

# Promoting sustainable growth and self-production of energy through the water sector, as key elements for the recovery after the **COVID-19** crisis.

Region of Madrid Water Company- Canal de Isabel II

October 2020

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**ECONOMIC AND  
SOCIAL AFFAIRS**



SUSTAINABLE  
**WATER &  
ENERGY**  
SOLUTIONS  
NETWORK

# Group Canal: *leading companies and geographical location*



**ESPAÑA**

Canal de Isabel II	<a href="http://www.canaldeisabelsegunda.es">www.canaldeisabelsegunda.es</a>	●
Delegación de Canal en Cáceres	<a href="http://www.canaldeisabelsegunda.es">www.canaldeisabelsegunda.es</a>	●
Aguas de Alcalá UTE	<a href="http://www.aguasdealcala.es">www.aguasdealcala.es</a>	●
Canal Gestión Lanzarote	<a href="http://www.canalgestionlanzarote.es">www.canalgestionlanzarote.es</a>	●
Hispanagua	<a href="http://www.hispanagua.es">www.hispanagua.es</a>	●
Canal de Comunicaciones Unidas	<a href="http://www.canalcom.com">www.canalcom.com</a>	●
Hidráulica Santillana	<a href="http://www.hidraulicasantillana.com">www.hidraulicasantillana.com</a>	●

**COLOMBIA**

Gestus	<a href="http://www.gestus.co">www.gestus.co</a>	●
ASAA Riohacha	<a href="http://www.asaa.com.co">www.asaa.com.co</a>	●
INASSA	<a href="http://www.grupoinassa.com">www.grupoinassa.com</a>	●
Amerika TI	<a href="http://www.amerikati.com">www.amerikati.com</a>	●
<b>PANAMÁ</b>		
Inassa Panamá	<a href="http://www.grupoinassa.com">www.grupoinassa.com</a>	●

**REPÚBLICA DOMINICANA**

AAA DOMINICANA	<a href="http://www.aaa.com.do">www.aaa.com.do</a>	●
<b>ECUADOR</b>		
AMAGUA	<a href="http://www.amagua.com">www.amagua.com</a>	●
<b>BRASIL</b>		
Fontes da Serra	<a href="http://www.fontesdaserra.com.br">www.fontesdaserra.com.br</a>	●
Emissão	<a href="http://www.emissao.com.br">www.emissao.com.br</a>	●

- Water cycle management
- Support services for water cycle management
- Telecommunication and IT
- Electric power production





# Canal de Isabel II *key figures*

## Region of Madrid

- **6.36 million inhabitants served** (supply / sanitation)
- **479.87 hm<sup>3</sup>**
- **489.24 hm<sup>3</sup> treated** in WWTP
- **124.72 hm<sup>3</sup> of regenerated water** (12.01 reused)
- **2,808 employees.**
- **146.6 million euros invested.**
- **107.07 MW installed** for electricity generation.
- **312.22 millions KWh produced (68% of consume)**
- **122.34 litres per capita per day of domestic consumption**

