



OFFSHORE PROCESS WATER

System design customization to meet your requirements

RELIABILITY

- **Safe and reliable water** supply from a virtually endless source

FLEXIBILITY

- **On demand production** according to seasonal requirements

INDEPENDENCE

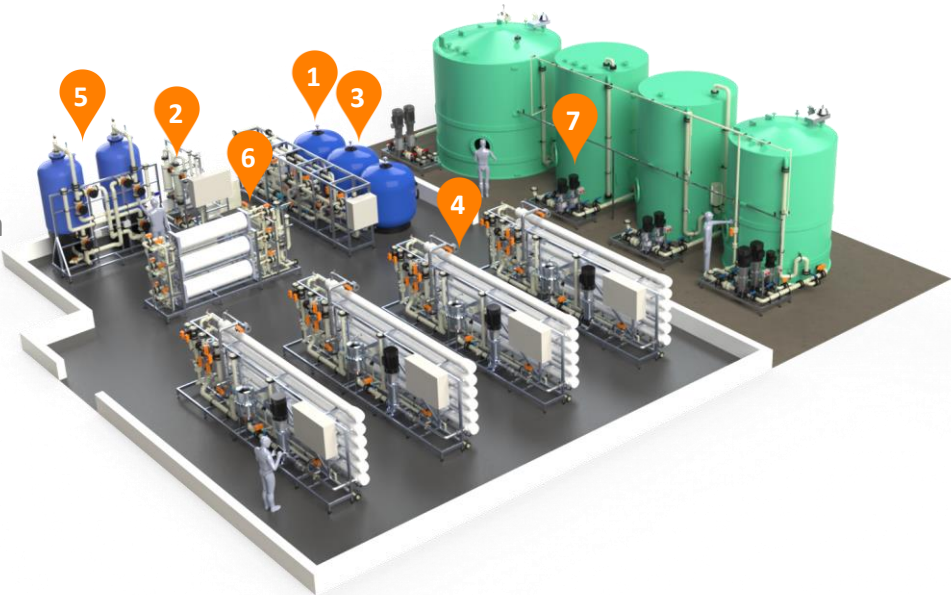
- Off the grid connection, allowing **independence** from local water network

DECENTRALIZED SYSTEM

- Suitable to provide water **in remote locations**

Our Solution

- 1 ▶ Multimedia Filtration
- 2 ▶ Ultrafiltration
- 3 ▶ GAC Filtration
- 4 ▶ Reverse Osmosis / Nanofiltration
- 5 ▶ Ion Exchange
- 6 ▶ Electrodeionization
- 7 ▶ Water conditioning



Special features

- ▶ Nanofiltration membranes, targeting specifically sulphate at low energy
- ▶ Containerization to minimize the site works and footprint
- ▶ Energy Recovery Device (ERD) resulting in **energy savings up to 60%**
- ▶ Remote monitoring and support, allows to access and control the plant remotely



SULFATE REMOVAL FROM SEAWATER

Scandinavia, 2400 m³/d

Aim of the Project

The seawater Nanofiltration system is designed to treat fresh seawater for offshore works. The main goal was to design a system capable of reducing the sulfate concentration to less than 15 mg/L that would replace the use of tap water for drilling and stimulation processes. The system should produce 100 m³/h of water and must fit in the limited space available on the client's vessel.

Lenntech has engineered and built a double pass nanofiltration unit fully automated and resistant to marine environment. The system design complies with client's requirements in terms of automation level, electrical and mechanical specifications.

The unit has been delivered in three skids: a pretreatment and rinse skid including self-cleaning filtration and filters; a pump and water distribution skid; and a pressure vessel skid.

For this process, 175 state-of-the-art seawater nanofiltration membranes have been installed.

Scope of Work

- ▶ Engineering, manufacturing and assembly
- ▶ Sulfate removal nanofiltration
- ▶ Customized mechanical design for installation on top of 20ft tanks, with ISO locks.
- ▶ Duplex equipment for high-pressure line
- ▶ Customized production sequences adjustable depending on the water quality requirements.
- ▶ Installation supervision & commissioning
- ▶ Remote data monitoring and system optimization

▶ FEED WATER QUALITY

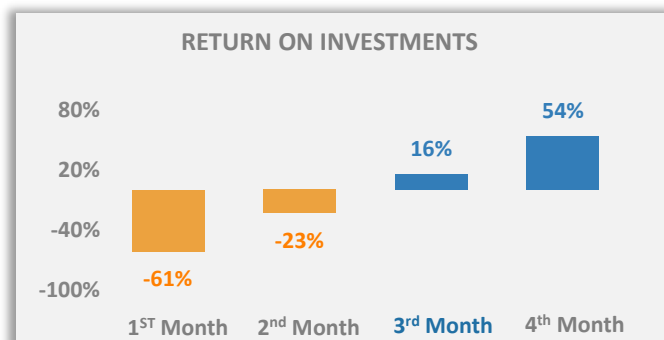
Conductivity: 48,000 µS/cm
Sulfate: 2500 ppm

▶ PRODUCT WATER QUALITY

Sulfate < 15 ppm

Key accomplishments

▶ RETURN ON INVESTMENT < 3 MONTHS



Based on 24/7 operation, compared to drinking water average cost per m³ in Scandinavia. Data specific to this project.

▶ BRINE QUALITY IMPROVED FOR REJECT IN SEAWATER

