



CASE STUDY

The Challenge

A Flourishing Seaside Metropolis
with Water Woes



LOCATION

Chennai, India

PROJECT

Minjur Seawater
Desalination Plant

CAPACITY

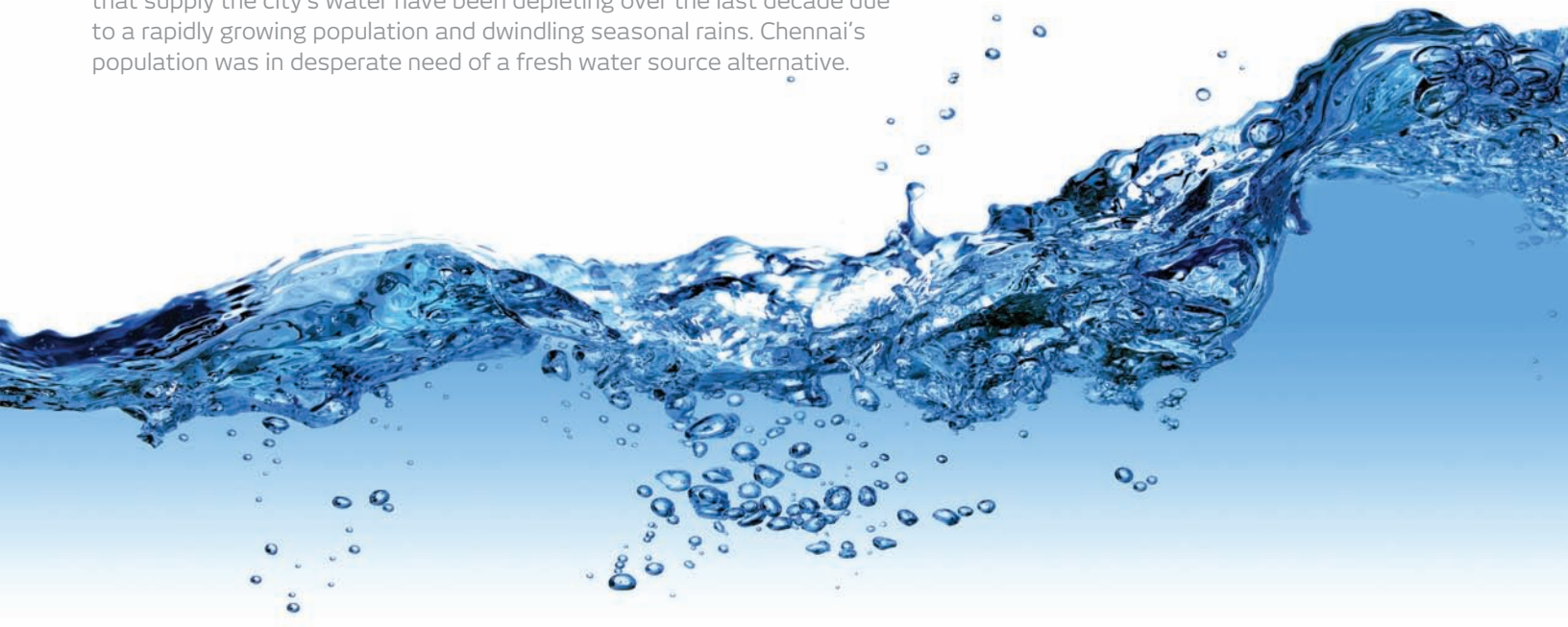
100,000 m³/day

ENERGY SAVINGS

95,484,000 kWh/year*

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

With a growing metropolitan population of over 8 million people, Chennai is the fourth largest population center in India after Mumbai, Delhi, and Kolkata. Historically dependent upon limited water resources, the people of Chennai must pay high costs to transport water. Meanwhile, the lakes that supply the city's water have been depleting over the last decade due to a rapidly growing population and dwindling seasonal rains. Chennai's population was in desperate need of a fresh water source alternative.



