000 interactions were processed.

Creation of the robotic process automation (RPA) experience center for Grupo EPM: by leveraging technology, the center increases the efficiency of some commercial activities, through the standardization of repetitive and numerous tasks, to simplify and speed up the customer request processes.

Addition of new functionalities to the mobile application: they include the request of turns in office lines, the query of office locations, and the information on the requirements for the most frequent transactions. The application has been downloaded to 28,000 devices.

Development of the interactive bill (QR code scanning) and submission of the bill through WhatsApp and the Factura Web platform: 317,000 customers and users are subscribed to online billing.

Execution of the developments to reduce waiting times: they include solutions such as thermal printing, electronic signature, fingerprint biometrics, e-mail submission of assisted-customer certificates, online document storage, and document encryption.

Standardization of the commercial customer-service system at the four national energy affiliates: this ensures the regulatory compliance with the due process, the income stream of the companies, and the minimization of penalty risks, overcoming technological obsolescence and reinforcing the standardization of processes among affiliates.

Installation of eight Puntos Fáciles (Easy Points) in the metropolitan area of Valle de Aburrá: this allows customers and users to address queries, complete formalities, and make payments at the closest point. The points were installed at the EPM offices in the Miguel de Aguinaga building (downtown Medellín) and in the municipalities of Bello and Envigado; at the Parque de Berrío metro station; at the Más Cerca (service offices) of the Belén and Castilla neighborhoods; at Parque de los Deseos, and at the Pablo Tobón Uribe Hospital.

— Customer and community training

As Grupo EPM at the national level, during 2019, we interacted with more than **526,000** people from all the regions of the country where we are present, of which **255,000** correspond to EPM. We carried out 160,000 training activities nationwide, 125,000 corresponding to EPM, and we got closer to the community by means of different engagement programs such as Cercanía (Closeness) and Por Ti, Estamos Ahí (We Are There for You), the creation of a network of community leaders, the work with the educational community and the Cuidamundos (World's Protector) program, the visits to the power plants, and, in general, the development of workshops, working groups, roundtables, and home visits

The engagement with customers and the community is achieved thanks to educational communication at levels of awareness-raising, information, and training on basic aspects of the provision and safe and efficient use of residential public utilities.

Through the **Por Ti, Estamos Ahí** program, 71 institutional events were held, benefiting 99,750 people nationwide. These activities (home visits, conversations, roundtables, workshops, and other educational engagement events) allowed us to talk with the communities about different topics associated with the provision of residential public utilities.



With the purpose of contributing to a better understanding of the bill, the fees, the process of meter reading, among others, we had conversations with 147,000 people nationwide, contacted through the **Lectura a Tu Medida** (Reading at Your Measure) program.

Through the **Cuidamundos** program, EPM and the national affiliates interacted with 72,460 children, young people, and adults of the educational sector in 830 activities, fostering the care for the environment, the prevention of electrical hazards, and the appropriate use of the natural services and resources. As for the work associated with education on **safe use**, we carried out several activities with the participation of 30,000 people in Antioquia. Of them, we emphasize the drawing contest on prevention of electrical hazards that took place in 33 territories and the development of the second version of Especialidad Scout (Scout Specialty), in which 54 groups and around 3,000 scouts designed and implemented, with their distinctive enthusiasm and commitment, communication strategies to promote the safe use of energy and the prevention of electrical hazards.

As part of these educational activities, we made progress with the **social and educational management plan of the Unidos por el Agua (United for Water) program**; during the year, we interacted with 74,000 people from the neighborhoods benefited from the program to generate reliable relationships with the leaders and communities from the territories, facilitate the technical development of the works, empower the community to use, care for, and respect the new infrastructure, and commit them to efficiently use the resource and timely pay the bill.

Líderes Amigos de EPM (Friend Leaders of EPM) also stands out as a strategy that favors conversation groups as a basis to create strong reliable relationships. This has allowed the national companies of the group to hold permanent meetings with the community representatives. In total, during the year, 10,000 people participated in these meetings among leaders and representatives of the communities.

With the aim of recovering the trust of the communities downstream the Ituango hydroelectric project, multiple engagement and group strategies, including discussion sessions, workshops, and home visits, were developed, through which we were able to establish close dialogs with 43,000 inhabitants of the area of influence of this work.

Likewise, programs such as **government seminars, business approach sessions, and visits to EPM power plants** were developed with employees and executives of the companies and institutions belonging to the segments of the government, companies, and large customers, to which EPM provides with its services and with which it consolidated a strategic relationship as an ally. With these activities, we reached 7,600 public servants and employees of companies and large customers of Grupo EPM.

— Somos program

The Somos program covers 891,500 customers and users, of which 246,300 have active credits, for a total of COP 132,800 million financed.

Thanks to the 5% growth in the number of customers and users with credits, compared to the previous year, the Somos program has benefited **246,300 families**, of which 88% belong to strata 1, 2, and 3. Sales amounted to **COP 132,700 million** as a result of the commercial operations and the different activities carried out with strategic allies of the program (Éxito, Jumbo, Haceb, Pisende, Samsung, among others) and the more than 260 commercial allies in Antioquia that have around 500 points of sale.

The program contributed resources amounting to COP 7,500 million to the company's sustainability. The company will continue strengthening the program with the national expansion plan and will implement the standardization of the product in the energy affiliates as of 2020.

Universalization of public utilities

At the national level, Grupo EPM has provided the access and availability of public utilities through commercial and infrastructure solutions. It reached 1,421,027 customers and users in water supply in Colombia; 1,362,670 in wastewater management in Colombia; 868,335 in solid waste management in Medellín; 4,584,486 in energy in Colombia; and 1,260,940 in natural gas in Antioquia.

These results show that, in Colombia, Grupo EPM accomplished a universalization of public utilities of 96.75% in water supply, 93.5% in wastewater management, 99.28% in solid waste management, 96.43% in energy, and 85.84% in natural gas.

In 2019, EPM connected **38,874** customers and users to the water supply service and **40,338** to the wastewater management service, for a total of 1,266,504 and 1,233,212 customers and users, respectively; this reflects a 3% annual growth in both services. This growth is the result of the business natural increase and the Unidos por el Agua (United for Water) program actions.

The company attracted **95,511** customers and users to the energy service, for a total of 2,508,552 customers and users, which shows a 3% annual growth, leveraging the Habitación Viviendas (Habitable Homes), Electrificación Rural (Rural Electrification), and Energía Prepago (Prepaid Energy) programs. This figure also includes the connection of 4,157 homes located in places with technical or legal limitations for the service provision.



Prepaid energy

The company connected **67,040** customers and users to the natural gas service in Antioquia, for a total of 1,260,940, which shows a 5% annual growth. In 2019, EPM created the Unidos por el Gas (United for Natural Gas) program, whose purpose was to apply for a subsidy granted by the Municipality of Medellín for the charges of connecting homes belonging to strata 1, 2, and 3 to the natural gas network. 12,004 homes were connected, exceeding the goal of 624.

The expansion outside of Valle de Aburrá stands out. During the four years, other 19 towns of Antioquia were connected to the service: Belmira, San José de la Montaña, Toledo, El Valle (small town in Toledo), Dabeiba, San Vicente, Concepción, La Clarita (small town in Amagá), La Mina (small town in Amagá), Angelópolis, La Estación (small town in Angelópolis), San Roque, Santo Domingo, Versailles (small town in Santo Domingo), Caracolí, Maceo, Remedios, Palermo (small town in Tamesis), and Nueva Colonia (small town in the Urabá region). In addition, EPM made an effort to accomplish the connection of 3,333 homes in areas enabled by the Municipality of Medellín, which improves the quality of life of these communities.

Note: the total of customers and users is the homes that have the residential public utilities available for their enjoyment.

— Unserved population

In 2019, we connected 37,171 customers and users to the energy, natural gas, water supply, and wastewater services in populations settled down in places with technical or legal limitations for providing the service, such as those located in high-risk areas or outside of the perimeters of the land use plans. It is 47% more than the previous year, increase that leveraged mainly the connections accomplished through the Unidos por el Agua (United for Water) program.

We emphasize the communication and collaborative and coordinated work between the different EPM teams with the administrations and other municipal institutions to enable and obtain licenses in difficult-clearance areas, including places with invasions, high risk, and law and order problems.

In the Unidos por el Agua program, we highlight the collaborative work with the inhabitants of the territories impacted and the community leaders, so that they can be active actors in the development of the intervention, feel the infrastructure installed as their own and, thus contribute to its sustainability.

In the water supply service, in 2016, EPM began to identify and quantify the population of Medellín that did not enjoy the public utilities of water supply and sewerage. Therefore, the company decided to conduct a characterization to find solution alternatives, which were grouped in the Unidos por el Agua program. This process was completed in 2019, accomplishing 103% of the goal, which was 40,200 homes with the service.

In the energy connections, we highlight the strategic contribution of discussing with the municipal administrations the problems of each sector, which evidenced the electrical and earthmoving hazards. Some provisional interventions were proposed to minimize the risks for these communities.

Similarly, in the natural gas connections, a collaborative and coordinated work was developed between the Medellín Mayor's Office and the areas of Connection to Natural Gas and Marketing and Sales of EPM to promptly provide technical and commercial solutions to difficult-clearance areas.

— Unidos por el Agua (United for Water)

Unidos por el Agua is a program developed in collaboration with the Municipality of Medellín, the Social Institute for Housing and Habitat of Medellín (Isvimed), and Empresa de Desarrollo Urbano (EDU); it aims to improve the quality of life of 40,200 families located in Medellín by improving the water supply and sewerage coverage, providing the service with high-quality standards, encouraging the development of the communities, building a water care culture, and mitigating the geological risk in some areas.

In 2019, EPM connected 18,323 homes to the water supply and/or sewerage services, for a cumulative total, since 2016, of 41,391, which exceeds the goal set of 40,200. The sectors benefited include La Honda, La Cruz, Versalles II, Bello Oriente, Brisas del Jardín, Brisas del Edén, San José la Cima, Unión de Cristo, Esfuerzos de Paz 1, Esfuerzos de Paz 2, La Luz del Mundo, Altavista, Santo Domingo Savio (La Torre), Nuevos Conquistadores, La Salle, Colinas de Enciso, El Salado, El Socorro, La Loma, and Brisas del Jardín, among others.

This program helped to boost the development of the communities by generating more than 1,096 jobs per year, of which 51% correspond to people from the previously defined areas of influence. In addition, the construction of 8 km of sewerage networks in the city of Medellín helped to reduce wastewater discharges to more than 10 streams.



Unidos por el Agua

— Program of water supply in rural areas

Wayúu Painwajirawaa Aasaawuin, the first association of indigenous users, was created for the operation of the public standpipe supply system in the municipality of Manaure, La Guajira.

The following advances stand out for 2019:

- Completion of the Manaure project infrastructure (osmosis plant, public standpipes, and waterless sanitary units) and the corresponding delivery to the municipality of Manaure, in the department of La Guajira.
- Delivery of one 10-cubic-meter tank car, one 150-cubic-centimeter motorcycle, 3,600 five-gallon containers, and resources for the public standpipes to the municipality of Manaure. These goods are part of the pilot project developed in the rural area of the municipality of Manaure.
- Completion of the Puerto Caicedo project. The construction of 600 toilet units was completed, benefiting 3,000 inhabitants of the scattered rural area.
- Contracting and completion of the Zetaquirá project. The construction of 40 toilet units was completed, benefiting 160 inhabitants of seven rural settlements.
- Reformulation and negotiation process with the auditor contractor of the Sabanalarga project, which allowed for the resumption of the works in November and their completion in January, 2020.

— Unidos por el Gas (United for Natural Gas)

This program, defined through an inter-administrative agreement signed with the Municipality of Medellín, allowed for the provision of subsidies corresponding to 100% of the natural gas connection charges to homes in strata 1, 2, and 3, located in the city of Medellín. It started on June 20, 2019, and its total resources amount to COP 7,300 million; as of December, COP 7,210 million had been invested. The connection percentage was 15% in stratum 1; 40% in stratum 2; and 45% in stratum 3.

As of December 2019, the subsidy had benefited 12,004 families, mainly in the areas of Robledo, Buenos Aires, San Javier, Manrique, Belén, Villa Hermosa, Doce de Octubre, Castilla, Aranjuez, Popular, San Antonio de Prado, Santa Cruz, Guayabal, La Candelaria, La América, Laureles Estadio, and El Poblado.

— Electrificación rural (Rural Electrification)

The different programs and projects of rural electrification that are being implemented by the energy companies of Grupo EPM are one of the most significant examples of social innovation that contribute to improving the quality of life of the community and increase the opportunities for inclusion and equity.

The importance of the program in each company is reflected on the investment in infrastructure that has meant an amount of COP 34,704 million for EPM in 2019.



The work of ESSA stands out, since it invested COP 17,254 million in infrastructure in 2019 with the Iluminemos Santander (Let's Light Up Santander) program, which began in 2015. This is how the most isolated rural communities have had access to the electrical energy to thrive. The program is implemented in CHEC under the name of CHEC Ilumina el Campo (CHEC Illuminates the Countryside).

For all its national affiliates, Grupo EPM obtained in 2018 the approval by the Mining and Energy Planning Unit (abbreviated UPME as per its acronym in Spanish) for the execution in 2019 of the Coverage Expansion Plan of the Network Operator (abbreviated PECOR as per its acronym in Spanish). EPM presented a plan for 4,030 homes and it was approved for 3,184, which became the goal of the Electrificación Rural program for 2019. The plan for the remaining 846 should be executed with isolated solutions that become the goal for the EPM coverage project, with photovoltaic energy solutions that, as a result, will lead to make progress with regulatory and technical management.

Two of the international affiliates of Grupo EPM made progress with the rural electrification initiative. Delsur stands out with 590 homes electrified and an investment in infrastructure of COP 1,383 million.

Rural electrification - National companies of Grupo EPM	
	Year 2019
EPM	
Homes electrified	6,074
People benefited	18,829
CHEC	
Homes electrified	80
People benefited	248
ESSA	
Homes electrified	5,116
People benefited	15,860
CENS	
Homes electrified	121
People benefited	375
Total homes electrified	11,391
Total people benefited	35,312

Rural electrification - International companies of Grupo EPM	
	Year 2019
Delsur	
Homes electrified	590
People benefited	2,360
Eegsa	
Homes electrified	181
People benefited	815
Total homes electrified	771
Total people benefited	3,175

Source: Vice Presidency of Power Transmission and Distribution.

Figures as of December 2019. The people benefited correspond to the estimation of people per home electrified.

— Servicios Prepago y Paga a tu medida (Pay According to Your Needs)

Regarding the options and solutions available for customers and users to maintain the possibility of consuming the residential public utilities of EPM and, thus, the company can satisfy their tastes, preferences, and needs, in agreement with its capabilities and willingness, in 2019, Grupo EPM attracted 69,878 customers and users in Colombia to the offers of prepaid services and Paga a Tu Medida, of which 52,931 correspond to customers of EPM.

Specifically, 2,834 customers and users were connected to prepaid water supply. Since the beginning of the offer, the group has managed to attract 25,211 customers and users. As for prepaid energy, 17,527 customers and users were attracted by EPM; 3,885, by CENS; and 5,335, by ESSA. Since the beginning of the offer, the group has managed to attract 317,618 customers and users.

Paga a Tu Medida attracted 32,570 customers and users in EPM, 1,347 in CENS, and 6,380 in ESSA. Since the beginning of the offer, the group has managed to attract 209,437 customers and users.

The company has maintained and provided the enjoyment of the **prepaid water supply** service in the 10 municipalities of the metropolitan area of Valle de Aburrá, with a monthly average consumption of 8 m³, in accordance with the needs and abilities to pay of the customers that are connected to this modality. Likewise, with the purpose of benefiting more users, the expansion of the target market (to users with suspended services) was approved and it will begin in 2020.

As for **prepaid energy**, adjustments to the offer were made to enable customers and users from new target markets and include other connection statuses, as well as to strengthen the offer intervention in below-average areas throughout the regions. This allows for the improvement and simplification of the management of the nontechnical losses caused by illegal connections to the distribution networks. In addition, some channels for top-ups were strengthened including Gana and UNE pay phones, in which the customers can top up COP 2,000 on credit using their cell phones or make micro top-ups on credit using UNE pay phones and pay in the next top-up at Gana points. In average, users top up COP 6,000 six times a month, for a consumption per installation of 114 kWh/month.



Prepaid energy

— Aguas del Atrato (Atrato Waters)

We offer 24-hour continuity to all the customers and users connected to the water supply service in Quibdó, the capital of the department of Chocó.

We continued the agreement for the operation of the services in Quibdó, which has allowed us to improve the quality and process control, keeping the water quality risk index (WQRI) below the maximum limits allowed.

At the request of the Colombian government, Grupo EPM is operating the water supply, sewerage, and waste collection services in the urban area of Quibdó, through the affiliated company Aguas Nacionales. To that end, an inter-administrative collaboration agreement was entered into between EPM and Empresas Públicas de Quibdó E.S.P., under liquidation, from 2008 to 2015, which has been extended by the parties through mutual agreement.

The following achievements took place during 2019:

- Average 24-hour daily continuity for all users connected to the water supply service.
- Collection of COP 5,040 million in 2019, 17% more than in 2018 when COP 4,319 million was collected.
- Water quality assurance with a WQRI of 0.59%, which meets the risk level defined by the Ministry of Health and Social Protection through Decree 1575 of 2007. We highlight that, in 2018, the WQRI was 1.16%, which represents a 49% reduction.
- No positive administrative silences during 2019.



— In Urabá

Considering the economic strengthening brought by the port and road-infrastructure development, its strategic location, the sound public and private integration process that leads nowadays the effort for territorial transformation, the accelerated population growth, and that it is a point of convergence between Antioquia and the Caribbean, the Urabá region is today a priority of the regional development set by Grupo EPM. With the development of the infrastructure plans, Urabá will experience an increase of up to 100 basic points in the economic growth rate. The commercial projection of EPM for 2019-2028 shows that the energy, water supply, sewerage, and natural gas services will have increases of 10%, 12.7%, 23.3%, and 19%, respectively, which is more than what is planned today.

Since 2017, upon the creation of the regional management and the commissioning of the Model of Territorial Integration (abbreviated MIT as per its acronym in Spanish), EPM consolidated a strong and leadership-based institutional presence in Urabá.

Investments

The road map is defined in the MIT to ensure the provision of public utilities in the municipalities covered. In the short term, the affiliated company Aguas Regionales EPM built a well in Apartadó and in the small town El Reposo to offset the supply in summer seasons. In the long term, with the outcome of the new source of supply in the León River, near Bocas de Chigorodó, the contracting process for the feasibility study will start with resources amounting to COP 5,000 million provided by EPM. As for the sanitation roadmap, five plots have been acquired and three designs are ready for the wastewater treatment plants of Turbo, Apartadó, and Carepa; the treatment plants of Chigorodó and Mutatá will be designed in 2020. These projects will be submitted to the Colombian Ministry of Housing to request resources amounting to COP 82,031 million.

This year, COP 41,221 million was invested in energy, natural gas, water supply, and sanitation in Urabá.

A total of COP 19,832 million was invested in the **energy** service to support the growing and future demand, foreseeing the charges of development as a result of the port operation, which is added to infrastructure and operational investments to increase reliability in the region. We strengthened the quality and reliability in the region by commissioning the expansion of capacity of the Urabá 220/110/44 kV substation, the standardization of the Carepa 44/13.2 kV substation, and the expansion of capacity of the Arboletes 44/13.2 kV substation. In addition, the most relevant project that will support this port and business development is the 110-kV line that will connect the substations located in Turbo, Nueva Colonia, and Apartadó; its progress is 40.95%. Thanks to the negotiation from the MIT, the municipalities of Turbo and Apartadó and the banana industry granted the licenses allowing the installation of the power line that will be operational in 2021.

An amount of COP 1,821 million was invested in the **natural gas** service to increase customers in the nine municipalities of the region; the impact focused on Apartadó (33%), Turbo (23%), and Chigorodó (17%). The resources were invested in the connection of new residential complexes to natural gas, specifically, in Nueva Colonia—small town in Turbo—and allowed the delivery of this service to 355 families as of December. Moreover, we connected the Colombian National Navy facilities in Turbo to natural gas and negotiations are in progress to install the service in the small town Zungo Embarcadero, the Unibán industrial area, and the Frubatec-Banacol project in Nueva Colonia. Likewise, negotiations are taking place to expand the portfolio in the ports and the free zone of the region. As for the commercial sector, 97 business establishments, such as restaurants, hotels, and stores, were connected to the natural gas service.

Furthermore, in the **water and sanitation** service, we prioritized the design of projects for the management of resources contributed under condition, to close the gap and increase the continuity and coverage without affecting the fees, important aspect when more than 77% of users belong to strata 1 and 2. The own amount of COP 19,567 million was invested; additionally, there are three projects under implementation through the Obras por Impuestos (Works instead of Taxes) modality, with resources from EPM, Aguas Regionales, and EDEQ: construction of La Lucila II storage tank of the water supply system for the sectors 1 and 2 in Turbo, whose progress is 14.6%; expansion of the sewerage networks of Barrio Obrero in Turbo, whose progress is 48%; and optimization of the Apartadó water supply system, whose progress is 46.41%. These investments do not affect the fee for users. Likewise, the commissioning of the overhead water supply was complemented with the installation of more than 6 km of overhead networks and 700 m of footpaths in Turbo. This favored the connection of more than 500 users in a sector including the Colombian National Army and the districts Pescador 1, Pescador 2, and El Progreso, with an investment of more than COP 4,000 million.

The contribution of EPM for COP 5,000 million to finance the feasibility stage of the Nueva Fuente project is emphasized. This project will enable the provision of services in the Carepa-Apartadó-Turbo corridor as an alternative in the long term planning to offer water resources and cover the needs of the region.

Investments with contribution under condition in water supply and sewerage

A total of 77% of users from the five municipalities and two small towns of the Urabá region where the company provides the water supply and sanitation services belong to strata 1 and 2. Due to the tax and socioeconomic conditions of these municipal administrations, the subsidies granted are fewer than in other municipalities of the country, which complicates the investment of own resources, since this would affect the fees that families with complex conditions pay. Therefore, the Aguas Regionales project formulation team was created since 2016 to consolidate a process to identify sources to obtain resources, including Obras por Impuestos.

Thanks to the management of resources from contributions under condition, the company completed important works in 2019, including the optimization of 52 km of water supply networks in the municipality of Turbo, which favors the conditions to improve the quality of life of 1,580 families and positively impacts the continuity and coverage indicators of Aguas Regionales EPM.

As for the sanitation service, we emphasize the project benefiting 256 families in district Juan XXIII in the municipality of Turbo.

In 2019, the company continued executing projects negotiated with resources from contributions under condition and started the three Obras por Impuestos projects. These investments under execution amount to COP 52,760 million, of which COP 28,488 million comes from Obras por Impuestos resources and is intended to replace water supply networks in Apartadó and build the La Lucilla II tank and develop the sewerage works in Barrio Obrero in Turbo. The projects are financed with taxes from EPM, EDEQ, and Aguas Regionales EPM.

The management of resources from contributions under condition has provided the investments to build a well for water supply in Apartadó. This project—with resources from the nation—was executed and made operational in 2019, ensuring that the service was not interrupted due to shortage during the dry season or to damages in the water intake during the flood of the Apartadó River.

Furthermore, COP 2,605 million provided by OCAD PAZ (institution whose purpose is to approve investment projects concerning the implementation of the final agreement to end the conflict) was made viable for the construction of water supply and sewerage networks in the sector of Nuevo Horizonte in Mutatá; likewise, COP 6,063 million (still pending for allocation) was made viable for the third stage of the wastewater collector in Carepa.

Finally, three projects amounting to COP 82,031 million to be developed at the wastewater treatment plants were filed and are pending for viability and allocation of resources.

Coverage

The efforts focused on activities to attract customers, such as public utilities committees, actions on the power loss management process, natural gas customer retention, educational campaigns, sanitation gap reduction, and delivery of community sewerage systems.

In 2019, EPM succeeded in solving the water supply problem of a community that, for more than 30 years, was always told that having access to this service was not possible because it was located on unstable ground, namely a mangrove area. The company proved that it was possible with overhead water supply and benefited 500 families in the districts Pescador 1, Pescador 2, and El Progreso in Turbo. As a result, the Inter-American Development Bank described it as one of the three most innovative initiatives in Latin America and the Caribbean

Regarding the energy service, the company maintained the urban coverage at 100% and the rural coverage at 96%, which positively impacts reliability. As for loss management, integrated with the Urabá EPM Management, 1,294 installations were legalized in 2019, which is equivalent to recovering 665,300 KWh, namely COP 347 million (at full price), thanks to the management with the Turbo, Apartadó, Carepa, and Chigorodó mayor's offices.

In the natural gas service, the penetration indicator went from 75% in 2018 to 80% in 2019, mainly impacting Arboletes with a 12% increase (from 68% to 80%) and San Pedro de Urabá with a 7% increase (from 73% to 80%). The most important actions in which we made progress took place in San Pedro de Urabá, with the network expansion and the total connection of homes in the district Urabá; in Apartadó, with the planning licenses and the consolidation of commercial efforts to connect 10 residential complexes; in Arboletes, with the connection of the districts San Lorenzo and La Inmaculada; in Turbo, with the connection to natural gas of the Colombian National Navy project stage I and, in the small town Cururlao, the districts Buguita and Villa del Carmen and the connection of the small town Nueva Colonia to natural gas through a pressure reducing station, alternative selected considering the limitations to access the distribution network.

