



CASE STUDY:

Canal de Isabel II.

Accelerating the implementation of
SDG # 6 of the 2030 Agenda.



Content

Where do we stand?.....

Canal de Isabel II and the Agenda 2030

Canal de Isabel II is a 100% public company of the Region of Madrid created in 1861, whose shareholders are the Government of Madrid, as majority shareholder through the Public Entity Canal de Isabel II with 82.4%, and one

2018-2030 Strategic Plan

Sustainability is one of the five values on which Canal de Isabel II's Strategic



SDG # 6: to ensure availability and sustainable management of water and sanitation for all.

TARGET 6.1 By 2030, to achieve universal and equitable access to safe and affordable drinking water for all by 2030

TARGET 6.2 By 2030, to achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and people in vulnerable situations

TARGET 6.3 By 2030, to improve water quality by reducing pollution, eliminating dumping, and minimising the release of chemicals and hazardous materials, halving the proportion of untreated wastewater, and significantly increasing recycling and safe reuse globally

TARGET 6.4 By 2030, to significantly increase the efficient use of water resources in all sectors and ensure the sustainability of freshwater withdrawals and supplies to address water scarcity and significantly reduce the number of people suffering from water scarcity

TARGET 6.5 By 2030, to implement integrated water resources management at all levels, including through transboundary cooperation, as appropriate

TARGET 6.6 By 2020, to protect and restore water-related ecosystems, including forests, mountains, wetlands, rivers, aquifers, and lakes

Implementation of the 17 SDGs by Canal

The SDG integration process at Canal de Isabel II applies the United Nations methodology, starting with a first phase of understanding and awareness of the 17 Sustainable Development Goals within the organisation. Undoubtedly, this first stage is key to engage everyone in the company with the 2030 Agenda.

Likewise, the goals on which the company has a direct impact have been analysed and assessed to prioritise their implementation. Stakeholders are decisive for the real and effective achievement of the SDGs. Thanks to the participation in working groups with other companies in the sector at European level and in Latin America, as well as the holding of workshops with its own employees and shareholders, Canal was able to draw up a first map with the Sustainable Development Goals that have the greatest impact.

Without forgetting the rest of the SDGs, targets were established for each of them, selecting the appropriate indicators for their monitoring, which are part of Canal's 2018-2030 Strategic Plan. This whole process culminates with the regular communication of the quarterly progress results for each of the goals.

The synergies that the activity of the water cycle itself produces in the economy and society are the perfect scenario to globally demonstrate the transversality of water in the 2030 Agenda and its Sustainable Development Goals.

Finally, the irruption of COVID-19 has meant an additional and unexpected challenge for everyone. At Canal de Isabel II, following the guidelines of the Region of Madrid and its health authorities, the pandemic was faced from the beginning with the objective of guaranteeing the health and safety of the workers and employees as well as ensuring the water supply to all the people of Madrid.

From the point of view of sustainability, this situation has further highlighted the interconnection with other Sustainable Development Goals such as Health and Wellbeing (SDG 3) thanks to the collaboration with the Madrid Region in the development of an early warning tool on the presence of genetic material of the SARS-CoV-2 virus in wastewater or the fight against poverty (SDG 1) through the social rebates on bills approved for people economically affected by COVID-19.

In short, this cross-cutting integration of the 17 SDGs, beyond the mere fulfilment of all their targets, seeks to increase the positive impact of water on the economic and social development of the Region of Madrid.

1. Ensuring security of supply

Objectives and description

The Madrid Region is characterised by its geographical situation and the scarcity and limitation of its water resources.

irrigated: in 401 municipal green areas in the region (1,876 ha), in 11 golf courses with a total surface area of 789 hectares and in 13 companies and entities that have the reuse service (228 ha).

Canal continues to strive to improve efficiency through leak detection campaigns, pressure management in the network, the fight against fraud, the regularization of some municipal supplies and communication and awareness campaigns on the rational use of water. It is estimated that the combination of all these efforts and the implementation of the RED Plan throughout 2022 would have avoided the consumption of 18.3 million cubic meters of water, equivalent to 3.7% of the water derived for consumption in 2022 or the water needed to supply 244,213 people for one year.

