

Oceans of Opportunity

by Lisa Gray Apr 12 2007

The world needs more water and one company thinks it's found a way around some of the problems with desalination plants. Has its ship finally come in?



Photo by: Sarah Wilson

(Photo: Water Standard's chief operating officer, Amanda Martin Brock)

The problem: Water—freshwater, the kind used to wash clothes and flush toilets—is becoming scarce. Growing cities demand more even as pollution shrinks the supply. Goldman Sachs analyst Deane Dray calls it “the petroleum for the next century.”

In California, a desperate need for water has collided with the country's toughest environmental regulations. Desalination plants are among the leading proposed solutions, but detractors worry about the damage to marine life these can cause.

As a standard desalination plant removes salt from seawater, it causes harm not once but twice: First when large amounts of marine life are sucked through a long, narrow pipe to shore along with the water, and again when the plant discharges its waste product—hot, extra-salty brine—into the ocean.

The proposal: Put a desalination plant on a boat. Water Standard, a Florida-based company started by entrepreneur Andrew Gordon, proposes to build “seawater conversion vessels,” tankers that would send an intake pipe into water below the level sunlight reaches, where few organisms live.

Because the pipe would be shorter and thinner than those required by land-based facilities, the shipboard desalination plant could draw in seawater less forcefully, inflicting less harm.

Onboard the ship, the briny waste from the desalination process would be mixed with enough seawater to give it almost the same salinity and temperature as the ocean, at which point it could be released safely.

Icing on the eco-cake: Because pipelines might disturb the sensitive ocean floor in places like California's Monterey Bay National Marine Sanctuary, freshwater produced onboard would be carried ashore by special tankers, while the desalination ship itself maintained its position with an anchor. Also, the ship's power plant would have the capacity to run on biofuel.

Other bonuses: One ship could produce as much as 50 million gallons of drinking water a day—enough for hundreds of thousands of people. Permits for a shipboard desalination plant would be far easier to obtain than permits for a land-based one, saving time and money. Water Standard estimates that it could have a desalination ship ready for service in 14 months, whereas a land-based plant can take two to five years to build.

Will it work? "Desalination is something we're going to have to do, and I think the only way to do it is out in the ocean," says marine biologist George Somero, director of the Hopkins Marine Station at Stanford University. He's impressed by Water Standard's scientific advisers: "They've been doing their homework."

"It's a concept company," says Goldman Sachs analyst Dray. He notes that though Water Standard has yet to generate revenue, it has registered patents, its technology is proven, and the desalination market is established and growing. "What's left," he says, "is the execution." That part has become a little easier because state-of-the-art reverse-osmosis technology requires much less energy than it needed in the past. Factor in the rising cost of freshwater and desalination becomes feasible in more places than ever.

The Monterey Peninsula's water-management district is reviewing Water Standard's proposal. Amanda Martin Brock, Water Standard's chief operating officer, says that if her company could operate in the most environmentally regulated state in the U.S., it would prove that it can operate anywhere. (Besides California cities, Water Standard is eyeing urban areas in Texas, Florida, Australia, and Saudi Arabia, among others.)

And the ships' mobility presents interesting options. Brock says ships could be dispatched to areas affected by drought or natural disasters to provide short-term assistance, and that a single ship could serve several communities by moving regularly from spot to spot. She also points out that Water Standard would be able to take on risky developing nations as clients—if a government refused to pay, the plant could sail elsewhere, protecting the company's investment.

