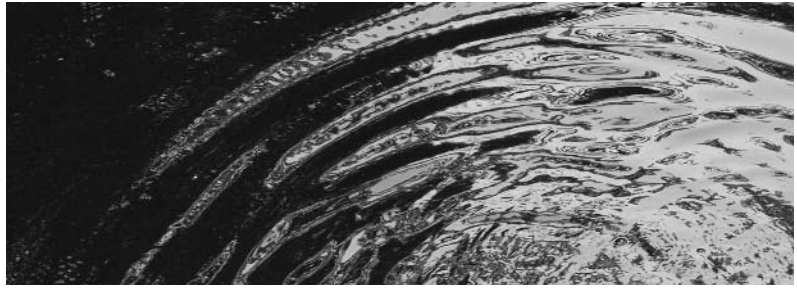


Food for Thought



Discussing the barriers to water reuse.

By Ralph Eberts

When Black & Veatch (www.bv.com) held a dinner dialogue on January 28 in Washington, DC, to discuss barriers to water reuse, it was not by chance that the roundtable discussion was held at a restaurant known for purifying and recycling its own water on site.

The dinner dialogue brought together 17 utility leaders from the U.S., the UK, Australia, and Singapore who were gathered in the capital city for the “Climate Change Impacts on Water,” a forum sponsored by a group of water industry associations.

Black & Veatch hosted the roundtable event as part of an ongoing series of discussions with representatives of leading utilities in multiple locations around the world. The purpose of this particular dialogue was to delve deeper

into issues commonly perceived as potential barriers to water reuse. Participants at each table addressed one of four topics: 1) financing and pricing of water; 2) public education and outreach; 3) regulatory and institutional issues; 4) or sustainability of reuse.

Dan McCarthy, president and CEO of Black & Veatch’s global water business, hosted the event while his colleague Cindy Wallis-Lage, senior vice president and executive managing director of technical solutions, led the overall discussion. Other water leaders from the company facilitated each of the four roundtables and summarized the findings.

Financing and Pricing of Water

To help stimulate discussion that evening, Wallis-Lage shared with the group her thoughts on the financing

and pricing of water:

How we finance and price water presents many challenges—not only for the acceptance and successful implementation of reuse as a water supply option, but also for the water industry in general. Conservation results in reducing the amount of water that needs treatment, which means there is less water available for recycling. Advanced treatment for reuse further increases the price of that water, and creates a product that can only be sold for less than water produced by conventional means.

Based on that discussion prompt, participants focused their comments on the true value of water and the comparative costs of reuse and desalination. They suggested that public perception of the value of water is influenced by what customers have seen on their average bills and how that compares to other utility bills, like cable service.

Attendees pointed out that desalination can become the “path of least resistance” for some utilities that are faced with prolonged drought and cannot sell the benefits of direct or indirect potable water reuse to their customers. The group discussed the “whole value of water” and agreed that it should be based on the “long-run marginal cost” of providing that water into the future.

Ultimately, consumers look closely at the bottom line of how much they pay, participants said. People don’t really care whether it’s reused, recycled, desalted, native water, etc. They just want to know what it will cost at the end of the day, and each utility has to be ready and able to make its case to justify that cost.

Public Education and Outreach

Public education and outreach was a



Jim Clark (left) and Eamonn Kelly (right) of Black & Veatch listen as Dan McCarthy (center), President and CEO of Black & Veatch’s global water business, opens the January 28 dinner dialogue on barriers to water reuse.

key focus of conversation at another dinner table. To initiate discussion about this topic, Wallis-Lage summarized the results of a roundtable discussion that took place during WEFTEC®.09 and then asked participants two specific questions:

Group discussion at Black & Veatch's Reuse Roundtable in October established the importance of communicating early and often—and not sugarcoating reuse-related messages. But how do we really go about doing that, and how early should we start?

Participants agreed that it's best to communicate with customers early on and provide them with compelling reasons for water reuse, such as ensuring the security of their water supply or preventing seawater intrusion that could contaminate an aquifer. One participant noted that "a crisis can be a terrible thing to waste" because it can highlight a problem in a way that helps a utility make its case.

Utilities need to be ready with compelling stories when the media are watching. A drought can elicit additional support for reuse, but it shouldn't be used as the only selling point because public support can quickly dry up once it rains.

From a public relations perspective, it's best to start with the kind of reuse that everyone can support, such as using recycled water rather than surface water for non-contact cooling purposes. Another example cited was the use of recycled water to fight off seawater intrusion of coastal aquifers.

