BUSINESS

Water Desalination Makes Seawater Palatable

ERI's technology makes desalination affordable

By Julie Barsamian
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These days, when mankind finds a way to run a natural resource dry, it seems to find an answer to its replenishment. Gasoline prices in the U.S. are soaring, but alternatives abound in the form of ethanol, bio diesel, and even recycled kitchen grease.

In the past, when draught has reared its parched head, people turned to a multitude of things – water rationing, trading front lawns for yards full of quartz, even infrequent flushing. Thankfully, there is a highly effective and more practical answer to the world water crisis, in the form of water desalination.

> *"Everything is assembled here."*
>
> **— Richard L. Stover, ERI Chief Technical Officer**

San Leandro based Energy Recovery Inc. (ERI), founded in 1992, has developed a method to make water desalination simpler and far more affordable – in some cases, less than $2 for every 1,000 gallons. They use a method called reverse osmosis desalination coupled with their patented Pressure Exchanger energy recovery device. The device shoots a highly pressurized stream of water through a membrane which separates the salt from the fresh water. Then, the energy from the concentrated runoff water is actually recovered and used to process more fresh water before it is returned to the sea at the end of the cycle.

Thermal water desalination – via evaporation, has been used extensively in the middle east since the 40's. The U.S. and other parts of the world have been slower to adapt to this method of finding fresh water because it has long been expensive and criticized as wasteful.

A most recent and celebrated example of ERI's efficient technology in action is at the Perth Saltwater Reverse Osmosis Plant in Australia.

The plant supplies 17-percent of the city's water needs per day, is 97-percent efficient and has cut energy costs in half.

ERI's Pressure Exchanger technology is allowing for the spread of more affordable and less wasteful water desalination. The San Leandro company operates globally and establishes itself in parts of the world with a growing need for sensible water conservation – for example Algeria, Dubai, and Spain.

Despite the worldwide implementation of the device – which is fabricated from ceramic and has only one moving part – ERI has kept all of its assembly, research and development in San Leandro, according to ERI's Chief Technology Officer Richard Stover.

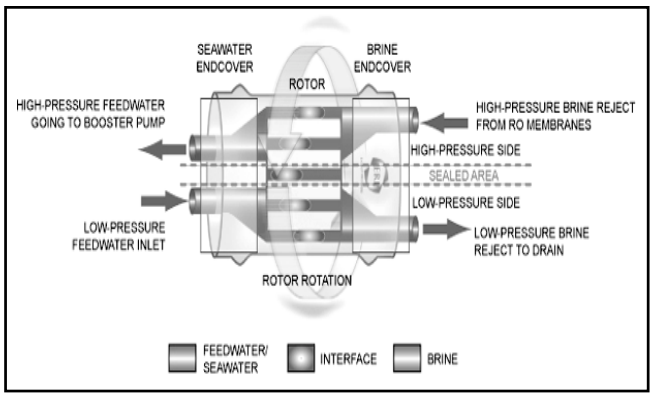
"Everything is assembled here," says Stover.

Stover also stated that sea water reverse osmosis desalination with ERI's technology or the similar technology of their competitors, has found its way into more Middle Eastern markets that traditionally use thermal desalination.

In order to ensure maximum efficiency of the Pressure Exchanger, ERI exhausts a multitude of tests on each product before placing it in the field, according to the company's Vice President of Manufacturing, Terry Sandlin.

"We can't send something half a world away and have it malfunction," says Sandlin.

To find out more about Energy Recovery's products or projects visit www.energyrecovery.com.



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A diagram of how the water is filtered in the pressure exchange device.

PHOTO BY JULIE BARSAMIAN

ERI's CTO, Dr. Richard Stover with the Titan Pressure Exchange device.