



**energy
recovery™**

CASE STUDY

The Challenge

Water Supply Needs at Odds with
Regional Demands to Lower Power Use



LOCATION

Marsa Alam, Egypt

PROJECT

Marsa Alam Water Plant

CAPACITY

1,500 m³/day

ENERGY SAVINGS

3,909,150 kWh per year*

CO₂ SAVINGS

2,305 metric tons per year**

* Energy savings based on client-provided data

** Equivalent to CO₂ emissions from 317 homes' electricity use for one year

The shoreline of the Red Sea is a dazzling destination for tourists and locals to experience the beach and enjoy marine activities. In Egypt, the shoreline sprawls from the Suez Canal in the north, down to the southern part of the country bordering Sudan. Though most of Egypt's population has traditionally lived in the Cairo metro area, migration trends show more and more residents are relocating to the coastlines. Given this migratory development, small coastal towns like Marsa Alam on the Red Sea now have huge demands to supply potable water to a growing population. Until recently, the Red Sea Water and Sanitation Company was operating an outmoded SWRO desalination plant and any increase in production would require a retrofit of the existing plant. In addition to the much needed plant upgrade, the Red Sea Water and Sanitation Company was tasked by regional authorities to simultaneously lower its power consumption.



The Innovation Solution

Retrofit with Energy Recovery's PX300 and VP3471 booster pump

To solve the plant's main issue of high power consumption, the upgrade of the old 500 m³/day plant to increase capacity to 1,500 m³/day required a high-efficiency solution. The Red Sea Company implemented two of Energy Recovery's PX[®]300 Pressure Exchangers with a booster pump to optimize the plant's energy usage. Energy Recovery's Team 360 and their proven track record of superior customer service, coupled with the maximum availability of the PX Pressure Exchangers, provided a win-win solution for the Red Sea Company.



The Result

Dramatic Energy Savings & Surge in Water Availability

By upgrading the Marsa Alam Water Plant with Energy Recovery's PX300, the Red Sea Company witnessed immediate reductions in total power consumption at the plant. The plant is now able to run at fully upgraded capacity using only one diesel generator set instead of two: a huge contribution to the overall energy savings. Furthermore, the project return on investment and implementation was exceptional, and the Marsa Alam region now has an abundant supply of fresh drinking water for its residents.

"By retrofitting with Energy Recovery's PX300, the return on the investment has been remarkable. The Energy Recovery support team served as expert advisers and demonstrated that we could significantly lower power consumption by two-thirds of previous levels – all without affecting water production."

Ragb Sobhey

Desalination Sector, Red Sea Water & Sanitation Company

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



Verticle Pump

- Compact vertical inline design
- Highest efficiencies
- Low energy consumption



About Energy Recovery Energy Recovery (NASDAQ: ERII) develops award-winning solutions to improve productivity, profitability, and energy efficiency within the oil & gas, chemical, and water industries. Our products simplify complex systems and protect vulnerable equipment. By recycling fluid pressure that would otherwise be lost in critical processes, we save clients more than \$1.4 billion (USD) annually. Headquartered in the Bay Area, Energy Recovery has offices in Barcelona, Shanghai, and Dubai. Learn more at energyrecovery.com.

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MK-W040023-R00

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