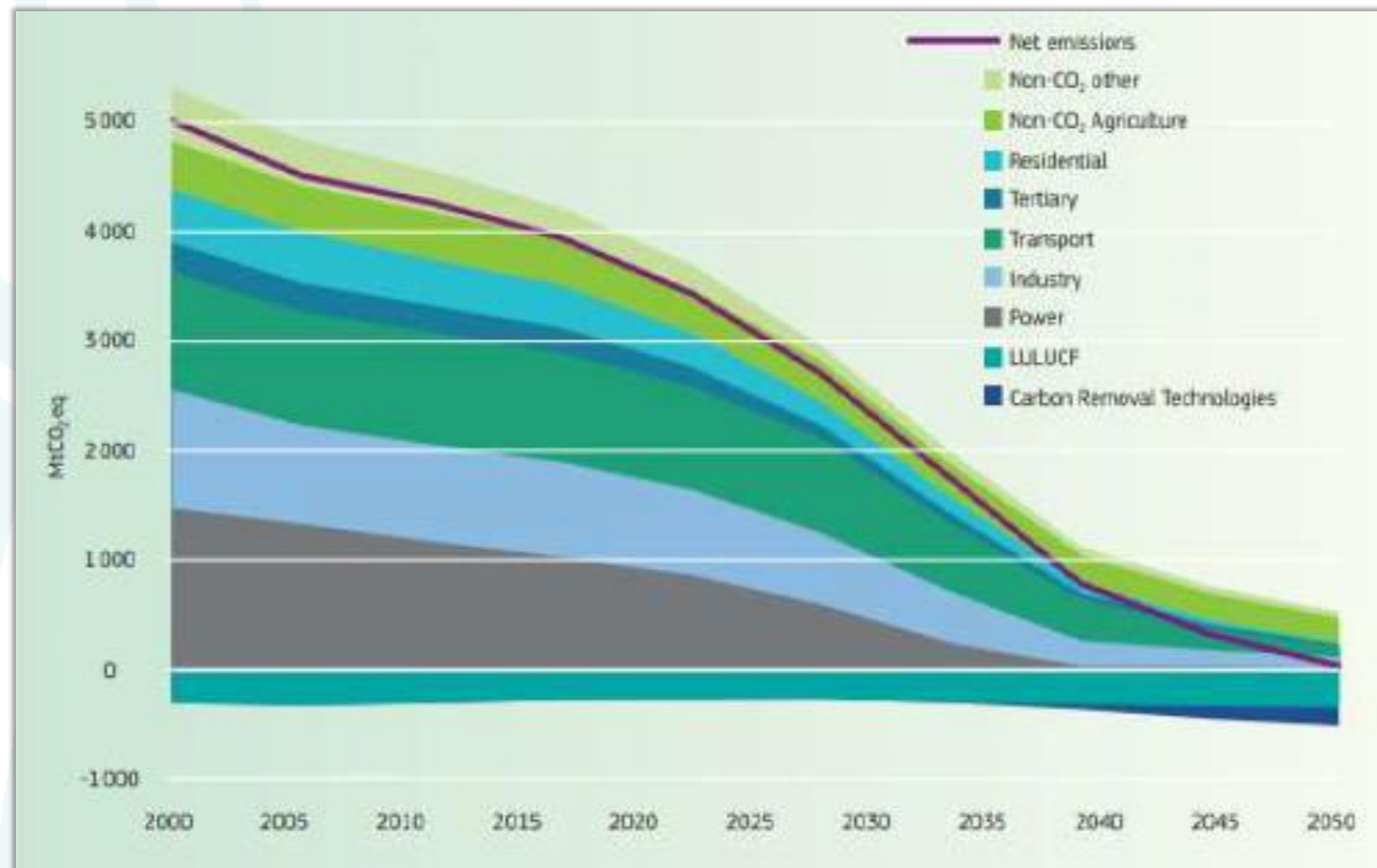


# Towards the Decarbonization of the EU Economy



Europe is challenged to decarbonize its economy in 30 years.

This objective is in line with the **Paris Agreement** and is a geostrategic objective for Europe.



*We have the internal goal of reaching **100% self-consumption** by 2030.*

*How are we going to do it?*





# Canal water-energy full urban cycle


Water collection

Installed capacity 2020\*  
107,5 MW


Drinking water

Waste water


Drinking Water treatment

 Hydroelectric

 Solar

 Biogas generators

 Biogas micro turbine

 Dry sludge

 Floating solar

 Micro turbine

 Gas station

 Methane reinjection

 Solar panels

Water Distribution

Wastewater treatment



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\*largest installed capacity company on the Region of Madrid