In the areas where the company provides the water supply service, the most representative growth occurred in Turbo, with a 19% increase (from 68% to 87%), upon the commissioning of the project on optimization and expansion of secondary distribution networks, the overhead water supply, and other projects to expand networks by sections. As for the sewerage service, Turbo also had a significant coverage increase of 10% (from 34% to 44%).

The water is potable and meets the regulatory parameters and the water quality risk index.

Model of Territorial Integration

Colciencias, fundamental actor and leader of public policies for science, technology, innovation, and entrepreneurship (STIE), ratified the Urabá University-Industry-Government-Society Committee (abbreviated CUEES Urabá as per its acronym in Spanish) as a reference for the department and the country.

During the Grupo EPM chairpersonship, the achievements include the construction of reliability, the STIE Plan for 2032 (innovative region), the consolidation of the Network of Strategic Allies (abbreviated RAE as per its acronym in Spanish) for the territory-focused development plan (TFDP), the allocation of resources from the Colombian Presidential Agency of International Cooperation, and the strengthening of the citizenship with different academic and sectoral events for the engagement with stakeholders.

The notable accomplishments in the most significant scenarios for the MIT implementation include:

CUEES Urabá, where Grupo EPM holds the chairpersonship and which consolidates itself as an agency that thinks, connects, and transforms the Urabá region. The committee has led diverse initiatives such as the STIE Plan for 2032 and has built valuable regional integration actions, which makes the CUEES Urabá a model for the country. Moreover, the RAE, space that gains strength thanks to the CUEES Urabá activities, made important contributions for the construction of the TFDP. In 2019, considering the efforts for the decentralization after seven years of existence (of which EPM has held the chairpersonship for two), the CUEES Urabá has held meetings in places other than Apartadó, with excellent outcomes and favorable reception of the calls in the municipalities of Carepa, Arboletes, Chigorodó, and Necoclí. Likewise, the company played an essential role during the election period by holding six forums with candidates to the mayor's offices of the Urabá region municipalities and the Antioquia Governor's Office.

Environmental working group with the Corporation for the Sustainable Development of Urabá (Corpourabá). The accomplishments include the approval of offset rulings pending since 2015, promptitude with environmental licenses, information on projects in the area, and monitoring of the Sanitation and Wastewater Management Plan.

Working groups with Puerto Antioquia, Puerto Pisisí, and Darién International Port, key ports to plan how to respond to the demand of the future port activity.

Working Group for Development, Habitat, and Residential Public Utilities of Apartadó with the municipal administration, Camacol Antioquia, Corpourabá, the Colombian Association of Banana Producers, constructors, and developers to synchronize the challenge proposed by the 19 partial plans approved in this municipality of the Urabá region facing the public utilities demand. The working group consolidated the information of the different sectors and studied the models of other cities of the country to integrate this important challenge that will be the reference for other working groups in the municipalities of the region.

— In Eastern Antioquia

For the National Planning Department, Medellín-Rionegro will be one of the 10 hubs of leading cities in the economic development of the country. The municipality of Rionegro aims to create an exporting revolution, leveraging its competitive advantage of being close to the José María Córdova airport, by favoring the possibility of new companies establishing in the region and by strengthening the existing industrial area.

Therefore, Grupo EPM seeks to participate in the sustainable and competitive development of Eastern Antioquia; develop infrastructure projects to comprehensively offer solutions for energy, water supply, natural gas, and other services in its organic and inorganic growth; and provide an action system that enables and harmonizes the financial, social, and environmental results.

Empresa de Aguas del Oriente Antioqueño

The company aims to have an investment plan of COP 18 billion for the next 10 years considering the fee adjustments of 28% in 2018 and of 43% in 2019, which will serve the current service provision area.

- Updating of the fee after 20 years of incorporation of the company.
- Capitalization for COP 2,161 million by the partners in 2019.

Empresas Públicas de Rionegro

- Contracting and execution of the Water Supply and Sewerage Master Plan for COP 4,382 million.
- Reduction of risks due to environmental contingencies.
- Standardization and preparation of the affiliate for the merging with EPM.



Environmental management

Integrated water resources and biodiversity management strategy

The purpose of this strategy is to contribute to the sustainability of Grupo EPM and the territories where it operates, through joint activities with different stakeholders and taking into account the land use plan, the characteristics of the territories, the conservation of ecosystems, the supply and demand, and the risks related to water and biodiversity. Our focus is **water and biodiversity for life and sustainability**.

— Water protection

Grupo EPM contributes to this management strategy directly or in alliance with other stakeholders through initiatives such as the support to public and private protected areas, erosion control, environmental sanitation, environmental management of reservoirs, forest management, restoration, and environmental awareness-raising and monitoring.

These strategies take place in the following hydrographic basins: Porce (including watersheds of the Grande, Aburrá, and Porce-Alto Nechí rivers); Nare (including watersheds of La Fe and the Negro-Nare River); Cauca (including areas of influence of the Ituango hydroelectric project); Chinchiná and other basins in areas of influence of CHEC; some basins supplying Aguas Regionales in Urabá; and other basins in areas of influence of EPM and the transmission and distribution affiliates CENS, ESSA, CHEC, and EDEQ.

During 2019, Grupo EPM supported the protection of 19,618 ha for a cumulative total of 76,505 ha since 2016, contributing directly to the fulfillment of the following Sustainable Development Goals (SDGs): SDG 6, clean water and sanitation; SDG 15, life of terrestrial ecosystems; and SDG 17, partnerships to achieve the goals. Indirectly, this also contributes to other SDGs.

To fulfill the water protection goal, Grupo EPM develops different strategies for water resource protection. The following strategies stand out:

- **Forest conservation** (including support to public and private protected areas and programs of payment for environmental services): in 2019, the contribution covered 1,022 ha for a cumulative total in the 2016-2019 period of 19,945 ha.
- **Restoration and reforestation:** in 2019, the contribution covered 13,800 ha for a cumulative total in the 2016-2019 period of 30,510 ha.
- **Sustainable practices and uses** (including silvopastoral and agroforestry systems, living fences and barriers, good agro-environmental practices, erosion control, and rural basic sanitation systems): in 2019, the contribution covered 1,758 ha for a cumulative total in the 2016-2019 period of 6,972 ha.
- **Environmental offset and new protected areas** (including purchase of lands for offset and new areas for the protection of reservoirs): in 2019, the contribution covered 3,038 ha for a cumulative total in the 2016-2019 period of 16,834 ha.
- In addition, the group has implemented strategies of forest conservation and payment for environmental services in other basins of interest for a cumulative total in the 2016-2019 period of 2,244 ha.

The most relevant programs and initiatives include:

- Forestry development program of EPM, through which over 5 million seedlings were produced in the 2015-2019 period to be provided to the communities and owners of properties located in the watersheds supplying the organization's reservoirs. This plant material is used in the protection of riverbanks, living fences, and restoration and improvement of forests.



Forestry development

- Strategy implemented of payment for environmental services to 1,032 rural families to protect more than 12,000 ha of forest in hydrographic basins of interest to EPM, the affiliated company Aguas Regionales, and the power transmission and distribution affiliated companies of the business group.
- Alliances and agreements of EPM with other actors such as the Regional Autonomous Corporation of Central Antioquia (Corantioquia), Regional Autonomous Corporation of the Negro and Nare Rivers Basins (Cornare), Corporation for the Sustainable Development of Urabá (Corpourabá), Cuenca Verde Corporation, United Nations Development Programme, Antioquia Governor's Office, municipalities, and universities to develop actions for conservation, restoration, reforestation, sustainable land use and practices, payment for environmental services, and contribution to the declaration of protected areas of interest to the companies.

Moreover, Grupo EPM owns more than 64,000 ha of forest in protected areas of its systems and reservoirs (56,910 ha of forest and natural ecosystems and 7,130 ha of forest plantations). The operating facilities owned by Grupo EPM are in different ecosystems that contribute to the conservation of biodiversity, provide ecosystem services, generate regional biological corridors, and provide shelter for flora and fauna species that are considered threatened, mainly due to the loss or alteration of their habitats, pollution of the environment, or overexploitation.

— Aburrá-Medellín River Sanitation and Wastewater Management Plan

For 50 years, EPM has been committed to finding solutions to depollute the Medellín River and its tributary streams, with the purpose of contributing to improve the status of this natural resource, through an effective and efficient sewerage service that benefits significantly the metropolitan area of Valle de Aburrá.

- The company has an accumulated investment since 2016 amounting to COP 594,273 million for the projects included in the Sanitation and Wastewater Management Plan (SWMP), such as the Aguas Claras wastewater treatment plant (WWTP), the modernization of the San Fernando WWTP, Centro Parrilla (replacement and modernization of networks in Medellín downtown), Cuencas La Iguaná-La García (La Iguaná-La García Basins), Interceptor Sur (South Interceptor), the renewal of collectors, Otras Cuencas (Other Basins), and Cuencas Rodas, Piedras Blancas y El Salado (Rodas Piedras Blancas, and El Salado Basins).
 - The company collects 207 wastewater discharges.
- The water supply and sewerage networks and the Centro Parrilla express collector become operational.
- The modernization and expansion projects of the San Fernando WWTP become operational.

Main progress actions and achievements of the four-year period

- An accumulated investment of COP 594,273 million for the 2016-2019 period, allocated to the projects of the SWMP. During 2019, the investments amounted to COP 45,897 million.
- Collection of 207 wastewater discharges divided in the following projects: Otras Cuencas (76), Centro Parrilla (107), Cuencas La Iguaná-La García (60), and Cuencas Rodas, Piedras Blancas y El Salado (27). Of the total discharges, 24 correspond to the year 2019.
- Commissioning of the water supply and sewerage networks and the Centro Parrilla express collector.
- Commissioning of the modernization and expansion projects of the San Fernando WWTP. Among other benefits, this improved the reliability indexes and contributed to the reduction of operating costs.
- Stabilization, in 2019, and operation of the Aguas Claras WWTP, ensuring the quality of the effluents, in accordance with the regulatory parameters, after achieving the stabilization of the biological processes in the following years.



Climate strategy of Grupo EPM

The climate strategy objective of Grupo EPM is to achieve resilient and carbon-efficient businesses as of 2025, by managing greenhouse gas (GHG) emissions, analyzing and managing risks associated with climate variables, and comprehensively managing water resources and biodiversity.

All the efforts made by Grupo EPM as part of its climate strategy are proof of materialization of concrete actions that it has taken towards the accomplishment of the sustainable development goal 13, action for the climate, whose purpose is to adopt urgent measures to combat climate change and its impacts.

— Strategy management

Seeking a carbon neutral operation as of 2025, Grupo EPM contributes to the commitment of Colombia in the 2015 Paris Agreement to reducing 20% of its greenhouse gas (GHG) emissions by 2030.

With the purpose of achieving a **carbon neutral operation as of 2025**, the carbon footprint or GHG emissions inventory (scopes 1 and 2)¹ is estimated in accordance with *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*, known as the GHG Protocol. The 2019 inventory will be available as of April, since the calculations take place during the first four months of the following year.

As part of the 2012-2018 climate change strategy, EPM committed to keeping its emission factor below the factor of the National Interconnected System, which has been achieved from 2016 to 2018.

Currently, EPM verifies the emission reduction obtained by the operation of the previous year, as a result of the emission reduction projects registered before different international standards, in order to make them available for the different offset or commercialization purposes in the national or international markets. In 2019, the company conducted the first five-year verification of the Reducing Emissions from Deforestation and Forest Degradation (REDD+) project, after its registration in 2013, and accomplished the renewal of the third and last credit period of the Jepírachi wind park and the La Vuelta and La Herradura small power stations.

¹ *Scope 1 emissions (direct emissions). They include the emissions from the sources owned or controlled by the company, as well as the emissions from vehicles of the company's fleet, the emissions from steam or boilers, and the fugitive emissions from the company's air conditioners, ducts, or systems.*

Scope 2 emissions (indirect emissions). They include the emissions from the electrical consumption and those from heat, steam, and refrigeration sources that are acquired externally.

The carbon neutral operation of Grupo EPM can be achieved through generation projects that meet the registry standards, through the purchase of third-party certificates, through certified emission reductions of other initiatives such as sustainable mobility, through power generation from nonconventional renewable sources, or through energy efficiency programs, among others.

EPM has opportunities to commercialize, with other companies of the country, the carbon credits currently available. In August 2019, it held an auction for the 550,000 emission reduction certificates, available as a result of the operation at the La Vuelta and La Herradura small power stations from 2010 to 2017, which generated revenue for COP 8,415 million.

As of 2019, a total of 2,467,480 green energy certificates or renewable energy certificates from Jepírachi, La Vuelta, La Herradura, and Porce III have been issued, of which 2,370,806 have been redeemed; this represents an approximate revenue of COP 4,204 million, which will be reinvested for the development of new projects.

— Climate change mitigation: energy efficiency

As part of its climate strategy, Grupo EPM seeks to develop and implement practices and operations that favor the optimization of use and demand of the different types of energy that the organization requires for its operations and businesses.

In this way, EPM resumed the analysis of the energy efficiency business that it has with Veolia and adopted the decisions to i) continue participating in the energy efficiency business as a non-controlling shareholder, through VE Servicios de Eficiencia Energética S.A.S. and ii) allocate more resources of the company to this partnership, with views to the development of new energy efficiency solutions. Through this business, the company has reached more than 165 customers—namely factories, buildings (such as hospitals, shopping centers, offices), and district heating and cooling systems—in different regions of the country.

The power transmission and distribution companies implemented initiatives oriented to reduce energy losses from the power lines and leaks of sulfur hexafluoride, an artificial gas widely used in high voltage equipment thanks to its excellent electrical insulation properties.

EPM started implementing the regulation of sustainable construction in the projects, considering climate variables for the design of offices and facilities. The company made progress with actions of power consumption savings in administrative and operative areas (sensors, efficient lighting, and low-consumption air conditioners, among others) and replaced refrigerant gases of air conditioning, refrigerators, and other cooling systems for other less polluting gases. Likewise, it made progress with the formulation of plans for the efficient use of energy.

— Climate change mitigation: renewable energies

Grupo EPM has a portfolio of expansion projects for conventional and nonconventional renewable energy generation options, based on hydroelectric, photovoltaic, wind, and geothermal sources.

With the purpose of generating strategic value and ensuring more synergies exceeding the efforts accomplished individually, EPM maintained its strategic alliance with Invenergy to invest, develop, build, operate, and maintain power generation parks with wind or solar (including the possibility of rooftops) technologies in Colombia.

Furthermore, taking advantage of the solar resource, some companies of the group—such as ENSA, Delsur, Aguas de Malambo, EPM, and CHEC—are making progress with the development of initiatives to generate their own power in their offices or facilities.

Progress was also made with:

- Tailored offers by EPM for homes, residential complexes, universities, state entities, SMEs, companies, and business establishments that intend to replace part of their consumption with solar energy.
- Analysis by CENS for the implementation of renewable energy source systems at residential and commercial scales. The feasibility studies for the connection of photovoltaic solar energy (80 MW) projects to the system are already approved by the Mining and Energy Planning Unit.

The affiliated company Eegsa made progress with the process before Guatemala's National Electrical Energy Commission to contract the purchase of renewable energy supply for 15 years.

EPM and CHEC are making progress with the studies and licenses to develop the geothermal energy project in central-western Colombia, as well as with the financial model for its feasibility.

For its part, EPM continues to reclaim biogas at the San Fernando wastewater treatment plant (WWTP), which generates, on average, close to 40% of the plant's energy requirements. Moreover, it has conducted analysis to define the best use of biogas generated at the La Pradera landfill and the San Fernando WWTP, as a result of a new regulation that authorizes its purification and injection to the network.

— Climate change mitigation: sustainable mobility

EPM leads eight electric mobility projects that were part of the 2016-2019 development plan: regulation of Agreement 44 of 2015 and Decree 1221 of 2016 that creates the strategy for the promotion and mass use of electric mobility in the municipality of Medellín, Mobility Week event, signature of memorandum of understanding with companies of the ecosystem, pilot project implementation of electric taxis in Medellín, acquisition of electric buses in agreement with Área Metropolitana del Valle de Aburrá and Metro de Medellín, implementation of electric vehicles with third parties, and adjustment of public and private charging stations.

EPM makes progress with the consolidation of alliances that favor the implementation of measures and the strengthening of the electric mobility and vehicular natural gas (VNG) plans as clean transportation alternatives in the air quality programs. In this sense, EPM developed the **Calidad del Aire (Air Quality)** program with the **sustainable mobility** strategy and with initiatives that include **VNG**, slow internal charging, and public charging **stations for electric vehicles**, contributing to the reduction of CO₂ emissions, promoting a more rational use of energy, and opening new spaces to diversify and optimize the clean energy mix of Colombia.

As promoters of **electrical mobility** in Valle de Aburrá, the main achievements in 2019 include:

- Adjustment of a green public charging station, for a total of 20 in Valle de Aburrá and more than 600 users. At the end of the year, there were 613 new electric vehicles on the roads of Valle de Aburrá, for a total of 1,143.
- As for the public transportation fleet, commissioning of 64 electric buses corresponding to Metroplús vehicles, for a total of 66 on the roads. In addition, EPM put together the project of electric taxis, which has seven electric taxis on the roads, and acted as advisor in the drafting of national bills and municipal agreements that establish benefits for the users of this technology.



- Establishing of the offer to finance bicycles and electric motorcycles for holders of the Somos card (EPM loyalty program).
- Signing of the agreement between EPM and the EPM employee's fund to finance electric vehicles for employees of the company.
- Construction of five internal charging points for EPM customers, for a total of 50.
- Structuring, in collaboration with Renting Colombia, of the first Colombian project to rent electric vehicles.
- Opening by ESSA and EDEQ of public fast- and slow-charging stations for users of this technology in Colombia.

As for natural gas, the company made progress during the year with the following:

- The task of EPM in some conversion workshops is to promote the financing of the VNG equipment installation through the Somos program; EPM financed more than COP 2,800 million. Currently, the natural gas chain (producer, carrier, distributor—EPM) delivers a "bond" amounting to COP 1,254,000 per vehicle. Approximately 3,800 bonds were delivered in 2019 to install VNG equipment, to which EPM contributed an approximate value of COP 1,400 million.

- A total of 411 buses of the mass transit system and four Emvarias garbage compactor vehicles, which are still 63 in total, started operating with natural gas. In 2019, three drinking water tank cars became part of EPM, for a total of 66 trucks, including Emvarias' and EPM's fleet, operating with natural gas. In total, 503 natural gas vehicles, namely buses, trucks, dump trucks, and taxis, are on the roads of Valle de Aburrá as of December 2019.
- There are currently 17 VNG stations: 15 in Valle de Aburrá, one in Apartadó, and one in Rionegro. Of the 15 stations in Valle de Aburrá, one is exclusive to the Metroplús mass transit system and another to the Emvarias garbage compactor trucks.

As for the EPM's fleet, by the end of the period, the company has the following natural gas fleet, whose main environmental benefit is its low emission of particulate matter, source of the air quality problem in the territory; compared with diesel engines, reductions can amount to 99%:

- Three tank cars with the capacity to transport 10 m³ of drinking water.
- One dump truck of the wastewater treatment plant.
- One repowered Vactor truck, with new VNG engines for diesel-engine units. Original engine.
- One bus to transport EPM's public servants on the EPM building-EPM Belén offices route in Medellín.

EPM estimates that, with the use of natural gas, particulate matter has been reduced by 91.87%; volatile organic compounds, by 45.54%; and carbon dioxide, by 21.14%. These percentages are obtained by comparing the emission reduction with natural gas as an Euro IV diesel substitute; with electric vehicles, this reduction is by 100%.

Additionally, EPM implements the **Corporate Sustainable Mobility Plan** (abbreviated PEMS as per its acronym in Spanish), through which the following was accomplished:

- A total of 136 executives and 324 public servants work from home, of which 56 started in 2019.
- Workdays were kept flexible with five staggered work schedules: from 6:00 a.m. to 4:00 p.m. (1,315 people), from 6:30 a.m. to 4:30 p.m. (1,032 people), from 7:00 a.m. to 5:00 p.m. (3,298 people), from 7:30 p.m. to 5:30 p.m. (935 people), and from 8:00 a.m. to 6:00 p.m. (201 people).
- In the En Bici al Trabajo (Bike-Riding to Work) program, 180 people registered in 2019, for a total of 705. In addition, the company maintained the 221 bike parking spaces at the EPM building, 24 at the Calle 30 offices, and 40 at the Colombia substation in the city of Medellín.



- The EnBici mobile application was enabled and now it has 471 users.
- To facilitate commute, 24 positions were enabled in 2019 at offices south of the metropolitan area for people living nearby.

— Climate change adaptation

Seeking proper articulation with the corporate tools to manage this adaptation, the company made progress in 2019 with:

- Formulation of a climate module based on the corporate risk framework, with the purpose of addressing, analyzing, and constantly managing climate risks as appropriate in the levels of group, business, company, project, or process.
- Completion of stage II of the study on climate scenarios as of the year 2100 in the areas of greater interest to the water and energy businesses located in Antioquia. The forecast includes temperature rises, storms, and dry periods, which will impact power generation and distribution and water supply.
- Installation of two servers at EPM, which will enable the group of professionals expert in the water and energy businesses to operate a specialized climate model and provide the relevant indications during decision making. The climate adaptation plan of the group will be updated and complemented based on the main measures provided by this study.

Project development

Vision 2025 growth projects

Based on analyses carried out by EPM regarding worldwide transformations that have been occurring in the public utility sector and their implications for the future of its businesses, a consulting process was developed in 2017, which produced a series of recommendations on the new businesses and the lines that should be integrated, as well as the action routes in the medium and long terms to maximize the value of Grupo EPM by 2025.

— Nonconventional renewable energies (NCREs)

In order to increase the energy portfolio of EPM through NCRE solutions (solar parks, wind farms, and power self-generation plants) with a strategic ally and gain the key capacities to develop this type of businesses, during 2019, the company selected Invenergy as its strategic partner, negotiated the knowledge transfer plan clauses, and signed a collaboration framework agreement in November. This initiative is expected to generate an EBITDA of COP 178.2 billion by 2025.

— Small hydroelectric power stations (SHPSs)

This project aims to strengthen EPM competitiveness in terms of planning, construction, and operation of SHPSs through the design and implementation of improvements applied to processes that lead to the execution of new SHPS projects. Its scope includes the application of improvements and the formalization of a partnership for the development of the Santo Domingo project (two 20-MW SHPSs). The main achievements are:

- Structuring of the Santo Domingo project with two SHPSs. Successful modification procedure of license, which is to be obtained.
- Recommendation about five potential allies that continue in the process to competitively develop the Santo Domingo project.
- Registration of the environmental impact assessment of the Guacaica SHPS.
- Exemption from environmental diagnosis of alternatives for the PGU6 projects.

This initiative is expected to generate an EBITDA of COP 49.3 billion by 2025.

— Growth and efficiencies in solid waste

With the purpose of structuring and implementing feasible lines of business for the growth of the solid waste business through landfills, recycling, hazardous waste, and construction and demolition waste (CDW) and for the definition of the technological configuration looking to the valorization of waste that is not sorted at the source, progress was made during the year with the following:

- The agreement with International Finance Corporation was signed to define the road map for the valorization of waste that is not sorted at the source.
- The lawn mowing and street cleaning component was included in the solid waste fee.
- In efficiency, with Emvarias, the tree pruning and grass-cutting processes were included in the fee. Likewise, the leachate management is partially included in the fee (COP 5,000/t). The studies to improve the cleaning routes also started.
- Support was provided to Emvarias in the installation of waste containers in some areas of the city.



- The direct purchase management was structured from Emvarias.
- The company awarded the consultancy contract of road map for the valorization of waste that is not sorted at the source.

- In the reclamation line, the pilot program for the extended producer responsibility was structured with Emvarias, Kaptar, and TriCiclos. Moreover, support was provided to reclamation of organic waste, classification and reclamation stations, and Puntos Naranja (Orange Points) of Emvarias.
- Reciclados Industriales de Colombia was selected for the reclamation of CDW.

This initiative is expected to generate an EBITDA of COP 53.7 billion by 2025.

— Financing

The project seeks to strengthen the commercial and operational capabilities of EPM and the national affiliates to enable Grupo EPM to reach better national market penetration. During 2019, the following was accomplished:

- Approval of the business case with each affiliate company: CENS, ESSA, CHEC, and EDEQ.
- Creation of the interaction agreement with affiliates.
- Completion of the financial and accounting model of the project.
- Definition of the commercial offer manual and the image manual, which includes the products to be financed and the financing conditions.
- Definition of operating procedures (customer attraction, credit analysis, payment to commercial allies and suppliers, billing, collection, document management, etc.).
- Definition and introduction of the information system implementation plans.
- Introduction of the granting policy standardization.

This initiative is expected to generate an EBITDA of COP 81,000 million by 2025 and to quadruple the number of attracted customers in the Somos program.

