Minrea Escondida, World's Largest Copper Mine, Upgrades to LG NanoH2O RO Membranes, Lowering the Cost of Seawater Desalination

LG Water Solutions, renowned for its NanoH2O™ reverse osmosis (RO) membranes based on the breakthrough thin-film nanocomposite (TFN) technology, has improved the operational efficiency of the RO systems at Minera Escondida, the world's largest copper mine in Chile. This enhancement comes through reducing energy consumption in the mine's seawater desalination process.

Minera Escondida previously relied on fresh groundwater sources for their water supply. However, due to severe water scarcity, the company shifted to alternative sources, such as seawater, to minimize the impact on local aquifers and the communities that depend on them. In 2018, they built and opened a seawater RO desalination plant, now the largest in the Americas, producing 216,000 cubic meters (57 million gallons) of fresh water daily.

The plant initially used RO membranes from a different manufacturer, but Minera Escondida encountered issues with their performance. As a result, the plant owner, BHP Billiton, gave LG Water Solutions the opportunity to replace one of its SWRO trains with LG NanoH2O™ RO membranes at the end of 2021. The LG NanoH2O™ TFN RO membranes showed superior performance, enabling the facility to operate under lower feed pressures, reducing energy usage and operational expenses. This positive outcome led to a subsequent replacement order recently.

Minera Escondida, producing over one million tons of copper annually, accounts for approximately 5% of the global output and plays a vital role in the Chilean economy. Situated in the Atacama Desert, about 170 km southeast of Antofagasta, the open pit mine operates in one of the driest regions on Earth, with an average annual rainfall of around 15 millimeters. Victor Casarreal, Commercial Director of Latin America at LG Water Solutions, commented: "In regions facing acute water scarcity, adopting sustainable water solutions is crucial for minimizing the environmental footprint of mining operations. We're delighted with the customer's positive response to our NanoH2O™ RO membranes and expert commercial and technical support. The performance and results at Minera Escondida demonstrate the unique advantages and value LG Water Solutions' technology and service bring to the industry."

For more information on LG Water Solutions and its NanoH2O™ Reverse Osmosis (RO) membranes, visit www.lgwatersolutions.com.