

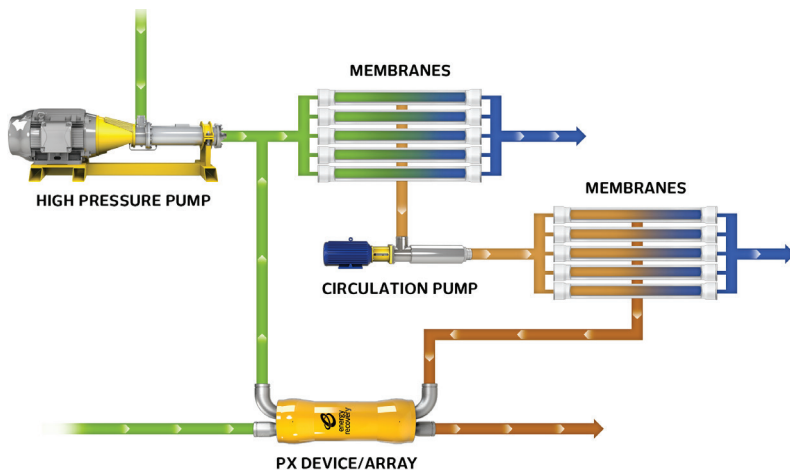
# Energy Recovery Solutions for Low Pressure RO Systems

Making Potable Reuse Sustainable and Affordable

## REDUCING ENERGY CONSUMPTION WITH THE PX<sup>®</sup> PRESSURE EXCHANGER<sup>®</sup>

Energy Recovery has spent 30 years perfecting the reliable, field-proven, and trusted PX Pressure Exchanger technology. Consuming no electrical power and engineered with only one moving part made of highly durable and corrosion-resistant ceramic, the PX Pressure Exchanger offers substantial energy savings and ease of integration resulting in reduced operational expenditures.

The PX Pressure Exchanger transfers hydraulic energy in the concentrated brine stream into hydraulic energy that supplements the flow from the main high-pressure feed pump which feeds the membranes. This is done via direct contact between the concentrated brine and filtered seawater feed stream. An optional booster pump can be used to balance the fluxes in both stages.



## PX Technology BENEFITS

### Reliable

- Industry-leading reliability (99.8% uptime)
- Maintenance-free with 25-year design life

### Flexible

- Modular and scalable to any flow capacity
- Isobaric device with wide operating range
- High efficiency with flow and pressure variation

### Affordable

- Short payback period: more energy efficient design for low pressure

### Easy to Retrofit

- Potential to use in existing feed and booster pumps

## FEATURES

- Operates at low pressures 5.5-27.6 bar (80-400 psi)
- Models ranging from 7m<sup>3</sup>/h to 59 m<sup>3</sup>/h (30 gpm to 260 gpm) per unit
- Ideal for potable, non-potable, agricultural, and industrial water reuse



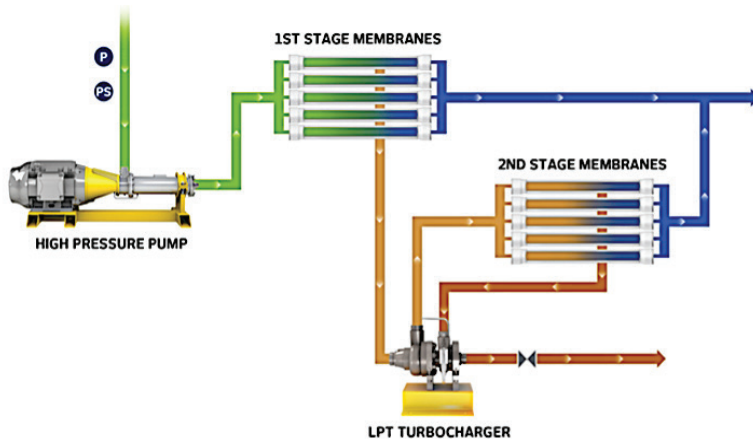
Ready to learn more about how our energy recovery solutions can benefit your low pressure RO systems?

Contact us at [iww@energyrecovery.com](mailto:iww@energyrecovery.com).

## ENERGY SAVINGS & EASE OF INTEGRATION WITH TURBOCHARGERS

The LPT Turbocharger is a cost-efficient energy recovery solution offering long-term reliability and versatility in a compact footprint. Designed for low-pressure applications such as multi-stage brackish reverse osmosis water treatment, this device handles flows from 227 to 908 m<sup>3</sup>/h (1,000 to 4,000 gpm) and pressures up to 45 bar (650 psi). The LPT is the ideal solution for two-stage systems where flux balancing and system optimization are desired. It can easily replace a booster pump for this service, providing equal or better performance all while requiring no electrical connections, motors, or drives.

Turbochargers convert hydraulic energy in the brine stream into mechanical energy, reducing the amount of head required by the main high-pressure pump. The turbine drives the pump section boosting the discharge of the high-pressure pump to membrane feed pressure. The turbocharger decouples the energy recovery device from the pump and motor, allowing it to run at higher speeds and higher efficiency than the Pelton wheel.



## LPT Turbocharger BENEFITS

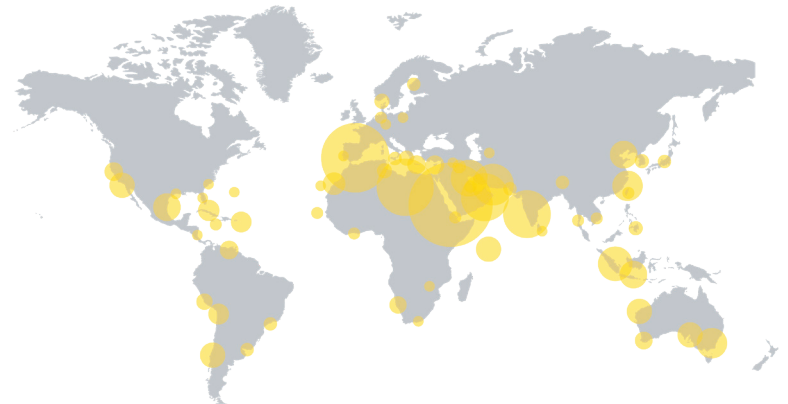
- Eliminates need for interstage booster pump
- No electrical connections
- Easy system integration
- Long-term reliability

## FEATURES

- Flow range: 227 to 908 m<sup>3</sup>/h (1,000 to 4,000 gpm) per unit
- Operating pressure: up to 45 bar (650 psi)
- Ideal for brackish desalination and similar low fouling applications with stable recovery and flow rates



**Energy Recovery (NASDAQ: ERII)** creates technologies that solve complex challenges for industrial fluid-flow markets worldwide. Building on our pressure exchanger technology platform, we design and manufacture solutions that make industrial processes more efficient and sustainable. What began as a game-changing invention for desalination has grown into a global business accelerating the environmental sustainability of customers' operations in multiple industries. Headquartered in the San Francisco Bay Area, Energy Recovery has manufacturing, research and development facilities across California and Texas with sales and on-site technical support available globally. For more information, please visit [www.energyrecovery.com](http://www.energyrecovery.com).



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