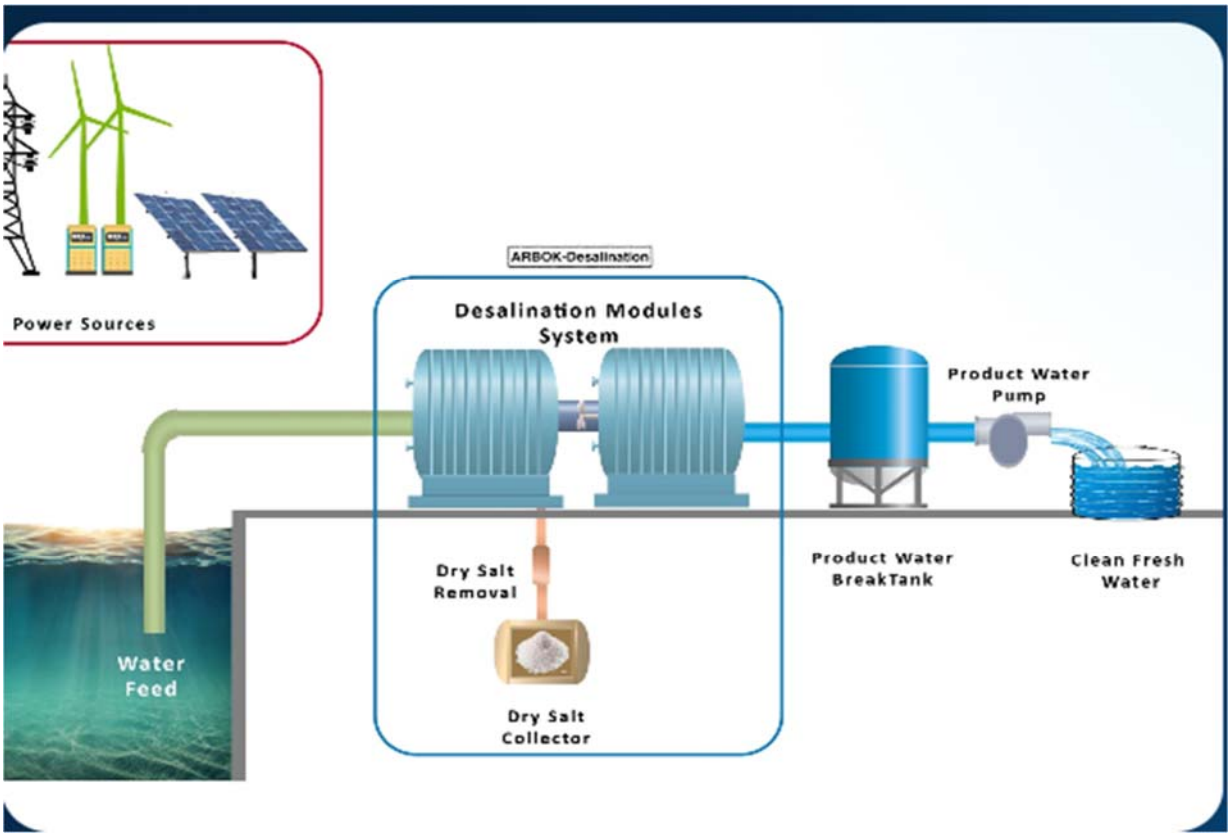
1) OVERVIEW

GlobalAquaTech Sustainable Technologies for Water, Energy, Environment and Industry

TECHNOLOGY SECTOR

Water Desalination & Treatment

Desalination, brine recovery, purification, and treatment of radioactive or oil-contaminated water.



Water Desalination and Treatment

“Innovative Solutions for Sustainable Water Management: GLOBALAQUATECH Ecosystem”

The GLOBALAQUA technologies collectively form a comprehensive ecosystem of innovative solutions to tackle diverse water desalination and treatment challenges. At the forefront of this ecosystem are technologies focused on desalination and water purification, such as GLOBALAQUA -Brine, GLOBALAQUA -Desalination, GLOBALAQUA -Sotarix, and GLOBALAQUA -NewRO. These technologies leverage cutting-edge methods to enhance efficiency, sustainability, and affordability in seawater desalination, ensuring access to clean and sustainable water sources. Complementing these are GLOBALAQUA -Purification and GLOBALAQUA -Oily, which target water contamination treatment, addressing pollutants ranging from industrial chemicals to oil products. These technologies safeguard water quality and environmental integrity, offering versatile solutions to various contamination challenges. Furthermore, GLOBALAQUA -Nuke, GLOBALAQUA -Space, and GLOBALAQUA -Oasis contribute to resource management and sustainability, addressing specific needs such as radioactive water purification, human waste management in space environments, and groundwater salinization challenges, respectively. Together, these technologies form a cohesive framework that embodies a commitment to sustainability, innovation, and responsible resource management, ensuring access to clean and sustainable water sources while safeguarding the environment for future generations.

