

California Turns to the Ocean for Drinking Water

With no letup seen for drought, coastal cities build more desalination plants despite high cost

Jim Carlton, Wall Street Journal, 2-17-15

SANTA BARBARA —California's four-year drought is putting a new spotlight on a plentiful but costly water alternative: ocean water, minus the salt.

This Southern California beach city may spend up to \$40 million to update and reactivate a desalination plant it mothballed after another drought ended about 24 years ago.

With its local reservoirs at less than 30% of capacity, the City Council voted in September to pursue reopening the facility, which can turn sea water into the equal of nearly three-fourths of Santa Barbara's normal demand for drinkable water.

While desalinated water will cost about a third more than the city's imported freshwater supplies, Mayor Helene Schneider said other options, including more conservation, have been exhausted for the city of 90,000.

"It should be the source of last resort—and the reality is we are getting to that place of last resort," Ms. Schneider said.

Desalination is widely used in other parts of the world, including the Middle East, but has been slower to catch on in the U.S. One reason: It takes a great deal of electricity to separate the salt from water, making the process unattractive for communities that have cheaper sources.

In California, desalination commonly takes place by a process called reverse osmosis, which entails running ocean water through permeable membranes to separate out salt. The salt is returned to the ocean as a brine solution.

Poseidon Water, a Boston company that develops water systems, is using \$1 billion in private financing to construct a desalination plant in Carlsbad, Calif. It aims to provide the San Diego County Water Authority with about 8% of its water, at a cost up to twice that of water the agency imports from northern California.

Israeli-based IDE Technologies will operate the facility under contract with Poseidon.

With no end in sight for the drought, more communities are looking to desalination. The Orange County Water District in January voted to negotiate to buy water from another \$1 billion Poseidon plant, to be built in Huntington Beach, Calif., pending final permits.

The district, which provides water to agencies that serve 2.4 million customers, needs the supply to help refill an aquifer that gets drawn down during the region's frequent dry spells, board President Cathy Green said. "People are looking at sustainable resources, and that's why we're looking at desal," said Ms. Green, also a former Huntington Beach mayor.

As of 2013, there were 26 desalination plants in California—up from 18 in 2006, according to the most recent data. Some are operated by government authorities while others are privately run.

In the Central Coast town of Cambria, water managers in November got a desalination plant running six months after filing an emergency request with the state when local wells sank to dangerously low levels. The \$9.5 million plant produces water from an aquifer that has become brackish from seawater.

“There was a clarity that we need to move now,” said Gail Robinette, board president of the Cambria Community Services District that serves the town of about 7,000. The district, she said, already had taken drastic conservation measures.

Critics of desalination contend the plants hurt the environment by, among other things, using large amounts of electricity and sucking fish eggs and microorganisms into water intake pipes that often rest in the open ocean.

“We think it’s the stupidest, most environmentally harmful water alternative possible,” said Kira Redmond, executive director of Channelkeeper, an environmental group in Santa Barbara.

Plant operators say the intake pipes are equipped with screens to minimize ocean kill. Some plants, including one near Monterey, Calif., proposed by a subsidiary of American Water Works Co. , use pipes below the ocean floor to reduce fish kill.

The \$343 million plant, which is nearing final regulatory approval, would produce nearly half the water needed for about 100,000 residents on the Monterey Peninsula.

Critics also contend the costs are excessive given how little water the plants produce. “It would take putting a plant every 2 to 3 miles in Southern California to equal what we get from the mountains,” said Conner Everts, co-chairman of the Desal Response Group, a nonprofit in Santa Monica, Calif.

For many communities, the higher costs will be borne by taxpayers like Steve Kellogg, a 75-year-old retired biology instructor in Cambria. To help pay for that town’s new plant, his bill for two months of water use jumped 20% to \$112. “To me, it’s not that big a deal,” Mr. Kellogg said. “It’s nice to have the backup when we move to the next crisis.”

Industry supporters say the costs have dropped and are likely to continue to decrease as technology advances. Desalination, they add, won’t ever completely replace other water supplies.

“It’s never going to be a silver bullet, but it will be an important tool in the toolbox,” said Scott Maloni, a Poseidon vice president of project development overseeing the California plants.