

Dalian Petrochemical Company SWRO Desalination Project

The Industry Standard Solution

The efficiency and lifecycle costs of a plant's energy recovery technology is critical to both winning SWRO projects and achieving maximum plant profitably through the lowest operating costs. Leading international OEM's such as Acciona Agua, Aqua Engineering, Befesa, CH2MHill, Cobra Tedagua, Doosan Hydro Technology, Fisia Italmimpianti, GE Water Process and Technologies, GEIDA, IASUR, INIMA, Metito, Siemens and Suez Degrémont have selected the ERI® PX modular technology for their recent projects because it consistently achieves real energy transfer efficiencies—up to 98%, making it the most efficient energy recovery device available today. At the core of the PX device is a single moving rotor made of tough engineered ceramic that is unaffected by chemicals, will not corrode, and requires no periodic maintenance. Over 80 OEMs are standardizing on PX technology with installations around the world, including plants such as Al Shuaibah III, Barcelona, Chennai, Hamma, Perth, Skikda, Torrevieja and Yuhuan.



Dalian Petrochemical Company

At 5,000 m³/day, the Dalian Petrochemical Company SWRO plant began operation in November 2003 as one of the largest SWRO installations in Asia. The plant, designed and constructed by CNC Technology, Inc., Beijing Fountain Environmental Engineering, Inc., employs ERI's PX Pressure Exchanger™ technology.

The Dalian plant consists of three trains that produce approximately 1,800 m³/day each at 45% recovery from 29,000 parts per million (ppm) seawater. Each train is equipped with a dedicated supply/cartridge filter pump, a splitting centrifugal high-pressure pump, spiral membranes, two ERI PX-220 Pressure Exchanger devices, and a booster pump. The PX was selected based on its simple design, low lifecycle costs due to high efficiency energy savings as well as its proven reliability. In fact, in May 2005, ERI examined the installed units by taking apart and inspecting the ceramic cartridges. No evidence of deterioration or wear whatsoever was found. and as a result, no service or maintenance will likely be required during the life of these PX devices.

The Dalian plant serves as a showcase for SWRO-PX technology in Asia, with similar processes and equipment specified for larger plants on the continent. Their success with PX technology has led Dalian to contract for more PXs to supply new SWRO trains. Due of its 98% energy efficiency solution, China now leads the world in the adoption of efficient PX technology, with over 80% of seawater desalination plant capacity in the country using the ERI PX technology solution.

Dalian Project Facts

- CAPACITY: 5,000 m³/day
- 6 PX-220 PRESSURE EXCHANGERS
- 95% ENERGY EFFICIENCY
- PLANT STARTUP: NOVEMBER 2003

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Energy Recovery, Inc. (ERI®) is a leading manufacturer of energy recovery devices, which help make desalination affordable. ERI's PX Pressure Exchanger® technology (PX®) is a rotary positive displacement pump that recovers energy from the high-pressure waste stream of sea water reverse osmosis (SWRO) systems at up to 98% efficiency with no downtime or scheduled maintenance.

ERI has research, development and manufacturing facilities in the San Francisco technology corridor as well as direct sales offices and technical support centers in key desalination hubs such as Madrid, Dubai, Shanghai and Florida. ERI service representatives are based in Algeria, Australia, China, India, Korea, Mexico, Taiwan and the Caribbean.

The world's largest energy recovery device manufacturer* delivers:

- Proven SWRO Power Consumption as Low as 1.7 kWh/m³
- No Scheduled Maintenance Shutdown
- No Pulsations, or Complicated Controls
- The Simplest Solution to Lowest Lifecycle Costs
- Flexibility, Proven Reliability and Real Savings

Guaranteed.

Contact us today to find out how you can start saving, or to learn more about ERI and the PX solution, visit us at:

www.energyrecovery.com

*ADC



PX-220 Pressure Exchanger Devices



Pumps and Pressure Exchanger Devices



Membranes and Pressure Exchanger Devices



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Making Desalination Affordable®