Water stress is becoming an infrastructure, industrial and security problem.

40% Projected global freshwater demand/supply gap by 2030.

$1.3T+Water treatment industry scale referenced for 2030.

$36.98B Projected desalination market by 2032 at 9.61% CAGR.

The growing water crisis

- **Rising demand:** population growth, urbanization and climate change are increasing pressure on freshwater resources.
- **Projected shortages:** by 2030, global freshwater demand is projected to exceed available supply by approximately 40%.
- **Regional scarcity:** water-stressed regions increasingly depend on desalination, reuse and non-traditional water sources.

Market and infrastructure opportunity

- **Market scale:** the water treatment industry is projected to surpass $1.3 trillion by 2030.
- **Desalination growth:** the desalination market is expected to reach $36.98 billion by 2032, growing at 9.61% CAGR.
- **Investment trend:** demand is driving innovation in desalination, wastewater treatment and groundwater management.

2) Water Desalination & Treatment

“Water Desalination and Treatment Sector”

The Water Desalination and Treatment Sector encompass various innovative solutions to address diverse water purification and desalination challenges. These technologies offer groundbreaking approaches to tackling brine waste management, groundwater salinization, radioactive water purification, space waste management, and oil-contaminated water treatment. Each solution leverages cutting-edge technology to enhance efficiency, sustainability, and affordability while minimizing environmental impact.

GLOBALAQUA-Brine introduces a transformative approach to brine waste from reverse osmosis desalination, offering sustainable brine recovery and enhancing efficiency.

GLOBALAQUA -Desalination revolutionizes water purification with low-temperature technology, maximizing resource utilization and minimizing ecological footprint.

GLOBALAQUA -Purification offers a comprehensive solution to water contamination, addressing pollutants from industrial chemicals to bacterial contaminants.

GLOBALAQUA -Oasis tackles groundwater salinization challenges by efficiently treating well water and revitalizing non-functional wells.

GLOBALAQUA -Nuke provides advanced purification of radioactive water, ensuring safe disposal and meeting the needs of the nuclear industry.

GLOBALAQUA -Space manages human waste in space environments, converting urine into potable water with minimal energy expenditure.

GLOBALAQUA -Sotarix employs solar energy for seawater desalination, offering an eco-friendly and scalable solution to freshwater provision.

GLOBALAQUA -NewRO enhances reverse osmosis desalination with improved efficiency and cost-effectiveness, setting new standards in water purification.

GLOBALAQUA -Oily targets water pollution caused by oil and oil products, utilizing phase transition technology for efficient purification.

3. TRUE – ZERO LIQUID DISCHARGE

WATER TECHNOLOGY PORTFOLIO

Focused directions for desalination, reuse, brine conversion and performance validation.

GLOBALAQUATECH WATER SOLUTIONS

From scarcity to security through Zero-Liquid Discharge water systems.

GLOBALAQUA develops modular technologies for desalination, brine conversion, wastewater reuse and industrial water resilience. The portfolio is designed to produce clean water, recover minerals and eliminate liquid waste streams.

OVERVIEW

True Zero-Liquid Discharge

GLOBALAQUA's patented True Zero-Liquid Discharge process converts saline, brine and complex water streams into drinkable water and dry technical salt or minerals without a liquid waste stream.

CAPABILITIES

What this direction covers

Designed for 100% water recovery by volume where the feed stream is transformed into purified water and solid residuals.Deep vacuum evaporation at ambient temperature, reducing dependence on high-pressure membrane systems.No brine discharge, no chemical dosing, no membrane consumables and no greenhouse-gas emitting combustion process inside the treatment unit.Net energy consumption target: up to 2 kWh per cubic meter depending on integration and operating conditions.

Where it can be used

- **Seawater desalination**
- **Reverse-osmosis brine recovery**
- **Industrial wastewater**

- Ballast water
- Brackish and well water
- Radioactively contaminated water

OVERVIEW

GLOBALAQUA V12 System & Operation

The GLOBALAQUA V12 unit is a modular vertical system for continuous water treatment, automatic salt extraction, remote monitoring and scalable capacity planning.