The balance of these factors has allowed the total volume of water derived for consumption in 2022 to be 493.50 million cubic meters, practically the same as the average of the previous five years, despite an increase in the population in recent years, which has made it possible to meet the strategic objectives.



2. RED Plan

Objectives and description

Water in the Madrid Region has always been characterised as a benchmark for quality in Spain. However, demographic pressure and society's growing awareness, together with the current and future increase in regulations, pose the challenge of satisfying ever greater demands.

It is true that raw water is exceptionally good at source; however, it must undergo advanced treatments and controls to maintain and improve its quality. Control of the quality of the water supplied begins at source, in the Sierra de Madrid, a protected area

quality of the water distributed. The main challenge of this plan is to address the renovation of an important part of the network in order not to compromise the safety and quality of the supply. The other challenge is to commit the municipalities, which are legally responsible for supply, to conduct all the planned renovation work. The aim is therefore to increase the rate of annual network renewal, which will not only improve water quality, but also the continuity of service.

Lessons learned

For a correct fulfilment of the Plan, the planning and coordination of actions is vital, so that unforeseen events that may arise do not hinder the execution of the project.

Results

Pipe renewal continued in 2022, with 83.54% of the network meeting internal high quality standards. The rate of renewal over the last five years represents an average of 120 kilometers of network per year.

This Plan is evolving on a positive trend with the clear objective of reaching 100% of the network under the Canal's internal standard by 2030.

In this way, the performance of Canal's distribution network will continue its decreasing rate of breaks per kilometre of network.

3. Sanea Plan

Objectives and description

Having adequate systems for the collection of wastewater and rainwater from urban centers through efficient sewerage networks and urban drainage systems is a vital element for guaranteeing the quality of life of citizens. However, the current reality is that many of the municipal sewerage networks, many of which have been incorporated into Canal's management in recent years, require major improvement works which, in turn, require a considerable technical and investment effort.

To respond to these problems, the 2019-2030 Strategic Plan of Canal de Isabel II incorporated the Sanea Plan, an ambitious plan whose main objective is to improve the sewerage networks of the municipalities of the Community of Madrid to make them the most efficient and modern in our country, ensuring water sanitation in a sustainable manner and avoiding overflows in the drainage systems. By means of this Plan we want to ensure that all the municipalities in which we provide sewerage maintenance services have sewerage and urban drainage master plans, documents in which the necessary measures and actions are established, setting the priorities of the actions to renew the networks and estimating the investments that will be necessary to avoid incidents and inconveniences to users, as well as to contribute to the protection and improvement of the environment.

Relationship with the targets of SDG # 6

This Sanea Plan is directly related to the targets: 6.2, to not only guarantee sanitation for the entire current population, but also for future

4. Social fees

Objectives and description

Poverty goes beyond a lack of income and resources to ensure more sustainable livelihoods. Poverty is a human rights issue. The different manifestations of poverty include hunger, malnutrition, lack of decent housing and limited access to other basic services such as education or health. Canal de Isabel II, following the guidelines of the competent bodies of the Region of Madrid, is aware of this problem, and has therefore created in recent years new formulas to subsidise the tariff that may affect the most vulnerable groups.

Canal's objective with this Plan is to promote social work directly related to the daily activities of the company, such as the application of the social tariff to the groups that need it most. In addition to this social aid, the project contemplates the study and implementation of new social fees that can be extended to vulnerable groups that may benefit from them in the future.

At present, the following groups can benefit from Canal's social fees:

- Recipients of a widow's or widower's pension.
- Large families or households.
- Non-profit organisations owning community housing or supervised flats.
- Beneficiaries of a non-contributory pension.
- Beneficiaries of the minimum insertion income.
- Beneficiaries of the active insertion income.
- Recipients of the minimum living income.

And, of course, all people in a situation of special exclusion with a certificate by their social worker.

Relationship with the targets of SDG # 6

Canal's social bonus programme is directly related to target 6.1, to achieve universal access to water supply without limiting the quality of life of some people who do 0()-1o 0 122.42 382.37 Tm0 g0 G(B)-3(e)-3(n)9(e)-3(f)-2(iciarie)-3(s)8(o)-4(f)-e

Challenges

The main challenge of this plan is to adopt a new model that ensures sustainable, affordable, and solidarity-based fees, simplifying and adapting the

The objective of this plan is to increase the volume of reclaimed water produced and distributed, extending, and promoting its use in the Region of Madrid, thus preserving the natural resource at its source.

