CEO Water Mandate

CELSIA

2017

CELSIA

The current global situation of water and other natural resources needs everyone's special attention, especially when these resources are an essential part of companies' operations, like the case of Celsia with water.

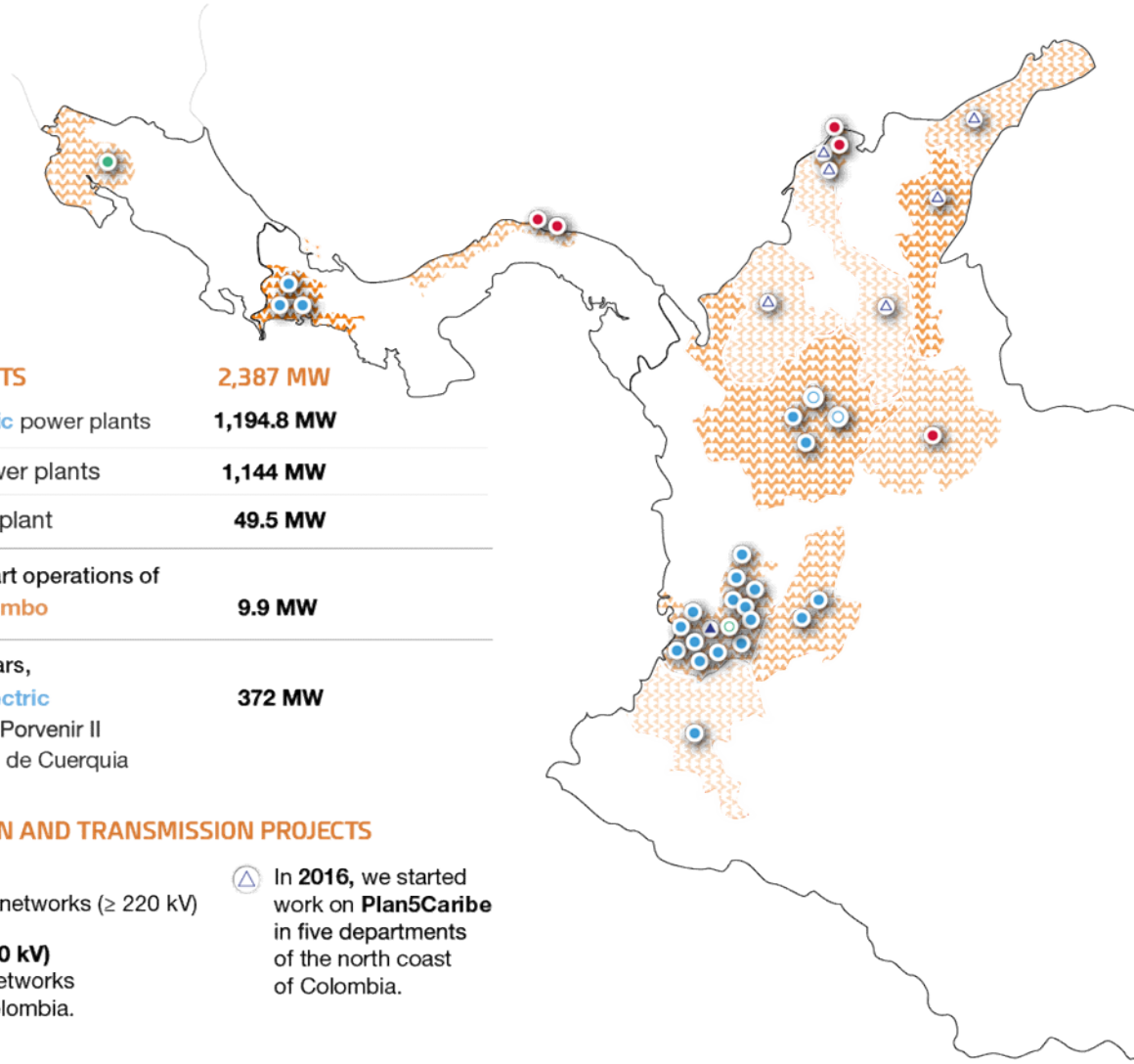
Electric power generation from renewable sources is growing more and more given the scarcity of resources and the impact that generation from non-renewable sources is causing on the environment.

Therefore, in its commitment to sustainability and the environment, Celsia adheres to the initiative of the CEO Water Mandate to report the Company's water management, highlight actions and achievement in this respect, and establish the targets and commitments to achieve better water management every day.

Marcelo Javier Alvarez Rios
GENERATION VICE-PRESIDENT OF CELSIA S.A. E.S.P.

Celsia is the **Grupo Argos** energy company. It has an innovative energy portfolio for the City, Business and Home segments.