# Water supply

## Hydraulic Power Plants

9 facilities: 35.5 MW



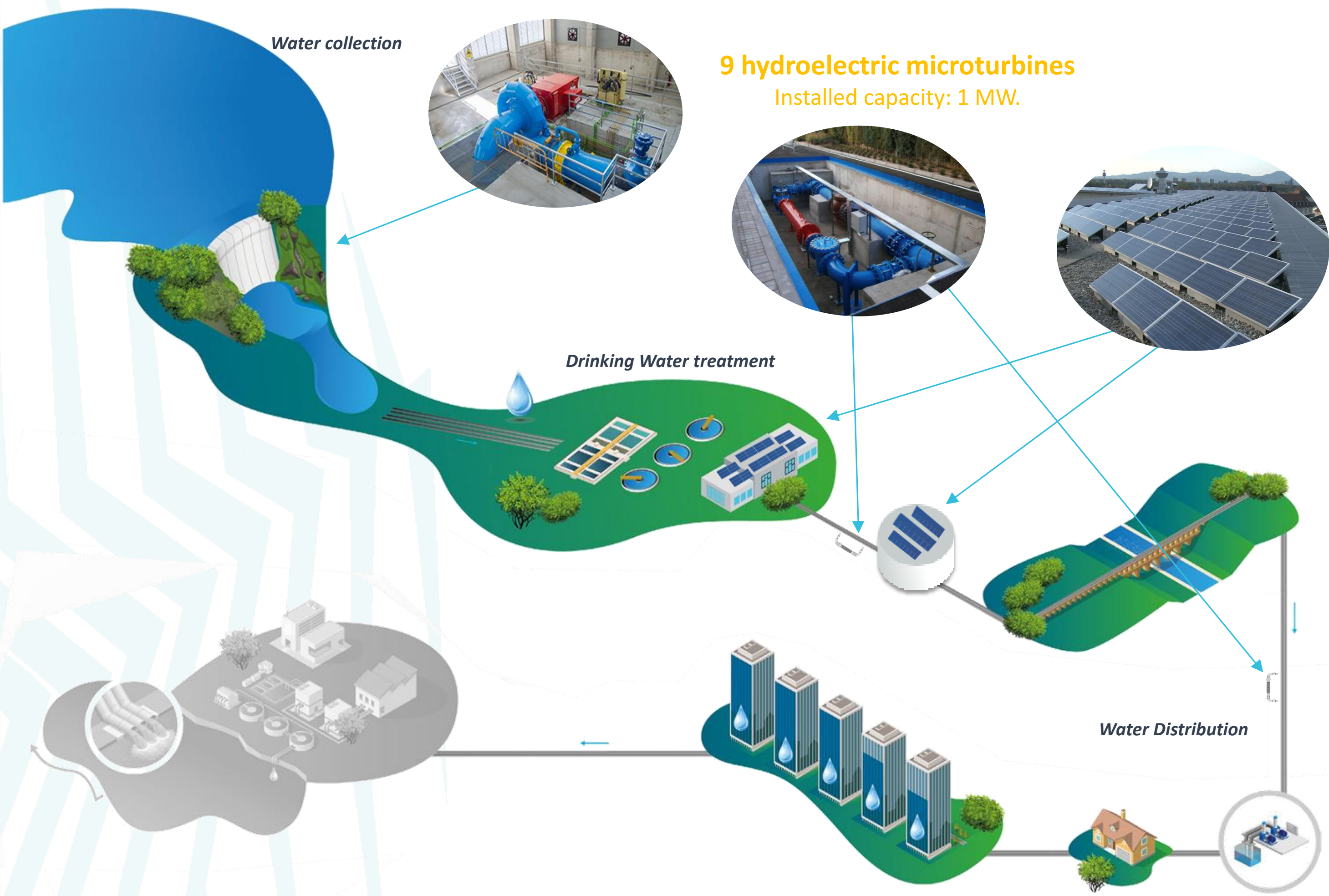
## 9 hydroelectric microturbines

Installed capacity: 1 MW.



## Solar Plants

Floating solar plant: 1.6 MW  
12 MW In tender





# Sanitation

**Biogas power plants**  
16 facilities: 26 MW



**Thermal sludge drying plant**  
2 facilities: 44.7 MW



**Biomethane for injection into the natural gas network**  
1 facility  
*European ECO-GATE Consortium (Nedgia)*



**Hydraulic Microturbines and Biogas Microturbines**  
7 facilities



**Photovoltaic solar panels**  
Installed power: 0.4 MW + 5 MW under tender



**Biomethane for TRANSPORT**  
2 facilities



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# Power generation and Consumption

