SEAWATER DESALINATION

- Affordable
- Reliable
- Environmentally responsible

Technological advancements are making seawater desalination a promising **new source of fresh water** for the US and around the world.

ADC

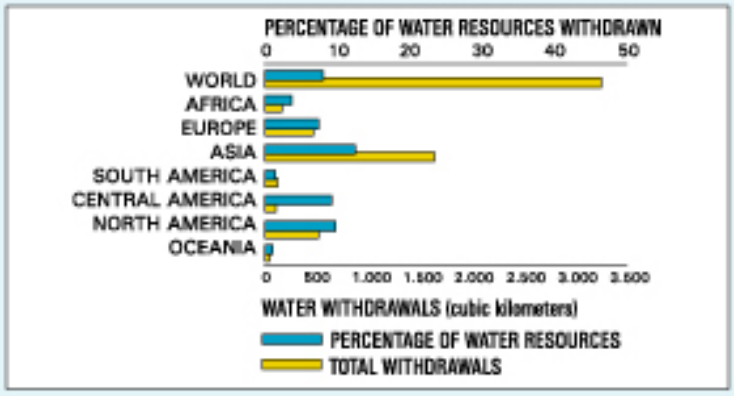
Background

Fresh, potable water is a scarce, indispensable resource required by people and industries. As the world population rapidly increases, fresh water usage is also growing, thus new methods are being created and investigated to meet this demand. Water scarcity has become a concern especially in the state of California due to the shrinking availability of traditional fresh water sources and the droughts that have severely affected the region.

The Affordable Desalination Collaboration (ADC), a California non-profit cooperation, is a group of industry leading companies, federal and state governments agencies, and water districts, working together to demonstrate that seawater desalination (SWRO) is now an affordable, reliable and environmentally responsible source for fresh water.

Mission

Globally, water supplies are abundant, but they are unevenly distributed among and within countries. In some areas, water withdrawals are so high, relative to supply, that surface water supplies are literally shrinking and groundwater reserves are being depleted faster than they can be replenished by precipitation.



Source: World Resources 1998 DataTable 12.1

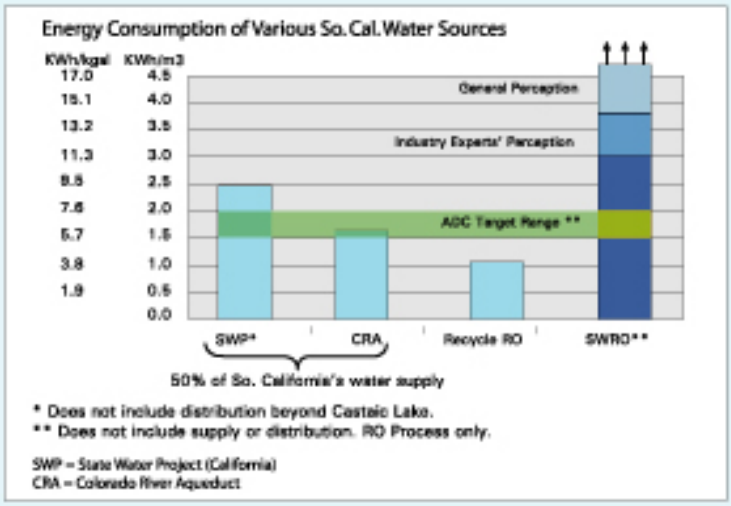
"What makes the use of seawater so appealing is most of the nations and areas with serious water shortages border the sea. And almost 70% of the world's population lives within 50 miles of the ocean."

Senator Paul Simon, Tapped Out, The Coming World Crisis in Water and What We Can Do About It.

The problem is that SWRO has historically been an energy intensive process, making it expensive and less acceptable. However, breakthroughs in SWRO technology have reduced this energy component significantly, making it an affordable, reliable and environmentally responsible source of fresh water. It is the mission of the ADC to demonstrate and communicate what SWRO can do today.

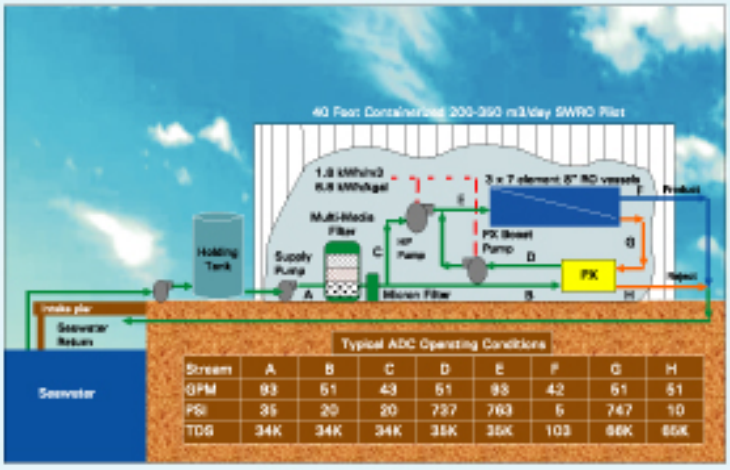
Goals

It is the goal of the ADC to operate and demonstrate SWRO at energy consumption levels between 5.7-7.6 kWh/kgal (1.5-2.0 kWh/m3) using proven designs and technology. These energy consumption levels approach or are below traditional water sources for areas such as Southern California. See graph below.



Process

The ADC will build and operate a full scale, state of the art SWRO plant using today's best available materials, components and processes. No prototypes or experimental components will be used because the purpose of the project is to demonstrate what can actually be done today. The modular system design will facilitate easy scale-up and the data should be reproducible at other seawater locations.



ADC Pilot Design and Installation

Conclusion

Recent developments in seawater desalination offer an opportunity for a new source of drinking water for both the US and world. Many political conflicts are generated by water rights and affordable desalination can now provide an opportunity to ease these tensions. Additionally, these state of the art technologies are less damaging to our environment, thereby removing one more barrier to embracing seawater reverse osmosis as an affordable and environmentally responsible source of potable water.

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