

COMBINED CAPABILITIES · BATCH RO + CEE

From any effluent to **clean water** and zero liquid discharge

Two complementary technologies — high-efficiency **Batch RO** recovery and **CEE** evaporation — treat the toughest industrial effluents: reusable water, minimal energy, zero liquid discharge.

TARGET SECTORS

Metallurgy

Leachates

RO system reject

Ultra-concentrated brines

>97%

WATER RECOVERED · CHAIN

ZERO

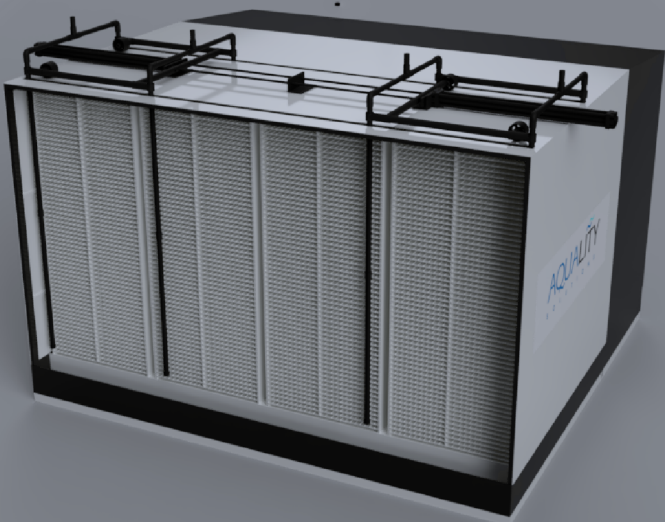
LIQUID DISCHARGE · ZLD

<€5/m³

ENERGY OPEX · CEE

350k_{ppm}

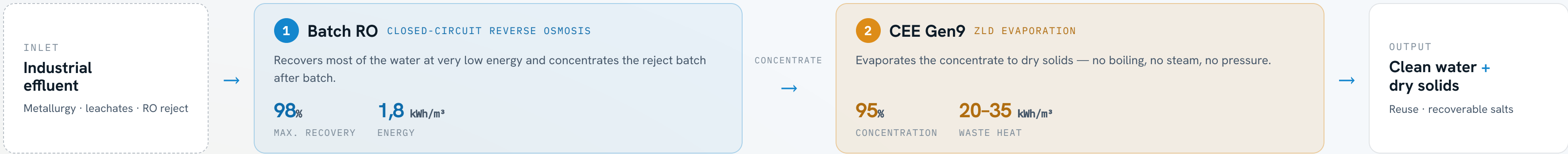
MAX. TDS VALIDATED



An evaporation pond of several hundred square metres, **folded into 9 m²**

CEE GEN9 · SINGLE MODULE · 9 m² FOOTPRINT

THE TREATMENT CHAIN · ONE LINE, ZERO DISCHARGE



One chain, two engines. **Maximum recovery, zero liquid discharge.**

1 BATCH RO · CLOSED CIRCUIT

High-efficiency water recovery

Recirculates and concentrates the reject within one batch, close to the thermodynamic limit — more recovery, less energy per m³.

up to **98%**
WATER RECOVERY

1,845 kWh/m³
SPECIFIC ENERGY
vs conv. RO >3 kWh/m³

up to **99%**
SALT REJECTION

~104 µS/cm
PERMEATE CONDUCTIVITY

WATER RECOVERY VS CONVENTIONAL RO



REAL DEMONSTRATOR · HARDWARE IN SERVICE



High-conductivity effluent · up to 90% recovery, 97% salt rejection – validated in operation

Less saline water · up to 98% recovery, 99% salt rejection

2 CEE GEN9 · AUGMENTED CONVECTION

Zero liquid discharge in a single step

Concentrates the RO reject or effluent up to 95% of its volume and crystallises dry salts — including the Batch RO concentrate. No boiling, no steam, no pressurised vessel.

up to **95%**
REJECT CONCENTRATION · ADJUSTABLE

20-35 kWh/m³
WITH WASTE HEAT

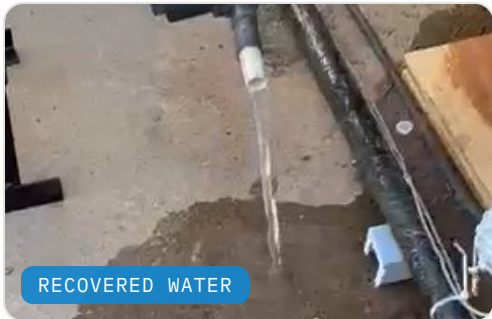
<€5/m³
ENERGY OPEX

350k ppm
MAX. TDS VALIDATED · SEA SALT

PROCESS · ATMOSPHERIC EVAPORATION

Preheating → Thin film → Forced convection → Condensation → **Dry salt on trays**

REAL CASE · LANDFILL LEACHATE



Water ready to reuse — <50 mg/L TDS · <100 µS/cm · neutral pH — and **recoverable dry salts**. Zero liquid discharge, resources recovered.

Wastewater evaporation at **low temperature and ambient pressure**. A simplified system, **robust and durable** — low capex and low opex.

Zero corrosion · PP / PA6 / FRP

9 m² module · atmospheric