

# Sustainable water management commitment from FRIGORÍFICOS COSTA BRAVA contributes to water conservation in Cataluña, Spain

## CASE STUDY

### ▶ BACKGROUND

In the northeastern region of Spain's Catalonia, where the sun beats down relentlessly, a pressing challenge uprises: water scarcity. As of January 2024, Barcelona and its surroundings have endured 39 consecutive months of below-average rainfall. Industry, civil society, and governments have an urgent role: reduce and optimize the water that is used in each and across different sectors.

Amidst this arid challenge, **Costa Brava Mediterranean foods**, a stalwart in the food industry, stands resolute. With over 50 years of experience, they operate across four major divisions: Livestock, Fresh and Frozen Meats, Processed Goods, and Cured Products. From farm to table, they held the reins of their supply chain. Their reach extends to 60 countries worldwide, and their commitment to quality and sustainability is unwavering.

At one of specific location in Girona: Frigoríficos Costa Brava, water consumption is distributed across several critical processes: general services (including cooling towers and boilers), cleaning in productive zones, production (within the slaughterhouse and tripe processing areas), and sanitary water usage. Faced with the challenge of reducing groundwater usage, **Nalco Water** partnered with them throughout their sustainability journey, achieving in the way significant reductions in water consumption, energy cost savings and greenhouse emissions.



### ▶ SOLUTION

After performing an extensive analysis and evaluation focused on the quality of the effluent water from the wastewater treatment plant, a promising opportunity emerged: the effluent plant could serve as a valuable water resource. Leveraging our extensive experience across various industries, Nalco Water implemented advanced membrane technology. Specifically, **ultrafiltration (UF) and reverse osmosis (RO) systems** were strategically deployed to elevate the effluent quality to desired levels.

A robust monitoring and control system played a pivotal role in project execution. The treated effluent water, once considered waste, found new purpose. It was repurposed as makeup water for critical processes, including cooling circuits, steam systems, truck cleaning, and stables cleaning. This innovative approach not only reduced freshwater consumption but also minimized the environmental impact. In addition, the steam system operated with newfound efficiency, leading to energy savings and a significant reduction in CO2 emissions.



#### ANNUAL SAVINGS



**18% reduction  
freshwater use  
57.000 €/year**



**9200 GJ/ year  
98.917 €/year**



**460 Tonnes CO<sub>2</sub> /year**



**Reduced 18% effluent  
discharge  
14.400 €/year**



**170.317 €/year**



IMAGE 1: Nalco Water membrane system treating effluent water.

## ► CONCLUSION

The partnership between Frigorificos Costa Brava and Nalco Water exemplifies the profound impact of strong collaboration. By repurposing treated effluent water for critical processes, we achieved substantial reductions in freshwater consumption and minimized their environmental footprint. Additionally, our focus on energy efficiency resulted in significant energy savings and reduced CO<sub>2</sub> emissions. Frigorificos Costa Brava's commitment to sustainability showcases how strategic water management, bolstered by Nalco Water's expertise, can drive positive change, safeguarding our planet's water resources while contributing to environmental protection.

## ► RESULTS

After a year of implementing this sustainable transformation, remarkable results were achieved. Effluent was reclaimed and redirected. This strategic move significantly reduced ground water consumption, **resulting in an 18% decrease in overall water usage**. Additionally, the use of Nalco water treatment in the cooling circuits has decreased due to this improvement. Furthermore, the innovative system of storing and dosing chemicals using the Portafeed system contributed to a reduced carbon footprint. Having the cumulative impact of these significant changes resulted **in energy savings of 9200 GJ per year**, accompanied **by a substantial reduction in CO<sub>2</sub> emissions, curtailed to 460 tons annually**.

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