



REDUCING ENERGY USAGE IN THE WATER INDUSTRY *Innovation and Efficiency Lead to Energy Reduction*

The Water Industry: A Heavy Consumer of Energy

- An estimated 3 percent of national energy consumption is used for drinking water and wastewater services. This equates to adding approximately 45 million tons of greenhouse gas to the atmosphere. (U.S. Environmental Protection Agency)
- Drinking and wastewater systems in the U.S. spend nearly \$4 billion a year on energy to pump, treat, deliver, collect and clean water. (U.S. Environmental Protection Agency)
- Energy costs for water and wastewater can account for 30 percent of a municipality's total energy bill. (U.S. Environmental Protection Agency)
- Demand for electricity at wastewater facilities is expected to grow by 20 percent over the next 15 years. (U.S. Department of Energy)

Innovation and Improving Efficiency are Key to Energy Reduction

- Energy consumption in most water systems can be reduced significantly through cost-effective efficiency measures.
- Water and wastewater facilities can reduce energy use by performing regular equipment inspections, maintenance and efficiency tests.
- Replacing system components—including equipment, systems and controls—with new and improved high-efficiency equipment and process technologies optimizes the performance of existing facilities. There are opportunities to improve the energy performance of most municipal treatment facilities by 15 percent, while reducing costs and promoting environmental stewardship. (NYS Energy Research & Development Authority)
- Recovering energy from existing systems can maximize the energy produced by a facility.
- Inventing new systems approaches, such as capturing kinetic energy (leveraging the power of moving water), taking advantage of thermal capacity (optimizing the heat transfer potential of water), and developing a deep understanding of communities, sites, land uses, etc. (maximizing the planning and design process for water facilities) can be instrumental in reducing energy and improving efficiency. (Camp Dresser & McKee Inc.)

Design-Build Promotes Quicker Path to Energy Reduction

- Design-build is the most efficient and effective approach for getting water projects started and completed more quickly, as one firm assumes responsibility for design, construction and commissioning.
- Design-build projects have paved the way for reclamation and reuse of highly treated water, helped deploy sophisticated systems for the conversion of “waste” products and improved water quality and delivery to communities—to provide communities with the most energy-efficient facilities.
- Design-build projects often utilize state-of-the-art, high-efficiency drives and motors, leading to more energy-efficient facilities. Design-build project delivery stimulates local economies more rapidly than conventional design-bid-build delivery.

For more information on the Water Design-Build Council, please visit www.waterdesignbuild.org.