— B2B B2C

This project favors the definition and implementation of an added-value service portfolio to offer comprehensive solutions regarding public utilities for homes and micro and small enterprises, namely energy equipment: installation, repair, and maintenance. During 2019, the following was accomplished:

- Provision of maintenance services with Haceb. Nine services were provided.
- Commercial campaign and provision of maintenance services with Dismogas. A total of 172 services, of a goal of 50-200, were provided.

- Commercial campaign and provision of installation, maintenance, and repair services with Haceb and Dismogas. A total of 800 services, of a goal of 500, were provided.
- Strategy to sell memberships: 87 contacts and 21 sales, of a goal of 300 customers.
- Definition of the EPM a Tu Puerta (EPM at Your Door) brand strategy.
- Contracting of supplier Market Team to develop the pricing capacity.

This initiative is expected to generate an EBITDA of COP 28 billion by 2025.

— Solar energy self-generation project

The goal of this project is to offer solutions to the market through the sale of solar energy for large power consumer customers with power purchase agreements (PPAs) and comprehensive photovoltaic solutions for small and medium-sized enterprises and homes with engineering, procurement, and construction (EPC) contracts. During 2019, EPM installed systems through PPAs at Plaza Mayor (convention and exhibition center of Medellín) and made progress with the signing of a PPA with Universidad Eafit. In addition, the company accumulated for PPAs 15 commercial proposals, three signed contracts, and 0.423 MWp installed. As for the EPC comprehensive solar solution, by the end of the year, there were four attracted customers, 45 interested customers, and 7.75 KWp installed, which is equivalent to 875 KWh/month. By the end of December, there were 720 PPA and EPC-contract requests. This initiative is expected to generate an EBITDA of COP 15.4 billion by 2025.



Business development projects

During the period, progress was made with the execution of business transformation projects to improve Grupo EPM's governance, optimize processes and tools associated with the operation of businesses and with the support areas, develop the required capacities according to the defined strategy, and, in turn, benefit the customers and users and other stakeholders of EPM.

The accomplishments are listed below.

— Business transformation: strategic projects

The **Supply Chain** project stands out for obtaining benefits amounting to COP 272,220 million during the period, associated mainly with joint procurement, materials and warehouse management, and implementation of the Ariba tool for purchase management at EPM and the affiliated companies of the group.

The **Grupo EPM sin Fronteras (Grupo EPM without Borders)** projects include the **Field Productivity** project. Its purpose is to optimize the on-site procedures and resources of the natural gas, wastewater management, solid waste management, and power transmission and distribution businesses; this improves the coordination between businesses, creates synergies, efficiencies, and reduces the impact of costs on the fee. The project has increased the prompt closing of work orders, the crew's efficiency, and the hours of effective work and has reduced the failed visits, the overtime consumption, and the hours of travelling. It should be noted that the project methodology is also adopted by the international affiliated companies. The benefits obtained during 2019 amounted to COP 62,893 million.

An **asset management** system was designed and implemented following the ISO 55001 standard and seeking to ensure the creation of value in a sustainable manner and according to the corporate plan. The project minimizes the cost of valves maintenance thanks to improvements in the specifications and makes progress in the incorporation of asset management business rules in the maintenance processes of the sewerage system. In the generation business, the application of the different asset management tools made it possible to keep improving the readiness level. It is worth highlighting the reliability, serviceability, and availability analyses conducted in the Guatapé power plant, as well as the asset health indexes. In 2019, the project was closed and the capture of benefits amounted to COP 57,355 million.

The **Digital Connection** project was implemented aiming at an evolution in the enterprise architecture that would favor interaction between people and information, in addition to the provision of secure services to the different stakeholders of Grupo EPM. Throughout the year, security issues in storage were resolved and delivered to the SOC provider; the VPN (virtual private network) was also set in motion; and private ExpressRoute vs. VPN performance tests were carried out. The project concluded in December 2019 with the following achievements:

- Consolidation of data centers. During the third semester, 13 servers were consolidated.
- Monitoring tuning. Progress was made in the implementation of "Operation Management Service" practices, whose name changed to "Log Analytics". An availability analysis transaction of the external EPM portal was implemented.
- Updating of the Service tag. Application of the objects of the Azure's productive subscription.
- Publication of the mechanism for assigning values when creating a service in the application.
- Creation of the EPM's multicloud management platform document based on Gartner and other documents from the main suppliers of the Magic Quadrant.

With the purpose of effectively supplying the goods and services required for the proper operation of Grupo EPM, the **Supply Chain** project was implemented through a management model, which obtained benefits for COP 272,220 million, thanks mainly to the reduction in joint procurement and contracting plans among the affiliate companies.

Leveraging the business strategy and evolution is also achieved through the transformation of the workspaces. For this reason, the **EPM Building Renovation** project was carried out in order to improve the communications service of basement 2, as well as floors 3, 4, 5, 6, 7, 8, 10, 11, and 12. During the year 2019, adaptations were made on floor 0 and renovation of floor 9 was started.

— Efficiencies 2025 projects

The project for the **implementation of efficiencies in the power transmission and distribution business** stands out for being classified as a research project by Colciencias, which creates tax benefits to EPM for about COP 973 million.

The efficiency in the **Global Shared Services Center** project seeks to strengthen the growth of the Shared Services Center as a support and optimizer of common processes in the business group. It expects to generate an EBITDA of COP 23.8 billion by 2025. The main achievements are:

- Completion of the survey on the current status, both in EPM and its national affiliates, of the processes of cost management, accounting management, tax management, supply, accounts payable, compensation, and contributing insurances.
- Contracting of a consultant (Ernst and Young) who supports the redesign and implementation of the service center.
- Redesign, implementation, and go-live of the first service: contributing insurances.
- Redesign of the supply management service.

To achieve efficiencies in the gas service, the project for the **implementation of operational efficiencies in the gas business** was created. It seeks to reduce operating costs by analyzing and formulating initiatives in the processes of the Vice Presidency of Gas. The object of impact will be all the processes of the gas business, without including support processes. By 2025, it is expected to generate an EBITDA of COP 4.7 billion. Throughout the year, with the efficiencies identified, benefits close to COP 1,050 million above the established target have been captured. The “income insurance” efficiency is the initiative with the greatest positive impact.

In order to improve efficiencies in the generation business, the project for the **optimization of plant availability in EPM’s major hydraulic stations** was started aiming at increasing availability by managing the unavailability hours. By 2025, it is expected to generate an EBITDA of COP 2.9 billion.

The main achievements are:

- Construction of a model to determine the asset health index in generation.
- Construction of the block diagram for major hydraulic plants

- Functional modeling of the Reliability, Availability, and Serviceability (RAS) model—designed to manage all variables related to plant availability—for major hydraulic plants.
- Assessment of the health index of significant assets of all major hydraulic plants (stator, rotor, turbine, and transformer).
- Presentation of the guide that explains the scope of the different types of overhaul.
- Completion of the planned maintenance optimization (PMO) system in Porce III.
- Achievement of the availability goal with a value of 92.9%, taking into account that the goal was 92.68%.

The project for the **implementation of efficiencies in the power transmission and distribution business** seeks to identify opportunities to obtain short-term benefits, reduce costs, increase income, optimize cost-expense, and lower investment; thus capturing operating efficiencies in EPM and the national energy affiliates. By 2025, it is expected to generate an EBITDA of COP 37.7 billion.

The main achievements are:

- Installation of 20 macrometers to monitor consumption of large customers.
- Power recovery based on the data obtained from the macrometers installed. To date, it amounts to 142,000 kWh/month approximately.
- Replacement of 264 km of network in critical circuits.
- Installation of 250 reclosers.
- Installation of 9 automatic reclosing systems in the network.
- Development of analytics for real-time quality indicators.

— Capacity-building initiatives 2025

Grupo EPM constantly executes projects with a high impact on society. For this reason, it works on strengthening this capacity through the **Project Management** project, which aims to achieve success rates of 80% or more in the development of infrastructure projects on time, within the cost estimate, meeting the initial objectives and business intention, exhibiting the expected quality and a high level of maturity in the materialization of benefits. All this, by strengthening internal capacities in EPM and improving capacities between EPM and its environment. This initiative is expected to generate an EBITDA of COP 3.7 billion by 2025.

The main achievements are:

- Implementation of 10 modules of the project management training plan.
- Progress in the construction of the portfolio management strategy at the territorial level.
- Preparation of specifications for PPM contracting (Primavera).
- Construction of BIM libraries.
- Start of the design reliability consultancy (Design to value).
- Implementation of action plans in the businesses to improve 2019 budget execution.

The **Digital Transformation** project aims to achieve a fundamental change in the way of operating and creating value for the different stakeholders, incorporating digital technology in all areas of the organization and digitizing processes and forms of interacting. This becomes evident as different and innovative solutions are delivered, a better relationship with customers is achieved by transforming traditional processes into customer-centric processes, data are optimally used, and greater analytics capabilities are developed to operate, invest, and explore new opportunities. By 2025, it is expected to generate an EBITDA of COP 16 billion. The main achievements are:

- Completion of the capacity assessment model.
- Start of the agile methodology and innovation courses for key teams in the organization.
- Seven start-ups in execution (digital transformation teams focused on solving business challenges) of four initially planned in 2019. Two of them with subteams to work on specific topics (technology and processes). The start-ups have created minimum viable products in advanced analytics, customer experience, and digital components.

— Other strategic projects

In order to minimize the risks associated with information and business operations, it is worth highlighting the **Information Security Management System** project and the **Operational Safety** program. During the year, the former developed cyber intelligence services, facilitating the detection of external threats; while the latter was consolidated as a program to manage operational safety, developing comprehensive solutions to implement the pillars of operational safety under standards.

With the execution of these projects, safety practices and culture are being promoted, so that the probability of people, goods, and infrastructure being affected is reduced through the continuous process of risk identification and management.

Other project that is worth mentioning is the **water supply system with telemetry**. Its IoT technology allows it to be the first regional water supply system and automate and control plant instruments remotely.

In 2017, the implementation of **El Centinela**, an **information security management system** applicable to Grupo EPM, was started in order to preserve the confidentiality, integrity, availability, traceability, and non-repudiation of the information assets that support the processes for the achievement of the group's strategic objectives. It allows the group to display its services and information to its stakeholders, minimizing the risks that affect the reputation, image, finances, and continuity of the services and information it offers.

The following services are among the main achievements:

- Operational center for security and cybersecurity in operation.
- Monitoring and correlation of events: in order to have a better protection, the team is correlating more than 3,600 million monthly records, which favors visibility of possible attacks.
- Advanced internal analytics: internal atypical behaviors within the systems were analyzed.
- Cyber intelligence services: external threats that indicate possible attacks were preventively investigated and analyzed so that the group is able to react opportunely.
- Cyber defense services: the behavior of attackers was investigated.
- Implementation of systems to detect intruders in the control center.
- Implementation of solutions for processing confidential information through cloud tools that make it possible to control the sending and copying of sensitive information.
- Implementation of protection mechanisms to secure information residing on mobile devices (laptops, cell phones, and tablets).
- Reduction of the risk indicator for cyber attacks in areas and processes of the power business: 4.99% reduction in control centers, 5.7% reduction in substations, 0.17% reduction in telecommunications, and 13.54% reduction in generation.

- Attack containment: configuration changes (352), blocking of services published on the internet (52), malicious network traffic (213), information theft (172), phishing (84), unauthorized use of information (530), spam-pishing (5,908).
- Contracting of the vulnerability assessment and monitoring service (SOC) in the four energy affiliates in Colombia (CHEC, CENS, EDEQ, ESSA).
- Risk assessment in national affiliates and Emvarias.
- Progress in the development of a cybersecurity awareness program for employees and contractors, through the implementation of the course on digital security policy (65% effectiveness); the dissemination of the digital security culture in the internal communication media: Mi Canal (My Channel), Correo Unificado (Unified Mail), EPM al instante (EPM Right Away), EPM te Escucha (EPM Listens to you); and cybersecurity talks and workshops with 315 people in person and 1,160 people via streaming. The social media security week was also held with 6 conferences and 6 practical workshops.

Antivirus programs were installed in 30 machines of the Control Center. Despite the execution of these actions, the risks related to cyber attacks increased during the year and were classified within the three most relevant risks by the World Economic Forum (WEF) due to their strategic impact.

For its part, the **Red Trunking** project aims at implementing an operational communications system that guarantees current coverage, that is, that facilitates tasks such as project development, maintenance, operation, and emergency response in each of the business units (power generation, distribution, and transmission; water supply and sewerage, and gas); and that, in addition, favors the expansion needs of EPM and the affiliates that may require it. It includes the analysis, design, and implementation of the trunking network. Among the advances of this project, it is worth highlighting the delivery of the detail designs by the contractor, the submission of critical elements for the Ituango project, the entry into service of the control center on the first floor; the entry into operation of the La Caverna, El Salto, Nevado, La Yegua, Marconi, Boquerón, Tarazá, and La Cruzada repeat sites.

In order to incorporate the best management practices in the treasury processes, the **Comprehensive Treasury Management** project was executed. It mitigates the existing risks in the operations of debt, hedging, portfolio, bank reconciliation, financial risk, and liquidity management of the group to leverage the strategy of the action matrix. During 2019, the group acquired the necessary infrastructure to implement the debt and derivatives functionality; configured the development and testing environments; purchased the license and reviewed, along with the SAP firm, the quality and production environments before starting production; and adjusted the conditions to guarantee their good performance. Likewise, it started the transition to production on December 23, 2019; loaded the balances and master data; carried out the period closures; and validated the figures to be released into operation.

The **Operational Safety** program covers the design and implementation of operational safety practices—in accordance with the ICAO standard (document 9859)—in the generation, transmission, distribution, gas, water supply, and solid waste management businesses of the parent company, including the support processes that impact the operation of the businesses. The main achievements are:

- Adjustments were made in the management of snacks, starting with the transmission and distribution businesses, and in the management of shifts and the fire protection system in the generation business.
- Water and sanitation: disclosure and validation, with the people involved, of the operational safety baseline. With this material, the roadmap will be designed to address the safety goal for the business. Progress was made in the execution of the action plan, but it was not fully completed because some elements and actions required the attention of other areas and additional time for their execution.
- Gas: completion of the operational safety baseline for the business, which includes the diagnosis for the development of the actions to be undertaken through the execution of the roadmap. Additionally, execution of the actions corresponding to the short-term findings that meant a risk to operational safety.
- Transmission and distribution: completion of the operational safety baseline and its respective roadmap. Moreover, reduction of the risks that may affect operational safety, thanks to the execution of 99% of the proposed actions.
- Generation: completion of the actions of the 2019 roadmap for the business, updating of the energy operation process, identification of four critical positions, definition of strategic risks associated with operational safety, and establishment of the respective service plans and of various guidelines for the use of electronic devices that are not part of the production process, for access to plants, among others.

Based on the increasing amount of information generated in Grupo EPM and the number of IT tools available for different processes, an initiative was created for the **implementation of an enterprise resource planning (ERP) solution** in the group. It is still being formulated and its purpose is changing the ERP of Grupo EPM at the national level; therefore, it is necessary to select, acquire, and implement the best solution for managing enterprise resources, based on the current needs and characteristics of the group.

Another business development initiative that is in the formulation stage is the **Transactional Business Architecture** project, which is focused on the definition, acquisition, and implementation of a technological solution to cover the needs and reduce the risks of the traditional commercial process, also including the necessary adjustments in the dimensions of strategy, processes, people, structure, and information.

With the purpose of implementing a more convenient smart metering scheme that allows EPM and the national energy affiliates of the business group to comply with the regulatory guidelines, the market needs, and the technological and process trends, a project is developed for the **implementation of advanced metering infrastructure in the electrical energy service in the companies of Grupo EPM in Colombia.**

In order to ensure the availability and reliability of documentary information in EPM and thus optimize operations and mitigate the risks from the inadequate management of information, the **Consolidation of Document Management** project was developed and, throughout the year, released the customers and work histories record in EPM and the national affiliates; in addition, Enter Online was implemented in ESSA, Emvarias, Aguas Regionales, Aguas del Oriente, Aguas de Malambo, and EPRio. It is worth mentioning that the project advanced in the construction of the document retention schedules (TRD) and the institutional file plan (Pinar).

— Innovation efficiencies

Grupo EPM seeks efficiencies or optimization in process, product, and offer in the current businesses. In order to define the project's initiatives, ideas were collected by means of the innovation agenda, a call for the Creando Ando (Creating) program—promoted by Human Development—and workshops with each of the business planning departments to validate the priorities, until reaching a consensus on the understanding of the problem and what is expected from D&I in the coming years.

The project for **injecting biomethane into the gas network** was approved in order to transform the biogas currently produced by the San Fernando wastewater treatment plant (WWTP) into biomethane that is subsequently injected into the natural gas network, which will represent a significant income stream for the gas and water businesses. This project, besides being necessary due to the technological obsolescence of the current motor generators, becomes the first circular economy project since it makes a more efficient use of biogas. Activities scheduled during the formulation stage were 100% fulfilled and, for this reason, the business case was approved in September 2019.



In its search for development options in new markets and businesses, Grupo EPM launched the **Floating Photovoltaic** project, which makes it possible to identify and validate whether floating solar panel technology can become a competitive technological option that creates conditions for commercial exploitation. During 2019, the contract was amended to certify both solar photovoltaic systems in RETIE (Technical Regulations for Electrical Installations). In the second quarter of the year, there was a damage in a cable coating, so the contractor is in the process of replacing the floating datalogger; situation that caused a delay in the operation and reception of the planned reports. Work was done to obtain and install equipment and materials that comply with the RETIE standard. The system is expected to be back in operation by January 2020, so that the delivery of operational reports is resumed.



In an attempt to incorporate new solutions into the water supply business by means of technological developments (grounding systems and telemetry), the **Water Supply System with Telemetry** was created, increasing the performance and productivity of the operations. The agreement was modified to extend the term and value with two purposes: include two new monitoring points near the below-average sector and expand the capacity of the control panel for including new operational signals (pressure and flow rate of the below-average sector).

This pilot becomes the first regional water supply system with IoT technology in Colombia, identifying so far multiple benefits that include:

- Online monitoring of the quality of the water supplied (pH, chlorine, and turbidity).
- Remote automation and control of the WWTP instrumentation.
- Contribution to decision making thanks to the information generated in real time.
- Opportune identification of faults in the pressure regulating station (PRS).
- Improvement in the quality of service (continuity, pressure, and physicochemical parameters of the water).

EPM has about 200,000 electrical energy installations in difficult-access areas; therefore, the provision of the service requires high physical and economic effort. This led to the creation of the project for the **operation in difficult-access areas** aiming at improving quality indicators and satisfaction in these places. The original goal is to develop and test a viable solution for Mandé, in Urrao, Antioquia, so that it can be scalable to other similar areas. In 2019, the best solution was selected for commercial operation in this location. During the year, the group worked on the definition of the scope for the pilot, the requirements, and the work plan; as well as on the management of resources and relationships for the development of the pilot and its implementation. The installation of meters was postponed until the last quarter of the year, since it was necessary to make some adjustments as a result of the risk analysis; however, due to law and order reasons, the installation of the pilot was interrupted and, to date, it has not been possible to access the area again to complete it.

Infrastructure projects

— Ituango hydroelectric project

The Ituango hydroelectric project is the biggest challenge that EPM has faced throughout its entire business history. It is a transcendental infrastructure work for Colombia because it represents the generation of 17% of the country's energy, with clean, reliable, safe, and low-cost technology. It is also a **regional development** initiative that directly benefits 12 municipalities and over 160,000 people in its area of influence.

On April 28, 2018, when the project was 84.3% complete, there was a sudden and unforeseeable blocking of the auxiliary diversion gallery (GAD), which, among other effects, led to the decision to enable the powerhouse as a canal for the discharge of the retained water, in order to give priority to the protection of human life and the environment.

In view of the contingency, EPM, as a member entity of the national system coordinated by NGRD, used all its capacity to take part in the **preparation phase** through support and training activities for the implementation of the contingency plan; in the **management phase**, by carrying out activities to meet the basic needs of the affected population; and in the **recovery phase**, by structuring a specific action plan for the recovery of the municipalities of Ituango, Valdivia, Tarazá, Cáceres, Caucasia, and Nechí—located downstream.

During the contingency, **5,626** families were evacuated from the municipalities of Valdivia, Tarazá, and Cáceres. The families from the municipalities of Tarazá and Cáceres returned to their homes between July and October 2018, while the families from Valdivia have gradually returned to their homes. As of December 31, **1,974** families have returned.

In order to guarantee the living conditions of the evacuated families and meet, in an efficient and timely manner, the needs of the communities evacuated and affected, an economic support line was defined; in consequence, resources amounting to **COP 29,239 million** were delivered. Likewise, **84,344** humanitarian aid packages were delivered in Valdivia, Tarazá, Cáceres, Caucasia, and Nechí.

As for the social and environmental component, in response to the impacts of the contingency, different actions were taken to ensure the protection, conservation, preservation, and restoration of the Cauca River. The budget execution for this component, as of December 31, 2019, is **COP 228,174 million**. Additionally, **COP 659,069 million** has been executed as part of the additional social investment agreed in the BOOMT contract and of the regular social and environmental management of the project, that is, aside from the contingency.

The physical progress of the project is 76.7% and its cost currently amounts to **COP 15,310,061 million**. This value was considered in the Investment Plan 2010-2023, which is under permanent review according to the progress of the project's recovery works.

For the recovery and commissioning of the Ituango hydroelectric project, some relevant premises have been defined, which include the lifting of the precautionary measure imposed by the ANLA pursuant to Ruling 0820 of 2018, obtaining the opinion of the Poyry company for the lifting of the precautionary measure, building and/or reinforcing the plugs of the auxiliary diversion gallery and the right diversion tunnel, and recovering the penstock and the generation works.

Some of the benefits of the project are:

- Lower energy costs for the 2021-2028 demand by **COP 34 trillion**.
- **CO₂ reduction by 4.4 million** tons per year; benefits to the economy by USD 110 million per year.
- Income tax for **COP 18 trillion (2021-2061)**.
- Remaining project investments for **COP 5 trillion (2019-2024)**, contributing to the GDP.
- Direct jobs in construction: On average, **5,535** formal jobs per year (2011-2024).
- Direct jobs in operation: **370**.

With the construction of the Ituango hydroelectric power plant, the needs of the market are met and stakeholders are offered energy stability and security, as well as a commitment to the long term and the appropriate use of resources.

— Aguas Claras wastewater treatment plant park

The Aguas Claras wastewater treatment plant (WWTP) park is one of the works that make up the Medellín River Sanitation and Wastewater Management Plan (SWMP). This plant is designed to treat an average flow of 5 m³/s, with the capacity to remove 123 t/day of biochemical oxygen demand (BOD₅), which will remove 80% of the water's pollution load. This secondary treatment plant that receives domestic, industrial, and commercial wastewater from Medellín and Bello is the largest and most modern in the country and one of the most advanced of its kind in Latin America. In October 2018, it began operating its first treatment line.



In the development of the project, construction technologies were implemented that reduce the environmental impact and execution time of the works, including microtunnelling with tunnel boring machines (TBM) for the construction of the North Interceptor, excavation of shield walls (precast retaining walls) at the Aguas Claras WWTP and the Thermal Biosolids Drying Plant (TDP), and use of automatic welding in the assembly of the digester tanks.

In operational terms, modern, efficient, and appropriate technologies were used, considering the wastewater quality in Valle de Aburrá, with emphasis on electrical energy generation with biogas from sludge stabilization and on biosolids drying with thermal energy recovery.

In 2019, the Thermal Biosolids Drying Plant came into operation and Aguas Nacionales received the Aguas Claras plant operation from Consorcio HHA (constructor and operator for one year).

As for the environmental and social management, awareness-raising campaigns on the sanitation of the Medellín River were conducted in 2019 with 684 people from the community in the area of influence of the project. Similarly, 62 guided visits were made to the WWTP, 725 school kits were delivered to seven educational institutions in the area of direct influence, and informative events were carried out with stakeholders during the plant's testing and stabilization stages.

— Valle de San Nicolás

The aim of this project is to provide water supply services and, partially, sanitation services in the rural and suburban sectors of the center-western area of Valle de San Nicolás and the municipality of Envigado. The following infrastructure will be built to that end: Stage 1 - Water supply in Envigado, Stage 2 - Water supply in El Retiro, Stage 3 - Sanitation in Centro Poblado, Alto Palmas, and Retiro, and Stage 4 - Water supply in Rionegro.

In 2019, investments amounted to COP 42,782 million and, since the beginning of the project, COP 219,754 million has been invested. It is worth highlighting as the procedure of the year the obtaining of the environmental licenses for the execution of stage 4 and of the order to initiate the contracting process for the civil works of the La Fe, Tablazo, and Gualanday sections; the completion of the civil works of stage 2 (La Fe circuit, Los Salados section, and La Fe traffic circle); and the completion of the works for the expansion of the El Retiro WWTP and the beginning of the testing and stabilization process for its operation.

Within the social and environmental management, it is important mentioning the implementation of information, awareness, and community participation programs with the different stakeholders and the strengthening of community leaders' abilities, which makes it possible to establish and consolidate two-way communication and trust relationships for the viability and sustainability of the projects; as well as the social support for the constitution of easements and property management.