CAPABILITIES

What this direction covers

One vertical V12 unit is designed for approximately 200 m³/day production capacity.Compact industrial footprint: approximately 7 m² for a 20-foot vertical tank configuration with around 6.5 m height.Operation phases include intake, controlled flow, deep vacuum evaporation, condensation, purified water collection and automated salt discharge.The system is planned for continuous 24/7/365 operation with automated monitoring, water quality control and emergency shutdown logic.

APPLICATIONS

Where it can be used

- New modular plants
- Containerized water production
- Remote infrastructure
- Industrial sites
- Emergency water capacity
- Distributed municipal systems

OVERVIEW

Greenfield & Brownfield Deployment

GLOBALAQUA water technologies can be deployed as new desalination capacity or integrated into existing reverse-osmosis plants to recover brine and increase freshwater output.

CAPABILITIES

What this direction covers

Greenfield: GLOBALAQUA-Desalination System for new plants producing drinkable water and dry technical salt.Brownfield: GLOBALAQUA -Brine Utilization System for existing RO assets with brine residue or effluent streams.Brownfield integration can more than double freshwater production by recovering and recirculating brine output.Deployment can reduce land demand, lower waste-disposal complexity and create additional mineral or technical salt value streams.

Where it can be used

- Existing RO plants
- Coastal desalination hubs
- Industrial parks
- Water-stressed municipalities
- Island infrastructure
- Utility partnerships

OVERVIEW

Wastewater & Industrial Reuse

GLOBALAQUA’s water platform extends beyond desalination into wastewater purification, difficult industrial streams and circular water reuse where discharge must be minimized.

CAPABILITIES

What this direction covers

Target streams include domestic wastewater, industrial wastewater, contaminated process water, oil-contaminated water and difficult underground or chemical effluents.The approach supports water reuse by returning treated water to municipal, industrial or agricultural applications.The technology is positioned for facilities where brine, contaminated residuals or liquid discharge create regulatory and operating risk.The same Zero Waste Discharge ideology supports water recovery, pollutant isolation and resource recovery from complex streams.

Where it can be used

- Municipal wastewater
- Industrial reuse
- Oil and gas water
- Mining and critical materials
- Agriculture runoff
- Environmental remediation

OVERVIEW

Validation & Performance Evidence

GLOBALAQUA maintains a validation-oriented evidence base covering independent testing, SGS reports, water-quality measurements, energy-performance data and EU water-quality review.

CAPABILITIES

What this direction covers

Referenced validation includes SGS Test Reports from 2021 and 2023 covering system performance indicators.Water-quality tests are referenced for 2020 and 2023, including analysis of salt and recovered water quality.An EU Quality Test dated November 2023 is referenced against EU water directives, including Water Framework Directive 2000/60/EC and Drinking Water Directive 98/83/EC.The validation section is structured for investor diligence: energy, recovered water quality, solid by-products, standards and operating assumptions are separated for review.

Where it can be used

- **Investor diligence**
- **Government review**
- **Utility procurement**
- **Engineering validation**
- **Pilot planning**
- **Regulatory discussions**

4. WATER TECHNOLOGY SOLUTION

TECHNOLOGY BREAKTHROUGHS

Low net energy, zero liquid waste and modular capacity.

The GLOBALAQUA water platform is built around a True Zero-Liquid Discharge desalination process: clean water production, dry technical salt by-product, no liquid brine discharge, no chemical consumables, no membranes and a compact scalable unit architecture.

- Up to 2 kWh/m³ net energy target depending on project integration.
- 100% water desalination by volume and conversion of brine to water and salt.
- No pre-treatment or post-treatment requirement in the stated design concept.
- Modular units can be scaled by adding V12 mod

Up to 2 kWh/m³

Target net energy consumption depending on integration.

100% recovery goal

Water recovery by volume with dry solid residuals.

No liquid brine

Designed to remove wastewater discharge from the process.

Modular scale

Capacity expands by adding V12 units.

TECHNICAL SUMMARY

Key facts for engineering review, partnership evaluation and investor diligence.

Problem

Water scarcity, brine disposal, industrial wastewater, aging infrastructure, freshwater demand growth and policy pressure are increasing the need for circular water systems.

Solution

GLOBALAQUA proposes modular Zero-Liquid Discharge systems that recover water and isolate solid salts or minerals instead of discharging brine

Deployment

The portfolio supports both greenfield plants and brownfield integration into existing reverse-osmosis desalination infrastructure

Evidence

The validation pathway includes SGS reports, water-quality testing and EU quality review materials for technical diligence.