

## CASE STUDY

# EFW: BESPOKE ECO MULTIPRO WATER TREATMENT SYSTEM SELECTED FOR DELIVERY AT A MAJOR FACILITY IN GREATER MANCHESTER



Envirogen has been selected to deliver a fully integrated, bespoke Eco MultiPro demineralised water treatment system for a major Energy-from-Waste (EfW) facility in Greater Manchester. The new installation will replace ageing plant infrastructure, support long-term operational reliability, and improve efficiency, while also contributing to the region's wider transition towards a circular economy and zero waste.



The project centres around a containerised, plug-and-play solution built around Envirogen's skid-mounted Eco MultiPro reverse osmosis / continuous electro-deionisation (RO-CEDI) technology, designed to provide high-purity treated water for critical steam generation processes.

## SUPPORTING GREATER MANCHESTER'S ZERO WASTE OBJECTIVES

SUEZ's investment focuses on improving the facility's environmental performance and operational efficiency, aligning with GMCA's broader goals of advancing Greater Manchester's transition towards a circular economy and a "zero waste" future. Envirogen was selected to deliver the water treatment solution required to meet these aims.



**BEN PHILLIPS,**

Regional Sales Manager at Envirogen, said:

*"Following a site visit and technical audit, we worked closely with the customer to assess the relative merits of refurbishing the existing plant versus installing a new system. Based on lifecycle performance, operational efficiency and long-term reliability, the Eco MultiPro solution was identified as the strongest option. Its energy-efficient, zero-chemical design is expected to deliver a stronger return on investment while supporting wider sustainability goals."*



*Envirogen's containerised solution, the Eco MultiPro, will arrive on site ready for fast integration with existing processes and quick start-up.*

The existing demineralising system had reached the end of its operational life. The Eco MultiPro system was selected because its performance and cost-effectiveness are already proven across many Energy-from-Waste facilities. It is also designed to deliver high-purity demineralised water to help protect critical boiler and steam turbine assets.

## THE SOLUTION:

Envirogen's scope includes the delivery of a bespoke Eco MultiPro water treatment system within a compact, skid-mounted, plug-and-play package designed for rapid integration with existing site operations. The installation will replace ageing infrastructure, including an existing 15 cubic metre (m<sup>3</sup>) treated water tank, with a new robust 80m<sup>3</sup> tank to increase resilience and storage capacity.

The treatment train combines pre-treatment, reverse osmosis, degas membrane technology, and continuous electrodeionisation to produce high-purity demineralised water for critical boiler and steam turbine applications.

Pre-treatment removes chlorine and hardness from incoming raw water to help prevent scaling and mineral build-up in downstream processes. The system also includes PLC/HMI controls with secure remote monitoring capability, enabling live operational visibility, historical data logging, and proactive maintenance support.

## PLANNED KEY OUTCOMES:

- Increases storage capacity from 15m<sup>3</sup> to 80m<sup>3</sup>, providing significant operational headroom and a 433% increase in on-site water resilience.
- Delivers ultra-pure water to stringent specifications:
  - o Achieves a conductivity of less than 0.10 micro siemens per centimetre (µS/cm), with trace levels of silica (below 0.02 mg/l), sodium (below 0.01 mg/l), and Total Organic Carbon (below 0.20 mg/l).
  - o These high standards ensure maximum protection for critical boiler and steam turbine assets from mineral build-up and corrosion.
- Exceeds flow requirements with a treated water output of 5m<sup>3</sup>/hr, providing essential safety margins and flexibility compared to the specified 3.5m<sup>3</sup>/hr.
- Eliminates hazardous chemical handling by utilizing a zero-chemical process (RO-CEDI), removing the need for anti-scalant dosing, acid, caustic, and effluent neutralisation.
- Improves sustainability through high-efficiency recovery rates (up to 90% for CEDI) and a salt rejection rate of over 98%, while removing 99.9% of viruses, bacteria, and suspended solids from the feed stream
- Lowers operating costs and total cost of ownership through high-efficiency, low-energy membranes and low-maintenance design.
- Supports long-term reliability through predictive maintenance and real-time monitoring, reducing unplanned downtime risk.
- Enables future growth through modern infrastructure with substantial built-in capacity.



### ABOUT THE CLIENT

SUEZ are recognised specialists, offering leading innovations across water, wastewater, waste, municipal, healthcare, and industrial sectors in the UK.



## INTERESTED IN OTHER EFW PROJECTS?

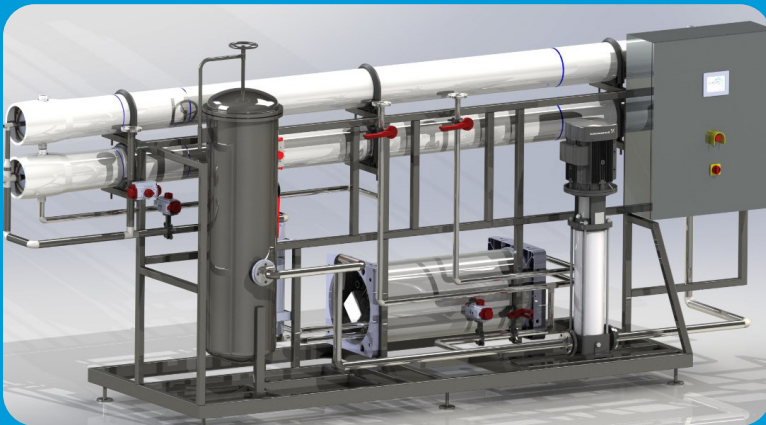
For more information on other water treatment and process filtration solutions for the power & energy industry:



Learn how purified demin water helps Energy Works Hull generate enough energy from waste to power 47,000 homes:

[CLICK HERE TO LEARN HOW](#)

[www.envirogengroup.com/bioenergy](http://www.envirogengroup.com/bioenergy)



Discover how all-in-one Eco MultiPro RO-EDI water system helps EFW plant process 169,000 units of refuse-derived fuel (RDF) each year to supply the UK's National Grid:

[CLICK HERE TO LEARN HOW](#)

[www.envirogengroup.com/vital-energy](http://www.envirogengroup.com/vital-energy)



Learn how a combined reverse osmosis and electrodeionization system (RO-EDI) helps Eco Park Surrey process 40,000 tonnes of kitchen waste and 50,000 tonnes of general refuse waste a year

[CLICK HERE TO LEARN HOW](#)

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## ABOUT ENVIROGEN

Envirogen is a leading international provider of water and wastewater treatment solutions. We solve complex challenges relating to water availability and quality, and help our customers to increase productivity, reduce costs and meet environmental and sustainability targets.

We do this through offering:

- Best in class water and wastewater treatment and process filtration technology
- Expertise in design, project management and engineering
- World class manufacturing and servicing capability



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