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(Photo courtesy of CH2M Hill)

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The World of Desalination

"If we could ever competitively, at a cheap rate, get freshwater from salt water at a low cost, that would indeed be a great service to humanity and would dwarf any other scientific accomplishment."

— President John F. Kennedy, 1962



In July, I traveled to Israel to tour facilities and meet with solutions providers as a part of the Water & Energy Environmental USA Press Tour. The trip increased my awareness of areas in which the U.S. water and wastewater industry excels as well as those in which we have room for improvement.

A walk-through of the Hadera seawater reverse osmosis (SWRO) desalination plant—the largest such facility operating worldwide—proved to be the highlight of my weeklong excursion. It also suggested to me that here in the U.S. we have progress to make in terms of desalinating water cost-effectively and energy-efficiently.

Commissioned in 2009, the 127-million-cu-meter-per-year Hadera plant brings in water from the Mediterranean Sea to produce high-quality (personally taste tested) potable water at a cost of about 60 cents USD per cubic meter. The 118-million-cu-meter-per-year Ashkelon SWRO plant, located about an hour's drive away, was commissioned four years earlier and produces water for a few cents less per cubic meter.

Singapore is another nation we should look to form a desalination alliance with so as to exchange information, ideas and experiences. The island country is building its second and largest SWRO desalination facility, scheduled to begin 320,000-cu-meter-per-day operations in July 2013. Singapore's 136,000-cu-meter-per-day Tuas SWRO plant has been operational since 2005, with a first-year water selling price of less than 50 cents USD per cubic meter.

It doesn't take a crystal ball to see that our global future holds population growth and increasing water scarcity. For years, desalination has been discussed and tested as a promising piece of the solutions puzzle, both domestically and abroad. Over the past decade or so, the full-scale applications President Kennedy dreamed of finally have become a reality. But we mustn't go this road alone: As we fine-tune U.S. desalination facilities and build new ones, we need to turn to our peers overseas to collaboratively advance the common goal of protecting global water quality.

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