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Company News

Batch RO startup partners with OEM

Salinity Solutions, a spin-out of the University of Birmingham, has announced that it has signed a manufacturing agreement with Te-Tech Process Solutions, a UK-based technology provider, who will manufacture and market the company's new Batch RO technology and range of products.

Aston University Professor Philip Davies conceived the idea for a high-efficiency batch RO process ten years ago, and it was seized upon by Tim Naughton as the subject of the thesis for his engineering degree. Along with Davies, he moved to the University of Birmingham to build and test a full-scale prototype, supported by a £200,000 ($240,640) grant from Innovate UK's ICURe program. Naughton founded Salinity Solutions in 2021, and has raised £1.6 million ($1.92 million) from private investors and two crowdfunding campaigns.

The two-step batch process includes a pressurization step, where fresh water is produced as saline water and is recirculated and concentrated, and a purge-and-refill step, in which the system is flushed of brine from the previous batch and refilled for the next pressurization cycle. The heart of the batch process is a piston-type pressure exchanger, which acts as a variable-volume tank to accommodate the hydraulic circuit's diminishing volume as RO permeate exits the system.

The company has since conducted several successful field trails of the patented process, including its application to achieve a 7X concentration of a lithium-rich groundwater for Cornish Lithium in far southwest England, and a 13X concentration factor for an ultrapure water application (see wdr2022-36).

A part of the Trant Group, Te-Tech Process Solutions has a broad range of innovative water and wastewater treatment products.

Salinity Solutions will be a participant in the Technology Idol event at the 2023 Global Water Summit in Berlin, Germany, on 8-10 May.

Australia

Site selected for SWRO plant

SA Water, South Australia's government-owned water company, said that it has selected a preferred location for a new, 11,000 m^3/d (2.9 MGD) SWRO plant. The plant will have the ability to be doubled in size, and is deemed critical to maintaining a long-term supply of drinking water for 35,000 customers on the Eyre Peninsula, which is said to be "perilously close to running out of drinking water by 2025".

Billy Lights Point, a former industrial site near the Spencer Gulf's south-western entrance, and 255km (160 mi) west of Adelaide, was selected over a site at Sleaford West, which has reported geological and transport challenges, and would cost the project an additional A$150 million.

Billy Lights Point was originally selected as the project site in October 2021, following an analysis of 20 other sites on the Eyre Peninsula. However, project opponents delayed the project over concerns about its impact on marine life; however, the recent South Australian Research and Development Institute's (SARDI) reports said that the plant can be built without negatively impacting the local marine environment. SARDI's oceanographic modeling shows that once the plant is operational, long-term salinity levels in the bay will remain within natural background levels.

Since the 2021 study, the cost of the project has increased significantly to an estimated A$313 million ($209.5 million), a point that did not escape the State's Premier, Susan Close, who said that the plant "was unnecessarily delayed for years" for political reasons.

"The [274,000 m^3/d] Adelaide Desalination Plant constructed by SA Water [in 2021] has had no negative impact to the marine environment and we expect this to be the case at Billy Lights Point," said Close.

Colorado

Mobile DPR blends of science & outreach

Over 90% of Colorado's reusable water supplies are treated and re-used to meet the state's non-potable water requirements. Researchers at the Colorado School of Mines

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