The Innovation Solution

Increasing Seawater Reverse Osmosis Capacity in Region

In 2007, the water governing body of Chennai-Metropolitan Water Supply and Sewerage Board (CMWSSB)-contracted Befesa Construcción y Tecnología Ambiental (Befesa CTA) to build Chennai's largest desalination plant. Under the agreement Befesa would design, build, own, and operate the \$140 million Minjur plant for 25 years. The plant, located near Minjur just north of Chennai, would produce 100,000 m³/day (100 MLD) of desalinated water to the region. In order to produce economically viable water and uphold environmental standards, Befesa selected Energy Recovery's advanced PX® technology as the plant's energy recovery device (ERD) of choice. The decision was based on the PX device's high efficiency, low overall lifecycle cost, and reliability, as well as for Energy Recovery's industry credibility and exceptional aftermarket service expertise.

The Result

Environmentally Sustainable Drinking Water at Low Cost

The Chennai plant was built with five trains containing 23 PX devices each and has since been upgraded to a permanent intake system, running four trains and reserving the remaining train for backup. The plant is currently supplying 100,000 m³/day (100 MLD) of desalinated water to the region. To ensure that the brine from desalination is disposed of in an environmentally friendly manner, it is diluted with pure treated water before being discharged back into the sea, so the salinity does not disrupt natural habitats.

This fresh water currently reaches approximately 2 million people at a cost of just over \$1 per 1,000 liters.

"Energy Recovery's energy-savings technology makes it possible for our city's population to receive clean, reliable water at a much more competitive cost, enabling our people to live without the fear of insufficient water."

Natarajan Ganesan
International Joint General Manager
Chennai Water Desalination Company

Chennai's second 100 MLD desalination plant, being constructed by VA Tech / IDE Consortium, is currently under commissioning.

"We use Energy Recovery's PX technology in many of our plants because the technology gives us a competitive advantage."

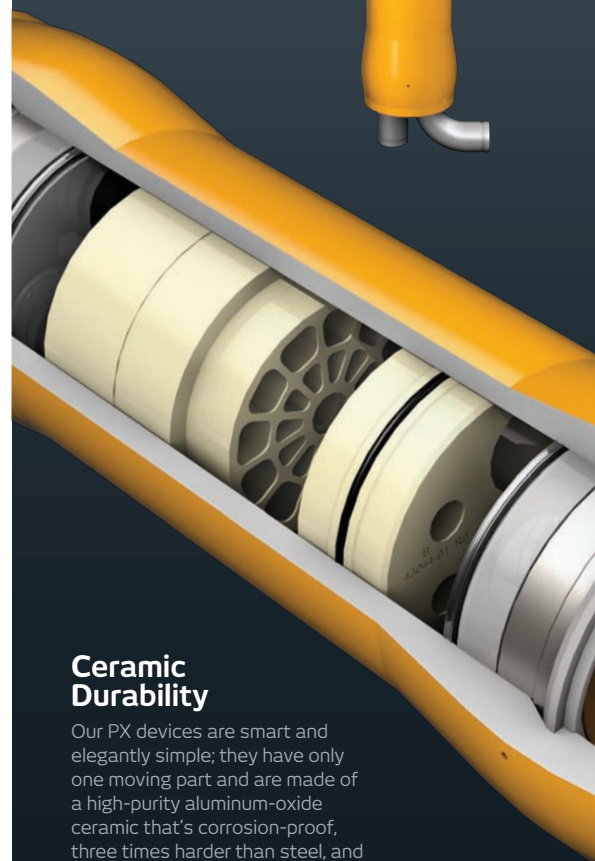
Carlos Cosin
International Director, Befesa

WHERE DESIGN MEETS ECONOMICS

After a quarter of a century, we're still raising the bar with innovative desalination solutions. Our flagship PX® isobaric technology is the most efficient and reliable solution on the market in energy recovery for desalination.

PX S Series®

- Designed for any size reverse osmosis desalination plant
- Delivers 96.8% efficiency
- Scalable solution



Ceramic Durability

Our PX devices are smart and elegantly simple; they have only one moving part and are made of a high-purity aluminum-oxide ceramic that's corrosion-proof, three times harder than steel, and provides unmatched durability.

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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