



WATER DEMINERALIZATION PILOT FOR H2 PRODUCTION

Spain, 24 m³/d

Aim of the Project

The project consists of a deionization plant designed to produce pure water in accordance with ASTM-D1193-9, Type II from tap water. The purified water is used as make-up water for an alkaline electrolyzer in a hydrogen production process.

Lenntech supplied a turnkey pilot unit that includes a complete pretreatment chain, a combined RO and EDI module, a storage tank, and a distribution pump.

This pilot system enables the fully automated production of demineralized water with very low conductivity. Its modular design allows customization to meet specific client requirements, including optional pretreatment steps or post-treatment using mixed-bed ion exchange resin to achieve the lowest possible conductivity at the point of use.

The distribution skid is engineered in accordance with worldwide hygienic design guidelines, ensuring full compliance with operational standards required by these industries.

Key accomplishments

OVERALL
WATER
RECOVERY

76%

FOR SINGLE-PASS RO
AND EDI UNIT

CONDUCTIVITY

< 0,07

μS/cm

**MODULAR
UNIT**

Scope of Work

- ▶ Pretreatment module with an activated carbon filter, a twin softener and a UV TOC
- ▶ Modular units
- ▶ PP piping for the distribution skid
- ▶ Control with central microprocessor and Fleck Valves
- ▶ Permeate water conductivity control
- ▶ Automatic water distribution based on pressure and tank level
- ▶ Water distribution with recirculation loop, enables the use of IEX mixed bed resin if necessary
- ▶ Include a **Protegra® CS Pro** unit

▶ FEED WATER QUALITY

Conductivity: < 1400 μS/cm

Si: < 10 mg/L

TOC: <3 mg/L

▶ PRODUCT WATER QUALITY

Conductivity: <1 μS/cm

TOC: < 50 μg/L

Meet ASTM-D1193-9, Type II grade for demi water