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State's desalination prospects downplayed

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By Tony Davis

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Arizona shouldn't count too heavily on desalting seawater as a solution to its water problems, said the chairwoman of a committee that wrote a national report on the use of salt water.

In a report released Thursday, the National Academy of Sciences painted a generally optimistic outlook for desalination, since it costs a lot less and uses a lot less energy than it used to.

Environmental effects of desalting seawater still present "substantial uncertainties," the report said. They include the effects of depositing back into the ocean the salt left over from the desalting process and the effects on fish and other aquatic life that get caught in the desalination plants as they take in seawater, the new report said.

But while technological fixes exist for environmental issues, it would be risky for Arizona to rely on desalination, said Amy Zander, the academy report's committee chairwoman and a professor of interdisciplinary engineering and management at Clarkson University in upstate New York.

Arizona officials are looking closely at desalination, said Arizona Water Resources Director Herb Guenther.

He calls desalination the ultimate solution to the state's water problems.

One possibility, now under review, is to build a plant in the Kino Bay-Rocky Point area of Sonora. Another is working with California to build desalination plants along the coast. Getting a plant built in Mexico could take 12 to 20 years, but it could take 50 years before salt water can replace a large portion of Arizona's current supply, he said.

A quicker way might be for Arizona to pay California for plants in exchange for some of California's Colorado River supplies, Guenther said.

But the biggest uncertainty for desalination is that it still needs a lot of energy, raising economic and environmental concerns unless renewable sources such as solar energy make large advances, the academy panel chairwoman said.

"The energy prices are not known and are likely to increase," Zander said. "You'll also have greenhouse-gas emissions from most energy sources. It is a piece of the portfolio, but is it the entire solution? That's unlikely."

Today, desalinating seawater on the California coast costs \$600 an acre-foot. The city of Tucson pays \$112 an acre-foot for Central Arizona Project water from the Colorado River. An acre-foot is 325,851 gallons.

One reason some officials pin high hopes on desalination is that saltwater supplies are so plentiful.

More than 97 percent of Earth's water is seawater or brackish groundwater. Desalination accounts for 0.4 percent of the country's water supply. But a desalination plant now exists in every state, including the long-closed Yuma desalination plant along the Colorado River. The nation's capacity of plants to desalinate water grew by 40 percent from 2000 to 2005.

Theoretically, desalination's potential is unlimited, but its real potential can't be determined because of a host of complex economic, social, environmental and political factors, the report said.

These factors are far more important than technology in limiting desalination's potential, said the report. A strategic research effort to resolve environmental issues and lower costs can make desalination more attractive, the report said.

Currently, plans for 20 to 25 desalination plants are in progress along the California coast. One has been approved, for the San Diego suburb of Carlsbad. Opponents are challenging the approval in court.

Colorado River water supplies are expected to be a continuing concern for Arizona, including Tucson, because numerous studies have predicted that global warming will cut the river's flow 6 percent to 45 percent.

"To some degree, we are borrowing water from the future right now," Guenther said. "We are using some renewable resources but we will have to replace some interim supplies," such as groundwater, he said.

Regarding desalination's cost, he said, "We are kind of spoiled by cheap water. What is your alternative? If an acre-foot serves a family of five, and if your average family had to spend \$600 a year for water, that is \$50 a month. That is not unheard of."

It would probably take a boost in nuclear energy to make desalination more feasible, he said. The seven river-basin states are working on their own feasibility study on desalination as a way to augment Colorado River supplies. It is to be finished within a year.

To get access to California's Colorado River water would require legal steps, he said: a contract with the U.S. Bureau of Reclamation, an agreement between Arizona and California and possibly federal legislation.

"I would not want to speculate at this point" when or if Arizona and California could cut a deal to get Arizona some of California's river water, said Gerald Zimmerman, executive director of that state's Colorado River Board, which represents California in negotiations over the river.

Transferring that river water to Arizona is not likely to be free, academy panelist Zander said.

"I think Arizona had better look very carefully at cheaper options such as water conservation, rather than look to greatly increasing the supply through something as currently expensive as desalination," she said.

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