

EMERGING TRENDS Q&A: MANAGING THE GLOBAL WATER CRISIS OFFERS NEW BUSINESS OPPORTUNITIES

Q&A



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Overview

A changing climate, increased agricultural and industrial use, population growth and other global factors have led to a variety of concerns about the management of the earth's water resources. From higher water bills and the decimation of crops by months or even years of drought to armed conflict over rapidly diminishing natural resources in places like Darfur, the growing water shortage underscores the need not only for comprehensive conservation plans and re-allocation of water resources, but also the development of new technologies and facilities that allow us to convert non-potable water into fresh drinking water—essentially harnessing what many investors and commodities traders are dubbing “blue gold.” Here, we speak to Pillsbury partners Sheila Harvey, an environmental lawyer and head of our Global Climate Change & Sustainability practice in Washington, DC and noted Houston environmental partner and former NOAA general counsel Tom Campbell to talk about proposed business and regulatory solutions to the global water crisis and how diverse stakeholders are affected.

Q. Why are we experiencing a water crisis now?

Harvey: First is the demand factor; the world's population is growing and consuming more water—more than many traditional sources, such as underground aquifers and surface reservoirs, can reliably sustain. This is not just an issue for developing countries (indeed the U.N. sees water scarcity as a big factor in the dismal situation many women in developing countries face) but also for places like California and the southeast region of the U.S. For example, in California hundreds of proposed community development projects have been denied permits because there simply isn't enough fresh water to support them.

Secondly, only a portion of the world's water—that is, freshwater that is accessible, uncontaminated and treatable—is actually fit for consumption. The World Health Organization estimates that more than 20 percent of the world's population lacks access to safe drinking water. And the effects of climate change will likely only increase the problem. The

Intergovernmental Panel on Climate Change estimates that up to an additional 250 million people could have limited access to potable water within the next 20 years and that doesn't take into account water needs for agriculture, livestock and industrial use. Pollution and other consequences of population growth and industry have the potential to further deplete water resources.

Q. How are prospects for a water crisis playing out on the legal front?

Campbell: Reality is hitting home on a number of fronts. Throughout the country, local governments are reclaiming control over municipal water systems—often the same water works that were recently privatized. We may see more border disputes, such as one currently between Georgia and Tennessee, over where a controversial 19th-century survey set Georgia's boundary with respect to the Tennessee River—a skirmish one wonders would merit struggle if water were not in short supply. There is also a dispute between Georgia, Alabama and Florida regarding access to waters from the Apalachicola, Chattahoochee and Flint rivers. The problem centers around Georgia, which the two other states say is extracting a disproportionate share of water through Lake Lanier, reducing their own water supply downstream. Federal law requires that when a river flows between two or more states, each state has equal rights to water. In Feb. 2008, the U.S. Court of Appeals ruled that a 2003 agreement reached between Georgia, the Army

Corp of Engineers and Atlanta-area water users was illegal and that the federal government must ultimately decide how to distribute the water throughout the region. Governor Crist of Florida said he would continue to work with Governors Riley (Alabama) and Perdue (Georgia) to resolve all long-term water conservation issues facing the states.

Q. What are the worst-case scenarios?

Harvey: Famine and deaths resulting from drought, and natural resource-related political instability and warfare are the most devastating scenarios. News stories recently highlighted a Congressional report conducted by U.S. intelligence agencies asserting climate change and a resulting water crisis posed a true threat to the country's security. Water is worth fighting over, it is that simple.

In less-tragic economic terms, you could see a painful adjustment for businesses and consumers as they deal with the increasing cost of water in the coming years. In this respect, the situation may be similar to the one we now face with the cost of gasoline, which, like water, had been viewed by many as infinitely plentiful at historic price levels. And just as with rising gas prices, which have resulted in some manufacturers now opening local plants instead of relying on a central factory in the U.S. or overseas to cut transportation costs, limited water supply could lead to a complete change in how companies operate.

Q. Three quarters of the planet is covered by oceans—what technologies are available to convert seawater to fresh water?

Campbell: Desalination is a proven path to drinking water, and is already common in the Middle East and Mediterranean regions, but faces an uphill road in many markets, especially the U.S. Desalination has its own unique challenges, including huge capital costs to build plants—and operators' wishes to build such facilities will also face everything from regulatory concerns, environment impact surveys and even real estate developers and tourism groups' opposition. These interests may recognize the need for water, but don't necessarily want such facilities marring ocean views.

Once built, desalination plants also require a great deal of energy to run, which poses additional problems giving the rising costs of oil and ongoing energy shortages.

Nonetheless, some desalination projects are extremely innovative and actually can address the question of energy and water shortages at the same time, which might help reduce opposition. For example, the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO) recently began deploying JetWater Thermal Desalination systems off the western coast of Australia. These systems provide a wide array of desalination services (seawater, brackish groundwater and remediation of industrial wastewater) while also conserving precious energy resources like oil by running entirely on solar-power.

Moreover, market realities have a way of changing risk tolerance and perception, and desalination sustains millions of people around the world. It also helps that new desalination technologies, such as “reverse osmosis”—utilizing special filters instead of constant heat—hold the potential to make these plants smaller and more efficient.

Q. Are there any other technologies currently being explored besides desalination?

Harvey: There is a great deal of capital going to “cleantech” and other environmental research, and water is certainly part of the picture. Because we know where the world’s water lies, there is a premium on technologies for treating, recycling and conserving it in order to make it a more renewable resource.

For example, a report by the U.S. Climate Change Science Program, entitled “Preliminary Review of Adaptation Options for Climate Sensitive Ecosystems and Resources,” notes that 70 percent of water withdrawals in the U.S. are devoted to agriculture, and that climate shifts will increase competition for this water. It recommends, among other things, offsetting decreased availability of water by increasing agricultural, municipal and industrial re-use of wastewater. Look for new, existing

and future conservation standards to be increasingly referenced in business plans, and serve as the benchmark to beat.

The International Energy Agency recently estimated that in order to reduce greenhouse gas emissions 50 percent by 2050, a goal just reaffirmed at the G8 Summit, global investment in renewable energy, energy efficiency and carbon sequestration will need to reach roughly \$45 trillion by that date. Just as there will be opportunities to build and invest in wind power farms, solar energy, nuclear and other alternative energies, the call to build desalination plants, effectively recycle waste water and other technologies that will help us maximize or renew water resources will be part of the mix.

All risks considered, the world’s leading investors are recognizing that a transition to a clean energy economy is the single biggest economic opportunity of the 21st century—and possibly the biggest economic opportunity ever. The U.S. represents one of the largest renewable energy markets, so merchant bankers, private equity firms and venture capitalists are all educating themselves about how to navigate this immature yet promising marketplace and make the right decisions to drive the industry forward and avert future catastrophe.

Pillsbury is a noted leader in energy and environmental issues offering equally strong capabilities advising on energy-related regulatory, public policy and litigation, transactions, and project financing and infrastructure development, whether it be water desalination projects, LNG terminals or renewables such as wind or solar power. We offer a multidisciplinary, 360-degree perspective to ensure clients have a comprehensive understanding of what unique challenges they may face and/or potential opportunities they might benefit from when it comes to energy and environmental matters.

The firm also recently launched a commodities finance practice to help clients invest in or underwrite funding for the exploration of or building of facilities or technologies to improve access and the distribution of commodities such as water, oil, natural gas and corn. We also counsel startups, helping them to secure funding, patents or other IP assets, contracting and company formation issues, particularly in the technology sector, including cleantech.

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