— Water Provision Intervention Program (PIPA)

With the purpose of ensuring continuity of the water supply service in the short and the medium terms, the Water Provision Intervention Program (abbreviated PIPA as per its acronym in Spanish) was created by the end of 2017. This program integrates critical interventions and a series of projects that will improve the continuity of the water supply service.

This intervention plan consists of six projects located in the upper part of Western Medellín (Pajarito, San Cristóbal, San Javier, among other sectors), in the southern sector (San Antonio de Prado and the municipality of Itagüí), and in the northern area (municipality of Bello). Its purpose is guaranteeing the water supply service to more than 500,000 users in a reliable manner, considering the quick growth of Valle de Aburrá (expansion projects and natural increase) and the deterioration of water sources.

The total budget of the plan is COP 582,600 million, of which COP 45,622 million was invested during 2019. It is worth highlighting the coming into operation of the Aures I - Aures II headrace tunnel in Cadena de Occidente (Western Chain), in addition to the completion of civil works on the Buey - Piedras pumping station.

Within the social and environmental management, it is important mentioning the preparation of two studies on ecological connectivity; the implementation of information, awareness, and community participation programs with the different stakeholders; the strengthening of community leaders' abilities; and the social support for the constitution of easements and property management.

— Projects of the Regional Transmission System - Urabá region

Since January 2017, four expansion projects of the Regional Transmission System (STR) are being executed in the Urabá region, with the aim of guaranteeing the energy supply and the reliability in the provision of the service for the connection of Puerto Antioquia and the current users of the system in Urabá (Antioquia), as well as those expected with the dynamism that the port brings, which in turn increases customers' and users' satisfaction with the service provided.

The project portfolio has an approximate investment of COP 75,089 million and, as of 2019, COP 33,426 million has been executed. The following are some milestones of the year:

- Entry into operation in October of the project to increase the capacity of the Urabá 220/110/44 kV substation, with a total investment of COP 12,717 million.
- Entry into operation in October of the project to standardize the Carepa 44/13.2 kV substation, with a total investment of COP 7,893 million.
- Entry into operation in March of the project to increase the capacity of the Arboletes 44/13.2 kV substation, with a total investment of COP 1,225 million.
- In the project for the connection of the Urabá - Nueva Colonia - Apartadó 110 kV substations, progress is being made with the civil works of Nueva Colonia, in the control detail designs, in the protection and automation of the substations, in the management of equipment and material contracting for Nueva Colonia and the transmission lines, and in the property management of the easements.

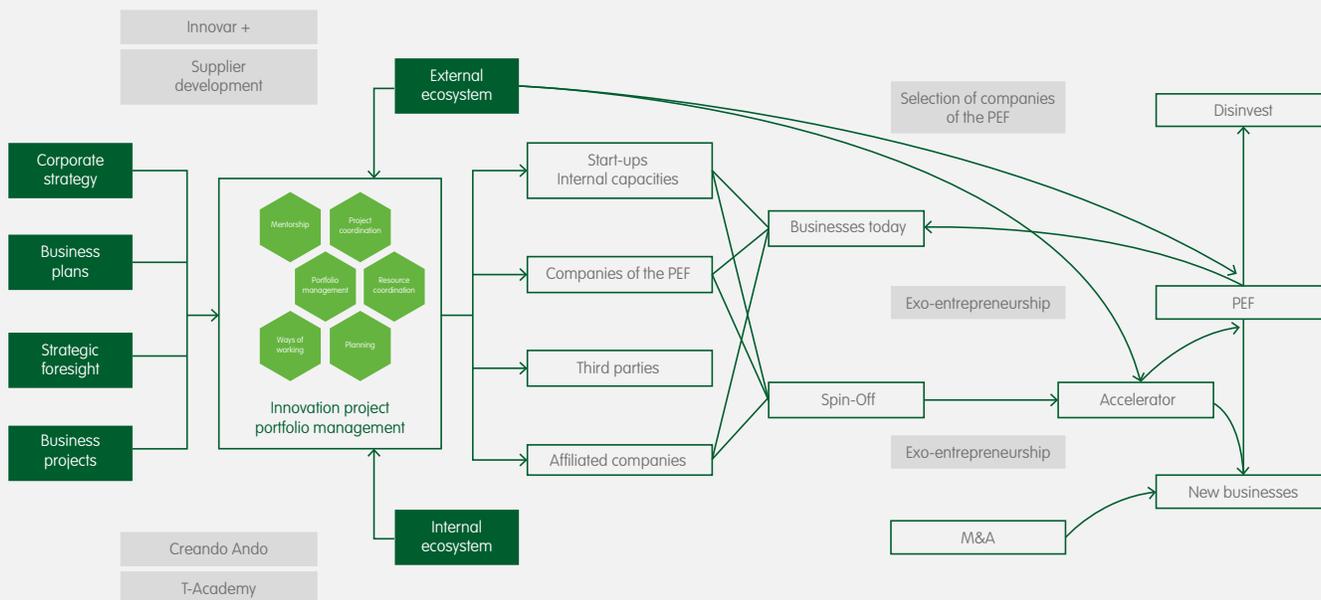
Regarding the social and environmental management, it is worth highlighting the preparation of the Environmental Management Plan for civil works and assemblies of the Nueva Colonia substation, as well as the agreement on the definitive route for the 110 kV transmission lines of the project for the connection of the Urabá - Nueva Colonia - Apartadó substations with the banana and plantain producers operating in the area that the line crosses. The line route was approved by most of the owners and the work continues, addressing specific cases. The Environmental Impact Assessment (EIA) was filed on October 15, 2019, before Corpourabá, while in November 2019 the Ministry of Environment and Sustainable Development issued the authorization to end the national closed season for the project. The sociopolitical environment is being analyzed in order to deliver the necessary instructions to the project; in addition, the environmental and social management is being articulated with the Model of Territorial Integration (abbreviated MIT as per its acronym in Spanish) in Urabá, leveraged by the Urabá EPM Management.



Innovation management

Innovation in Grupo EPM is the ability to develop and implement new solutions, new sources of income, and new businesses that change lives, create economic, social, and environmental value, and effectively contribute to the growth and sustainability of the group, coordinating mechanisms and actors in the innovation and entrepreneurship ecosystem. It is understood to be open, focused on human talent, oriented towards achieving the SDG, and aimed to stakeholders.

The innovation system is aligned with the corporate and competitive strategy and integrates various forms of growth, including intra- and extra-entrepreneurship by means of initiative acceleration mechanisms and investment in highly innovative companies related to the group's business through the private equity fund (PEF). The system also includes programs such as Creando Ando (Creating) and T-Academy, which is an innovation and technology training school for the promotion of innovation and entrepreneurship among employees. Other important programs are Innovar+ (Innovate+), Feria CT+I (ST+I Fair), Innóvate (Innovate Yourself), and Circuito Solar (Solar Circuit), which aim at the integration and strengthening of innovation skills among the actors of the external ecosystem, such as universities, suppliers, customers, students, etc.



Over the last few years, efforts and synergies have been articulated through a single work plan called Agenda de Innovación (Innovation Agenda). Based on the innovation focuses by business agreed in 2018, some innovation challenges were identified for each business

and subsequently launched in a training and dissemination event called Innovar+, which had the participation of employees and suppliers of Grupo EPM and students from different universities. Additionally, Creando Ando, a call for innovation initiatives, was carried out in the group, which received and analyzed 76 initiatives and chose 12 to continue in a training and development process until the proof of concept and the pitch presentation.



Nonconventional renewable energies (NCRE)

- Solar energy.
- Wind energy.
- Biomass.
- Biogas.
- Small hydraulic power stations.
- Geothermal energy.
- NCRE integration.
- Hydraulic and thermal power stations.



Transmission and distribution

- Operational optimization and maximization of returns.
- Purchasability and digitization.
- Increase in service provision (growth and coverage).
- Environmental and social management.



Water supply Wastewater management

- Sustainable management of water sources.
- Infrastructure optimization.
- Distributed solutions.
- Energy efficiency.
- Water treatment by-products.



Natural gas

- Comprehensive solutions.
- Biogas.
- Vehicular natural gas.
- New gas applications



Solid waste management

- Operational and infrastructure optimization of the waste collection service.
- Waste reclamation.
- Waste valorization.
- Efficient management of sanitary landfills.

During the 2016-2019 period, EPM was recognized as a highly innovative company and the Development and Innovation Management was distinguished as a R+D+i unit, through which six projects were executed and presented before Colciencias that were qualified as science, technology, and innovation projects and received certificates for around COP 33,000 million to apply tax deductions and discounts.

Private equity fund

During 2019, Ventures EPM made progress in structuring the private equity fund II and selecting the management company, while executing the first business acceleration pilot by means of the agreement with Créame and Ruta N. In this process, the companies HOH and NEU are being accelerated and are currently conducting proofs of concept for some needs of the water supply and power distribution businesses, respectively.

Along with ERCO Energía S.A.S., the company signed a 10-year solar energy sales contract with the Plaza Mayor convention center in Medellín. In addition, it launched Oferta Solar Integral (Comprehensive Solar Offer), a product aimed at homes, and is currently designing solar roof projects for large EPM customers. The implementation of IoT pilots for managing rural water supply systems and business infrastructure was also achieved with the participation of Telemetrik in the successful pilot, which made it possible to monitor the telemetry system performance in 2019.

Young public program (Jóvenes Innovadores)

The Jóvenes Innovadores (Young Innovators) program is a commitment of EPM to develop innovation skills in the new generations of Medellín and other municipalities of Antioquia with projects that create alternative solutions in five lines of interest: sustainable mobility, alternative sources of energy, water and life, solid waste management, and comprehensive solutions for agriculture. Innóvate and Circuito Solar, events in which there was important progress, are part of this program.

- **Innóvate EPM:** projects from 15 universities signed up and 11 universities are participating in the current phase. The five finalist teams received mentoring and the closing event with the finalists was held on November 15.
- **Circuito Solar EPM:** 180 teams from schools in Antioquia signed up for 94 projects. For the first time in the history of the program, there was a classifying system with regional qualifying races where participating teams were grouped into regions: Medellín, South, and North. Each region had a competition from which the 60 best teams were selected to compete in the final race. A total of 173 students and 40 teachers participated.

Technological developments for the businesses

In 2019, the Acueducto Aéreo y Senderos de Vida (Overhead Water Supply System and Life Paths) project, developed by EPM and Aguas Regionales in Turbo, in Antioquia's Urabá region, ranked second in the social innovation category of the Ideas en Acción (Ideas in Action) awards, organized by the Inter-American Development Bank (IDB).



With the energy companies, Grupo EPM works in the search for solutions to achieve smart metering, increased efficiency, and reduced losses. That is why it has projects such as:

- Expansion of the telecommunications network (MPLS) to interconnect the networks of all national affiliated companies.
- Thermal barrier coatings and development of the "smart terminal board holder".
- Analytical models to improve service quality indicators in the power transmission and distribution business.

In the water supply business, nontraditional solutions are being implemented. These are related to other forms of water catchment for human consumption, use of new water sources, use of new structures and materials, and application of different practices for the removal of microorganisms or pollutants, among others. During 2019, the following initiatives were developed:

- Pilot project for the construction of overhead water supply systems in the municipality of Turbo, Urabá.



- Evaluation of the pump-as-turbine (PAT) technology to regulate the pressure or relieve the excess energy from EPM's water supply network flow and, this way, use it for generating electrical energy.
- Along with Aguas Regionales, the company executes the telemetry project in the water supply system of Sucre, in the municipality of Olaya.

Projects of new businesses

Grupo EPM is constantly looking for new and better solutions for its customers and users. That is why it seeks the incorporation of different lines of business derived from research, development, and innovation with the purpose of meeting the market demands that favor the evolution and transformation of the traditional businesses of the organization.

The projects implemented in 2019 aimed at producing savings and efficiencies: monitoring of the performance of the water supply system with telemetry in Sucre; operation in difficult-access areas with a pilot in Mandé, Urao; preparation of the business case for the project of injection of biomethane into the gas network; and delivery of the case for the project of renewal of dielectric oils, authorizing its continuity to the incubation phase. The latter initiative will be part of the solid waste management project of the Vision 2025.

Operation of our businesses

Generation

The actual power generation of EPM at the national level during 2019 was 14,305 GWh, of which 14,081 GWh corresponded to hydraulic generation; 161 GWh, to thermal generation; and 64 GWh, to wind generation. Regarding thermal generation in December, 146 GWh were generated in merit and the rest corresponded to operational tests. Compared to 2018, hydraulic generation shows a reduction of 876 GWh (the national hydraulic generation in 2018 was 14,957 GWh). The difference lies in the fact that 2018 was a year with normal water inputs, while 2019 was affected by El Niño, leading to a decrease in water levels and reduced river flow rates, especially between August and December. In the last quarter, the average input was 71%, which led to a reduction in hydraulic generation in order to increase the reservoirs and face the summer of 2020 in optimum conditions.

The generation plants presented high availability indices and the lower units generated were due to reduced water inputs.

The behavior of the stock market price in 2019 was also impacted by the variations in water inputs. The average monthly price in 2019 was 231 COP/KWh, higher than the one recorded in 2018 (116 COP/KWh). Prices were high at the beginning and the end of the year, and low at midyear, during the rainy season in the eastern area of the country.

In 2019, plant availability results are generally positive for EPM. An important milestone is the definitive recovery of the Playas hydroelectric plant, which started operating normally in July with the delivery of 207 MW. In order to manage the availability of EPM's larger hydroelectric plants in a profitable and sustainable manner in the long term, the company is working on the availability optimization project, which seeks to maintain reliable and operational assets to leverage the business' commercial strategies.

At the end of the period, smaller power stations did not achieve the availability goal, mainly due to forced stoppages and unscheduled services. Wind power availability was above the goal, while cumulative thermal availability was below the expected rate, due to the extension of the maintenance of the unit 1 in the La Sierra thermal power station.

As for the national affiliates, the following events had a negative impact on the results: in ESSA, the works for the reconstruction of the skip in the Cascada power plant and the corrective maintenance tasks at the Palmas plant between January and July 2019; and, in CHEC, the damage to the Curazao headrace tunnel at the Ínsula plant, which affected the availability of the station and the generation in the entire chain (Ínsula, Esmeralda, and San Francisco power stations) between February and August 2019.

The Alianzas para el Desarrollo (Alliances for Development) strategy was strengthened, involving relevant actors in the territory, broadening the negotiation horizon, and focusing on actions with greater impact.

Among the main achievements, it is worth highlighting the nine alliances signed and implemented with a regional perspective, in environmental, economic, and social matters:

In social matters:

- 13,000 children and young people received training through the Recreando la Paz y la Convivencia (Recreating Peace and Coexistence) agreement with Universidad de Antioquia, with the purpose of strengthening life skills by means of educational, sports, cultural, and environmental processes for the transformation of communities towards peace, coexistence, and integral development. The project reached 277 rural settlements and 298 educational centers, leaving installed capacity for 405 teachers and 4,897 parents.
- 134 community organizations linked to processes for improving their capacities and skills.
- 245 social leaders and public servants certified in training processes through the courses in development and community and territorial leadership.
- 15 community and youth initiatives. COP 335 million was invested in social, environmental, and sustainable tourism initiatives as a community contribution and recognition in the regions.
- 12 local and 2 subregional development agendas aligned with the 2030 Sustainable Antioquia agenda, in the framework of the SDG and in articulation with the territorial planning processes.
- Rural education offered in El Tablón, through the collaborative model of rural higher education, in alliance with seven universities and educational institutions with coverage in the north and northeast of Antioquia, which made it possible to start the process of technical training in electrical networks for 24 scholarship holders.
- Presentation of the El Tablón educational model before Colciencias, as a project for the provision of four digital collaborative environments for science, technology, and innovation amounting to COP 8,298 million, with a contribution from the allied entities by COP 1,914 million. The results of the call will be available in 2020.

In economic matters:

- 1,457 agricultural producer families from 19 municipalities, focused on sustainable production, commercialize their products through eight collection centers, eight revolving funds, and established markets. Some of them have managed to penetrate international markets with their own brands; it is the case of the commercialization of more than 150 tonnes of tomato from El Peñol to Martinique and more than 100 tonnes of coffee from the Porce River canyon exported to Belgium.
- Completion of the works corresponding to the first phase of the Guatapé pier, with new infrastructure at the service of the community and the region. Second phase of the project with the construction of the loading wharf, made viable for 2020.
- In the area of influence of the Jepírachi wind farm, 218 indigenous people from the Wayúu community were given access to drinking water and productive projects in fishing and craftwork, in addition to training processes in product innovation.

In environmental matters:

- Contribution to the protection of 13,600 ha through different conservation strategies and improvement of the natural capital with programs such as payment for environmental services, development of good environmental practices in production processes, reforestation and restoration, declaration of protected areas, basic sanitation, sustainable tourism, and environmental education.
- Planting of more than 800,000 trees with a wide participation of community and institutional actors in this initiative called Sembratón.
- More than 700 families benefited from new rural basic sanitation systems and 74 families receiving payment for environmental services and developing community monitoring strategies in the biological corridor of the puma of Eastern Antioquia.

Transmission and distribution

Regarding the **quality of service**, indicators have been improving thanks to EPM's efforts to strengthen the infrastructure of the distribution system (preventive and corrective maintenance of the local distribution system - SDL), but also thanks to expansion and replacement activities, implementation of suspensions, application of new loops automation, and installation and connection of new equipment that helps reduce power service restoration times.

It is worth highlighting the standardization of the monitoring of activities and processes associated with the quality of service in EPM and the national affiliates, as well as the development of an analysis tool for measuring and monitoring event management times, thus guaranteeing the restoration of services within the shortest possible time.

The results of the quality indicators for each of the companies are as follows:

SAIDI (hours/year)	
Company	2019
EPM	14.55
ESSA	23.15
CENS	27.33
CHEC	29.49
EDEQ	8.07
ENSA	12.43
Delsur	17.63
Eegsa	4.31

SAIFI (times/year)	
Company	2019
EPM	7.29
ESSA	15.13
CENS	8.96
CHEC	27.88
EDEQ	6.54
ENSA	6.56
Delsur	9.14
Eegsa	2.70

Source: Vice Presidency of Power Transmission and Distribution.

Figures as of December 31, 2019. The difference in values between companies is due to the geographic area, the network topology, the amount of customers served, and the analysis of events recorded. The difference in values between national and international companies is due to the particularities of the regulations in each country

With respect to the **management and control of energy losses** in Grupo EPM, the nontechnical losses indicator for the network operator has been at excellent levels since the beginning of the program, both for EPM and for the national affiliates of the group. The results speak of a comprehensive and sustainable labor in the group in Colombia, which has reduced the loss rate of the regulatory network operator (LRRNO), going from 9.44% in 2015 to 8.72% in a period of four years.

This has been possible thanks to the following actions conducted during the year:

- Standardization of tactical, technical, and operational procedures for energy recovery programs.
- Standardization in Grupo EPM of technical regulations and specifications for the equipment and materials of the project.
- Availability of planning software that allows for greater effectiveness when planning inspections. The system will issue an alert for those areas that present energy losses.
- Unification of technical specifications for hiring labor in the group.
- Standardization of the Uniform Conditions Agreement, which ensures equal conditions for the provision of the service to the group's customers.

Loss rate of the network operator (%)	
Company	2019
EPM	7.57
ESSA	11.84
CENS	11.91
CHEC	7.51
EDEQ	7.77
ENSA	11.47
Delsur	8.90
Eegsa	4.48
Filiales nacionales	8.72
Filiales internacionales	9.12
Grupo EPM	8.88

Source: Vice Presidency of Power Transmission and Distribution.

Figures as of December 31, 2019.

Water and sanitation

In general, the water supply companies presented high rates of **continuity in the water supply service**. In Aguas de Malambo, several pumping devices and the electric plant were put into operation, achieving an average continuity of 56.56% (in 2018 it was 38.77%). In Turbo, 24-hour continuity was achieved for 33% of users.

Since the second semester of 2017, the provisions of the New Pricing Framework for Water Supply and Sewerage (Ruling CRA 688 of 2014, amended by Ruling CRA 735 of 2015) were implemented in all the group's companies with more than 5,000 users (EPM, Aguas de Malambo, Aguas Regionales, and Empresas Públicas de Rionegro), regarding the continuity of the water supply service. Particularly in EPM, for the evaluation of the two semesters of 2019, required by the regulation, the continuity indicator was met (compared to a goal of 98.36%) and it was not necessary to generate discounts to users for noncompliance with the goal.



The results of the continuity indicator for each of the companies are as follows:

Continuity	
Company	2019
EPM	99.81%
Aguas del Oriente	99.9%
Aguas Regionales	92.1%
Aguas de Malambo	56.56%
EPRio	99.73%

Source: Vice Presidency of Water and Sanitation.

In relation to **water quality**, working groups were established with health and environmental authorities for the quality of the water withdrawn, quality variables were characterized in the water purification process, and the distribution network was systematically monitored. In addition, the modernization and expansion of the secondary treatment area was carried out in the San Fernando plant and in the tertiary treatment and disinfection areas of the El Retiro plant. It should be noted that, during 2019, all the group's water companies supplied water suitable for human consumption. The results of the water quality risk index (WQRI) are as follows:

Water quality risk index	
Company	2019
EPM	0.56%
Aguas del Oriente	0.48%
Aguas Regionales	0.05%
Aguas de Malambo	0.01%
EPRio	1.82%

Source: Vice Presidency of Water and Sanitation.

The WQRI is calculated in accordance with the provisions of Decree 1575 and Ruling 2115 of 2007 by the Colombian Ministry of Social Protection. 5% is the maximum value allowed; therefore, values below 5% are considered safe. The Ministry states that control and monitoring activities must be performed within this range of values to ensure that water is suitable for human consumption. Figures as of December 31, 2019.

As for **loss management**, the companies of the business took actions aimed at the early detection of leaks and their respective repair, the control of pressure according to the needs and growth of the system, the replacement of networks and the rearrangement of the system,

the renewal of the customer’s meter park, the detection and elimination of fraud, and the formulation of alternatives for disconnected customers. In EPM, it is important mentioning a:

- 3% increase in the volume of losses of the system, which went from 86.8 million m³/year in 2018 to 89.5 million m³/year in 2019.
- In relation to the previous year, the loss rate per billed user (LRBU) remained at 6.05 m³/user/month until December 2019. The non-revenue water index (NRWI) as of December 2019 was 30.58%.

As of December 31, 2019, the results of the LRBU and the NRWI for each of the companies of the business are as follows:

LRBU (m ³ /user billed)	
Company	2019
EPM	6.05
Aguas del Oriente	2.61
Aguas Regionales	9.95
Aguas de Malambo	17.98
EPRio	2.95

NRWI	
Company	2019
EPM	30.58%
Aguas del Oriente	20.3%
Aguas Regionales	43.8%
Aguas de Malambo	58.3%
EPRio	19.9%

Source: Vice Presidency of Water and Sanitation.

Figures as of December 31, 2019.

The year’s management also included the **Cierre de Brechas (Gap Closure) program**, which contributes to the decontamination of streams that flow into the Medellín River (with high benefits for the community located in the ten municipalities of Valle de Aburrá) and to ensuring greater coverage for the collection, transportation, and treatment of wastewater. All this in compliance with Ruling CRA 688 of 2014, which establishes in Article 9, as one of the goals of the efficiency standards, “the reduction of the difference among water supply and sewage customers”. The main achievements of this program during the year were as follows:

- Award and execution of the contracts for “Diagnosis of connections and design of networks to link customers to the sewerage service in the northern and southern areas”. The contract started in August 2019.
- Progress in the preparation of proposals for the construction of networks and connections to link customers to the sewerage service.
- As of December 31, 2019, the gap between water supply and sewerage service users is 20,532.

In **Agua de Malambo**, it is worth highlighting the fulfilment of the 2019 investment plan, with an execution close to COP 20 billion. Fondo Fuente de Vida Malambo (Malambo Source of Life Fund) is an agreement between PepsiCo, Waterteth, Postobón, and Fundación EPM that benefited more than 5,660 families through the installation of micrometers (with subsidies of 66%).

Emvarias achieved the incorporation of 32,000 new users to the billing system, the approval of the fee modification for the leachate treatment, and the authorization of offset measures for the La Pradera landfill.

Ticsa closed the investment agreement, integrated and consolidated its corporate identity and communication (Ticsa Plantas and Ticsa Colombia), and implemented the self-construction model in Mexico.



Adasa (Chile) emphasizes the progress of 90% in the first desalination plant of Tocopilla (75 l/s), the agreement of the nonrecognized investments by Econssa, and the improvement in the relationships with the indigenous communities close to the catchment areas.

Natural gas

In natural gas commercialization and distribution, 768 million m³ was sold during the year. The highest consumption was in the regulated market with 37%, followed by the nonregulated market with 34%. The business has been analyzing different options for offering natural gas to companies that can use it in their productive processes, such as in food drying and dehydration. Other options are also being explored in poultry and pig farming, as well as in the plastics industry. In this way, a customer from the dried fruit sector was connected to the service in Apartadó, as well as 43 coffee growers with dryers and a pig farm. During the year, conversations were held with Pascual Bravo, a higher education institution, to set up a commercial offer aimed at the plastics industry (at the end of the year a proposal was defined to create a pilot that is expected to be developed during 2020).