Operating in **Colombia, Panama and Costa Rica**, it has a generation capacity of 2,387 MW through 27 hydroelectric, thermal, solar and wind power plants that generate approximately 7,750 GWh a year.



27 POWER PLANTS	2,387 MW
21 hydroelectric power plants	1,194.8 MW
5 thermal power plants	1,144 MW
1 wind power plant	49.5 MW
In 2017, we will start operations of Celsia Solar Yumbo	9.9 MW
In the next few years, 2 new hydroelectric power plants in Porvenir II and San Andrés de Cuerquia	372 MW

SIX DISTRIBUTION AND TRANSMISSION PROJECTS

274 km of transmission networks (≥ 220 kV)

20,246 km (<220 kV) of distribution networks in southwest Colombia.

In **2016,** we started work on **Plan5Caribe** in five departments of the north coast of Colombia.

OPERATION

GENERATION

2,387 MW
TOTAL INSTALLED CAPACITY

7,125 GWh
Energy Generated in 2016

1
Generation project:
Solar Celsia Includes **250 MW solar farms in Colombia and Panamá**

2
Hydroelectric power generation projects: **372 MW**

TRANSMISSION AND DISTRIBUTION

274 km
Transmission Network (≥220 kV)

20,246 km
Distribution Network (≥220 kV)

2016
177 km
MORE

12
Transmission Substations

6
Transmission and distribution projects, Plan5Caribe:
5 new substations, 9 substations increased and approximately 53 km more of transmission network.

SALES

CLIENTS
586,000
Regulated and Non-regulated

2016
16,000 More

NEW LINES OF BUSINESS

SOLAR ENERGY
92 proposals
for installation on roofs with 37 MW

COOLING DISTRICTS
2
in Development

BACKUP ENERGY
24 Standby Generators
Installed,
Equivalent to 11 MW

COMPANY SUSTAINABILITY

The year 2016 was marked by the start of projects and actions that allow the Organization to progress in the consolidation of the corporate strategy established for the 2015-2025 period. Said strategy prioritizes the diversification of products and services with technology and processes that have low carbon emissions; an increase in the number of clients; and the segmentation of clients in the City, Business and Home segments to offer differentiated bespoke products and services.

The Company firmly believes in its responsibility to care for the planet, for people and for the resources that it uses. Celsia believes that it is possible to have a profitable company and, at the same time, contribute to the social development of the regions where we operate, with deep respect for the environment.

CORPORATE POLICIES

Sustainability Policy

Celsia understands sustainability as the ethical and transparent generation of value over time for all its stakeholders, achieving a balance between profitability, development and social inclusion, and respect for the environment.

Social Policy

Through this policy, Celsia defines the framework of action for employees and establishes the relations principles for social management, based on respect, transparency and building trust, always giving their best to grow together.

Environmental Policy

Celsia recognizes the importance of environmental conservation and the rational use of natural resources, promoting the use of low-carbon energy and diversifying its supply of products and services to improve people's quality of life.

The Environmental Policy has the following commitments for comprehensive water management:

- Preserve the water basins in the areas of influence.
- Use water efficiently and assess the water risk in areas of operation and in new projects.
- Measure the water footprint in all operations and implement the measures necessary to decrease its intensity.
- Promote projects to improve the water supply for different uses in the value chain.

MATERIALITY

The **materiality analysis** is a standard method to identify the issues of greatest interest based on comparative prioritization of issues that have an impact on the Company and its stakeholders.
Said material topics constitute the Company's lines of action and each one has an impact on the Organization's different stakeholders.

- ECONOMIC Performance
- CLIENT Management
- SUPPLIER Management
- Innovation
- SOCIO-ENVIRONMENTAL Management
- RESOURCE Availability
- Culture and TALENT

For more information, you can consult the 2016 Celsia Annual Report at the following link: https://goo.gl/S42w9w