**2017**

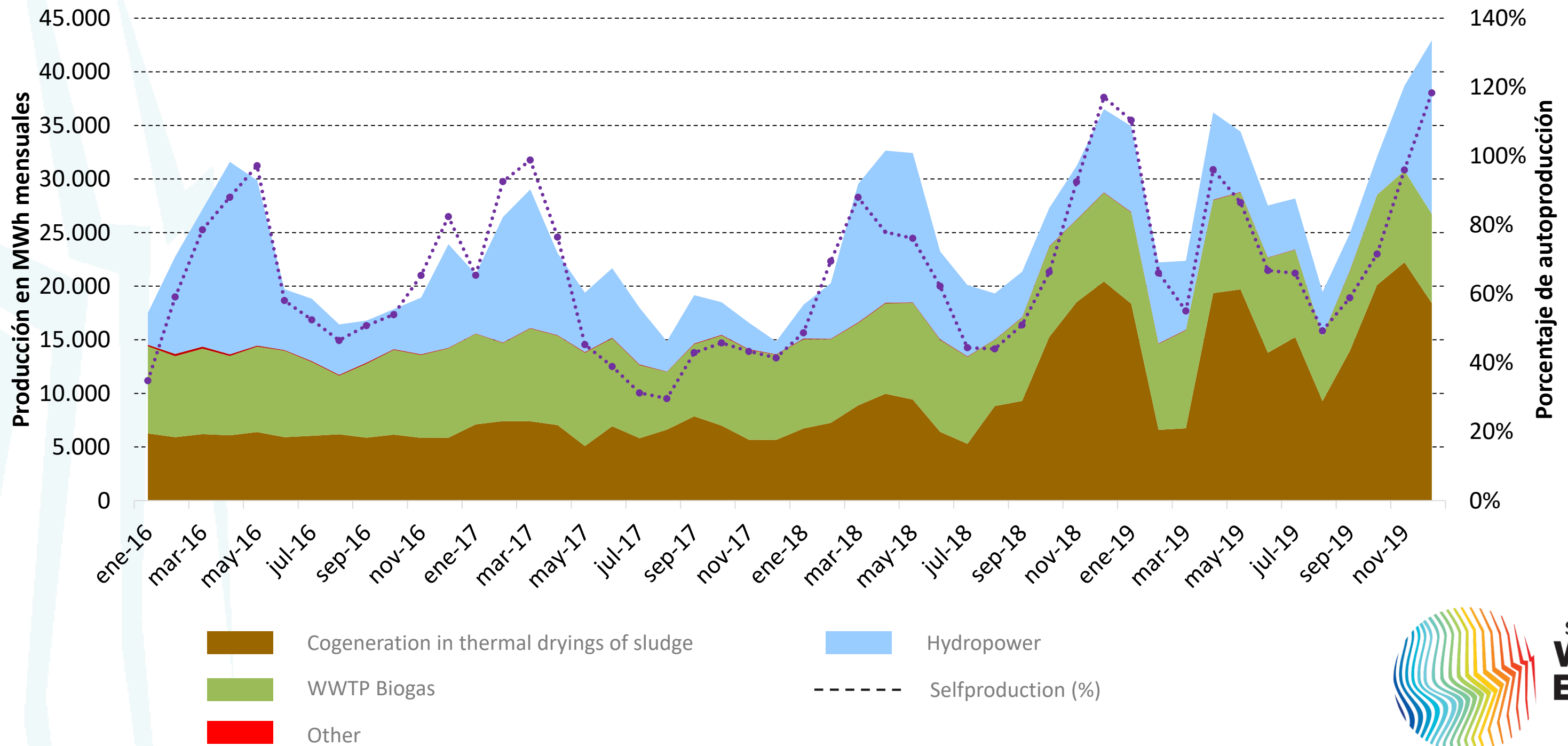
Production **242.7** GWh  
 Consumption: **485.8** GWh  
 Selfproduction %: **50.0 %**

**2018**

Production **312.2** GWh  
 Consumption: **459.3** GWh  
 Selfproduction %: **68.0 %**

**2019**

Production **364.0** GWh  
 Consumption: **470.6** GWh  
 Selfproduction %: **77.3 %**