Relationship with the targets of SDG # 6

The production of reclaimed water is linked to target 6.1 to achieve greater water availability, given that reclaimed water can be used for other purposes, avoiding the use of drinking water. With target 6.2, because it contributes to an improvement in the treatment of wastewater, increasing the quality of the treated water discharged into the river. With target 6.4, because it is a tool for efficient resource management, limiting the use of drinking water. In addition,

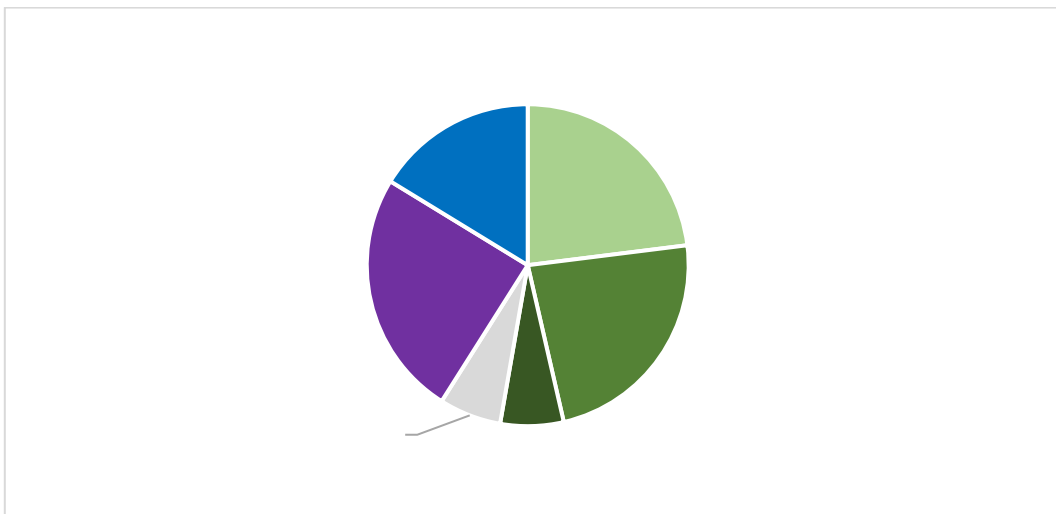
Lessons learned

The increase in the production of reclaimed water is undoubtedly an ambitious plan with positive synergies not only for the environment but also for the economy and industry. For some time now, reclaimed water has been supplied to industries such as paper mills and golf courses, as well as being used by street cleaning services and for watering parks and gardens. However, the authorisation of new uses for reclaimed water by the competent authorities is necessary to extend its use to other sectors and companies. However, it is not yet a competitive resource in terms of price, which is sometimes an impediment to its use.

Results

Canal manages 33 reclamation plants, 741 kilometers of reuse networks and 64 reclaimed water reservoirs. With these infrastructures, we serve 26 municipalities and 11 golf courses (789 hectares), as well as one industry (International Paper) and 13 other entities (228 irrigated hectares). Thanks to the agreements signed with the municipalities, 401 municipal parks and green areas in the region will be irrigated with reclaimed water by 2022.

During 2022, we regenerated for subsequent reuse the largest amount ever recorded, reaching a total of 17.05 million cubic meters of water, beating our previous record recorded in 2021 (16.08 hm³), Additionally, a total of 91.79 million cubic meters of regenerated water was discharged into riverbeds to improve the quality of their water bodies. The reused water consumed in 2022 is equivalent to 3.45 % of the total potable water consumption in the region. In the last 10 years (from 2013 to 2022), 137.5 million cubic meters of reclaimed water have been reused in the Community of Madrid, equivalent to slightly more than the capacity of the Valmayor and Navacerrada reservoirs combined.



5. Early warning system (VIGÍA)

Objectives and description

The appearance of the SARS-CoV-2 coronavirus causing the COVID-19 pandemic had a major impact on the health of the people of Madrid, which resulted in heavy pressure on the health system of the Region of Madrid.