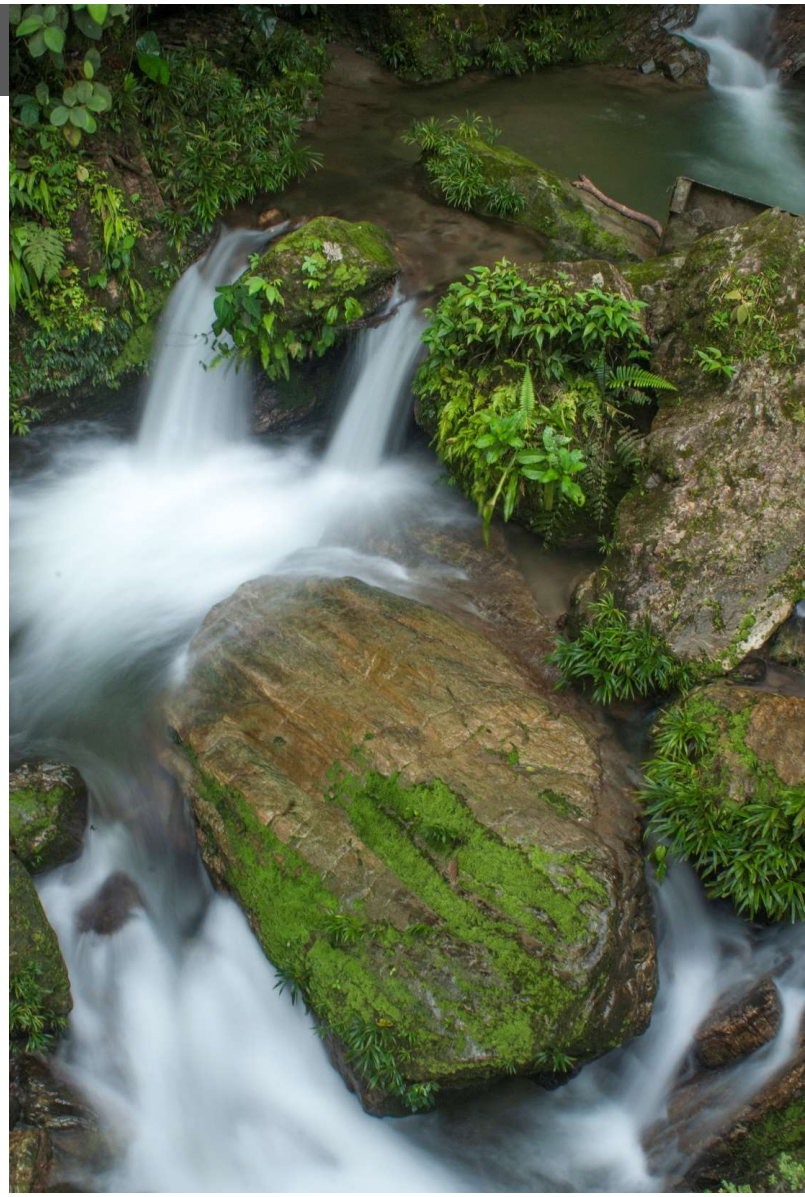
RISKS

Water Shortages

Celsia assesses the risk of water shortages with the methods of the World Business Council for Sustainable Development (WBCSD), specifically with the Global Water Tool (GWT). Said methods have confirmed that none of our operations are in areas of water stress.

Water Risk

The water risks related to the Company's operations are constantly assessed with the Aqueduct tool of the World Resources Institute (WRI), which demonstrates that most of the power plants have low/medium risk.



For more information about water shortages and risk, you can consult: http://www.celsia.com/es/sostenibilidad/politica-de-sostenibilidad/dimension-ambiental

DIRECT OPERATIONS - INTAKE

WATER INTAKE

	2016	2015
Water intake for cooling (m^3)	7,049,670	6,632,552
Total intake for other production processes (m^3)	53,658	93,924
Total intake for electricity generation (m^3)	12,358,891,040	12,531,180,257
Total intake in office (m^3)	121,623	131,173

MANAGEMENT

Despite greater electric power generation in Colombia, the total water intake in 2016 decreased by 8% from 2015 thanks to the increase in efficiency of the turbines of the Río Cali and Prado hydroelectric plants in Colombia.

The efficiency of the turbines of Units 1, 2 and 3 of the Prado Hydroelectric Power Plant in Colombia increased by an average of 8 GWh/year in the power generated with the same amount of water.

The total intake for offices in Colombia was reduced by 14%, which demonstrates greater awareness of use of the water resource in headquarters and sales offices.

By optimizing the use of water by eliminating leaks from the inlet valves of the Calima and Salvajina hydroelectric power plants by 0.7 m^3/s, we managed to save 4 GWh/year.

	2016	2015
Reused or recycled water (m^3)	2,117,294	612,185

For more information on the historical amount of water reused, you can consult the 2016 Celsia Annual Report at the following link: https://goo.gl/S42w9w

DIRECT OPERATIONS - DISCHARGE WATER

DISCHARGE WATER

MANAGEMENT

At the Zona Franca Celsia Thermal Power Plant, we managed to reuse 100% of the domestic residual wastewater to water the gardens and green areas. Likewise, we implemented a system for reuse of the water intake for power generation, which results in a similar reduction of the amount of water discharged into the Magdalena River.

In the Bahía Las Minas Thermal Power Plant in Panama, we made progress in the improvement of the wastewater treatment systems by changing the pipes of the neutralization tanks.