In terms of **quality of service**, the gas of EPM has had a compliance of 100%, as required by the regulations, in all the quality indicators (pressure index in individual pipeline, odorization index, and equivalent length of service interruption index).

In **loss management**, there is a regulatory level that is remunerated by CREG. This distribution companies work so that their levels of losses are within this range (<3.3). EPM obtained an indicator of 4.3% in 2019. This year, improvements were also made in the process of information gathering for calculating the indicator, mainly through the resolution of errors in the billing information and the control of facilities with significant frauds. Some of the actions taken during the year include verification of the meters' precision due to damage or termination of the service life, progress in programs and controls for those users who consume gas without having concluded the connection process, implementation of programs and actions to control fraud and gas theft, and control of leaks due to damage to the network or operational activities.

Income from new businesses

In the search for new sources of income, commercial relationships with relevant customers and users at the national level have been strengthened, consolidating important businesses and generating additional income for Grupo EPM. Likewise, the group has started selling new products, such as renewable energy certificates (REC), solar energy, and electric mobility, which are becoming an important item in the income derived from new related products.

During 2019, new income amounting to COP 98 billion was billed for the provision of energy, gas, water, and sewerage services. It is worth mentioning an annual billing of COP 16 billion derived from lighting infrastructure works in different municipalities of Antioquia and other locations at the national level. The entry of Grupo BIOS, whose contract was signed for a term of 19 years, recorded in 2019 an average energy consumption from the nonregulated market of 12 GWh/month (about COP 4,300 million per month). For its part, Cementos Argos in Nare recorded an average gas consumption from the nonregulated market of 1,600,000 m³/month (about COP 960 million per month). Similarly, representative income has been generated by the signing of new contracts with third parties (billing and collection) and by the strategy of recovering energy customers from the regulated market, thus achieving an annual billing of COP 2,301 million.

In renegotiation of energy contracts from the nonregulated market, 100% of the contracts that expired in 2019 (3.3 GWh/month) were closed and, as a shielding strategy, 60% of the energy that expires in 2020 and 2021 (32.4 GWh/month) was negotiated in advance.

Since the beginning of the new green energy, electric mobility, and solar energy offers, about COP 5 billion has been billed as of December 2019. Particularly, the RECs have generated income of more than COP 4,915 million. In this way, this offer is consolidated in the nonregulated energy market as an important and valuable attribute for customers, while making Colombia the third country in the world, after China and Brazil, that sells this product.



Information technology

The digital transformation strategy was defined, which seeks a fundamental change in the way of operating and offering value to the stakeholders by incorporating digital technology into all areas of the organization.

The plan to transform the organization with technology and information was defined. The following are the main achievements in 2019:

Transforming the relationship with the business

- Identification of the **comprehensive roadmap** for the power, water, commercial, and supply businesses. The IT roadmap was agreed with the transmission and distribution business. The shared services and supplies roadmap is 70% complete.
- Development of a **business intelligence** solution to control the SLAs and monitor the demand and projects. At the end of 2019, it is being tested.

Enabling the future

- Performance of the AI (Artificial Intelligence) experiment and definition of the AI model for the identification of labels (objects) in the EPM bill, in order to determine if the histograms, dynamic images, and legal information are printed on the bill.
- In the robotics working group, implementation of the customer service chatbot, service desk, contact center, and inquiry of requirements of the Somos card.
- As for the information platform, progress has been made in the dissemination of the information management model, the assessment of the water business readiness in terms of information management, and the definition of the information management roadmap for asset management (CREG-Leving diagnosis).
- Regarding the capacities to operationalize RPA (robotic process automation) and BPMS (AuraPortal), to start automating business processes, progress was made in the delivery of the governance model to the IT Management and the demand for RPA is growing.

- Definition of the architecture design for the water autonomy application based on modern approaches. Implementation of the architecture for digital assistants with modern approaches (microservices, API management, and cloud).

Operational excellence

- Execution of the work plan to bring the proactive monitoring solution to all the EPM IT services. Monitoring was implemented in the power generation, prepaid energy, and EPM portal services.
- Progress in the simplification of the architecture.
- Automation of IT infrastructure operation. The components (scripts) for automation were developed and delivered with the respective incorporation of the automations in the infrastructure operation contract.
- Aiming at implementing high availability (HA), the first billing cluster node is operating in the new data center; the hyper-converged solution was delivered.
- Advances in comprehensive testing processes: in OPEN, the first automated test is being applied, where the selected scenario was the billing of a product individually. In CRM, automated tests were implemented to validate the creation of a case and the integration with OPEN, Mercury, and Marco Polo.

Regarding the application of information management practices and the creation of value from data, during the year, progress was made in several initiatives that include: integration with Document Management, impact of CREG 080, articulation and support to the data science community (predictive analytics), support for responses to audits in data governance, data science training map, customer data desk, CSC information model, Genio Project (information management in the power generation business), conceptualization of “data monetization”, participation in MIPG (information components of the Digital Government policy), modeling of the Information dimension in the MEGA tool, support to the information management of physical assets (in EPM and in the affiliates of the business group), articulation around the ADN Digital capacity (through the digital transformation project; particularly, the characterization and assessment of the “Create value from data” attribute), and work with the enterprise architecture team from the perspective of the Information dimension.

Suppliers and contractors

Throughout the year, the group strengthened the spaces for engagement and the local productive fabric. It also continued working on the initiatives for the development of suppliers and the continuous improvement of the processes related to the macroprocess of supply of goods and services, in order to leverage the strategic goals and the sustainable and competitive development of territories through contracting.

Engagement with suppliers and contractors

Improvement in the performance of the different impact indicators with suppliers and contractors, mainly the one related to contractor loyalty, in which a result of 60.9% was obtained, resulting from the difference between promoting contractors minus the number of critical contractors, that is, the most loyal contractors, who are satisfied and who refer in positive terms to EPM (see table). This is a sample of the value perceived by this stakeholder group thanks to the EPM's effort to improve the processes, tools, and mechanisms of interaction, which reflects the organization's commitment to complying with its policy of engagement with suppliers and contractors.

It is worth mentioning activities such as specific workshops with suppliers and contractors of the water supply business, in order to identify opportunities for improvement that contribute to the goal of being more efficient in the execution of the challenges in projects and in the operation of infrastructure. Similarly, within the framework of the Innovar + meeting, the first recognition program was conducted with those suppliers and contractors that presented innovative initiatives to favor the sustainability of the group's businesses and, in general, of the territories where the organization is present.

In the second semester, the event was held with suppliers and contractors and EPM addressed various topics of interest that include progress in the supplier development initiatives through the Sustainable Ecosystem for Suppliers Development (ESDP), changes in the supplier registration process, internal evaluation of the requirements of the Occupational Health and Safety Management System (OHSMS), electronic billing, progress in the EPM supply chain, and tips on public risk.

An electronic billing workshop was also developed for suppliers and contractors. The community action boards (CABs) attended the event to create a space for conversation and to solve questions.

In November 2019, an event was held with suppliers and contractors for the presentation of the comprehensive plan for the prevention of public risk due to social violence. It received representatives of this stakeholder group from the areas of influence of EPM, such as Ituango, Nechí, and Porce. Twenty companies attended the event.

As a general balance of the engagement activities of Grupo EPM (EPM, energy affiliates, Emvarias, and some water affiliates) with suppliers and contractors during 2019, 43 events were held with about 3,330 participants. Several topics were discussed, such as contracting plans, contractual regulations, registration and contracting processes in the Ariba system, innovation, health and safety at work, supplier development, electronic billing, tips on safety and public risk, among others.

Indicator	2019
Contractor satisfaction	89.7
Contractor loyalty	60.9
Supplier and contractor reputation	867

The impact of the steps taken in the engagement plan is measured by using the indicators in this table.

- **Supplier and contractor satisfaction.** *It measures the satisfaction of the stakeholder group regarding the different transactions that they perform with EPM in the different goods and services supply processes.*
- **Contractor loyalty.** *It measures the degree of satisfaction with the relationship and, preferably, with EPM.*
- **Reputation.** *It measures the perception of this stakeholder group in relation to different attributes associated with the reputation of the organization. With the actions designed and prioritized in the plan, the group seeks to impact all of the indicators mentioned above.*

Strengthening and development of suppliers

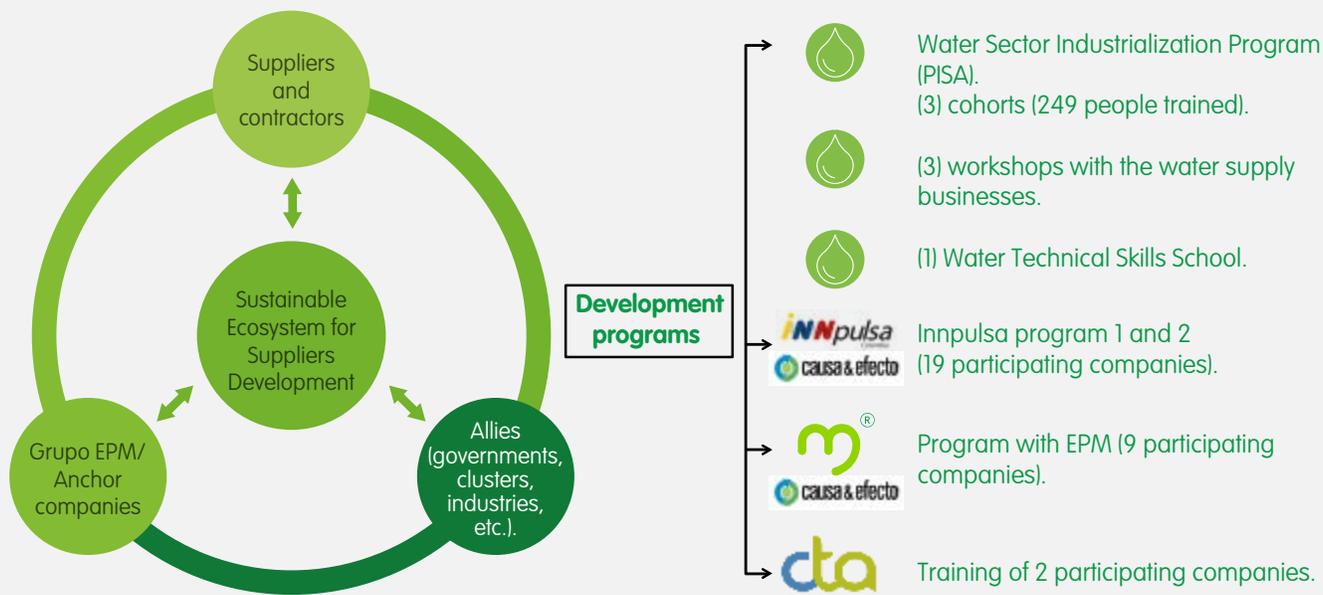
It is important highlighting the consolidation of the **Sustainable Ecosystem for Suppliers Development** and the collaborative work with other allies such as SENA, the energy cluster, and diverse local companies for the development of supplier and contractor capacities.

Throughout the year, the initiative reached more suppliers with a greater impact, thanks to the positioning of the development model called Sustainable Ecosystem for Suppliers Development.

This model seeks the articulation of the needs of Grupo EPM and the anchor companies with similar needs, as well as the development of capacities in suppliers and contractors through the engagement of local, regional, national, or international allies, strengthening the business fabric of the country by means of knowledge or economic contribution. In 2019, Grupo EPM implemented the following programs for strengthening and developing contractors:

- Development of suppliers under the Monozukuri methodology, in order to optimize the value chain processes, having Innpulsa Colombia and Causa y Efecto as partners. 18 and 8 companies participated, respectively.
- **Alliance with CTA:** support and training in development of solutions to improve productivity and competitiveness, as well as the engagement with suppliers at a level of maturity that makes it possible to solve problems. Two suppliers participated in this program.
- In 2019, the company undertook two initiatives of great impact for the water supply business and for society in general: **EDA—Escuela de Destrezas Aguas** (Water Technical Skills School)—in association with SENA, Causa y Efecto, and suppliers and contractors of the industry; and **PISA— Programa de Industrialización del Sector de Aguas** (Water Sector Industrialization Program), also in collaboration with SENA and suppliers and contractors of the sector, seek to improve the productivity and competitiveness of these companies and of the country, based on the integration and promotion of training programs for the human resource. Through this last program, 249 people (3 cohorts) were trained in electrofusion and thermofusion.

The following chart shows the operation model, the initiatives, and the suppliers impacted (numbers in parentheses).



Contracting

Reduction in contracting times by 40% and structuring and implementation of special contracting procedures such as supply with selection of various suppliers, framework agreement of prices, and strategic ally to improve the contracting opportunity for the infrastructure businesses and projects.

Contracting information was published in the Tecuento and Secop platforms to meet the requirements of Colombia Compra Eficiente, seeking to maintain the transparency and reputation indices in the relationship with suppliers and contractors.

Type of contracts in Colombian companies of Grupo EPM 2019		
Type of contract	Number of contracts	Value of contracts (million COP)
Supply of goods and services	39,978	1,965,685
Construction contracts	143	621,575
Provision of services	1,539	1,025,709
Movables and small purchases	172	74,094
Consultancy	108	71,326
Advertising connections and agreements	40	65,193
Other	492	333,815
Total	42,472	4,157,397

The amount and values correspond to what was signed by companies of Grupo EPM located in Colombia.

Contracts by modality in Grupo EPM 2019		
Modality	Number of contracts	Value of contracts (million COP)
Public request for proposals	7,155	2,050,233
Private request for proposals	33,981	363,003
Single request for proposal	1,336	1,744,161
Total	42,472	4,157,397

The amount and values correspond to what was signed by companies of Grupo EPM located in Colombia.

— Social contracting

In social contracting, one of the milestones in 2019 was the definition of the support and training topics for the community action boards, which we call the "curriculum".

During this year, we started structuring a "curriculum" or training program exclusive to social contracting, whose purpose is being more assertive in the processes of support and strengthening of the participating community organizations, as well as encouraging more allies to join this goal.

Social contracting		
Company	Number of contracts	Value (million COP)
EPM	116	37,662
Emvarias	28	2,018
ESSA	5	80
Total	149	39,760

The amount and values correspond to what was signed in 2019 by companies of Grupo EPM located in Colombia.

— Local, regional, and national contracting

For Grupo EPM, a **local** supplier is the one located in the municipalities, small towns, and rural settlements of the metropolitan area of the company under evaluation. A **regional** supplier is understood as the one based in the same region that supplies, but outside the metropolitan area. The **national** supplier is the one located in several departments. The **foreign** supplier is the one outside of Colombia.

Authorization of the procedure, pursuant to guideline 26, for contracting through the single and private modalities, as a mechanism for sustainable and competitive development of the local and/or regional fabric, both for EPM and its national affiliates.

Grupo EPM continues promoting local contracting. During 2019, more than 36,000 contracts were signed with local suppliers, that is, 85.73% of all the contracts signed.

Local, national, and foreign contracts of Grupo EPM		
Origin of the contractors	Number of contracts	Value of contracts (million COP)
Local	36,414	1,653,036
Regional	1,605	288,047
National	4,414	2,166,515
Foreign	39	49,799
Total	42,472	4,157,397

The amount and values correspond to what was signed by companies of Grupo EPM located in Colombia (EPM, CENS, CHEC, Emvarias, EDEQ, and ESSA). It includes special contracting (EPM).

Grupo EPM people

Grupo EPM has 14,046 collaborators, of which 53.5% belong to EPM parent company and, of these, 3% are executives, 39% are professionals, 39% are technologists, technicians, and assistants, and 19% are part of the support curve.

Grupo EPM has a level of unionization close to 90%, with presence of 34 union organizations, including the respective sub-directorates at the national level. At the international level, there are 8 labor union organizations. In the business group, there is a total of 20 collective bargaining agreements in force.

Staff and mobility

During the last four years, EPM has been ranked among the top 10 best companies to work for in Colombia, a measurement made among the 100 companies of the Merco Talento Colombia Ranking.

Between 2016 and 2019, the staff grew by 19.63%. During the last period, it increased by 5.05%, mainly due to the coverage of positions authorized by the Board of Directors to guarantee operational safety and execution of infrastructure and business projects, as well as the proper development of the businesses' operations and the contingency of the Ituango hydroelectric project.

In 2019, the plant presented an average internal mobility of 9.04%, compared to the annual occupied plant. This gave the staff the possibility to growth within the organization. The average admission rate was 6.81% per year, with respect to the total plant. It is worth mentioning that 570 people joined the organization, 78 people were promoted, and 236 people changed their position as a result of selection processes.

Employee welfare and benefits

Grupo EPM promotes the quality of life of its employees and their families by opportunely delivering monetary benefits and implementing programs and activities that harmonize their family and work life. In this way, the company promotes spaces for assistance, recreation, sports, and social and cultural projection, in a dynamic that consolidates the sense of belonging and strengthens the corporate culture for the fulfillment of the organizational objectives.

92.49% of the employees of EPM used at least one of the benefits granted by the company. A total of 52,099 benefits amounting to COP 31,028 million were awarded, and 161 people benefited from housing loans amounting to COP 21,001 million. The welfare events were 100% executed during 2019.

In 2019, the EPM Contigo (EPM With You) program was designed and implemented in the company, aimed at those employees with high levels of debt. The company offered trainings and workshops on the proper management of home finances, individual and family support, and financial advice. This program, in which 361 people from the company participated, was a contribution to improving the quality of life of the employees and their families.

ESSA (Santander) fulfilled its welfare plan with the savings proposed by the company and through strategic alliances. For its part, Eegsa (Guatemala) held sports and cultural events that allowed colleagues from different areas to interact. Delsur and ENSA (El Salvador and Panama, respectively) conducted programs to improve the health condition and eating habits of the participants. With various strategies, EPRio (Rionegro, Antioquia) is executing a welfare plan its employees, among others.

EPM, EDEQ, CHEC, Delsur, and Emvarias have special programs aimed at workers in pre-retirement, in order to foster a positive attitude towards their retirement from these companies of Grupo EPM, and allow them to find new horizons of life after completing their active working life.

EPM, EDEQ, and CHEC expanded the possibilities for both sexes to qualify for extralegal maternity and paternity leaves, thus promoting childcare.

Quality of life

The program for the quality of life is based on the identification, assessment, prevention, intervention, and ongoing monitoring of exposure of employees to psychosocial risk factors, both at and outside work. Health and safety at work transcend the traditional concepts and become an important aspect associated with productivity in modern organizations. Therefore, as a contribution to the welfare of the employees and their families, the assessment of psychosocial risks gives the group vital information to focus on the actions that foresee and prevent diseases caused by occupational stress.

The results of the quality of life and psychosocial risk assessment for EPM in 2019 show that 64.09% of the survey respondents is at low or no risk, which means a decrease of 0.13% in relation to the 2018 assessment.

Being above 50%, ranks EPM as a healthy company. In addition, the organization achieved this year the highest coverage with 6,246 responses, which means that it reached 86.07% of its population.



These figures are the result of a work focused on variables such as characteristics of leadership, participation and change management, performance feedback, role clarity, and recognition and compensation.

As for the affiliates of Grupo EPM, it is worth highlighting:

CHEC: all work teams have an action plan for managing organizational climate variables and, in a coordinated way, the dimensions of the psychosocial risk survey.

EDEQ: execution of the entire work plan defined to manage psychosocial risk, which made it possible to keep it at a low level.

CENS: recreational and educational activities aimed at strengthening and raising awareness of the importance of managing psychosocial risk and increasing the culture of self-care.

Delsur: nutritional program and psychological clinic available to collaborators.

Eegsa: beginning of the programs to improve the quality of life, including labor gymnastics, healthy eating, and stress awareness talks, with the participation of 790 workers.

Aguas Nacionales and Aguas Regionales: execution of their intervention plans for the improvement of the quality of life.

Emvarias: design and formulation of the intervention plan according to the results of the quality of life survey.

Training and development

- EPM implemented, for the management of its development process, the organizational knowledge map. It helps identify the general, key, and critical knowledge of EPM and guides the learning actions to consolidate the knowledge that gives the company sustainable competitive advantages or competitive advantages to be explored.
- Curriculum maps were designed for the core processes of the businesses, projects, commercial processes, and fixed assets, with the purpose of ensuring the suitability of the people who participate in the processes once certified their curricular path.

- Relevance has been given to self-training and to the efforts to incorporate virtualization technologies, online learning, discussions, etc., which favor the progressive entry into the digital world of training and development.
- Special emphasis has been placed on leadership development and the conversational model associated with cultural transformation as a strategic goal of the organization.

EPM continued working on the implementation of the virtual campus of Universidad EPM, making improvements such as online access, management of face-to-face and virtual information, preservation of the educational records, and reporting. In addition, transfer of knowledge was performed with people with key skills and the “experts’ table” was started with the center for technical excellence.

In EPM, 7,394 people received training and 54,402 people attended events, with an average of 32 hours of training per employee. In 2019, a strategy of group and individual roundtables was implemented, aiming at strengthening the cultural transformation measures taken in the organization. Similarly, some specific groups of executives received training and the ABC program for executives was launched, in which managers of the work teams also participated.

The knowledge map was designed for 80% of the processes and projects of vision 2025, identifying the key, critical, and general knowledge of EPM, which make it possible to determine the content necessary in the training plans and the educational offer for Universidad EPM and to effectively perform the transfer of knowledge.

The leadership school of Universidad EPM coordinates events to develop leaders’ skills to support their teams, make decisions, and strengthen measures taken, within the framework of the EPM cultural evolution proposal.

Detailed curriculum maps were designed for the maintenance of the water supply and sewerage system and for the maintenance of the gas distribution system. These maps facilitate the specialized training of the people who conduct the processes and define the training routes for each of them. Additionally, the curriculum maps for customer service and project management were updated.

At the CHEC affiliate, it is worth mentioning the following trainings: Interactive training in power distribution networks, qualified by Colciencias as a technological development project; the investments made allow the company an estimated income deduction of COP 42,384 million. And in agreement with the National Training Service (abbreviated SENA as per its acronym in Spanish), progress was made in the construction of a learning environment called Network Training Camp for the training of linemen.

At CENS, 81% of the collaborators participated in the 68 events that took place from the Leadership School, strengthening of competencies, training in OHS, and environmental and laboratory standards.

At ESSA, 98% of the employees participated in the 183 events related to issues aimed at aligning competencies, behaviors, and skills with the organization's strategic plan, as well as at the professional and labor development of employees.

On the other hand, EDEQ carried out the Management Skills program and the Development of the Initial Innovation System program. Aguas Regionales was supported by EPM in training and learning activities in various areas related to know-how, in order to qualify the work performed. Malambo and Aguas Nacionales also fulfilled their training plans, and 52 employees in the operating area were certified in labor competency standards.

At the Eegsa affiliate (Guatemala), the entire management team participated in the Leadership School.



Strengthening the Grupo EPM leader

EPM and its business group consider the role of the leader to be of vital importance. Therefore, during the year, the focus continued to be on this population group through the execution of individual and collective activities focused on the dimensions of the leadership model: self-management, management of others, and results management. Management orientation of closeness was reflected in the execution of the development plans of the Leadership School, in which strengthening strategies were defined to improve the organizational climate and trust between EPM's executives and Gente EPM stakeholder.

- Conversation circles with all levels of the organization aimed at strengthening cultural transformation.
 - Individual support through executive coaching strategies.
- Advanced training in people management, decision making, and business strategy.
 - Development of leadership and decision-making skills.
 - Specialized training in conscious leadership

The participation of 486 executives in the ABC Gestión Administrativa para Directivos program (ABC administrative management for executives) is noteworthy. Likewise, 110 executives were committed to participating in the advanced leadership training, 93 attended the program on electromagnetic wave impact on organizations, and 84 participated in spokesperson programs. Additionally, 220 executives and a total of 1,005 EPM's public servants participated in the 183 conversation circles programmed to discuss about uncertainty, ego, adaptability, and common purpose, in order to become aware of how to move, think, and operate as individuals and as an organization. It is worth noting that 656 team leaders participated in the activities of the Leadership School in events such as ABC and conversation circles.

The following are some of the development strategies implemented in the affiliates:

At **CHEC**, it is worth mentioning the interactive training in power distribution networks, qualified by Colciencias as a technological development project. In agreement with SENA, progress was made in the construction of the learning environment called Network Training Camp for the training of linemen.

At **CENS**, 81% of collaborators participated in the 68 events that took place from the Leadership School, strengthening of competencies, training in OHS, and environmental and laboratory standards.

At **ESSA**, 98% of the employees participated in the 183 events related to issues aimed at aligning competencies, behaviors, and skills with the organization's strategic plan, as well as topics related to professional and labor development of employees.

On its part, **EDEQ** carried out the Management skills program and the Development of the Initial Innovation System program.

Aguas Regionales was supported by EPM in training and learning activities in various areas related to know-how in order to qualify the work performed.

Malambo and Aguas Nacionales also fulfilled their training plans, and 52 employees in the operating area were certified in labor competency standards.

At **Eegsa** affiliate, the entire management team participated in the Leadership School.

