

Global partnerships crucial to solving water challenges

Embracing creative partnership models enables government and business to share experience, risk, and opportunities in order to overcome barriers to achieving water security, according to **Jon Freedman** of GE Water & Process Technologies.

With widespread population growth, increasing industrialization, and corresponding increases in water and energy consumption, the world is facing a future in which global water demand could exceed supply. According to the World Bank, “the world will not be able to meet the sustainable development challenges of the 21st century — human development, livable cities, climate change, food security, and energy security — without improving management of water resources and ensuring access to reliable water and sanitation services.”

But projection doesn't have to be destiny. Fortunately, water reuse, energy neutrality, digital water solutions, and other emerging technologies critical to overcoming water scarcity challenges will allow communities and businesses to reach new levels in water treatment and provide ways to protect freshwater resources, reduce energy consumption, and create value.

Often, however, having access to technologies is not enough. Water scarcity is too big of a challenge for any one business or community to address on its own. Creative partnerships can help overcome barriers to technology innovation, gaps in design capability, and inadequate financing. Additionally, partnerships can help enhance economic performance and competitiveness.

Public-private partnerships

One of the most common types of partnership models in the market today is the concept of public-private partnerships (PPP). According to the PPP Knowledge Lab, “A public-private partnership is a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance.”

The PPP model allows public agencies to gain access to a private organization's experience, capital, and risk management expertise. In exchange for taking on risk, providing services, and transferring knowledge, private companies often receive a fee or a percentage of the revenue stream. PPPs can especially help smaller utilities overcome capital and risk management challenges while also providing them with access to proven design and construction.

A great example of long-term strategy in public-private partnership is the joint venture created in 2012 whereby United Water and KKR acquired a 40-year water and wastewater concession from the Bayonne Municipal Utilities Authority (BMUA), based in the city of Bayonne, New Jersey, United States (US). United Water is a US environmental company, providing water and wastewater services; KKR is a global investment firm.

According to a press release on KKR's website, KKR will fund 90 percent of the joint venture with United Water, while BMUA will maintain ownership of the water and wastewater systems and will manage them to ensure quality and customer service performance standards. BMUA also will maintain control of rates charged to users, which will be guided by a formula in the agreement. United Water will operate the system for the 40-year term under an operations and maintenance agreement with the joint venture. To ensure that improvements are made throughout the life of the partnership, the joint venture committed to investing another US\$157 million into the system over the life of the contract.

In the release, Bertrand Camus, then CEO of United Water, says, “What is unique about this model is that it is a blend of United Water's operations expertise and KKR's long-term vision, which brings credibility to address America's water challenges. Our commitment to funding improvements in the water and wastewater system is critical to keeping rates stable and under BMUA's control.”

Information on public-private partnerships is readily available, and proven models are making it easier to implement these types of programs. According to the website for the National Council for Public-Private Partnerships, its



A Zeeweed 500 membrane cassette is being loaded at a treatment facility. Photo by GE Water & Process Technologies



mission is to “advocate and facilitate the formation of public-private partnerships at the federal, state, and local levels, where appropriate, and to raise the awareness of governments and businesses of the means by which their co-operation can cost effectively provide the public with quality goods, services, and facilities.”

The Water Environment Federation (WEF) also helps to advocate for partnerships to advance water infrastructure needs. Steve Dye, legislative director for WEF, commented that within the United States, the progression of public-private partnerships is being driven by the tremendous need for water infrastructure investment.

According to Dye, traditional financing sources such as municipal bonds and State Revolving Fund (SRF) programs are now complemented with new tools like the Water Infrastructure Finance and Innovation Act (WIFIA), which in effect allows municipal agencies to borrow at very low rates because their loans are provided by the US Department of the Treasury. Under WIFIA, low-interest US government loans and loan guarantees have the potential to unleash significant amounts of private-sector investment in the water sector. Dye notes that with the new presidential administration discussing meeting infrastructure needs through private capital, WEF is looking to “make sure that water infrastructure is a sizable part of the major infrastructure package that the President is pushing forward.”

“There is a greater realization that there is a lot of private capital that is eagerly awaiting these type of projects, and it will be important to balance the investment needs of communities with the goals of investors,” says Dye.

