

U.S. NEWS

California Gives Desalination Plants a Fresh Look

Process to Make Seawater Drinkable Gains Traction, but Environmentalists Object to Heavy Energy Use, Harm to Marine Life

By SABRINA SHANKMAN

Early next year, the Southern California town of Carlsbad will break ground on a plant that each day will turn 50 million gallons of seawater into fresh drinking water.

The \$320 million project, which would be the largest desalination plant in the Western Hemisphere, was held up in the planning stages for years. But a protracted drought helped propel the project to its approval in May—a sign of how worried local authorities are about water supplies.

“Water is going to be very short until you have a new source,” said Carlsbad Mayor Claude Lewis. “And the only new source is desalination, I don’t care what anybody says.”

The desalination plant would use water that flows by gravity

from the ocean across a man-made lagoon and into the facility through 10 large pumps. The plant would then blast it through a filter, extracting fresh water and leaving behind highly pressurized salty water. The process would provide enough water for 300,000 people each day.

Government agencies have opposed desalination because of the process’s energy consumption. The desalination plant would use nearly twice as much energy as a wastewater-treatment plant available in Orange County. Environmental groups also object because fish and other organisms are likely to be sucked into the facility.

“Eventually, people will have to realize, it’s either fish or children,” Mr. Lewis said.

Desalination is most commonly used in such places as

Saudi Arabia and northern Africa, where fresh water is scarce.

But in Southern California, authorities are increasingly desperate. Huntington Beach, in Orange County, is planning to break ground on its own desalination plant in 2010. Another plant is in the works at Camp Pendleton, just north of Carlsbad, in San Diego County.

Since January 2008, Orange County has been using a \$487 million groundwater-replenishment plant to recycle 70 million gallons of water each day. The city of Los Angeles is flirting with a plan to do the same.

Even at a time when budgets are strained, authorities are willing to push ahead on costly projects. The Camp Pendleton plant is expected to cost between \$1.7 billion and \$1.9 billion; the Carlsbad plant will cost

less because it is using a pre-existing power plant.

Half of the water in Southern California is imported from two sources: the State Water Project, which draws from the Sacramento River Delta in Northern California, and the Colorado River, which runs along the state’s southeast border. Local authorities need to cobble together the rest from groundwater, recycled or surface water, and imports from elsewhere in the state.

But exports from the Colorado River were cut by half—to nearly 180 billion gallons—in 2003 because of drought. The levels have risen since then, but now come with a 20% higher price tag. Pumping from the State Water Project has been cut by 40% from 2006 levels.

Scientists and water authorities are pushing for more water re-

cycling, conservation and water-use restrictions, as well as cleaning up the groundwater supply.

But increasingly they are also considering desalination.

“We don’t encourage people to put in a desalination plant unless they need one—unless they don’t have any other options,” said Lisa Henthorne, president of the International Desalination Association.

Officials in Carlsbad began discussing desalination in 1998 and planned to open the plant this year. But opposition was fierce.

The Surfrider Foundation and San Diego Coastkeeper—two local environmental groups—argue the plant would be disastrous for marine life, “killing everything that floats” near the plant’s intake, said Surfrider’s Joe Geever.

The permitting process con-

tinued for six years, and included 14 public hearings that ran a total of 170 hours and included five revisions to the plan.

Throughout the process, Scott Maloni, vice president for Poseidon Resources, which is developing the Carlsbad and Huntington Beach desalination plants, said he kept an eye on the situation. “No doubt that the drought played a role in the approval,” he said.

“Hopefully Poseidon will be extremely successful,” said Mr. Lewis, the Carlsbad mayor. “If they are, we’ll see lots of these kinds of plants popping up all along the coast. If they’re not, it’s going to be a long road.”

