



Water Reutilisation Station "El Prat de Llobregat"

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Background

The overexploitation of the aquifer of the Llobregat delta, located in the Metropolitan Area of Barcelona (AMB), has caused a high saline concentration of the aquifer water due to the intrusion of water from the sea. In parallel, Barcelona City and its surroundings have been suffering several long-term droughts, which are expected to increase in the following years, and which can compromise water supply. AMB, and in particular Llobregat delta, has many water uses: from industrial, to mouth water and agriculture.

Aims and Goals

To increase the hidrological resources of the region in 50 thousand million liters each year.

To provide optimized-quality water in different steps of the treatment depending on its uses: water provision to the Marine outfall; Llobregat river and wetlands, agricultural and urban irrigation, industry, and Llobregat Delta aquifer.

To stop marine intrusion through the so-called "hydraulic barrier against saline intrusion", a pioneering project in Europe that consists of injecting high-quality regenerated water from the WRP, with additional ultra-filtration and reverse osmosis treatment, to 14 strategically constructed wells to improve the quality of the aquifer's groundwater.

Actions taken

Installation of a Wastewater Treatment Plan (WWTP) and Water Regeneration Plant (WRP) that includes different serial treatments that provide water for different purposes:

- Secondary treatment with nitrification and denitrification.
- Tertiary regeneration treatment, which provides treated reusable water that is used for the wetlands and Llobregat river; for agricultural and urban irrigation water; and for industry.

- Ultrafiltration and osmosis, which leads to highly depurated water, going to the Llobregat Delta Aquifer, plus salts plus other impurities, which are discharged to the marine outfall.

Organisation of educational and technical visits.

Main Achievement to date

Treatment of 50 million liters wastewater/year.

Reduction of marine intrusion in Llobregat Delta Aquifer

Partners

Àrea Metropolitana de Barcelona - AMB

The Prat de Llobregat treatment plant is one of the three metropolitan WWTPs that have water reuse processes since it includes a Water Regeneration Plant. It is one of the most important stations in the world (50 thousand million L/year; peak flow: 3.25 m³/s). It includes 2 phases: 1st phase with physicochemical treatment plus microfiltration and disinfection, which treats 100% of the water. The resulting water is used for environmental use in the river; Agricultural irrigation; Urban Irrigation; Sewer cleaning; Maintenance of wetlands; Industrial uses. A 2nd phase includes ultrafiltration plus reverse osmosis, and treats 10% of the water. The resulting water of 2nd phase is reused to contribute to the creation of a barrier against saline intrusion.

Name

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Affiliation

MedCities

Keywords

regenerated water saline intrusion microfiltration ultrafiltration reverse osmosis WWTP wastewater Water Reuse

Country

Spain

Total funding

+5M €

Environmental

Medium-High

Social

Medium

Technological
High

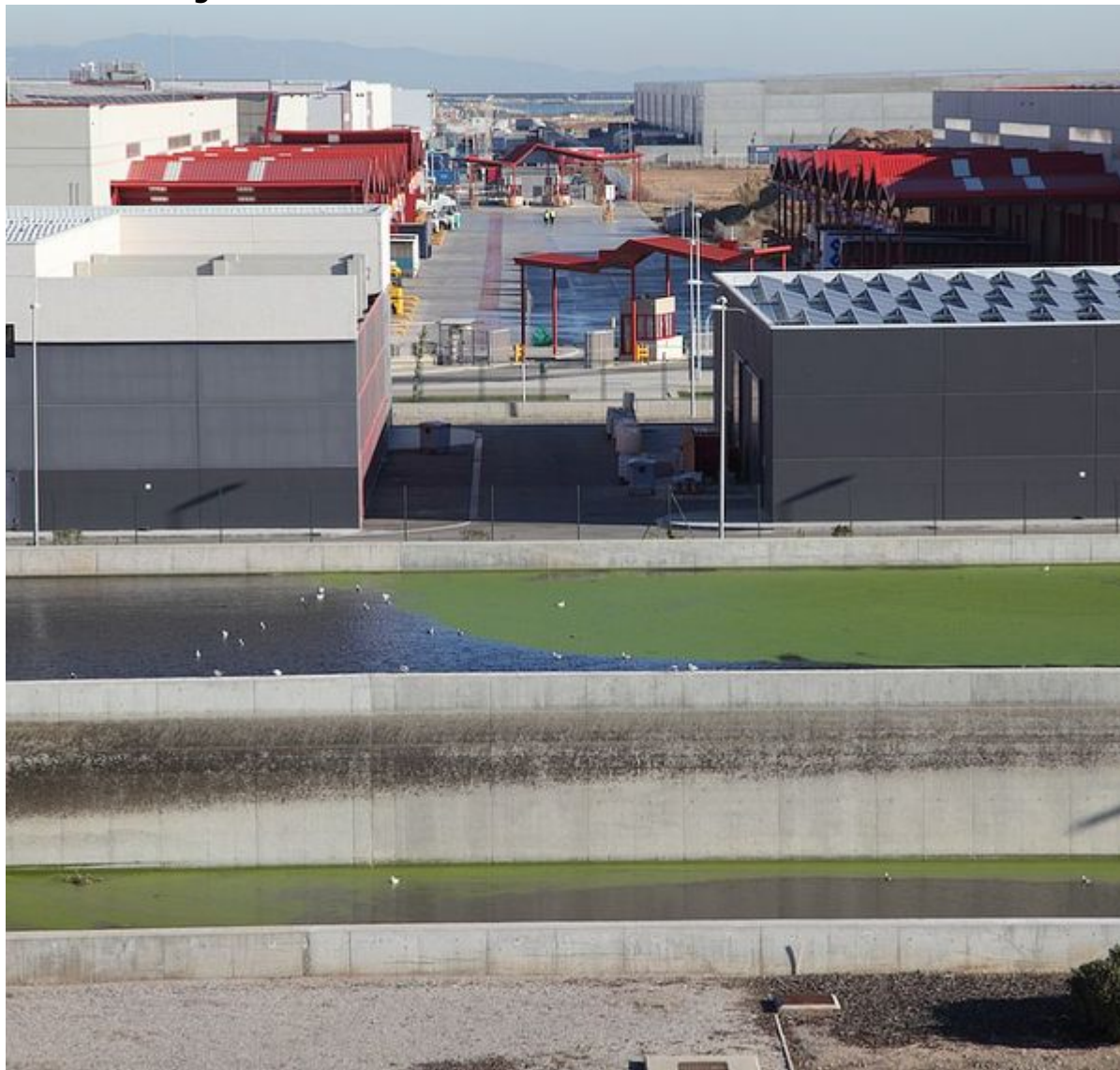
Financial
Medium

Institutional
Medium

SDGs



Featured Image



Website

<https://www.amb.cat/es/web/medi-ambient/aigua/instalacions-i-equipaments/detall...>

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Nexus Dimensions

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City

El Prat de Llobregat

Visibility

Public

Source URL:

<https://beta.toolbox.venthic.com/demo/water-reutilisation-station-el-prat-de-llobregat>