

Desalination

Reliable Tool to Increase State Water Supply

Summary

Background

Desalination is a process that removes dissolved minerals from seawater, brackish water or treated wastewater. Reverse osmosis, distillation, electrodialysis and vacuum freezing are some of the technologies used for desalination. These plants may use seawater, brackish groundwater or reclaimed water as feed water. In plants that produce water for domestic use, post-treatment processes are used frequently to meet health standards for drinking water. The product water usually exceeds drinking water standards and often is blended with other water sources to increase yield. The process is not new; Israel and Kuwait have relied on desalination for decades, as have military vessels and cruise ships.

According to the California Coastal Commission, there are about a dozen existing desalination plants on the California coast, both public and private, with an additional two dozen in the planning process. Many much smaller (mostly private) projects desalting brackish water or groundwater exist in the Central Valley. The Department of Water Resources reports there are 26 desalting plants operating in California that provide water for municipal use. The total capacity of these plants is approximately 84,000 acre-feet per year. That is in sharp contrast to the amount of desalination in the Middle East and North Africa, where desalination plants supply more than half of the freshwater consumed, or to Saudi Arabia, where 70 percent of water supply needs are met through this medium. In fact, the world's largest plant is located in Saudi Arabia and produces 128 million gallons per day.

Historically, the cost of desalination plants has been significantly higher than other water sources in California. Although cost has dropped by a third in the last decade, desalination still costs about three times as much as some other water sources. However, California's prolonged drought, the continuing drought on the Colorado River and recent court-ordered water delivery curtailments, combined with advances in desalination technology, have made this option more viable.

On November 3, 2009, the company Poseidon Resources was finally issued its Coastal Development Permit from the California Coastal Commission, clearing the way for the start of project preconstruction. Poseidon first introduced its Carlsbad Desalination Project in 1998 and initiated the permitting process in 2003. It has spent the last six years obtaining permits for the project, a process that included more than 15 public hearings and 80 hours of public testimony and deliberation. Over this period, the city of Carlsbad, the California Coastal Commission (two hearings) and the San Diego Regional Water Quality Control Board (six hearings) all approved the project. The project will provide enough drinking water to serve 300,000 residents annually at a guaranteed price. The project is scheduled to be operational in 2012.

Current Federal/State Policy

Under current California policy, siting a desalination plant is challenging. It requires many permits, such as a local land use permit, water discharge permit, drinking water permit, Energy Commission permit, State Lands Commission permit and, if in the coastal zone, a Coastal Development Permit, just to mention a few. Of course, an environmental impact report also has to be completed. Current federal law requires permits under the Clean Water Act and, given the locale, permits under the River and Harbors Act, at minimum.

Impact on Business, Employers, Economy

Desalinated water is undoubtedly more expensive than other more traditional sources of water. It may be more reliable in the future, however, especially if the plant is located on the coast. Whenever production costs increase, there is a direct and corresponding increase in the cost to deliver products, goods and services. In good economic times, businesses can recoup their costs in the marketplace, but in the current down economy, it is likely business will have to absorb the loss.

Anticipated Actions

Poseidon has requested a \$250 per acre-foot subsidy for its Carlsbad Desalination Plant from the Metropolitan Water District of Southern California to offset the cost of producing water. It

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is likely that the subsidy will be granted. The company also has requested \$530 million in tax-free private-activity bonds from the state of California to finance construction.

Several more desalination plants are in the planning stages. These facilities need support from surrounding businesses and local chambers of commerce to bring them online as soon as possible. There is strong opposition from some environmental groups concerned about the possibility that the plants will endanger marine life by dumping concentrated levels of brine and bacteria back into the sea. The opponents also fear that increasing the water supply will encourage an even bigger population increase.

The water bond legislation that passed in November 2009 contains funding in a couple of categories that can be applied to help fund more desalination plants. The plants qualify as new stable sources of water not derived from the Delta and they also could qualify in the inter-regional water program. Desalination is one of several tools to augment water supplies recommended by the California Water Plan, which outlines the state's plan to manage water into the future. Each of the last couple of water bonds has contained funding to promote and encourage more desalination as a means to help establish reliable local sources of drinking water.

CalChamber Position The California Chamber of Commerce supports a balanced approach to securing a safe and reliable supply of water for all businesses and residents of California. Desalination, like recycling, water reuse, water use efficiency, conservation and new storage, should be pursued to help increase water supply. Permit streamlining should be undertaken to expedite the approval process.

Reasons for Position

- Desalination can increase the supply of water more quickly than some other more traditional methods.
- Desalination is a proven technology that has been successfully used in arid countries with a scarce water supply.
- The most recent California Water Plan specifically recommends desalination as a tool to increase the state's water supply.

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