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If Water is the Next Oil...

By Fred White

The rapid rise in energy costs has been catching much of the media spotlight these days. But there is major concern over the global shortage of another critical resource: water.

Water abundance, or paucity, affects manufacturing factory location and expansion plans globally. In dry areas across the globe, though, various vested interests compete for ever scarcer water.

"The need to feed up to two billion more people by 2025, booming industrialization in developing countries like China, and a warming climate seen threatening the world's most precious natural resource has investors serious about water," according to [Reuters](#) in a report last summer. "The United Nations Human Development Report for 2006 said that by 2025, if current global water consumption continues, more than 3 billion of the world's 7.9 billion people will be living in areas where water is scarce."

The article added that fresh water supplies in the United States are shrinking. The author, Christine Stebbins, noted that water levels in the Great Lakes have fallen, and an aquifer that extends from Nebraska to Texas has dropped 30 feet in some areas.

The warmth (and beauty) of the Southwestern states has led to a huge influx of people from colder climes, leading to fierce competition and high demand for water. Simultaneously, a study last year that compared the most recent drought in the Southwest U.S. with other dry periods going back 508 years confirmed worries that water shortages will become more common and severe.

The study, detailed in the May 2007 issue of the journal *Water Resources Research*, examined growth rings in trees throughout the Colorado's vast drainage basin from New Mexico to Wyoming, is the first to look at five-year periods such as the 2000-2004 drought, [LiveScience](#) reported of the study's findings.

The researchers found that as many as eight droughts similar in severity to the most recent one have occurred since 1500.

In the face of looming shortages, companies and municipalities have taken action.

One project has involved water banking. Some central Arizona communities and a private-sector firm developed a "New River-Agua Fria River Underground Storage Project (NAUSP) to manage much of the Salt River Valley's limited water supply," according to [SRP](#), which operates the NAUSP with partners. (SRP is two entities: the Salt River Project Agricultural Improvement and Power District, a political subdivision of the state of Arizona; and the Salt River Valley Water Users' Association, a private corporation.) "Through artificial groundwater recharge, water is retained in [217-acre], porous earth basins and allowed to seep into the natural underground aquifer below."

The NAUSP project is intended to be "a low-cost alternative to other storage options, such as reservoirs, while increasing the amount of water that can be stored for the future for Valley homes and businesses."

Outside the U.S., the water scarcity situation also demands attention.

For some of us, this may seem incredulous.

"There is plenty of water, but it is too often in the wrong place at the wrong time, and in the wrong form," Managing Automation pointed out in a July 2007 feature entitled [This Thirsty World](#). "Only 1 percent of the earth's fresh water is available for drinking."

Looking abroad, we see another technological fix for a parched community in Western Australia. By 2010, around 86,746 acre feet (107 GL/year) of new water will be required to meet the rising demands of a growing population, which is already about 1.5 million.

"Although Perth sits on the Swan River, a growing population coupled with a climate becoming hotter and drier has put increasing pressure on the city's water resources," according to [Water-Technology.Net](#):

With the official opening of the Perth Seawater Reverse Osmosis Plant in November 2006, Western Australia became the first state in the country to use desalination as a major public water source... . Ultimately supplying 17 percent of Perth's needs, the plant will be the largest single contributor to the area's integrated water supply scheme and provide an annual 36,482 acre feet (45 GL), to help serve the 1.5 million population.

As water increasingly becomes a rarer resource, fierce competition will increase.

In fact, in addition to Australia and the U.S. Southwest, "conflicts over water rights" are already taking place elsewhere around the globe, from sub-Saharan Africa and the Middle East to India and eastern Asia, as Reuters noted. And with demand for water rising, investors will pour money into technology, equipment, project construction and research to help many nations' dry regions cope with their water shortage.

"One expert estimates that in the next 25 years, trillions of dollars will be needed to upgrade fresh water and wastewater technology and build new infrastructure to deliver water, with the bulk of that money to be spent in Asia," Reuters said.

As such, researchers have been experimenting with various media to produce new low-cost water filters. As a result, costs are coming down and effectiveness is rising. Investors still have plenty of opportunity to support further research because the range of water contaminants remains broad — arsenic, metals, pathogens, oil, nitrogen and much more.

Resources

[Thirsty World Captures Investors' Attention](#)

by Christine Stebbins
Reuters, May 2, 2007

[This Thirsty World](#)

by Robert Malone
Managing Automation, July 16, 2007

[Long History of Southwest Droughts Confirms Looming Water Shortage](#)

by Robert Roy Britt
LiveScience, May 26, 2006

[Underground Water Banking Projects](#)

SRPnet.com

[Perth Sewater Desalination Plant, Seawater Reverse Osmosis \(SWRO\)](#)

Water-Technology-Net.com

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