



# Demineralized Water Treatment

Demineralization is the process of removing dissolved minerals, salts, and impurities from water to produce high-purity water. This is essential for industries where even trace minerals can cause scaling, corrosion, or product contamination. Fluence provides cutting-edge demineralized water treatment solutions designed to meet the strictest quality and performance standards.

## Markets

**Power Generation** – Provides high purity water for boiler makeup and HRSG systems that comply with current industry limits, preventing scale and corrosion in boilers and turbines.

**Food & Beverage** – Ensures high-quality water for ingredient preparation, dairy processing, and juice production.

**Pharmaceuticals** – Delivers qualified water required for drug formulation and cleaning processes.

**Microelectronics & Semiconductors** – Supplies ultra-pure water (UPW) essential for semiconductor fabrication, chip manufacturing, and precision cleaning.

**High-Tech Industries** – Supports advanced manufacturing processes where even the smallest impurities can compromise product quality.

## Solutions

**Advanced Technologies** – Our solutions feature reverse osmosis (RO), ultrafiltration (UF), and continuous electrodeionization (CEDI) for optimal purity.

**Customizable** – Solutions are tailored to specific industry requirements, ensuring the best water quality for any operation.

**Compact & Modular Designs** – Our containerized and skid-mounted systems allow for easy integration and expansion.

**Eco-Friendly & Efficient** – Our solutions minimize chemical usage and wastewater production, promoting sustainability.

## Applications

**Boiler/HRSG Makeup Water** – Prevents scaling and corrosion, ensuring reliable steam production.

**Cooling Tower Makeup** – Reduces operational costs by reducing scaling and mineral deposits.

**Ultrapure Water (UPW) for Semiconductors** – Provides the low-conductivity water necessary for wafer processing, chip manufacturing, and nanoelectronics.

**High-Tech & Electronics Manufacturing** – Supports cleanroom environments where ultra-high-purity water is critical.

**Ingredient Purity** – Ensures safe and contaminant-free water for food and beverage production.

# Featured Case Studies & Solutions



## Maple Energy – Peru

### Surface Water Demineralized for Various Purposes

Surface water treatment plant with settling for reduction of suspended solids and organic content, media filters (AG-Plus) for removal of remaining suspended solids, reverse osmosis for water demineralization, electrodeionization (EDI) for final waterpolishing and removal of dissolved solids. The treatment system has a capacity of 880 GPM (gallons per minute) for cooling tower makeup, 90 GPM for use in the boilers and 130 GPM of demineralized water for process needs.



## Central Puerto - Power Generation - Argentina

### River Water Demineralized for High Pressure Steam Systems

River water treatment including ultrafiltration and reverse osmosis with the capacity to produce 295 GPM of demineralized water suitable for use in the plant's high-pressure steam systems. The final treated water quality contains silica at less than 10 ppb and conductivity less than 0.1  $\mu\text{S}/\text{cm}$ .



## MSU Energy (Barker & Villa Maria)

### Well Water Demineralized for Water Treatment Plants

Two water treatment plants supplied with well water to produce demineralized water. The design of each plant supports a total treated water capacity of 400 GPM arranged in four trains of 100 GPM each (3+1 configuration), which include two pass reverse osmosis and final polishing by electrodeionization.



## Gas Atacama - Power Plant - ENEL (Chile)

### Seawater Demineralized for High Pressure Boilers

Production of 500 GPM of demineralized water for use in a high-pressure boiler using seawater supply. With a modular design composed of ultrafiltration (UF) pretreatment and two pass reverse osmosis, followed by electrodeionization, a conductivity of less than 0.07  $\mu\text{S}/\text{cm}$  and a silica content of less than 10 ppb are obtained.