All these strengthening strategies contributed to improving the organizational climate and trust between EPM's executives and Gente EPM stakeholder.

Cultural evolution

Within the framework of cultural evolution, discussions are about the emerging future, the transitions from egosystem to ecosystem, resistance to adaptation with responsibility, common purpose, and inner place. More than 100 conversation circles have been organized with members of the board of directors, the management committee, executives, and other public servants under the scheme of pioneers and enablers who shall be multipliers of these practices within a process of systemic intervention.

In 2018 and 2019, the company encouraged to open mind, heart, and willingness to operate from the emerging future. EPM advances in understanding that cultural evolution is always an individual process of realizing, finding meaning, and taking charge of one's own contribution in the organization.

Prototypes have been made on relevant issues of the organization, which are reviewed and adjusted, fostering participation and feedback to obtain results with a high degree of adoption by public servants.

Within this framework, the measurement of conversational capital for EPM was carried out, which establishes the level of development of the conversational network within the organization.

Within the concept of diversity, a pilot program was launched, involving 28 people with various types of disabilities.



Likewise, progress was made in the search for synergies and points of connection in the 35 business development projects through articulation conversations between leaders and sponsors, while the Network of Agents of Change at EPM and at the affiliates of Grupo EPM was created.

Corporate governance

Grupo EPM's corporate governance has consolidated in response to the challenges posed by the public nature of EPM, growth, and consolidation as a group. In 2019, EPM's Board of Directors approved the updating of the governance code of EPM and Grupo EPM, which compiles the practices applied in this area and, among other matters, defines corporate governance as "The system by which Grupo EPM's companies are run, managed, and controlled through a balance between ownership and management, in order to guarantee their sustainability and growth, the rights of their investors, transparency and ethics in their actions, and access to information for their stakeholders.

Corporate Governance Plan

— Long-term initiatives

Long-term initiatives seek to maintain a constant evolution in terms of corporate governance.

For the year, it is worth highlighting the compilation and structuring of corporate governance practices in the updating of the governance code of EPM and Grupo EPM. This is a relevant milestone that allows for the consolidation of a systemic vision of corporate governance and the strengthening of its dissemination in Grupo EPM's companies.

- As a decentralized entity of the municipality of Medellín, EPM participated in the mayoral transition to provide information on fundamental aspects for sustainability (present and future of EPM and Grupo EPM) as well as to facilitate the mayor elect of Medellín to exercise his role as owner.
- The Guide for the nomination of EPM's board members was developed in response to a request from the commission appointed for the mayoral transition by the mayor elect for the period 2020-2023. This document compiled the existing definitions or guidelines for the formation of the board of directors.
- EPM's governance statute, which is incorporated into EPM and Grupo EPM's governance code, was updated. It was approved by the board of directors and a training plan was designed for its dissemination, in coordination with Universidad Grupo EPM, with the support of a supplier with experience in virtual training.

- The regulations for the boards of directors of the international companies ENSA, Ticsa, and HET were approved.
- For the affiliates of the water supply business, the interaction agreement for the adoption of guidelines for execution and management of minutes of the governance agreement was prepared. In addition, an online course was designed in coordination with Universidad Grupo EPM, in order to strengthen the dissemination of the governance agreement in Grupo EPM's companies.
- A training on risk management as a tool for decision making was conducted for the members of the Management Committee of EPM's Board of Directors.
- The strategic risk maps in the national energy companies (power transmission and distribution and power generation businesses) were updated and validated by the respective management committees.
- The assessment of EPM's internal control system was carried out through the Standard Form of Progress Report to Management (abbreviated FURAG as per its acronym in Spanish) established by the Administrative Department for Public Service (abbreviated DAFP as per its acronym in Spanish).

— Practices implemented and framework for action of corporate governance

Corporate governance practices applied annually within the framework for action.

It is worth noting the commitment to compliance with corporate governance practices and the compliance with the principles and obligations of the Relations Framework Agreement signed between the Municipality of Medellín and EPM, which are monitored in the governance report published every year.

- As part of the plan for openness of information during the elections, information on corporate governance was provided with emphasis on the framework agreement that governs the owner-company relationship.
- In October 2019, in accordance with the electoral process, the results of the local elections of the Municipality of Medellín for the period 2020-2023 were announced. Daniel Quintero Calle was elected by popular vote as Mayor of Medellín, and in his capacity as representative of the Municipality of Medellín, he will exercise the role of owner of EPM during the aforementioned period. In the context of the mayoral transition, information was provided to the commissions designated by the incoming municipal administration, through the fulfillment of an exhaustive agenda that was held during 6 days, starting Monday, November 25, 2019, with the presence of the mayor elect.



The following subjects were addressed during the face-to-face sessions:

- Group context
- EPM context
- Visit and context of Ituango hydroelectric project
- Strategy and growth
- Power transmission and distribution business
- Water supply and sanitation business
- Power generation business
- Natural gas business
- Commercial management
- Human resource and technology management
- Legal Affairs and general secretary
- Financial management
- Investment portfolio management (ISA, Adasa, Electricaribe, UNE, among others)
- Corporate governance
- Infrastructure projects
- Communications and corporate relationships management
- Corporate auditing management
- Supply chain management and shared service center
- Innovation and development
- Vision 2025

The management reports of the manager and the board of directors for the 2016-2019 period were submitted, as well as the manager's report in compliance with the law.

- In the formation of the EPM's Board of Directors, there were two updates as of December 31, 2019, with the resignations of Carlos Raúl Yepes Jiménez and Claudia Jiménez Jaramillo. They were accepted by the Mayor of Medellín as of January 1, 2020 through Decree 2412 of December 2019.
- The management of the board of directors for the 2019 period is summarized in the annual corporate governance report, which includes a specific chapter for this purpose.
- As part of the corporate governance practices implemented, the annual assessment of the board of directors was carried out. For the 2019 period, the assessment was assisted by an external consultant.
- With regard to Grupo EPM's shareholding composition, EPM's Board of Directors approved in August 2019 the merger of the affiliate EP RÍO SAS E.S.P. This decision was formalized and registered on December 31, 2019. In September 2019, EPM Chile S.A., an affiliate of EPM in that southern country, agreed to sell its shares at its affiliates Parque Eólico Los Cururos SpA and EPM Transmisión Chile S.A. to AES Gener S.A. and its affiliate Norgener Renovables SpA. EPM completed the purchase on November 27, 2019.
- As for the management of the affiliates, in 2019, the following appointments were confirmed by the board of directors of each affiliate:
 - John Fredy Restrepo Sánchez, Manager of Aguas del Oriente Antioqueño S.A. E.S.P. He started in the position on May 27 to cover the vacancy created by resignation.
 - Juan Carlos Restrepo Perea, President of Tecnología Intercontinental SAPI de CV (Ticsa). Before his appointment, he had four years and eight months of experience at companies of Grupo EPM (his last position had been finance director at Ticsa). As of October 1st, he assumed the position to cover the vacancy created by the appointment of the previous president as vice president of EPM natural gas.
 - Mario Alberto Naranjo Echeverri, Manager of Empresa Eléctrica de Guatemala S.A. (Eegsa). Prior to his appointment, he had 22 years and 8 months of experience at companies of Grupo EPM. As of December 1, he assumed the position to cover the vacancy created by the retirement of the former manager at this affiliate of Grupo EPM. Furthermore, during the term, the administrative structure of the affiliate was reformed. The positions of CEO and deputy CEO were unified; it is worth noting the career of the leaders who held these positions, who, on average, had 22 years of service at the company.

Fundación EPM

In 2019, Fundación EPM made an investment of COP 28,900 million to generate presence and closeness to the communities in the area of influence of Grupo EPM, through social and environmental management actions that improve the quality of life of communities. These initiatives benefited more than 4 million people in the departments of Antioquia, Atlántico, Cundinamarca, and Chocó.

In 2019, thanks to our work with communities and public and private entities, we were able to install 45 water purification solutions in rural education centers through our Agua para la Educación, Educación para el Agua (Water for Education, Education for Water) program, benefiting 4,988 children. Since 2011, the program has installed 722 water purification solutions in 5 departments in Colombia.



During the second half of the year, we implemented the Ambiente para la Vida (Environment for Life) project, whereby we provided socio-environmental support to the Ituango hydroelectric project through the implementation of social and educational actions in the communities downstream of the project, benefiting 42,840 people.

We supported EPM in its commitment to improve communication with the customers and users stakeholder through the Education to Customers and EPM Community project, as well as in the implementation of some programs of the Environmental Management Plan (abbreviated PMA as per its acronym in Spanish) and the Monitoring and Tracking Plan (abbreviated PMS as per its acronym in Spanish) of Nueva Esperanza and Sierra Cocorná projects.

We strengthened our purpose by working together with Emvarias affiliate to develop environmental education activities for the adequate integrated management of solid waste, as well as with Aguas de Malambo affiliate by standardizing the service for 3,530 users, thus promoting access to drinking water and contributing to a payment culture and legality.

We operate the following programs: Unidad de Vida Articulada (Articulated Life Unit—abbreviated UVA as per its acronym in Spanish), Water Museum, EPM Library, and Parque de los Deseos and Casa de la Música, offering educational, cultural, and recreational activities to promote social adoption of knowledge and care for natural resources.



Antioquia Higher Education Scholarship Fund program benefited 542 young people from Antioquia by awarding them a scholarship that covers the cost of tuition and maintenance for higher education studies (associates and bachelor's degrees). This program is developed in partnership with the Government of Antioquia and the Institute for the Development of Antioquia (abbreviated IDEA as per its acronym in Spanish).

Fundación EPM	
Program or project	2019
Agua para la Educación, Educación para el Agua	4,988
EPM Library	395,139
Education to customers and EPM community	157,773
Malambo Source of Life Fund	3,530
EPM Water Museum	97,517
Parque de los Deseos and Casa de la Música	1,800,195
UVA (14)*	1,774,118
Ambiente para la Vida	42,840
Cultura Ciudadana del Aseo (Civic Culture on Cleaning)	18,542
La Sierra Cocorná PMA and PMS	131
Puertas Abiertas (Open Doors)	2,013
Agua Hecha Raíces (Water Takes Root)	885
Antioquia Higher Education Scholarship Fund**	542
Library Network	N.A.
Basic sanitation	N.A.
ICT social adoption	N.A.
Medellín es Memoria Viva (Medellín is Living Memory)	N.A.

* The figures of the Antioquia Higher Education Scholarship Fund correspond to the 2019 scholarship holders. In partnership with the Government of Antioquia and IDEA, the total number of students reached 11,617 in the entire department. Of this number, 1,993 receive support with resources provided by Fundación EPM to the Corporation for the Promotion of Higher Education.

** The information corresponds to the education and culture component of Fundación EPM.

Financial results

Macroeconomic behavior

Grupo EPM operates in Central and South America regions, which have been characterized by changing economic and political environments, as well as tax and regulatory reforms that have affected the financial results of companies.

In 2019, the Colombian economic activity registered a positive performance that consolidated it as one of the best performing economies in the region, reaching a growth of 3.3%, supported by a greater dynamism in domestic demand, mainly in the components of investment in machinery and equipment, favored by the Financing Act and by the high execution of civil works (4G Toll Road Program); as well as in the component of private consumption, driven by relatively low interest rates and a strong growth in remittances. In line with greater dynamism of the economy, the demand for electrical energy grew 4.02% compared to the year 2018. The expansion of GDP occurs in a context of rising unemployment rates, political tensions, widening current account and fiscal deficits as a percentage of GDP, moderation in the growth of the global economy due to the trade dispute between the United States, China, and Europe, and a slowdown in the growth of trading partners, due to idiosyncratic events in some economies of the region.

Regarding inflation, the Consumer Price Index (CPI) registered an annual variation of 3.80%, within the target range established by the Central Bank of Colombia (2%-4%). The increase in prices was mainly due to supply shocks, which affected food prices to a greater extent, as well as to moderate pressures on tradable goods, derived from depreciation of the Colombian peso and an increase in public utilities fees. On the other hand, fuel prices maintained a downward trend due to lower oil prices.

In terms of exchange rates, 2019 was marked by high levels of volatility in the financial markets, which led to the exchange rate of the Colombian peso against the US dollar at historically high levels as a result of the following events: i) external uncertainty associated with political and social conflicts, ii) search for safe haven assets due to the risks of a global economic slowdown in the face of trade tensions with China, iii) a marked current account deficit, iv) social protests in the last quarter, and to a lesser extent, due to the Brexit and the behavior of oil prices. In this way, the exchange rate of the Colombian peso closed the year at COP 3,277 per dollar and registered an annual depreciation of 0.84%.

With respect to the other countries where Grupo EPM operates, economic growth in Chile, Panama, and Mexico was strongly affected by political tensions during the last quarter, by less dynamic domestic demand resulting from the deterioration of business and consumer confidence, and by a contraction in investment, global trade, and the construction sector, particularly in Panama. Guatemala and El Salvador maintained a stable growth path. With regard to inflation, there was a significant drop in prices, mainly due to the slower pace of economic activity and the moderation in oil prices, which led to a reduction in interest rates by several central banks. The behavior of the currencies against the dollar was influenced, as in Colombia, by episodes of volatility in the international financial markets associated with political and social conflicts.

The following are the main macroeconomic indicators of the countries where Grupo EPM operates:

Concept	Colombia	México	Panama	Chile	El Salvador	Guatemala
CPI (annual variation)	3.80%	2.83%	0.06%	3.00%	-0.01%	3.41%
PPI/WPI (annual variation)	4.66%	0.84%	NA	6.12%	-0.12%	NA
Exchange rate (end of the year)	3,277.1 COP/USD	18.86 MXN/COP	NA	744.62 CLP/USD	NA	7.70 GTQ/USD
Devaluation/ revaluation (annual)	0.84%	-4.00%	NA	7.03%	NA	-0.49%

CPI: Consumer Price Index.

PPI: Producer Price Index.

WPI: Wholesale Price Index.

NA: Not applicable.

Under this external scenario and a different internal dynamic, Grupo EPM succeeded in maintaining an adequate financial performance as a result of actions that have made it possible to mitigate risks.

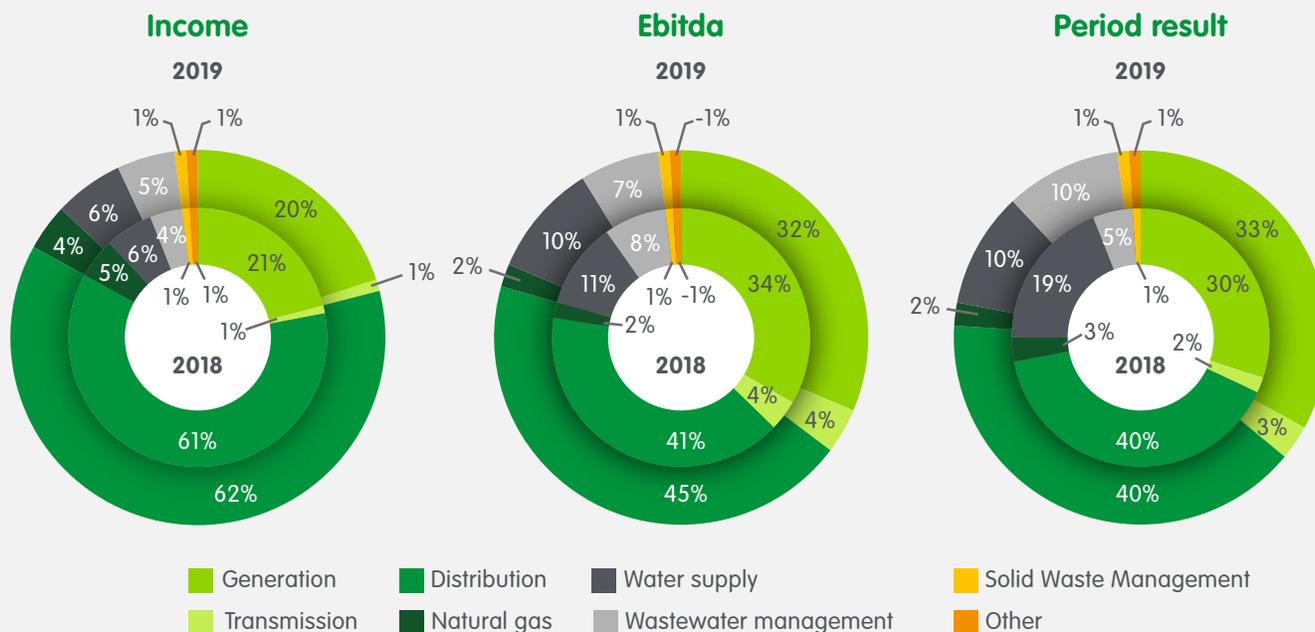
Grupo EPM's results

Grupo EPM has assumed important challenges and has continued with the strategy of guaranteeing financial strength by optimizing sources of financing, prioritizing the sustainability of the core businesses, complying with the investment plan, covering the needs generated by the contingency of the Ituango project, and achieving operational efficiencies.

Grupo EPM obtained COP 18.4 trillion in income, with a 12% growth; COP 6.0 trillion in EBITDA, 17% higher than in 2018; and a period result of COP 3.2 trillion, which shows a 31% increase.

In relation to the approved budget for 2019, there was an overspending of 10% in income, 15% in EBITDA, and 51% in net income.

In addition, EPM parent company obtained COP 8.8 trillion in income, with an 8% growth as well as COP 3.8 trillion in EBITDA, which is 15% higher than in 2018, and COP 2.7 trillion in net profit, which represents a 15% increase.



Regarding income, the share structure by business is maintained. Power distribution contributes 62%, followed by power generation with 20%, water supply with 11%, and the remaining percentage includes natural gas, solid waste management, and other businesses. This same structure is maintained in EBITDA and in the period result.

It is important to note that EPM's results drive Grupo EPM's consolidated financial statements.

In 2019, **power generation segment** presented different dynamics in the hydrological contributions of sources. In the first half of the year, contributions were at 100% of the historical average and, consequently, made it possible to meet the estimated generation levels. Between August and December, mean contributions was 71% of the average, which caused a decrease in hydraulic generation, especially between September and December, as a preventive measure to increase the reserves of reservoirs and reach optimal conditions for the summer of 2020.

Under this scenario, at the end of 2019, power generation segment reported 102% fulfillment in income, which was higher by COP 61,149 million; costs and expenses reported 84% fulfillment, equivalent to COP 445,559 million less; EBITDA reached 114% fulfillment, COP 247,577 million more; and the result of the year fulfilled 152%, with COP 353,074 million of overspending.

Grupo EPM's power generation segment obtained an EBITDA of COP 1.9 trillion, with 9% growth compared to 2018. This is explained by the increase in income in view of the higher energy sales prices in Grupo EPM's companies, since last year, the market was operating under the effects of La Niña, while this year, it was under the effects of El Niño, in the first and fourth quarters. The other income was higher by COP 78,295 million due to the reversal of the asset retirement in 2018 corresponding to the Ituango project. On the other hand, actual costs and expenses decreased due to lower service provision costs, lower restriction payments due to higher stock market prices, availability of system networks that were interrupted in the previous period for the Atlantic Coast, and lower power transmission costs due to fewer units sold to the nonregulated market.

Power distribution segment shows the widest range of operations both nationally and internationally. For this reason, its results are affected by the market dynamics of each of the countries where it operates. It is important to note that the connection of new customers, the increase in prices, the application of the methodology of CREG Resolution 015 of 2018, and the effects of the macroeconomic scenario affected the results for 2019.

Regarding budget, income fulfilled 109%, higher by COP 1.0 trillion; costs and expenses fulfilled 110%, equivalent to COP 933,855 million more; EBITDA met 105%, which is COP 133,237 million more; and the result of the year fulfilled 103%, with an overspending equivalent to COP 39,983 million.

EBITDA in the power distribution segment stood at COP 2.8 trillion compared to the previous year, with a growth of 29% and a variation equivalent to COP 627,063 million, explained mainly by EPM and the affiliate ENSA; by EPM Distribution due to the increase in income from marketing as a result of higher units at a higher price, caused by the retroactive effect of Resolution 015 of 2018 and the recovery of EADE's litigation; and by ENSA due to the combined local effect that favors growth in gross profit, lower growth in operating expenses, and a higher exchange rate. In the other affiliates, the positive variations are mostly explained by the increase in energy demand and the application of Resolution 015 of 2018.

Power transmission segment reported 103% fulfillment in its income, which is higher by COP 8,724 million compared to the budget; costs and expenses showed 98% execution, equivalent to COP 2,425 million less; EBITDA fulfilled 103%, which is COP 7,081 million more; and the result of the year reported 131% of budget performance, with overspending equivalent to COP 24,601 million.

EBITDA in the power transmission segment grew by COP 37,263 million due to the effect of income growth at both EPM and Trelec. For EPM, income growth was the result of the higher PPI and the recognition by the Colombian Ministry of Mines and Energy of the remuneration of assets in the STN; while for Trelec, the increase over the previous year is the result of the exchange rate differential and the increase in the annual transmission fee due to automatic adjustment as well as royalty income, which began to be received in September 2019.

Natural gas segment reported a budget performance of 111%, which is higher by COP 90,868 million; costs and expenses showed an execution of 107%, with overspending equivalent to COP 49,182 million; EBITDA met 159%, which is COP 42,825 million higher; and the result of the year reported a budget performance of 178%, with overspending equivalent to COP 27,440 million.

In comparison with the previous year, EBITDA stood at COP 115,173 million, with a decrease of 5% and a variation equivalent to COP 6,108 million less. This is mainly explained by higher sales to the nonregulated market (NRM) and to the secondary market in 2018, due to the increase in demand for thermal energy in the Atlantic Coast, not only to thermal energy agents, but also to other marketers at higher prices, which resulted in a higher margin.

A relevant fact in the water business is the consideration of budget given the disinvestment of Adasa (Aguas de Antofagasta) that did not materialize due to the social environment in Chile, which largely explains the variations in its indicators.

Water provision segment achieved 169% fulfillment in income, representing COP 501,561 million more; costs and expenses met 160%, with overspending equivalent to COP 303,989 million; EBITDA fulfilled 197%, with COP 292,507 million more; and the result of the period showed 307% execution, with overspending equivalent to COP 207,335 million.

For the **water supply segment**, EBITDA increased 4% in relation to 2018, representing COP 22,413 million. This increase is explained by higher income of EPM derived from greater consumption and the application of the fee path, which also explains the behavior in the wastewater segment.

Wastewater segment reported higher implementation of income by COP 166,037 million, and EBITDA was higher than budget by COP 13,874 million. With respect to 2018, this segment obtained COP 10,247 million more in EBITDA, which is equivalent to a 3% growth.

Solid waste management segment records operations with Emvarias affiliate, which during 2019 reported a higher implementation of income by COP 13,831 million, mainly in the collection service due to the incorporation of 39,923 customers as part of the standardization of users with Grupo EPM's databases. Costs and expenses reported lower implementation by COP 6,875 million due to lower depletion costs due to the extension of the Altaír landfill cell service life. EBITDA shows a higher execution by COP 11,649 million, which is mainly explained by higher income. Period result presents a higher execution by COP 18,229 million due to higher EBITDA and lower financial expenses. Segment's EBITDA grew 85%, which is COP 33,069 million more as a result of higher income and lower costs.

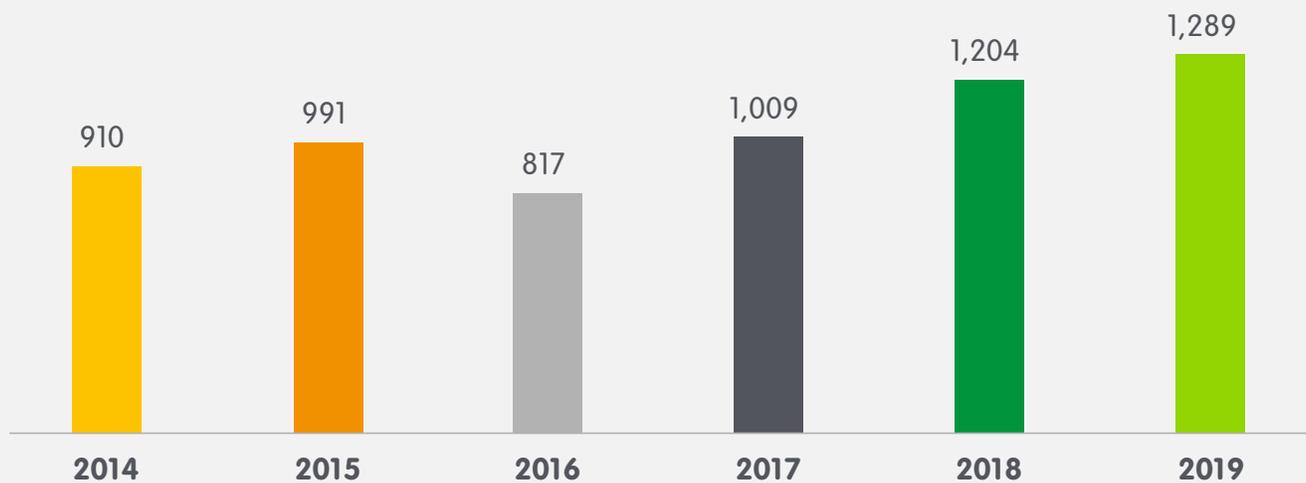
In the comprehensive income for the period, it is worth highlighting income from investments in affiliates and the efficiency in the recovery of income and wealth taxes. Affiliates contribute COP 2.3 trillion to EBITDA, of which international affiliates have a 55% share, and domestic affiliates a 45% share. The structure by business shows a contribution of 86% from energy companies and 14% from water supply companies.

