



# CASE STUDY

## The Challenge

British Virgin island dependent on reliable freshwater for GDP growth



Tortola is the largest British Virgin island in the Lesser Antilles with an approximate population of 24,000 residents. 92% of its Gross Domestic Product (GDP) comes from tourism where close to one million people visit the island every year. As with many island nations without natural aquifers, Tortola must produce all of its drinking water and demand is constantly high. Historically the island has supplied fresh water to residents and visitors through seawater reverse osmosis desalination, but current facilities in operation are deteriorating and this is having a deleterious effect on the island's environment and marine life.

In order to meet the island's growing demand for fresh water supply, Biwater was contracted to design a new, environmentally-sound desalination facility to provide high-quality fresh water to the island alongside wastewater treatment facilities.



### LOCATION

Tortola Island,  
British Virgin Islands

### PROJECT

Biwater Tortola

### CAPACITY

10,400 m<sup>3</sup>/ day

### ENERGY SAVINGS

8.2 million kWh per year

### CO<sub>2</sub> SAVINGS

4,862 metric tons per year

(equivalent to annual greenhouse emissions from taking 1,300 cars off the road)



## The Innovation Solution

# The PowerPlay for faster time to market with superior energy savings

Biwater selected Energy Recovery's PowerPlay integrated solution: PX Pressure Exchanger® 220 and the AquaBold high pressure pump. In island nations such as Tortola where power costs are high, Biwater chose the PX energy recovery device because it has the fastest payback than any other ERD in the market and allows the company to focus on delivering the highest quality water at the lowest price to the end user. In summary, by choosing the PX – AquaBold PowerPlay solution, Biwater is able to streamline the complex process of moving the Tortola plant from concept to operation. By combining the PX and the AquaBold, the Biwater Tortola project will enjoy faster deployment, longer life, and greater uptime.

## The Result

# Highest quality water for island's biggest industry



Inside the Biwater Tortola SWRO desalination plant

The Biwater Tortola plant will be able to supply residents and tourists with high-quality, affordable potable water. When operating at full capacity, the Tortola plant will produce 10,400m<sup>3</sup> of treated water per day, and with Energy Recovery's PowerPlay solution, the energy saved will be an estimated 9 million kWh per year - or the equivalent to taking 1,300 cars off the road. In addition to the new desalination facility, Biwater is also providing wastewater treatment facilities that will help better protect marine life in the vicinity. Once the desalination plant is online, the facility will boast the highest efficiencies possible with the Energy Recovery's PowerPlay.

**"The Energy Recovery PowerPlay with the combined ultra-high efficiencies of the PX and the AquaBold HPP, will help to give us the performance numbers we are seeking; the proven reliability and energy efficiency is a winning combination."**

**Ayman El Sersy**

Technical Director at Express Industrial Co. Hydro-Solutions

## 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



### Aquabold™

- Optimized performance
- Longer bearing life and wear cycle
- Casted, duplex metal for higher quality & availability



**About Energy Recovery** Energy Recovery Inc. (NASDAQ: ERIL) 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](http://energyrecovery.com)

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