SUSTAINABLE SOLUTIONS
for the Water Industry

BUILDING A WORLD OF DIFFERENCE

Black & Veatch is an employee-owned, global leader in building Critical Human Infrastructure™ in Energy, Water, Telecommunications and Government Services. Since 1915, we have helped our clients improve the lives of people in over 100 countries through consulting, engineering, construction, operations and program management. Our revenues in 2011 were US$2.6 billion. Follow us on www.bv.com and in social media.

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SOLVE THE ENERGY-WATER EQUATION AND ACHIEVE SUSTAINABLE WATER SYSTEMS.
WHAT DO WE MEAN BY SUSTAINABLE SOLUTIONS?

We will work collaboratively with you on tailored strategies in three key facets of the water-energy cycle.

C Adapting to the Impacts of Climate Change

You face ongoing obligations to protect communities and provide critical water supplies in the face of dynamic climatic challenges. Expert advice can help you analyze and address the issues of changing patterns of temperature, precipitation, flooding and runoff.

E Mitigating Future Environmental Impacts

The need to preserve the environment for future generations must be added to your list of priorities. The threats of changing patterns of temperature, precipitation, flooding and runoff, and the increase in water usage and 30 percent, and it was an increase in water usage that provides a framework that helps you to identify potential environmental impacts and social factors. The Severn Estuary could deliver a secure supply of low carbon electricity and meet the UK’s 2020 energy targets.

W SUSTAINABLE SOLUTIONS FOR THE WATER INDUSTRY

1 Severn Estuary Tidal Wave Power Scheme

B Black & Veatch has been providing consultancy services for a potential tidal power scheme using energy from the Severn estuary since the 1960s. The company is now reassessing the feasibility of such a major project based on current economics, potential environmental impacts and social factors. The Severn Estuary could deliver a secure supply of low carbon electricity and meet the UK’s 2020 energy targets.

2 Anglian Water UK

Several climate change studies are predicting a significant increase in water usage leading to a shortfall in supply. Black & Veatch is examining sources of new water supply including: canal and river transfers; wastewater re-use; aquifer recharge, surface water reservoir storage, and use of strategic mains to inter-link resource zones. A report is being prepared that provides a framework for implementing the work.

3 Renewable Energy Development Project, Henderson, Nevada

With a driving goal to reduce environmental impact while delivering excellent service to the community, the City of Henderson Department of Utilities Services worked with Black & Veatch on a wide-ranging project to maximize natural resource management. With team members from its water, energy and management consulting groups, Black & Veatch delivered a wide-ranging study that includes greenhouse gas inventory, rate analysis, energy optimization opportunities and alternatives for renewable energy, including solar, biorenewable energy and hydropower.

4 Philadelphia Water District

Black & Veatch is assisting the Philadelphia Water Department with development of a strategic energy master plan. The plan will incorporate electric and gas rate evaluations and forecasts, energy demand analyses and identification and evaluation of conservation initiatives at three wastewater treatment plants, three distribution system pumping stations, and four wastewater treatment plant pumping stations. Opportunities for renewable energy generation through biogas to energy generation, solar photovoltaic installations, and low head and micro hydropower opportunities will also be investigated. The plan will use a whole life cost model and identify any organizational and procurement policy changes necessary to implement the plan and deliver projects.

5 Palmdale Water District

Black & Veatch examined the Palmdale Water District’s options for self-generation. What emerged as a strong option was the use of wind energy. Based upon the results of a feasibility study, Black & Veatch became the owner’s engineer for the development of an on-site wind energy project. A performance estimate for a wind turbine near the district’s wastewater treatment facility yielded a capacity factor between 25 and 30 percent, and it was further established that the best location for the wind turbine was on the western boundary of the facility near the district’s reservoir. Black & Veatch also helped the owner find renewable energy incentives that could save money. For a 1,000 kilowatt wind turbine, Black & Veatch estimated a project cost to the District of about $1 million, with a payback period of about five to seven years.

6 Water and Wastewater System Optimization Study, Peoria, Arizona

In a fast-paced, two-phase study, Black & Veatch identified operational changes to yield cost savings with minimal modifications to existing infrastructure. A total-system, holistic analysis enabled Peoria to identify cost drivers and pinpoint how to operate at lowest cost points.

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10 Philadelphia Water District

At one of the largest wastewater treatment facilities in the world, Black & Veatch helped develop a long-term, three-phase biosolids master plan. The plan evaluated alternatives for improving energy management, including the use of digester gas for energy production. Working closely with plant operating staff, the team evaluated changes in treatment processes and their potential impacts on future energy usage and production and the plant’s overall energy balance.

11 Ina Road Water Reclamation Facility

Although this facility’s digester gas was being used for electricity generation, the client sought greater efficiencies in maintenance, operations costs and exhaust gas quality. We analyzed and evaluated three gas cleaning systems and recommended a solution for gas conditioning to improve the efficiency and life of the power generation equipment while alleviating maintenance concerns.