Grupo EPM's net profit was COP 3.2 trillion, with 31% growth, equivalent to COP 738,438 million. This is mainly explained by the net effect of a positive variation in EBITDA by COP 895,115 million, higher non-effective results due to recoveries, lower expenses due to exchange difference, lower costs and expenses to respond to the Ituango contingency, higher income tax expenses, higher financial expenses, and expenses for regulatory assets in the affiliate of the distribution segment in Panama.

— Transfers to the Municipality of Medellín

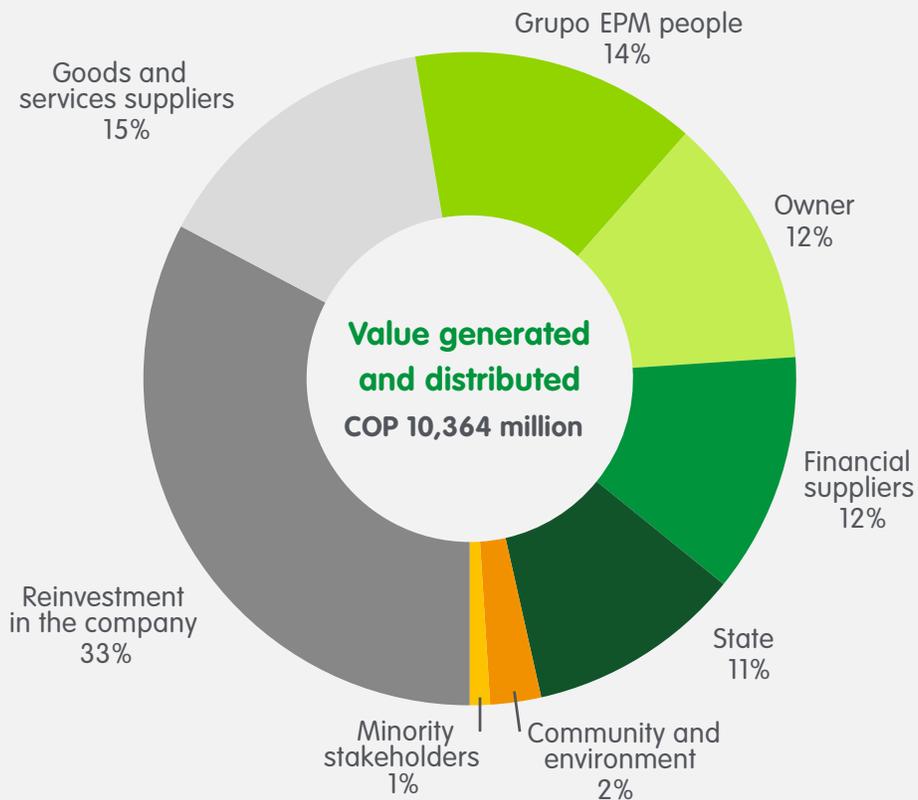
The transfers to the Municipality of Medellín in 2019 amounted to COP 1.3 trillion, of which COP 703,446 million corresponds to ordinary transfers and COP 586,205 million to extraordinary transfers. The variation with respect to the previous year in terms of ordinary and extraordinary transfers is 7%, which is equivalent to COP 85,000 million.

Transfers to the municipality of Medellín
Figures in billion COP



— Value generated and distributed

Grupo EPM generated COP 10.4 trillion in added value during the period, which means a contribution to the development of the territories in which it operates. It should be noted that suppliers of goods and services received COP 1.5 trillion, which is reflected in job creation and economic growth. Likewise, it is important to mention that COP 261,000 million was allocated to communities and to environmental improvement.



— Statement of financial position

Statement of financial position of Grupo EPM
Figures in billion COP



Grupo EPM's assets grew by 5%, going from COP 52.5 trillion to COP 55 trillion; liabilities grew by 1%, going from COP 30.5 trillion to COP 30.7 trillion; and equity grew by 10%, going from COP 22 trillion to COP 24 trillion.

Grupo EPM's non-current assets grew by 4%, mainly due to EPM, which represents 92% of the total for this category. With respect to infrastructure projects, Grupo EPM invested a total of COP 3.2 trillion in 2019, of which EPM executed COP 2.2 trillion, national affiliates COP 514,568 million, and international affiliates COP 539,376 million. Ituango hydroelectric project continues to be Grupo EPM's main investment, followed by projects associated with compliance with the service and efficiency standards required by the regulatory authority in the water supply business and in the power transmission business.

With respect to the national energy affiliates, it is worth highlighting the investments that contribute to the improvement of quality and coverage of service, through the construction and modernization of substations and lines, and through the expansion and replacement plan of the system. Similarly, it is worth noting the investments that the affiliates have been making to increase coverage in rural areas.

Regarding the international energy affiliates, investments were oriented to the implementation of projects for substations and lines, loss reduction, coverage expansion, and quality improvement for new customers and users.

In line with established liquidity strategies, liability management, especially that associated with debt, became a key issue for Grupo EPM. It is worth highlighting that EPM successfully made its fifth venture into the international capital market with the placement of bonds equivalent to USD 1,382 million, including bonds for USD 1,000 million and Global COP bond for COP 1.2 trillion. With these resources, EPM prepaid an amount of USD 1,035 million in credit balances with international commercial banking, in addition to the advance repurchase of COP 1.1 trillion, corresponding to the international bond issue executed in January 2011 and maturing in 2021. This resulted in an improvement of debt profile by passing the average life of debt portfolio from 5.41 to 7.08 years.

Derived from the debt management operation, the early settlement of financial derivatives amounting to USD 535 million was carried out, which generated actual income of USD 38 million.

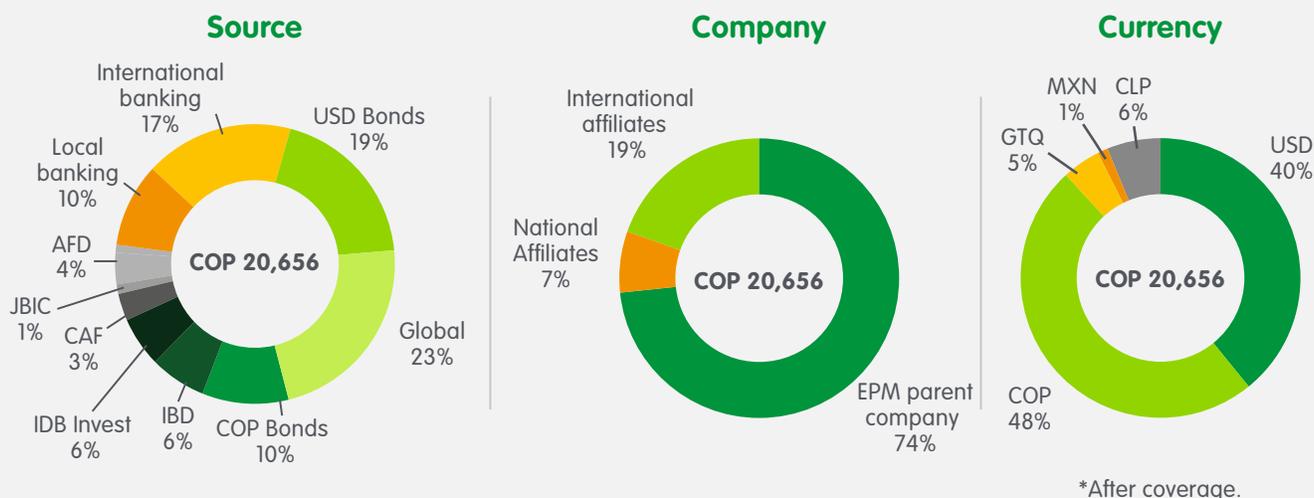
It is also worth noting the advance payment of the USD Bond maturing in July 2019 for USD 500 million, as well as the improvement in financial conditions, in some credits in force with local and international commercial banking.

Additionally, the financing requirements for Grupo EPM's affiliates were managed opportunely, especially the operation in Guatemala of Grupo Deca for USD 100 million and in local affiliates for COP 173,500 million.

Regarding credit risk rating agencies, in 2019, EPM continued with its practice of keeping them widely informed in order to provide them, in a transparent and comprehensive manner, with the elements that would allow them to develop their decision making in a clear way and thus keep their trust in the company. The international investment grade level was maintained by both rating agencies, Moody's at Baa3 with a negative outlook and Fitch Ratings at BBB international level and AAA national level, both on rating watch negative.

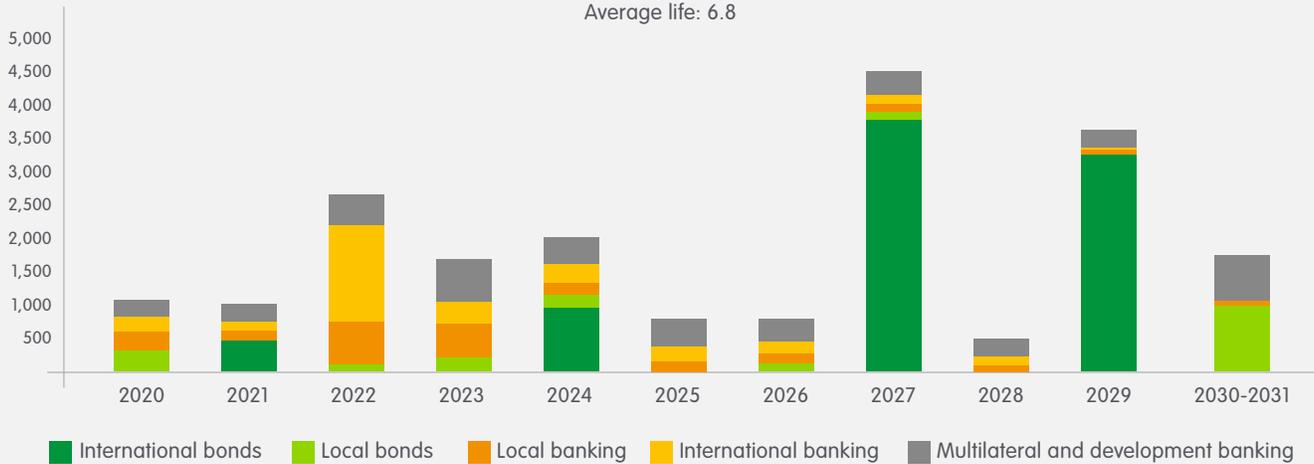
Local affiliates and Adasa performed positively as the ratings were maintained at AAA for the local energy affiliates, A for Aguas Regionales, and AA- for the local rating in Chile for Adasa. In addition, Emvarias rating was again obtained, reaching a level of AA+ with a stable outlook.

Debt profile



Maturity profile

Average life: 6.8



Grupo EPM's liabilities grew by 1%, with EPM representing 74%. By December 2019, EPM Business Group's Debt/EBITDA indicator rose to 3.49 and thus fell within the established limit of 3.5, improving on the value obtained in 2018 (3.86), since Grupo EPM's EBITDA exceeded COP 6 trillion, which is the highest figure in its history, with a growth of 17.5%. With this EBITDA, the company would take 3.5 years to pay its current financial debt, which is close to COP 21 trillion.

— Financial indicators

Indicator	Previous	Implemented	Budget	Execution %	Var. %
Liquidity					
Current ratio	0.77	0.99	1.26	78	28
EBITDA	5,115,430	6,010,545	5,243,810	115	17
Covenant	3.86	3.49	3.53	99	-10
Return					
Return on equity	11.6%	14%	9%	151	24
EBITDA margin	31%	33%	31%	106	6
Operating surplus	3,593,899	4,969,746	3,881,950	128	38
Operating margin	22%	27%	23%	116	23
Net margin	15%	17%	13%	137	16
Indebtedness					
Indebtedness index	58%	56%	55%	101	-4
Financial indebtedness	41%	40%	38%	104	-3

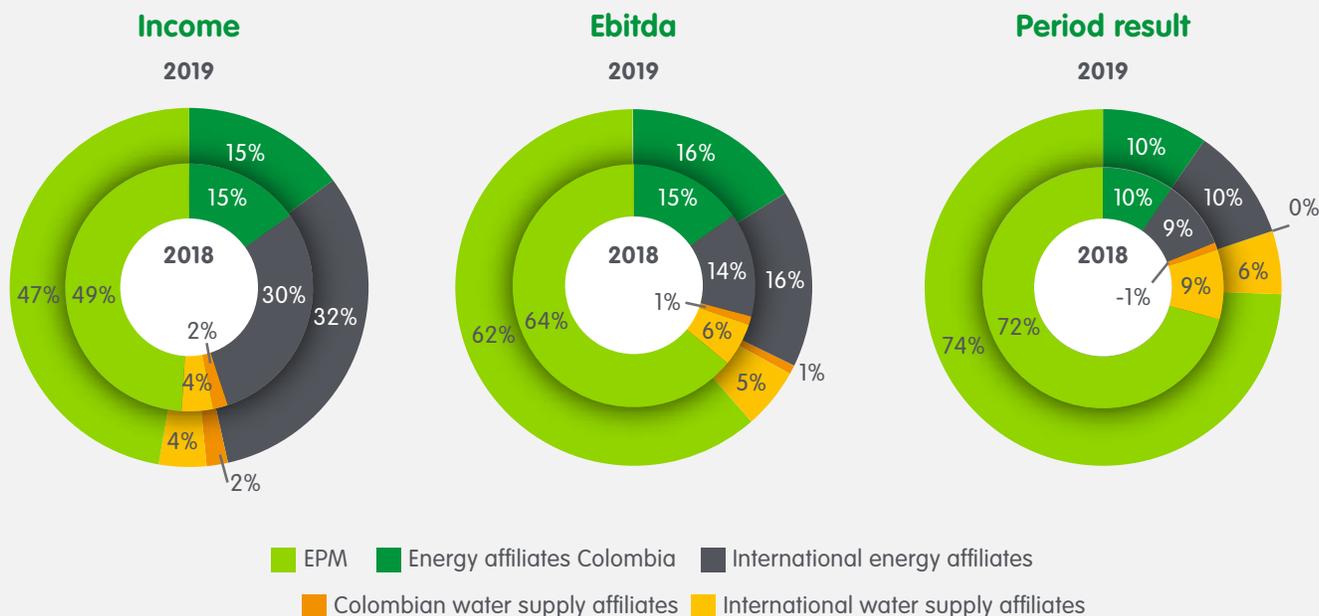
— Performance and evolution of investments

EPM received resources amounting to COP 752,305 million from its affiliates and subsidiaries, of which controlled companies paid dividends worth COP 654,583 million and those non-controlled COP 97,722 million.

The carrying value of portfolio investments at controlled and non-controlled companies amounts to COP 11.8 trillion at the end of 2019.

During 2019, EPM capitalized HET by COP 178,469 million, EPM Mexico by COP 74,661 million, Aguas de Malambo by COP 12,000 million, and Aguas de Oriente by COP 1,211 million.

With regard to Grupo EPM's EBITDA, 62% is generated by EPM and 38% by Grupo EPM's national and international companies.



Grupo EPM continued to consolidate its core businesses and affiliates. The merger of EPRio by EPM stands out as a beneficial synergy strategy for the Eastern Antioquia market.

— Taxes and contributions

For EPM, tax compliance is a minimum legal requirement. EPM understands that meeting mandatory commitments is the basis for acting in a socially responsible manner.

The following table presents EPM’s contribution to the nation, municipalities, departments, and monitoring and control entities, among others, with taxes and contributions, during the 2019 and 2018 periods:

Tax or contribution	2018	2019
Income and ancillary taxes (current and deferred)	605,235	174,292
Income tax for equity (CREE)	0	-25,936
Tax surcharge CREE	0	0
Equity tax	0	0
Wealth tax	0	0
Valuation	1,358	4,694
Industry and commerce tax	47,878	50,014
Tax on financial transactions	43,447	37,094
Control and auditing fee	18,504	17,923
Unified property tax	13,991	12,167
Motor vehicle tax	12	14
Contributions	21,504	20,809
Environment – Act 99 of 1993	89,328	81,325
Use of natural resources tax	4,081	3,662
Pollution of natural resources tax	8,482	9,442
Fund for the Electrification of Non-interconnected Areas (abbreviated Fazni as per its acronym in Spanish)	28,013	28,729
Fund for the Electrification of Interconnected Rural Areas (abbreviated Faer as per its acronym in Spanish)	0	0
Gas promotion fee	4,085	3,742
Ministry of Communications and/or Communications Fund	183	170
Stratification Committee - Act 505 of 1999	962	1,373
Motorway toll	437	433
Other taxes and contributions	13,706	10,286
Total	901,205	430,234

Adjustment and calculation of the provision for income for the taxable year 2019 was carried out in accordance with the tax legislation in force for that period.

The breakdown of the income tax provision, by current and deferred income tax, is COP 600,558 million and COP 4,678 million, respectively.

In this regard, among other aspects, this provision considers the following:

- The amendments introduced by the Financing Act, Act 1943 of 2018, which was in force during 2019.
- The Colombian holding company (CHC) regime, incorporated in the aforementioned Act 1943, which implies that dividends received from international affiliates shall be considered as exempt income.
- In 2018, the recovery of deferred tax due to the decrease in income rates in future years, determined in said Financing Law.
- Apply the tax benefits indicated in the tax statute for investments in science, technology and innovation, capitalization of water supply and sewerage companies in the region, as well as for power generation from nonconventional sources, which contributes to reducing the tax burden of the entity within the framework of the law.
- The particular conditions granted by the legal stability agreement for the activity of power generation in tax regulations in force for 2008-2028. One of the most significant of these conditions is the stability of the regulation that allows for the exceptional use of 40% of investments in fixed assets as a deduction in the income tax return, the income tax rate, and the equity tax, among others.
- Situations associated with the contingency of the Ituango hydroelectric project and its tax impact.

— Engagement with investors

EPM maintained its practices of transparency before the international financial market. During the year, it provided updated information on the company.

Some of the most representative practices in this sense include: Quarterly teleconference for the presentation of financial results in two versions (Spanish and English), annual plenary meeting with local and international financial public, and continuous attention to the concerns of local and international investors. In addition, for the seventh consecutive year, the IR (Investor Relations) recognition was achieved for voluntarily adopting the best practices in disclosure and investor relations required by the Colombian Securities Exchange.

Financial strength

EPM has sought to maintain its financial indicators at levels that will allow the company to maintain its strength. This principle has been preserved, even with the changing levels of risk that the company has been facing.

In 2018, EPM faced a different internal dynamic, derived from the contingency of the Ituango hydroelectric project, which changed the company's risk scenario and generated a perception of uncertainty in aspects associated with EPM's financial sustainability. This situation forced a rethinking of the established goals.

The strategic redefinition continues to focus on financial strength. A new road map was established to ensure sources of resources. For this purpose, a combination of sources was defined that incorporates credits, optimizations within Grupo EPM, and alienation of some of the assets acquired in the past in order to maintain adequate liquidity levels, so that the company can replace the postponement of the entry of income from the Ituango project, as well as cover the additional investment needs derived from it, the assistance to the affected population, and the fulfillment of financial obligations. In addition, these resources will be used to make the infrastructure investments required to ensure the continuity of business operations, control indebtedness indexes, and maintain the investment grade by the risk rating agencies.

— Liquidity strategy

Grupo EPM's liquidity strategy focused on undertaking actions such as debt rescheduling, disinvestment of assets in Chile (Parque Eólico Los Cururos and EPM Transmisión Chile), claiming the Ituango policy, optimizing costs and expenses, and postponement of non-priority investments, in order to guarantee sources of resources that will enable the company to cover the needs arising from normal business operations and ensure the implementation of the infrastructure investment plan, with the aim of continuing to provide quality public utilities.

In 2019, Grupo EPM obtained an internal generation of funds (abbreviated GIF as per its acronym in Spanish) by COP 6.2 trillion and EPM by COP 3.9 trillion. These resources come from the dynamics of its operation and other sources that have allowed the financing of the investment plan and other obligations of Grupo EPM.

Claim for policies

In 2019, the renewal of Grupo EPM's insurance program reflected the impact on the cycles of the global reinsurance market, with strong increases in rates, especially for high claims policies, both worldwide and in our own case, with strong increases of up to 40%. The actions carried out made it possible to obtain compensations derived from the event at Central Playas for a value of nearly USD 6 million, out of a total of USD 35 million paid by the insurer. It is estimated that by 2020, the claim can be closed for an additional value of nearly USD 3 million.

As for the compensation received during 2019 for claims under the other policies of the program, approximately COP 7,000 million were received for EPM and COP 6,400 million for the national affiliates.

For the Ituango project contingency, an advance payment was received in May for the claims of affected third parties under the noncontractual civil liability policy amounting to COP 6,168 million.

With respect to the all-risk construction and assembly policy, on September 16, 2019, coverage was confirmed for damage to the project's works and equipment. Therefore, on December 4, 2019, Mapfre insurance company made a first advance payment of USD 150 million corresponding to consequential damage in civil works.

Disinvestments

At the request of EPM's Board of Directors, an analysis of EPM's investment portfolio (shareholdings) in Colombia and abroad was carried out to determine those disinvestments that should eventually be made and thus generate resources for EPM in the context of the contingency of the Ituango hydroelectric project.

EPM's Board of Directors authorized the initiation of the necessary procedures to alienate Grupo EPM's shareholdings in ISA, Adasa, Parque Eólico Los Cururos, EPM Transmisión Chile S.A., Río Aures, and other minority shareholdings such as Promioriente and Gasorienté.

Upon authorization by the board of directors, the procedure was carried out before the Council of Medellín for the alienation of EPM's shareholdings in Colombia, which concluded with its approval through Agreement 090 of 2018.

Disinvestment in Adasa:

Although binding offers were received in November 2019, the sale process was suspended.

Disinvestment in Parque Eólico Los Cururos SpA and EPM Transmisión Chile S.A.:

In 2019, the transaction was closed for USD 142.8 million, of which USD 138 million was received in November 2019 and USD 4.8 million in February 2020, derived from the price adjustment agreed with the buyer.

Disinvestment in ISA:

14,881,134 shares were sold, whereby EPM received a total amount of COP 233,633 million. The number of shares awarded is equivalent to 1.34% of ISA's shareholding.

Disinvestment process of Aguas de Antofagasta – Adasa

- During the first half of 2019, studies were carried out comprising due diligences (financial, accounting, tax, legal, technical, regulatory, and market), which provided inputs for the modeling and implementation of the disinvestment process.
- The most suitable non-binding offers submitted by interested investors were selected. They were given access to the data room in addition to a management presentation and site visit.
- Although binding offers were received in November 2019, the sale process was suspended.

Disinvestment process of Parque Eólico Los Cururos and EPM Transmisión Chile.

- In September 2019, after a competitive process, EPM Chile S.A. signed a promise to purchase agreement with Norgener Renovables SpA and AES Gener S.A. for the shares of Parque Eólico Los Cururos and EPM Transmisión Chile. At the end of November, the transaction was completed for an amount of USD 138 million (in February 2020, USD 4.8 million were received as a result of the price adjustment agreed with the buyer).

Disinvestment process of ISA

- During the first stage of the alienation process of EPM's shareholding in ISA, aimed at special conditions recipients, 14,881,134 shares (1.34% of ISA's shareholding) were sold, for which a total amount of COP 233,633 million was received.
- In the second stage, 8.66% of the shareholding in ISA was offered for sale and the pre-qualification conditions and the auction mechanism were established so that potential investors could submit their bids. However, the potential investors withdrew from the process due to the political and social uncertainty in certain countries where ISA operates, requiring a longer deadline than December 31, 2019, to carry out the necessary analysis and decide on the submission of a bid. Nevertheless, this was the maximum time frame provided for this disinvestment as established in Agreement 090 of 2018 of the Council of Medellin. For this reason, on December 31, 2019, EPM completed the program for the alienation of its shareholding in ISA.

Disinvestment process of Gasoriente and Promioriente

- In accordance with the strategy defined for alienation, EPM acquired all of the shares that its affiliate Electricadora de Santander (ESSA) held in Gasoriente y Promioriente, and subsequently initiated the sale process in accordance with the provisions of Act 226.
- The first stage of the alienation of shares in Gasoriente began in June and ended in August. In this stage, 50,000 shares were sold, equivalent to COP 144.6 million. Subsequently, the auction corresponding to the second stage of the alienation program was held in November and all the shares offered were sold for approximately COP 35,000 million.
- Regarding Promioriente, the first stage of the alienation program began in October. A total of 50,000 shares were sold for COP 24.4 million. The market was informed of the program completion, taking into account that this stage ended on December 30 and that the deadline for executing the alienation program was December 31.

Integrated Model of Planning and Management

2019 is the second year in which EPM makes progress in the process of closing the gaps identified in the self-assessment for the implementation of the Integrated Model of Planning and Management (MIPG for its acronym in Spanish). The gaps that obtained a rating of 60 points or less in the self-assessment received special management attention.

