



CASE STUDY

The Challenge

Indian Power Plant with Meticulous Water Needs



LOCATION

Udipi, Karnataka
India

PROJECT

Udipi 1300MW
Thermal Power Plant

CAPACITY

16,200 M3/ day

ENERGY SAVINGS

8,750,000 kWh/year*

*Energy savings estimates based on India's power cost of \$0.1/kWh

The Udipi 1300 MW Thermal Power Plant is a coal/gas-based power generating station located in Udipi, near Mangalore, Karnataka, India. It produces power by converting water into steam, which is then used to drive turbines. Vast amounts of the highest quality pure water are needed for the steam generation process.



The Innovation Solution

Advanced TurboCharger™ + AquaSpire™ High Pressure Pump

After weighing the options, contractor Triveni Engineering chose seawater reverse osmosis (SWRO) desalination as the most viable option for obtaining the highest quality pure water. While Triveni Engineering had been offering custom made solutions to the Indian desalination industry for more than a decade, they were seeking the latest advances in energy recovery technology to increase plant efficiency. Triveni selected Energy Recovery's Advanced TurboCharger™ (AT) due to its reliability and optimal efficiency. Triveni also chose to configure the plant with Energy Recovery's AquaSpire™ centrifugal high-pressure pump. The AquaSpire pump is a single-stage, high-pressure pump ideal for medium-to-large-scale seawater-and brackish-water reverse-osmosis systems.

The AT™ energy recovery device and the AquaSpire™ centrifugal pump are designed to complement each other for maximum efficiency and hydraulic flexibility. A flexible solution that simplifies the SWRO system while maintaining its operational reliability, the AT is easy to install and has a compact footprint. This winning configuration is a turnkey solution that requires minimal installation time, operator training, and plant design. With Udipi's 16,200 m³/day plant capacity, it was of paramount importance to find the most cost-effective and energy-efficient desalination solution.

The Result

Flexibility with Cost Savings

The plant is configured with four centrifugal high-durability AquaSpire pumps and three AT TurboCharger energy recovery devices working together to give flexibility and cost/energy benefits. A total of three trains have been running since May 2010. As a result of using our technologies, the plant went to working at 100% full capacity in one year. More trains will be purchased for the expansion of the plant within the next two years. In fact, the client is so satisfied the setup is being showcased as a demo site for their potential customers.

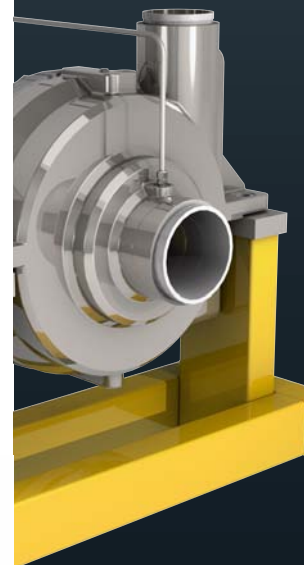
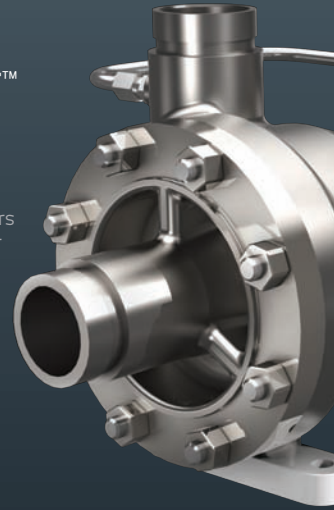
HIGH PERFORMANCE LOW COST

A fully customized, high-performance, low cost energy recovery solution for high-pressure systems.

Advanced TurboCharger™

**Smallest Footprint.
State-of-the-Art
Engineering.**

- Optimized efficiency
- 3D geometry impellers
- Insert technology for field flexibility



AquaSpire™ High-Pressure Pump

**Operational flexibility
with achievable
efficiencies up to 90%.**

- Compliments our AT TurboCharger™
- Simple field retrofits
- Optimization with removable volute inserts

About Energy Recovery Energy Recovery Inc. (NASDAQ: ERII) technology harvests the power of pressure from high-pressure fluid flows and pressure cycles. Through collaboration with industry, Energy Recovery helps make industrial processes within water, oil & gas, and chemical industries more profitable and environmentally sustainable. Headquartered in the San Francisco Bay Area, Energy Recovery has offices in Madrid, Shanghai, and Dubai. For more information, visit energyrecovery.com

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INNOVATORS™**

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