As a tool to support the management of the pandemic, the Region of Madrid has entrusted Canal de Isabel II with the development of a tool for the detection of the virus in wastewater through the quality controls conducted

than 3.5 km and that the distance between the final discharge point of the population and the sampling point should be less than 2.5 km.

In addition, as this system has been permanently incorporated into the company's processes, new challenges arise such as the detection of new strains or the monitoring of other diseases present in the wastewater.

Lessons learned

The virus is usually not active in wastewater. What is found are traces of the virus. Due to the variability of virus residues that a person excretes (which depends on the intensity of their infection) there is no direct relationship between values found in sewage and infected persons. Therefore, we work with trends, which are comparable.

Different testing methodologies and laboratories give different results for the same sample, so it is necessary to standardise the values to make them comparable. For this reason, a screening task for statistical outliers was conducted to avoid methodological flaws in both sampling and analytical processes.

On the other hand, it is also necessary to analyse the contamination values in the wastewater to ensure that the values obtained correspond to a normal wastewater discharge and to avoid data with extraordinary discharges. If this is not the case, the sample is repeated the following day.

It has also been found that when it rains the sample is diluted, so it is necessary to normalise the results based on the contamination data or repeat them the following day if a day without rain is expected.

Results

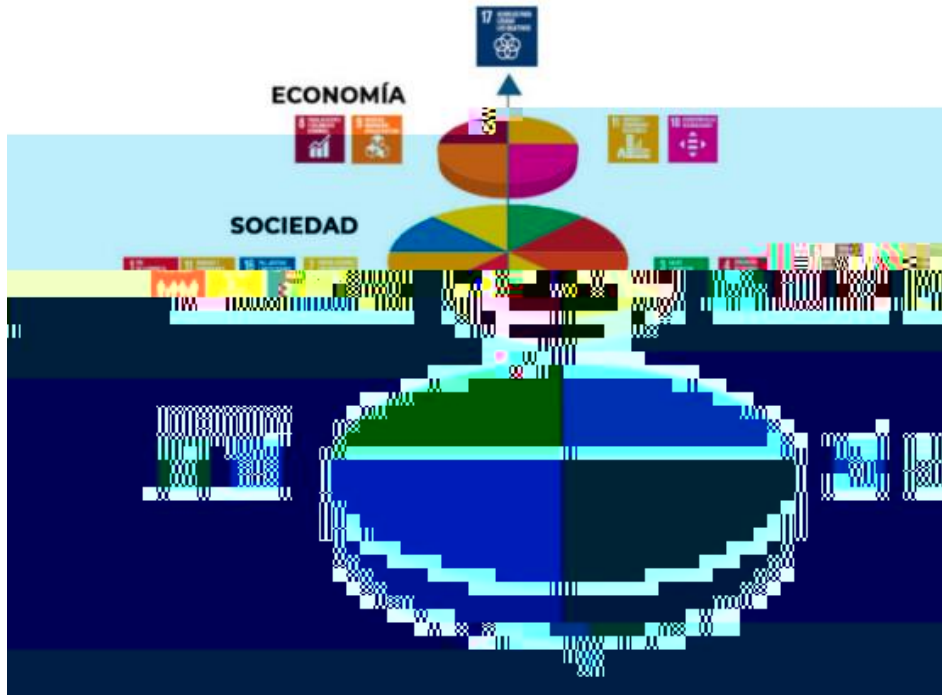
The information obtained in "VIGIA" is used by health authorities as a tool in the adoption of relevant measures to fight the pandemic.

Canal de Isabel II was chosen by the EU-WOP program to develop the Watch System for tracking, monitoring and early warning of COVID-19 in wastewater in the metropolitan areas of Lima and Callao, which have more than nine million inhabitants and are managed by the Peruvian state-owned company SEDAPAL. In 2022 we have continued to develop this project, highlighting the visit made to our company in November by a delegation of SEDAPAL project managers.