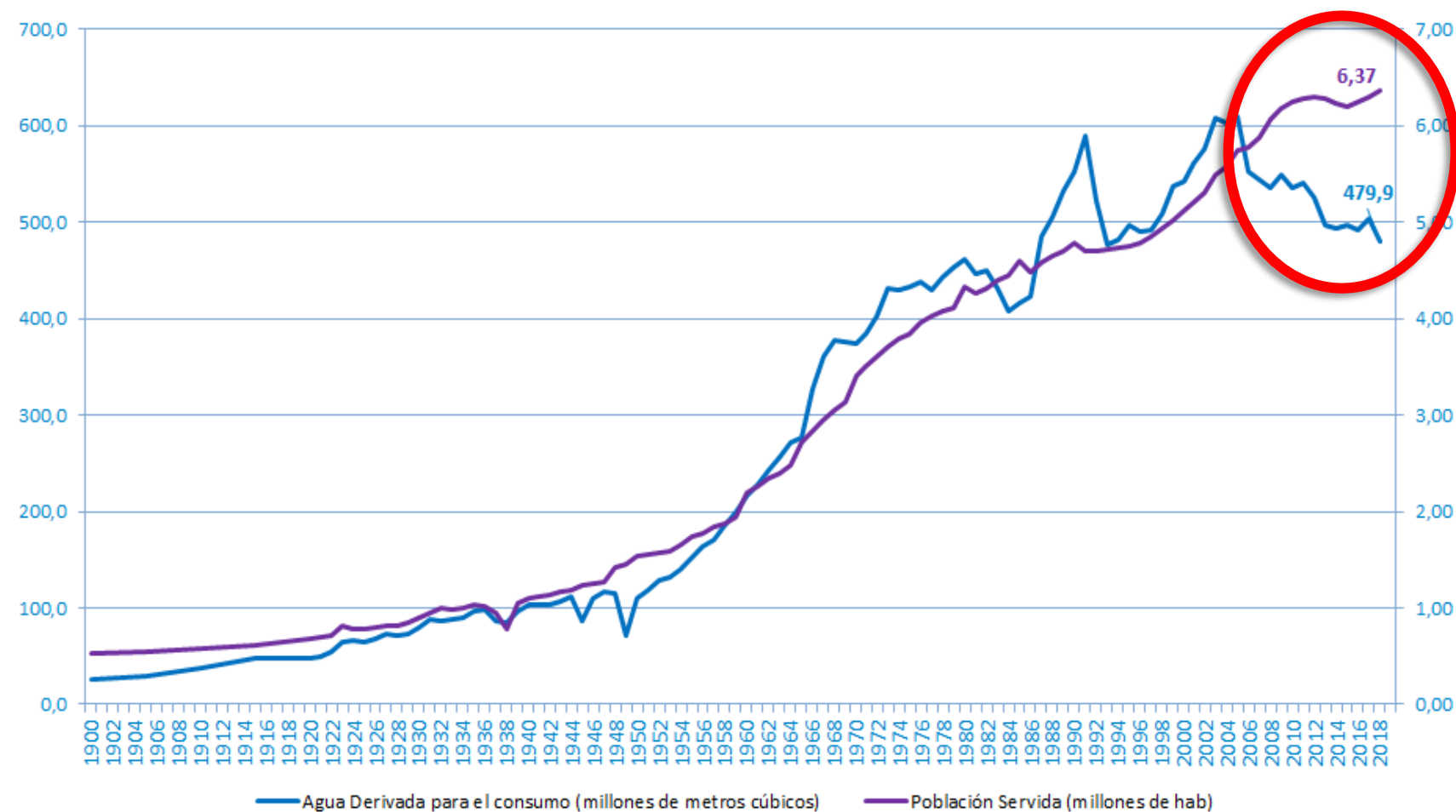


# The best way to **save energy** is to **save water**

Traditionally, population growth has led to an increase in water consumption.

In Madrid this has been the case until **2005**.