We implemented the efficient water use and saving plans in all our hydroelectric power plants in Colombia, meeting the requirements of the environmental authorities.

We started operation of the Advanced Vision Operating Center (NOVA, for the Spanish original) building, which will be the integrated operating center for the monitoring, supervision and control of the Company's whole electric power grid and new businesses. For its operation, the NOVA building incorporates systems for rainwater storage and reuse of wastewater from hand basins, which will be used to water green areas and in bathrooms, reducing the use of drinking water. The building will have the LEED certification for its construction.

We increased the efficiency of the turbines of Units 1, 2 and 3 of the Prado Hydroelectric Power Plant in Colombia, with an average increase of 8 GWh/year in the power generated with the same amount of water.

COMMITMENTS AND INITIATIVES

Execution of the ReverdeC project, a voluntary initiative developed with the support of local environmental authority (CVC, for the Spanish original), which aims to contribute to the restoration of the river basins of Valle del Cauca in Colombia by planting one million trees per year for ten years. In 2016, we planted more than 562,000 new trees and in October 2017 we reached our goal of the first one million trees.

Participation in Alianza por el Millón in Panama, which aims to prevent the destruction of natural forests in the country by planting 1 million trees over the next 20 years.

Installation of 24 septic systems in rural areas of the Cucuana Hydroelectric Power Plant's area of influence in Colombia, which reduces the pollutant load of domestic waste, improving the environmental conditions of the microbasins.

Isolation and construction of water runoff management works on the gully of the town of Aguacates in the Tuluá River basin, Colombia.

BASIN AND SUPPLY CHAIN MANAGEMENT

- **Development of the agreement with the Farallones (Cali) and Las Hermosas National Natural Parks:** Inventory and monitoring of water sources, and isolation of ten sources that supply the power plants and some community waterlines. Additionally, we isolated 5 km to protect 20 hectares of La Elsa Stream, which supplies the Bajo Anchicayá Reservoir.
- **Partnership with Fundación Fondo Agua por la Vida y la Sostenibilidad:** Isolations to protect native forests, creation of agroecological and silvopastoral systems, strengthening of rural waterlines and planting of 15,000 native trees.
- We participated in the **"Declaration for Comprehensive Water Resource Management and Governance"**, an initiative that promotes joint, coordinated work for comprehensive water resource management in Antioquia.
- Measurement of the corporate **water footprint** since 2012.
- Adhering to other initiatives including the Global Compact, Sustainable Development Goals, CEO Water Mandate, Issuer Recognition (IR) and Acción Colectiva de Ética y Transparencia (Collective Action for Ethics and Transparency).

SUSTAINABLE HYDROELECTRICITY

Water as an alternative for electric power generation is now established in the country as the main source of energy to meet the energy demand, ensuring supply and reducing uncertainty regarding shortages of the energy resource. However, the methodologies and actions implemented during the construction and operation of this kind of generation project have gradually changed and their concept has steadily evolved: socio-environmental responsibility has taken supreme importance in management.

That is why we take the concept of sustainable hydroelectricity at Celsia as our roadmap with the conviction that this is the way to make the projects aligned with the global sustainability principles adopted by the organization.

Sustainable hydroelectricity is the process of electric power generation that uses water through adequate management of changes in the environment. That is, it protects and preserves natural resources and their biodiversity, promotes harmonious interaction with communities and generates value for the Company, regions and Colombia.

The Organization currently has two hydroelectric projects with environmental license in the department of Antioquia, Colombia: Porvenir II, which will have a capacity of 352 MW, and San Andrés de Cuerquia with 19.9 MW. Together, they will contribute 371.9 MW to the Company's generation capacity.

METAS

Water use optimization:

- Optimize 124 mm3 of water per year in hydroelectric power generation between 2016 and 2020.

- Achieve 15% reuse of water in the Zona Franca Celsia Thermal Power Plant in Colombia.
- Install a desalination plant in the Bahía Las Minas Power Plant (Panama) that permits the use of saltwater in thermical processes.
- By 2018, reduce the use of water by 5% per MWh generated in Unit 4 of the Prado Hydroelectric Power Plant in Colombia.
- Consolidate the strategy for diversification of the generation matrix with renewable energy (Solar, wind, biomass, hydric)
- Consolidate actions for efficient use of the water resource as part of the Suizagua III project promoted by the Switzerland Embassy in Colombia, through which Celsia it's committed to execute activities for the efficient use of water in the country's power plants.
- Start implementation of the efficient water use and saving plans in the Zona Franca Celsia Thermal Power Plant, Colombia.
- Adapt and improve the pump and pH control system for the water treatment plant in the Bahía Las Minas Thermal Power Plant.