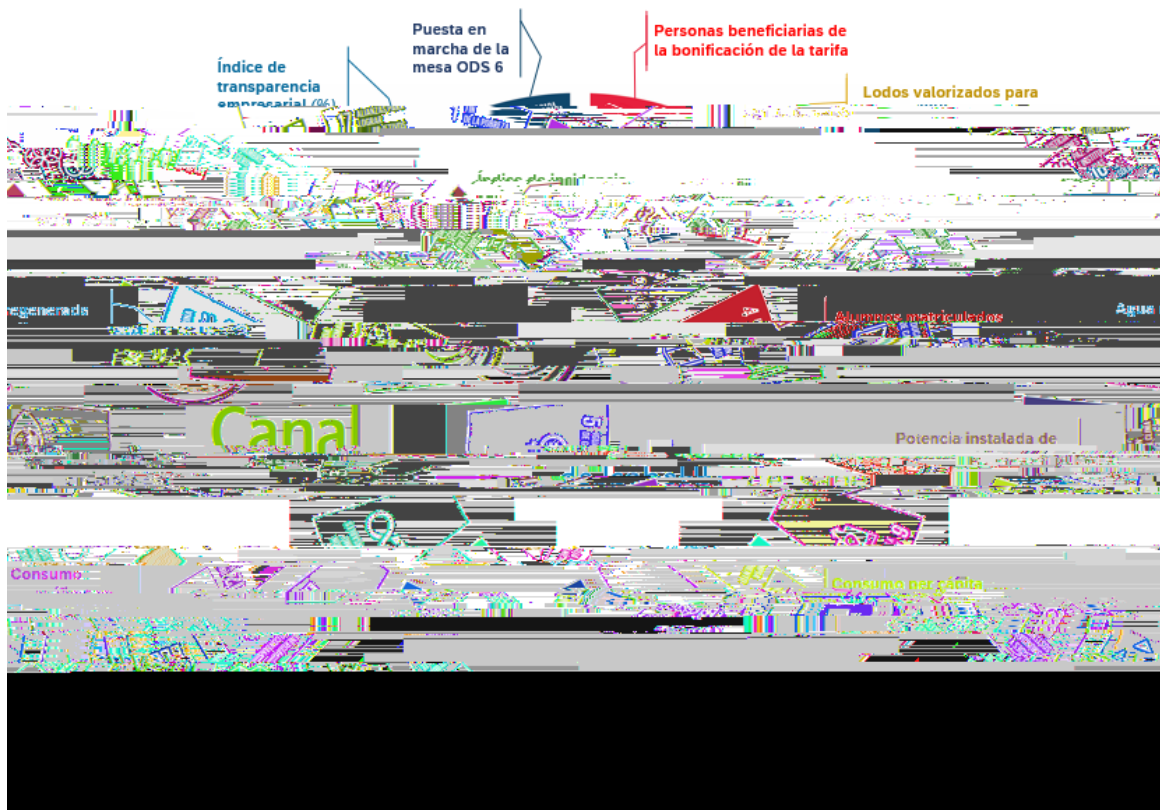


Linkage with other SDGs

The role of water as a major accelerator on the road to achieving the SDGs contributes in an integral way to the sustainable development of the other lines of action through its impact on hygiene, health, education, equality, livelihoods, and food. Water is a vital resource for sustainable development, and, for this reason, it has become one of the pillars underpinning the United Nations 2030 Agenda.



The strategy of the Region of Madrid to comply with the United Nations 2030 Agenda goes beyond the achievement of the Sustainable Development Goals directly related to Canal's own activity. As a public company that provides an essential service and due to the cross-cutting nature of water with the rest of the SDGs, Canal de Isabel II established from the outset an interconnection with the 17 SDGs through the deployment of the 10 strategic lines of its 2018-2030 Plan, working together and following the guidelines of the Region.



Thanks to the efforts in the 10 lines of work of the Strategic Plan, the 17 goals can be connected in a cross-cutting manner, through more than 45 plans and 100 actions that have been implemented. All progress is monitored on a quarterly basis thanks to the more than 50 indicators that have been developed to measure the degree of compliance, aligned with the United Nations indicators for the 2030 Agenda.

This measurement of Canal's contribution to the SDGs is conducted through a proprietary monitoring tool, which allows real-time consultation of the degree of compliance with each SDG based on the associated performance indicators.

All results are published on Canal's website on a quarterly basis and reports are prepared with the main achievements and progress of each of the actions that comprise Canal's Strategic Plan. In addition, this commitment to the SDGs also translates into a part of Canal's staff salary, as it is linked to the fulfilment of the objectives of these plans.

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