Consumption and population (1900-2018)



*¿How did we change the curve?*

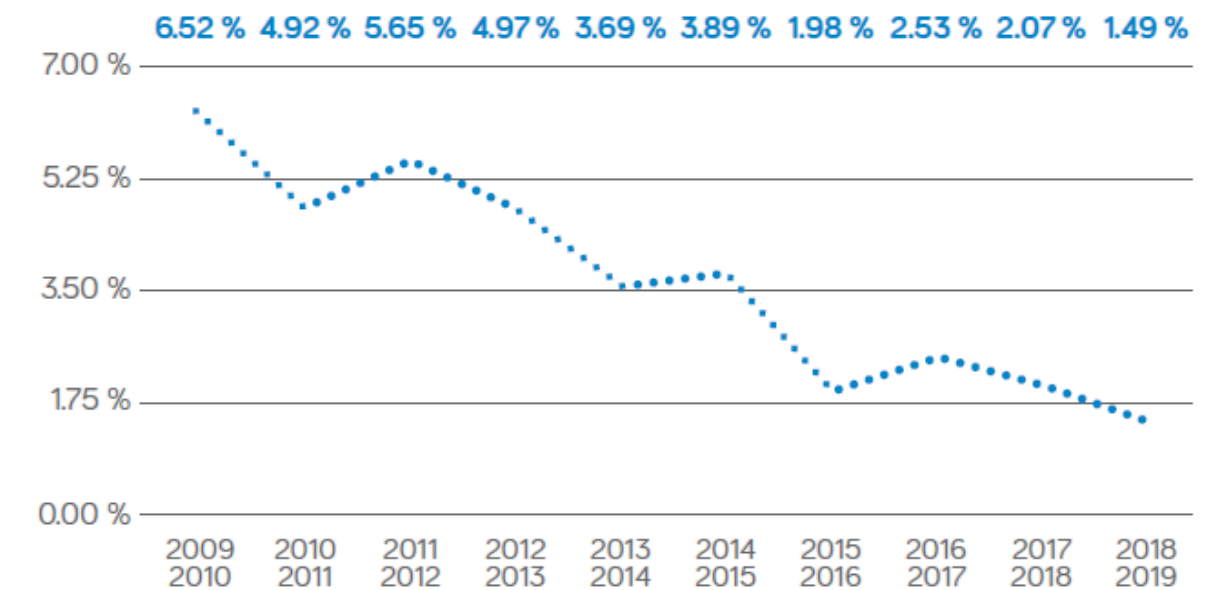
# Efficient use of water (*best practices*)