Additionally, during the first quarter of 2019, using the FURAG II² tool, the first measurement of progress in the implementation of MIPG based on 2018 was carried out. In this measurement, EPM stands out as a benchmark entity among the peers in its comparison group.

With a score of 77 in FURAG II, EPM is the benchmark company in the peer group to which it was compared. The following chart shows the FURAG II rating obtained by EPM as seen by the 7 dimensions of MIPG:

SIGEP code	4256		
Index	Score by entity	Peer group average	Peer group average
Institutional performance index	77	55.1	77
D1: Human resources			
D2: Strategic planning	72.6	52.5	72.6
D3: Result-oriented management with values	77.6	54.7	77.6
D4: Result assessment	72.1	52.3	72.1
D5: Information and communication	79	53.6	79
D6: Knowledge management	79.2	53.6	79.2
D7: Internal control	75	41.5	75

It is observed that EPM continues to be a benchmark among the peer group to which it was compared in the MIPG dimensional view. Dimension 1, Human Resources, was not assessed in FURAG because EPM does not apply the public office career. Despite the comparative results, EPM is aware that there are significant opportunities for improvement in some of its policies.

² FURAG: Standard Form of Progress Report to Management.

Some of the organization's progress on the MIPG are summarized below:

1. Harmonization of EPM code of ethics vs. MIPG code of integrity.
2. Structuring of the outline of defense lines at EPM.
3. Harmonization of the concepts of stakeholders and value groups of MIPG with EPM's stakeholders.
4. Analysis and proposal for the definition of digital government and document management policies at EPM.
5. Development of the survey for ITA³ to EPM.
6. Completion of FURAG 2019.
7. Creation and activation of the Integrated and Coordinated Meeting (abbreviated RIC in Spanish) of MIPG, as a mechanism for the coordination and progress of MIPG work plan.
8. Development of the MIPG training plan by EPM's public servants.
9. Benchmarking presentation of the implementation of MIPG before the Management Committee (Institutional Committee for Management and Performance).
10. Structuring and implementation of MIPG communications plan with the business organization.
11. Clarification of the scope of MIPG with the Administrative Department for Public Services (abbreviated DAFP in Spanish).
12. MIPG in sessions, Management Committee (Institutional Committee for Management and Performance) and the Management Committee (Institutional Committee for Internal Control Coordination), roles and responsibilities regarding MIPG, definition of the scope of the Management Committee in document management.
13. Articulation of the integrated planning cycle to MIPG and harmonization of MIPG policies with the different instruments of the regulatory model equivalent for EPM.

Improvement plans: Avanza application has registered 12 plans with a self-assessment origin (MIPG). Four of these plans have been completed, which are related to audit planning for integrity strategies, attention to gaps in public disclosure (ATC), plan for closing gaps in human development activities and in information technologies and accountability. Furthermore, eight plans are being implemented in relation to:

- Procedure indicator, public offering (abbreviated OPA in Spanish), and services.
- Inventory of information components.
- Global audit opinions.
- Complete human resource training plan.
- Incomplete registration of information in SIGEP.
- Improve aspects related to organizational culture.

³ *Transparency and Access to Information Index.*

- Document retention schedules.
- Migration of the IP addressing scheme to IPv6, which is more scalable and extensive.

The following are the relevant results obtained for each of the dimensions:

Human resource dimension

This dimension was not assessed under the FURAG II measurement. However, actions have been implemented based on the self-diagnosis and its overall rating was higher than 60 points out of 87.4. It comprises the following policies:

— Policy of human resource strategic management

Points for improvement were identified in the planning and admission actions. During 2019, communication strategies have been carried out in the planning process about the responsibility in updating the information on the resumes in SIGEP. In 2019, for the admission process, progress was made in updating data on public servants in the HCM tool through self-service, in order to improve traceability in the work history.

According to the information registered in the HCM⁴ tool, as of January 30, 2020:

- Active staff: 7,970
- Active apprentices and interns: 395
- Active public servants: 7,575
- Public servants with registered degrees: 5,215
- Percentage of public servants with registered degrees: 65%
- Public servants (2,360) and apprentices and interns (395) without registered degrees: 2,755
- Percentage of public servants (30%) and apprentices and interns (5%) without registered degrees: 35%
- Average number of registered degrees per public servant: 2

In the areas associated with **information management**, key staff indicators were defined for admissions, turnovers, promotions, transfers, assignments, secondments, study leaves, absenteeism, demographic data, pre-retirements, and reinstatements. There are employees responsible for these indicators and the periodicity of their measurement has been defined.

⁴ HCM: Human Capital Management.

The **training** plan included topics associated with citizen service (customer service), online governance (digital transformation), financial management, organizational culture, human rights, sustainability, information technology management, innovation, planning, and public procurement. Similarly, the training plan included the reorientation of public servants through the development of topics defined by mechanisms such as Naturalmente (Naturally) or El Valor de lo que Hacemos⁵ (The Value of What We Do). In these spaces, public servants have been trained in matters related to the organization and its endeavor, as well as aspects related to the public servant.

In 2019, internal events were held that seek to incorporate public service into EPM culture through the design of the **plan for cultural transformation**, such as conversation circles for executives, pioneers, enablers, and other audiences, in which topics discussed include the public servant, the measurement of the conversational capital indicator, and the incorporation of innovation strategies through the Creando Ando (Creating) initiative, among others. Activities were also developed in relation to the Bilingualism Act (Act 1651 of 2013) and Estado Joven (Young State) program.

Finally, the structure of the exit interviews was defined, as well as the repository for preserving the information that has been documented in each one of them. By 2019, 48% of the population that has left the organization during this period has been reached.

— Policy of integrity

No improvement actions were generated to be addressed by the organization. On the contrary, progress is being made in the action plan related to the internalization of the code stipulated at EPM.

Strategic planning dimension

The result of this dimension through the FURAG II assessment was 72.6, while the self-diagnosis obtained a score of 96.3. This dimension is comprised of the planning policies and the anti-corruption plan; its results are detailed below:

⁵ Some of the topics addressed include updating the strategic planning components, which is being developed from each of the businesses around operational safety, the balance of the Ituango hydroelectric project during the first year under the defined dimensions, as well as other projects that the organization is currently developing under its future vision. In addition, online courses have been developed, including the "Integrated Model of Planning and Management (MIPG)" and "Work Inclusion" courses, which must be taken by all EPM's public servants.

— Policy of planning

Between 2018 and 2019, the company worked on the review and adjustment of the corporate risk map and of the strategic planning as a result of the impacts generated by the contingency of the Ituango hydroelectric project. The purpose of this action was to ensure business continuity and sustainability of Grupo EPM. Both the risk map and the strategic planning will be continuously reviewed and adjusted according to the evolution of the situation and the business context.

As for the involvement of citizens and stakeholders in the diagnosis and formulation of plans, programs, or projects of the entity that are of interest to citizens, it is found that, due to the nature of the company subject to competition, an open exercise with citizens is not considered. However, it is applicable in the case of plans and projects related to the territorial integration model and public hearings for the development of projects.

— Policy of the anti-corruption plan⁶

The score obtained in the application of the 2018 self-diagnosis was 94.3. Although FURAG II did not show results for it, EPM made progress in the following aspects in 2019:

- Presentation of the corruption risk map to the Audit Committee on February 22, 2019. An assessment of corruption risks is being carried out by the Vice Presidency of Corporate Auditing, which is included as a regular internal audit activity of the entity.
- Structuring and periodic monitoring of the Anti-corruption and Citizen Services Plan, as well as its publication. Management is carried out through the different control and attention mechanisms available for the detection of corruption events (Disciplinary Control Office, Corporate Audit, Work Coexistence Committee, Compliance Unit, and ethics hotline: Transparent Contact).

⁶ The Anti-Corruption and Citizen Services Plan (PAAC) (in compliance with Article 73 of Act 1474 of 2011).

Result-oriented management with values dimension

The result obtained in FURAG II for this dimension was 77.6, and that of the self-diagnosis tool indicates a score of 89.8. This dimension includes policies related to: Organizational strengthening and process simplification, digital security, regulatory improvement, budget management, digital government, legal defense, citizen service, procedure rationalization, and citizen participation. The management carried out in 2019 is summarized below:

— Policy of organizational strengthening and process simplification

A process model for EPM is currently available. The last update was approved on September 9, 2019 by the Corporate Core Committee, driven, among other aspects, by the requirement of control entities and the implementation of MIPG. For the design and management of processes, the methodology for the design and adjustment of processes has been applied, based on the international reference BPM⁷, whose purpose is to guide the management by processes to enable the achievement of the business strategy.

During this period, the functions manual by department and its approval by EPM's Board of Directors were documented.

Furthermore, adjustments were made to the organizational structure to respond to the contingency of the Ituango project, while the variation in the composition of the job structure and the dynamics of process management led to the need to design and/or adjust job descriptions. For instance, the creation of exclusive positions for the occupational medical reinstatement of public servants, the creation of a business advisor position, as well as positions for the implementation of the Work Inclusion within the Organization program.

— Policy of budget management and efficiency of public expenditure

- The budget management carried out by EPM is consistent with the principles of efficiency and effectiveness of public expenditure, in line with the actual value of contracts and the corresponding budget, amounts, and deadlines.
- For a correct registration of economic facts, a training plan on the IFRS accounting standards is being developed, which applies to all the company's public servants.

⁷ BPM: Business Process Management.

- In order to comply with Article 14 of Act 1474 of 2011, the information associated with budget management process was updated on the Transparency section of the entity's website, with the publication of budget modifications made during 2019.

— Policy of digital security

Some milestones stand out in the framework of the Centinela (Sentinel) project, which aims to manage information security and cybersecurity for Grupo EPM, in order to securely deliver services and information to its different stakeholders and to enable their integration and growth. These milestones include the definition and creation of the new process called Digital Security and Continuity of Technology Services, and the dimensioning of staff for the new process and its document structure. In terms of policies, it is worth noting the following progress in 2019:

— Policy of digital government

Entity's procedures and other administrative procedures (OPAS) associated with the mission processes were refined.

In the management and planning of information components, the information components were conceptualized in line with the model and the road map of information management.

In the transition plan from IPv4 to IPv6 protocol, the diagnosis for the transition from Internet Protocol version 4 to Internet Protocol version 6 was made. Based on this, the IPv6 design proposal for the Demilitarized Zone (DMZ) was prepared, as well as the next steps for the implementation of dual stack.

— Policy of legal defense

Sessions of the Conciliation Committee were held at least twice a month or whenever required during the year. The committee is comprised of public servants at the management level who are appointed for this purpose. The study and assessment of the legal proceedings against the entity was also carried out, identifying the causes of the conflicts and proposing corrective measures.

— Policy of regulatory improvement

EPM's internal regulatory model was updated to limit it to the directives defined by the Corporate Core for Grupo EPM and, in turn, to determine the applicability scope of the business policies, guidelines, and rules.

— Policy of citizen service

- Regarding disclosure of information to citizens, the information suggested by the MIPG was published in visible places and in formats other than the electronic one.
- Information was disclosed to citizens regarding offices and opening hours, defined hotlines, transactions over the web and phone, free issuance of certificates using the self-service modules, contact emails, links to access information on public accountability, current information about EPM, department responsible for addressing RCCs⁸, and schedule of activities in the services.
- Educational videos were shared regarding access to prepaid water and energy programs, use of EPM app and supported transactions, explanation of investments made in sanitation in the metropolitan area and their repercussions on rate variation, and key messages on bill changes. Moreover, a solution to doubts called **chatbot EMA**, was implemented in EPM's website. This solution is an automatic assistant that helps users with their procedures and addresses inquiries regarding values in bills and coupon for bill payment.
- Certification was obtained in Clear Language, a course taught by the DNP⁹, thus complying with the four-step procedure design, in accordance with the provisions of the DAFP¹⁰, and with the required structure to make them available on the website of procedures and services.

— Policy of procedure rationalization

The company's formalities and other administrative procedures (OPAS as per its acronym in Spanish) associated with its mission processes were refined.

⁸ RCCs: Requests, complaints, and claims.

⁹ DNP: National Planning Department.

¹⁰ DAFP: Administrative Department for Public Service.

Through consultancy services, advice has been received for the interpretation and due application of CREG Resolution 080 of 2019, “by which general market behavior regulations are established” and the following behavior standards are defined: compliance with the purposes of said regulation, market transparency, prioritization of users’ interests, independence in decision-making, free access to essential commodities, competition in the market, and adequate provision of the service. The resulting information is being studied to be later implemented in the company’s processes and thus in all impacted procedures.

— Policy of citizen participation

With respect to progress made in the implementation and maintenance of this policy, the diagnosis of citizen participation has been shared with those directly responsible for the engagement plans.

Result assessment dimension

— Policy of institutional performance monitoring and evaluation

Progress was made in the following activities:

- Through the development of the Alignment initiative, the company has been working on aligning EPM’s indicators from the operational to the strategic level.
- The percentage of compliance with the business objectives was calculated based on the BSC results.
- The efficiency and effectiveness of the business plan initiatives were evaluated.
- The strategy map and its indicators were reviewed and adjusted in accordance with the strategic planning defined as a consequence of the contingency that occurred in the Ituango hydroelectric project.

In response to the gaps, improvement actions were documented. These actions account for aspects to be improved which were defined based on accountability and each of the five phases established in the Single Accountability Manual (version No. 2 of February 2019) issued by the DAFP. Thanks to the actions taken, the following was achieved:

- The integral procedure for carrying out the accountability exercise was defined.
- The roles and those responsible for the comprehensive coordination of the accountability exercise (government) were established.
- The Review Guideline was adjusted by the Directorate of Systems Management at EPM.

As for the improvement plans, the indicators for each vice presidency related to plan effectiveness, deadline, delay, and reformulation were established, in order to raise more awareness among those responsible for the organization's continuous improvement.

Information and communication dimension

Progress made in 2019 is mainly focused on document management. As part of the Document Management Consolidation project, a new version of the Pinar¹¹ was developed. This new version was adjusted to the technical and legal terms required by this document. Regarding policies, progress was made mainly in:

— Policy of document management

The progress made regarding the planned actions is summarized below.

- EPM's document management policy was analyzed and a proposal was developed, in accordance with the guidelines set forth in the Integrated Model of Planning and Management.
- The updated Document Retention Schedules (TRD as per its acronym in Spanish) was submitted to the Departmental Council on Archives for its review.
- The Document Management Consolidation project was structured and started to be executed. Under this project, the necessary actions to close the identified gaps will be executed by adjusting the components of the business architecture from the following dimensions: processes, technology, information, organization, and people.
- The Vice Presidency of Corporate Auditing provided support, through consulting actions, in terms of risk assessment, control, and governance of the Document Management project, and the archival improvement plan, which was signed at the General Archive of the Nation, was monitored quarterly.

¹¹ PINAR: *Institutional Archive Plan*

— Policy of transparency and access to information

Currently, there is an institutional guideline for intercultural engagement and dialogue with ethnic communities. Such guideline was developed by the Sustainable Development Management within the framework of Corporate Social Responsibility (CSR) and Human Rights for the proper engagement of the companies of Grupo EPM with ethnic communities. It is currently being shared and validated. As a case example, EPM, through its affiliate Aguas Nacionales, is developing water supply projects; and in Manaure (La Guajira), for instance, there is a well water project, and a Wayúu indigenous was hired as a translator.



Knowledge management dimension

Although a tool has not yet been developed for the self-assessment of the policy associated with this dimension (knowledge management policy), the benchmark score of 79.2 was obtained through the FURAG II evaluation.

Internal control dimension

Progress made in this dimension includes:

- The assessment of the company's ethics management plan was established as a mandatory task for the Vice Presidency of Corporate Audit to be included in the annual audit plan. In their assessments, one of the reviewed topics corresponds to strategies to promote integrity in public servants (focus: training and awareness).
- From the Vice Presidency of Corporate Audit, the proposal for the issuance of global opinions was developed, by consolidating governance, risk, and control issues.
- In the results of the 2018 FURAG II evaluation, the need to strengthen the lines of defense within the organization was identified, in accordance with the scheme proposed by the MIPG. During 2019, the dependencies within the company acting as a second line of defense were identified, and based on this, a work plan will developed for the officialization of, socialization of, and culture awareness on this aspect.
- The 2019 Anti-corruption and Citizen Services Plan (PAAC as per its acronym in Spanish), which is part of the MIPG and proposes actions in coordination with the different EPM processes, was published. It aims to strengthen the results of the risk analysis and the integrated planning cycle, taking into account the analysis of the environment.
- The psychosocial risk at EPM was assessed.
- The company's ethical management plan and the role of public servants was constantly promoted through different communication, awareness and/or training strategies. These strategies are part of the Integrated Ethical Management Plan.
- Discussion panels, whose aim is to leverage cultural transformation by strengthening conversations among employees and, thus, achieve the development of organizational capacities, were held.
- The employee development plan was defined based on the "actions" that have been established within the organization.
- The corporate risk map and strategic planning was reviewed and adjusted as a result of the impacts caused by the contingency that occurred in the Ituango hydroelectric project.
- EPM's corruption risk map was updated and dully published on the website.
- The company's risks were monitored, and reports were prepared for the respective committees.
- Within the framework of the company's regulatory cycle, policies, guidelines, business rules and procedures were defined. Responsibilities regarding the application of controls were assigned.

- The company's transparent contact hotline was shared with external groups through the communication means defined at EPM.
- The annual workplan of the internal audit exercise at EPM was executed, where opportunities for improvement were identified, which will be addressed by those responsible for the organization's processes.
- The improvement plans that are being executed within the company and which emerged after different evaluation exercises were followed up.



Awards and honors

EPM

- **Seals of Excellence in Digital Governance:** In 2019, the Colombian Ministry of Information and Communications Technologies awarded EPM five seals of excellence: three for open data related to energy, water, and gas rates that were made available for use by citizens; one for citizen participation thanks to the exercises carried out in digital media (open governance); and one for the e-bill service. With this honor, entities owned by the Colombian state certify the high quality of procedures, services, and products provided by digital means, as well as a public entity's skills in the management of information technologies.
- **Recognition in the Social Innovation category of the IDB's Ideas into Action Awards:** the Acueducto Aéreo y Senderos de Vida (Overhead Water Supply and Life Paths) project, developed by EPM and its affiliate Aguas Regionales in Turbo's Port District, in Antioquia's Urabá region, ranked second among the most innovative water and sanitation companies from Argentina, Brazil, Chile, Costa Rica, Mexico, Peru, and Paraguay, according to a call by the Inter-American Development Bank (IDB).
- **Colciencias (the Administrative Department for Science, Technology, and Innovation in Colombia)** granted 100 of 100 points to EPM's Consolidación de Centros de Control (Consolidation of Control Centers) project in the Innovation category. This initiative contributes to the development of the country and the achievement of the Sustainable Development Goals (SDGs).
- **Certification on compliance with the International Internal Auditing Standards and the Auditor's Code of Ethics:** after a thorough work that involved conducting interviews and surveys to EPM's executives, reviewing documents, and evaluating assurance and consultancy tasks, a external evaluator from the International Institute of Auditors (IIA) ratified, for the second time, the "Generally Conforms" rating for the company.

CHEC

- **Third-level certification on the semantic interoperability framework for the information exchange service:** within the framework of the implementation of good practices regarding Digital Governance Policy, CHEC received recognition from the Colombian Ministry of Information Technologies and Communications (Min TIC) in the spheres of interoperability and clear language.
- **Lace of the Manizales Festival:** EPM's affiliate received this honor as a symbol of commitment and contribution to the development of the capital city of Caldas.

EDEQ

- Recognition to the Restaurar los Bosques para Conservar la Vida (Restoring Forests to Preserve Life) program: the Corporación Quindío Competitivo (CQC) recognized EDEQ for its contribution to the program, through which 86 hectares have been reforested in the department.
- First recognition by the Superintendency of Residential Public Utilities (Superservicios) and Andesco on best user service practices: Superservicios, through the National Association of Public Utilities and Communication Companies (Andesco), granted EDEQ an award, in the “Operation of the Requests and Resources Offices” category (medium-sized company), on its practices in the provision of public utilities.
- 2019 ACIEM Award on Maintenance Engineering: the Colombian Association of Engineers (ACIEM) ranked EDEQ third for its “Armonía electro-vegetal” (Electro-vegetation harmony) initiative within the framework of the 21st International Congress of Maintenance and Asset Management.

CENS

- Recognition on best user service practices: the Superintendency of Residential Public Utilities (Superservicios), through the National Association of Public Utilities and Communication Companies (Andesco), granted CENS this award, highlighting its strategies implemented in the operation of its requests and resources offices. A total of 80 public utilities companies applied in different categories, and the best ones were acknowledged by these two entities. This represents a great achievement for CENS, which has become a national benchmark in best user service practices.
- Business Merit Award: the Universidad Simón Bolívar recognized CENS’s work (among 181 companies from 12 departments of Colombia) in three categories. This is the highest recognition awarded to companies and entrepreneurs every year in Colombia.

The three categories include:

- Customer service at the national level: This category highlights what has been done in terms of customer service through strategies, such as strengthening of staff, improvement plans, management systems, and implementation of ICTs in services, which, day by day, strengthen customer satisfaction.
- Corporate social responsibility at the regional level: This category recognizes service vocation in the generation of favorable, dignified, and inclusive environments, and the care and protection of the environment.

- Entrepreneur of the year: recognition granted to José Miguel González Campo, CEO at CENS, for his career and permanent leadership in the development of projects that contribute to the development of the territory.

ESSA

- Energy Hero Medal: award granted by the Colombian Ministry of Mines and Energy for participating in the 2019 Renewable Energy Auction. ESSA received this recognition on November 9, 2019, in the municipality of Barichara in the department of Santander, during the 41st Construyendo País (Building Country) workshop of the Presidency of the Republic of Colombia.
- People of Their Word recognition: award granted by the Corporación Festival de Cuenteros (Corfescu) to ESSA as a sign of gratitude for supporting the 24th International Word Festival held on October 25, 2019 in Bucaramanga.
- Recognition for participating in the Soñamos y Sonreímos por Santander (We Dream and Smile for Santander) calendar: award granted by the Volver a Sonreír (Smile Again) German and Colombian Foundation to ESSA, in December 2019, in Bucaramanga, for supporting various of their initiatives. This foundation is committed to working on the development of children, adolescents, and their families who live in vulnerable conditions, are subjected to a high social risk, and whose rights are threatened and/or violated.
- Centennial recognition, A la Vanguardia awards: the Vanguardia Liberal newspaper, in commemoration of its 100th anniversary, granted a special award to ESSA, on May 30, 2019, for its 128-year history, throughout which it has been characterized by its excellent provision of residential public utilities and its commitment reflected in its effort to achieve the highest indicators.

Emvarias

- 2019 WasteExpo Award: recognition granted by the Colombian Association of Environmental Engineering (Acodal) to Emvarias for being a leading company in waste collection in the region and for promoting a comprehensive solid waste management. It was awarded in Medellín on November 14, 2019 within the framework of the International WasteExpo Seminar.

External assurance

See the external assurance certificate for the 2019 Management Report figures that are part of the 2019 EPM Sustainability Report in: [Independent assurance report](#).

The following financial figures were audited by KPMG for external assurance, through the financial statements of EPM and Grupo EPM. The reports by the independent auditors are available in: [EPM certificates](#) and [Grupo EPM certificates](#).

Financial information	Chapter and subchapter of the CEO's 2019 management report	Data submitted for verification	Figure verified	Page
Financial results	Grupo EPM results	Grupo EPM revenue	Grupo EPM had a revenue of COP 18.4 trillion . Figures validated through substantive testing and matching the consolidated financial statements.	110
	Grupo EPM results	Grupo EPM period result	Grupo EPM obtained a period result of COP 3.2 trillion , which shows a 31% increase. Figures validated matching the financial statements.	110

Financial information	Chapter and subchapter of the CEO's 2019 management report	Data submitted for verification	Figure verified	Page
Financial results	Grupo EPM results	EPM revenue	The EPM parent company achieved a revenue of COP 8.8 trillion , for an 8% increase. Figures validated through substantive testing and matching the separate financial statements.	110
	Grupo EPM results	EPM period result	EPM achieved a net profit of COP 2.7 trillion , which means an increase of 15%. Figures validated through substantive testing and matching the financial statements.	110
	Grupo EPM results	Grupo EPM assets	The Grupo EPM assets grew by 5%, going from COP 52.5 trillion to COP 55 trillion . Figures validated through substantive testing and matching the consolidated financial statements.	116

Financial information	Chapter and subchapter of the CEO's 2019 management report	Data submitted for verification	Figure verified	Page
Financial results	Grupo EPM results	Grupo EPM liabilities	The liabilities grew by 1%, going from COP 30.5 trillion to COP 30.7 trillion. Figures validated through substantive testing and matching the consolidated financial statements.	116
	Grupo EPM results	Grupo EPM equity	The equity grew by 10%, going from COP 22 trillion to COP 24 trillion. Figures validated through substantive testing and matching the consolidated financial statements.	116
	Grupo EPM results	Capitalizations	During 2019, EPM capitalized HET by COP 178,469 million , EPM Mexico by COP 74,661 million , Aguas de Malambo by COP 12 billion , and Aguas de Oriente by COP 1,211 million. Figures validated through the consolidated financial statements.	119

Sustainability Report 2019

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