

# WATER REUSE IN FOOD AND BEVERAGE

*Minimize wastewater discharge*

## COMPLIANCE WITH ENVIRONMENTAL REGULATIONS

UP TO  
**90%**

Reduction on  
wastewater

## REDUCTION OF WATER SUPPLY NEEDS

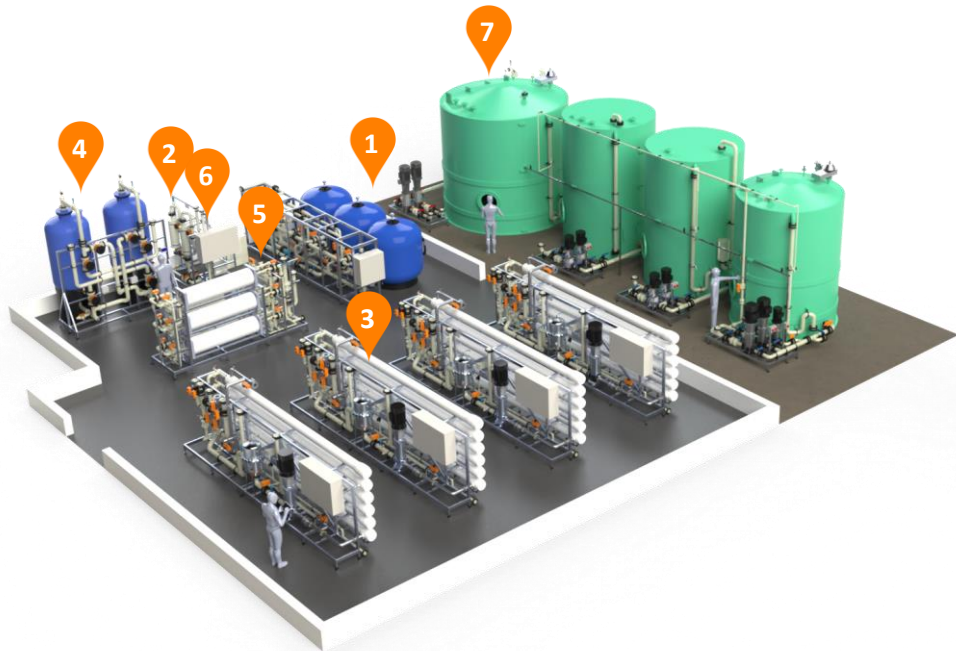
- Re-use the treated water for different applications

## INCREASED RELIABILITY

- **Extended** equipment lifetime
- **Control** of scaling, fouling and corrosion

## Our Solution

- 1 ▶ Multimedia Filtration
- 2 ▶ Ultrafiltration
- 3 ▶ Reverse Osmosis
- 4 ▶ Ion Exchange
- 5 ▶ Electrodeionization
- 6 ▶ Degassing membranes
- 7 ▶ Water storage



## Special features

- ▶ Pre-treatment with membrane technology
- ▶ Containerization to minimize the site works and footprint
- ▶ Closed Circuit Reverse Osmosis, allowing up to **96% water recovery**
- ▶ Automatic analytical measurement



# WASTEWATER REUSE IN BREWERY

Denmark, 2160 m<sup>3</sup>/d

## Aim of the Project

The wastewater reuse plant is designed to treat a MBR clarified stream to produce water in accordance with the local drinking water standards.

Lenntech has engineered, manufactured and commissioned a fully automated closed-circuit reverse osmosis (CCRO) plant with remineralization (calcite) for the reuse of wastewater generated by brewery processes. CCRO purifies the wasted stream at a **recovery rate of 90%** enabling its reuse in the factory.

The advanced CCRO process allows working at a high recovery while minimizing fouling and scaling, even with challenging feed water quality, minimizing cleaning frequency, resulting in less chemical use.

After remineralization with calcite, pH is adjusted, and water is disinfected with ClO<sub>2</sub> to ensure potabilization of the water.

## Scope of Work

- ▶ Engineering, manufacturing and assembly
- ▶ CCRO unit, with potabilization
- ▶ SS316 piping
- ▶ Automatic Cleaning In Place (CIP)
- ▶ Automated backwash and refilling of calcite filters
- ▶ Automatic calcite refilling of calcite filters
- ▶ Advanced PLC control
- ▶ Drinking water certified equipment
- ▶ Site commissioning and service after sales

### ▶ FEED WATER QUALITY

Conductivity: <3000 µS/cm  
COD: 20-50 ppm

### ▶ PRODUCT WATER QUALITY

According to WHO standards

## Key accomplishments

REDUCES  
WATER  
USAGE

**500** MIL.  
L/per year

REUSE  
**90%**  
PROCESS  
WASTEWATER

REDUCING BY  
**10%**  
ENERGY  
CONSUMPTION