## Communication Campaigns



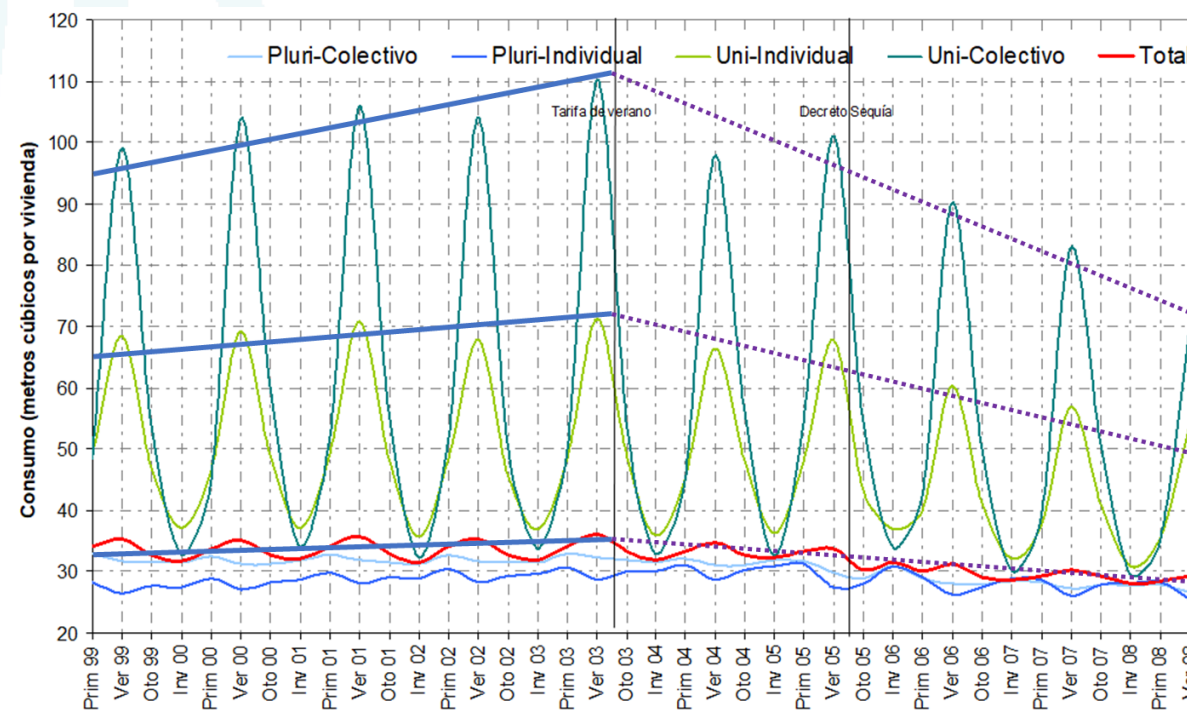
## Network loss reduction

HIDDEN LOSSES IN THE DISTRIBUTION NETWORK  
(% OF WATER DERIVED FOR CONSUMPTION PER HYDROLOGICAL YEAR)



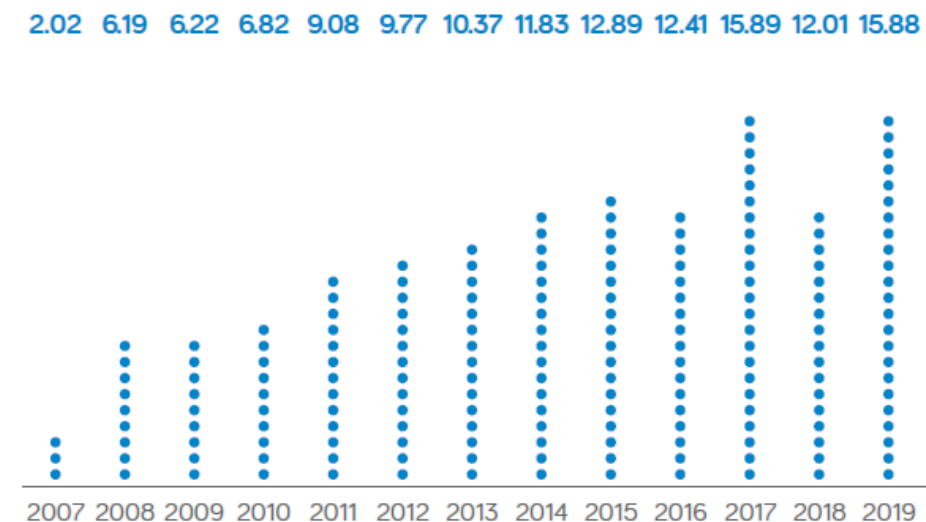
## Water Tariffs

- Progressive
- Seasonal
- Binomic structure
- Committed with the Environment



## Regenerated water production

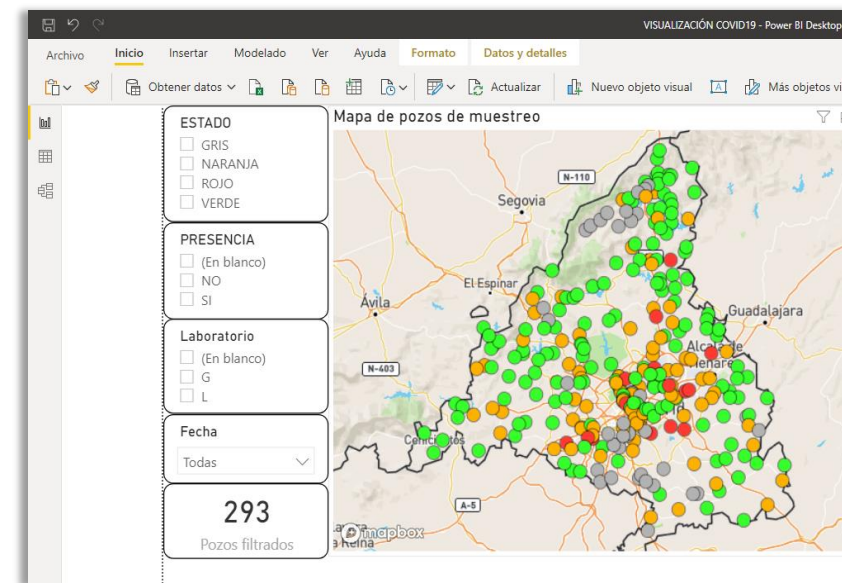
ANNUAL PRODUCTION OF REGENERATED WATER FOR REUSE  
(MILLIONS OF CUBIC METRES)