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The Encino Power Plant, planned site of a desalination plant in Carlsbad, Calif., can be seen from the beach in the Southern California city. Early next year, Carlsbad will break ground on the plant, which will have the capability to supply 300,000 people with fresh drinking water every day. Carlsbad Mayor Claude Lewis, right, said desalination is the best option for his city, which is struggling to secure adequate fresh water sources.

Parched State Searches for Ways to Expand Water Supply

By JIM CARLTON

SAN FRANCISCO—When California’s budget impasse is settled, Gov. Arnold Schwarzenegger will have to deal with the state’s other big crisis: fresh water.

Gov. Schwarzenegger and other top lawmakers have already drafted plans to attack a severe water shortage in the state, which has suffered a three-year drought.

As soon as the stalemate over how to bridge California’s \$26.3 billion budget gap is resolved, the governor and legislative leaders plan to introduce a package of water-related measures calling for more water conservation and an estimated \$10 billion bond measure to finance more fresh water storage.

“We’re going to get that water done this year,” said Gov.

Schwarzenegger last month at a budget speech in Fresno, Calif. “This is the year of the water. It’s that simple.”

Water is anything but a simple issue in California, where politicians have long fought over how to divvy up one of the West’s scarcest resources.

With some of California’s reservoirs now holding as little as 21% of capacity, 60 urban water districts have instituted mandatory water conservation, up from six last summer. The current drought is hurting the state more than in the past, partly because California’s population has grown to 38 million people, from 29 million two decades ago.

State officials warn the situation could worsen. “If next year is average or below average in water, we’ll have very serious problems,” said Lester Snow, director of the California Department of Water Resources.

One complication is a thicket of recent environmental restrictions that curtail how much water can be used.

In 2007, a federal court in Fresno ordered water managers to protect the ecosystem of the San Joaquin-Sacramento River Delta, in part by reducing how much water is pumped through it. That cut water shipments from the mountains of Northern California to arid Southern California by about 30%.

Mr. Snow estimates roughly a quarter of the state’s current water shortfall—which he calculates at about two million acre-feet—is due to the protections. An acre-foot is 326,000 gallons, or the average amount of water a family of four uses in a year.

Fixing the way water moves through the delta is now central to the water package that the governor and legislative leaders are pushing.

One idea is to build a new canal to circumvent the delta. California voters rejected a similar proposal in 1982, partly over concerns it would cost billions of dollars. So before calling for a new canal, lawmakers are drafting bills to create an oversight body to iron out details of what the delta needs, said state Assemblyman Jared Huffman.

Another cornerstone of the package is providing more water storage. California’s reservoir system was established decades ago, when the state’s population was smaller and before climate changes began yielding more rain instead of mainly snow. That change has made it more difficult to capture runoff in reservoirs because rain flows too fast to be captured without causing flooding, Mr. Snow said.

But even as Republicans and Democrats have hammered out a

water package in a rare show of unity here, any big-ticket water projects are likely to face intense opposition from environmental groups.

The groups say California already has 1,400 dams and that lawmakers need to fix leaky pipes, as well as better manage state groundwater.

“It’s not dams that are needed,” said Jim Metropulos, a Sacramento lobbyist for the Sierra Club. “You need to expand the existing water supply.”

Some legislators say dams have to be part of any possible solution because future water supplies are likely to remain precarious.

Meanwhile, local water districts are trying to cope.

On July 1, the Metropolitan Water District of Southern California reduced supplies of imported water to the agencies it

serves by 10% from levels that already were down 10% last year. As a result, the Rancho California Water District, a Riverside County agency that gets much of its water from the agency, was one of several that implemented mandatory conservation measures that day.

Among its new mandates to 42,000 customers: no watering of lawns and gardens between 7 a.m. and 8 p.m., fix leaky faucets and wash only full loads of laundry and dishes. Restrictions have been imposed in more than a dozen other water districts across Southern California, including in Los Angeles and San Diego.

Such measures are likely to become more common. “This is a forever change, that customers will have to start internalizing,” says Jennifer Persike, spokeswoman for the Association of California Water Agencies.