Public-private partnerships like these offer a very secure place for investors to put their money since only 0.04 percent of all water projects fail, noted Dye. According to Dye, financing assistance through WIFIA or other proposed tax incentives can help bring down the cost of capital to make them more appealing for private partners. He says there is great opportunity for public-private partnerships to “move the needle” on water infrastructure and technology spend; congruently, newer and more creative partnerships and approaches are gaining traction.

The US Environmental Protection Agency is also supporting the concept of public-private partnerships and has developed a guide to help local governments to assess public-private partnerships and alternative market-based tools to meet stormwater management regulatory and community development municipal stormwater management program needs.

According to the guide, “Partnerships between the public and private sectors have created a range of strategies to finance, plan, design, construct, operate and maintain public assets and/or deliver services. Partnering with the private sector has been identified as a viable alternative solution that will improve and sustain the ability of local governments to protect and restore our nation’s waters.”

Private-private partnerships

Recognizing that PPPs hold great promise, industry leaders including GE Water & Process Technologies are also increasingly focusing on private-private partnerships, in which different businesses come together with complementary expertise to deliver more holistic solutions to a customer’s needs.

Approximately 10 years ago, GE launched its global sustainability initiative called Ecomagination, which combined a commitment to resource productivity with clear financial logic. Recently, to celebrate the 10-year anniversary of Ecomagination, GE announced eight major private-private partnerships in which businesses combine resources, talent, and experience to solve global environmental challenges.

One of those private-private partnerships involved GE Water & Process Technologies, MWH Global, and Goldman Sachs. This global water partnership combines GE Water & Process Technologies’ advanced technology with MWH’s design and construction expertise and Goldman Sachs’s innovative financing capabilities to implement water reuse projects globally.

Private-private partnerships such as this can help public utilities and private-sector companies pilot and implement technology with more confidence and with greater financial backing than they had previously, while providing even greater protection for the environment.

Private-private partnerships can also play a

crucial role in accelerating innovation in emerging spaces. In the area of digital water, GE has been able to accelerate its software as a solution (SaaS) offering and to create platforms that address real-time infrastructure challenges due to direct partnerships with organizations such as the Smart Water Networks Forum (SWAN), WaterSmart Software, and Smart Earth Technologies. As such, GE Water & Process Technologies can tap into existing databases and apply algorithms from assets it currently operates as well as work with partnering organizations and end users to quickly adapt this data science to solve utility-specific challenges.

Public-public partnerships

Pushing the concept of shared experience and partnership even further, progressive public utilities are finding new ways to educate other public utilities and create service options that can enhance capabilities and revenue for all parties involved. One great example of a public-public partnership model is the US District of Columbia Water and Sewer Authority’s (DC Water) Blue Drop program, which markets its best practices to smaller utilities.

Alan Heymann, chief marketing officer for DC Water, is one of the leaders of the Blue Drop program. “We’re aiming to solve three basic problems,” says Heymann. “One, DC Water has spent a great deal of money developing services, expertise, and even products on behalf of its own ratepayers. We decided to look for ways to get more mileage out of these investments to help cover the rising cost of providing service. Two, some water and wastewater utilities can benefit from our expertise at a lower cost than developing their own or hiring a private-sector consulting firm. And three, with more than 50,000 water systems in the United States, there is great need for more economies of scale.”

According to Heymann, the Blue Drop business model affects risks and rewards in two ways:

1. *Blue Drop rewards risk.* Public water utilities will not jeopardize their ability to deliver their core service to the customer. Yet, sometimes, adopting an innovation allows the utility to deliver that service better, faster, or at lower cost. To the extent that taking on the new idea involves risk, the Blue Drop model incentivizes the risk-taker by increasing the potential reward.

2. *Blue Drop helps mitigate risk.* Blue Drop can enter into joint ventures, can invest in projects, or even explore new areas of potential business. Since some projects will not succeed as intended, having a separate corporate structure means that the risk from an unsuccessful initiative is contained within Blue Drop and doesn’t threaten DC Water’s or the partner’s rate base.

A secure water future depends on our ability to work together. By embracing creative partnership models, through which we can share experience, risk, and opportunity, businesses and governments alike can ultimately secure a sustainable water future.

Author’s Note

Jon Freedman is the vice president of global partnerships and policy at GE Water & Process Technologies, based in Trevose, Pennsylvania, United States.