# COVID-19 performance

- Our priorities: health safety and water supply
- 1.500 employees tele-working in less than 10 days
- Daily information to our staff and customers
- Invoice bonuses to most affected people
- Increase of bottled water production for hospitals
- Communication campaigns to enforce handwashing
- Automatic surveillance network for COVID-19 quick detection on wastewater (280 points)







# Canal & *Sustainable Development Goals*

Canal   
de Isabel II





# SDG's: Our 2030 strategy

- Full integration of SDGs in our strategy plan
- 99 actions working on targets
- Measuring the progress with an ad-hoc tool
- Quarterly communication on website
- International benchmarking groups
- Workshops with employees for prioritization
- Sustainability report based on SDGs



2019 has been the first year measuring the **ADVANCED GRADE** (vs. 2023) for the **SDG**...

...our main goal is to **colour** all the SDG in 2030.



# Canal commitment with #6 & #7

As a public company, Canal has the responsibility to achieve the ***17 Sustainable Development Goals***

However, there are two key SDGs where Canal can make more impact due to his activity: #6 and #7.

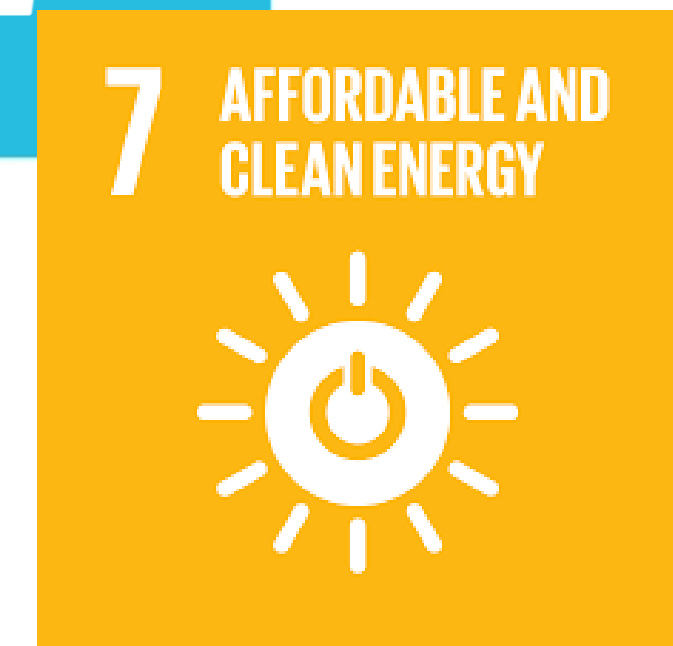




# Canal commitment with #6 & #7

Supplying **drinking** and **waste water** to more than 6.5 million of people requires a great infrastructure and large amount of **energy**.

Canal have been developing a **self-production strategy** to produce the 70% of his own consumption. We have the goal of reaching the 100% by 2030.



# Conclusions

- **Saving water** is the best tool to save energy
- There are **many alternatives** to recover energy from the urban water cycle. Canal is close to generate 100% of our consumption.
- **Comprehensive management** of the water cycle in large territories allows the development of robust and resilient companies, with the ability to develop plans to achieve high levels of self-generation of energy, invest in efficiency, monitoring and automation improvements which have been revealed as keys in the COVID19 crisis.

*We firmly believe that **it is time to act** and seek a more sustainable future for the next generations.*





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