Utilities should demonstrate to their customers that they recognize, have considered, and can respond to tough issues rather than shy away from them. Early identification of key advocates to persuade potential opponents is important before launching any outreach program. The group discussed the importance of finding appropriate water advocates who are credible and can push forward the reuse message in the marketplace. That kind of local advocate can help convince people that reuse is the right approach because it is appropriate and safe for its particular use.

Once a campaign is rolled out, it's extremely important not to "take the



The award-winning Butler Drive Water Reclamation Facility in Peoria, AZ, produces high-quality effluent for aquifer recharge, allowing the city to earn water credits and therefore extract the equivalent amount of water from the aquifer to augment its supply and meet future needs. (Photo credit: Diego Ceja)

foot off the accelerator," according to one participant, but instead to continue to educate the public on the value and safety of reused water. Done right, simple campaigns, such as taste tests, can help persuade the public.

Strong opponents can derail efforts, particularly when journalists coin phrases like "toilet to tap." It's essential to engage community environmentalists early on to discuss alternatives and approaches. Once they believe reuse is the right thing to do, environmentalists can help other customers embrace the idea.

A few comments were made about the impact of social media, such as Facebook and Twitter, as opportunities to reach out directly to the public. However, some utilities serve a contingent of customers who don't have access to the internet, so it's important to note that social media channels aren't effective for everyone.

Participants also agreed that there should be a greater focus on educating people about how much water they consume. There was recognition of the

importance of community engagement in promoting the use and value of recycled water. Singapore PUB was cited as a leader in this realm, with its NEWater Visitor Centre a stellar example.

Regulatory and Institutional Issues

Wallis-Lage noted that participants' perspectives on regulatory and institutional issues would certainly differ within such a wide, international group of utility leaders, but she challenged them to identify some common viewpoints and to answer the following question:

Application of reuse-related requirements varies among regulatory agencies, among or within countries, among states, and sometimes even between communities. How do we create synergy rather than competition when a utility or municipality has different objectives for managing potable water, wastewater, and stormwater?

Participants seemed to agree that two significant barriers for reuse arise when various departments within the same government body have competing mis-

sions and objectives or when separately governed, special-purpose entities focus on only one aspect of water.

Comparing two countries, participants suggested that there is greater trust in government in Australia than in the U.S., where utilities are challenged to gain public support for the regulatory requirements that they must meet. The U.S. water industry, they said, needs to better understand how to address the emotional issues of customer constituencies that can affect implementation of policies and projects.

Two specific best practice examples were mentioned. As part of a successful conservation program in Melbourne, for instance, the utility is now considering subsidizing rain tanks for customers to capture and store rainwater, which would help offset the need for limited surface water sources.

Also, efforts in the Las Vegas area to modify people's outdoor water use were met by initial resistance from established residents who resented having to reduce their water use just to accommodate additional demands from an influx of newcomers. However, the utility's innovative solution of paying customers to remove their grass lawns has proven



The Bundamba Advanced Water Treatment Plant in Australia is one of three advanced water treatment plants designed to produce purified recycled water from secondary treated water to supplement the region's drinking water supplies if required. (Photo credit: WaterSecure)

effective in reducing water use of long-time residents.

Sustainability

Wallis-Lage prompted discussion of the broader topic of sustainability with the following comments:

As we look at sustainability of reuse, we agree that it's important to recycle water; it's the right thing to do. But then we start looking at the distribution systems required for reuse and other questions arise. Should treatment be centralized or point-of-use? Do we look at indirect potable reuse or some other methodology? Should infrastructure be added? What is the sustainable answer?

Discussion initially centered on the importance of thinking through a reuse plan completely and trying to anticipate and avoid unintended consequences. Several people described situations where ideas with the best intentions resulted in unforeseen negative impacts. This led to a discussion about the necessity of using good data and good science—and of considering the bigger picture—when making decisions about reuse.

Nutrient reduction was cited as one example: Although utilities may be asked to reduce nutrient levels,

other large water users, such as the agricultural sector, may not be required to take similar measures. So the overall result of that reduction is diminished despite costly efforts.

Energy use, water quality, public acceptance, cost, and environmental impacts are some of the sustainability issues that need to be addressed in making these decisions. When forced to make decisions for the short term, utility leaders need to avoid making choices that limit their ability to diversify their water sources in the future. For new housing developments, it was recognized that there are opportunities to build dual-pipe or third-pipe systems. Installing dual systems in existing areas, however, can be cost-prohibitive.

Another major factor of sustainability is considering the energy footprint, not just in the production of water, but also in the transmission of and infrastructure for water supply.

The dinner dialogue concluded with a larger group discussion of the findings from each of the four roundtables. Even at the end of a long day of meetings, the participants were willing to share additional knowledge, insights, and best practices with the group. **GE**

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