

WATER SOLUTIONS

Save water, save energy.
Save energy, save water.



Blue is the new green.



- A recent government survey showed that at least 36 states are anticipating water shortages by 2013.¹
- Electricity and water use is expected to climb 50% during the next 25 years.¹
- Electricity production requires over 40% of all daily freshwater withdrawals in the nation.²

It takes energy to produce water. Water to produce energy. And Johnson Controls to produce solutions.

Creating a more sustainable future requires that businesses and governments address water and energy conservation hand-in-hand. In fact, you indirectly use as much water turning on lights as you do turning on faucets.¹ Water is integral to the cooling of power plants that provide energy to our electronics-dependent economy. Energy is needed to pump and treat water for our growing population. This interdependency is known as the energy-water nexus. Today more than ever, water conservation and energy efficiency require innovative solutions.

Johnson Controls can help. Our solutions increase the efficiency of water use and distribution while reducing your energy usage. We work with you to assess your individual situation and offer complete, specific water and energy conservation measures, including funding options.

Creating smarter municipal water systems

Saving water starts at the source. Johnson Controls can help identify where water is lost, and why, with a distribution system analysis. Municipalities are missing out on income and conservation opportunities because of undetected leaks and aging infrastructures. We can improve your water loss profile with the use of Automated Meter Reading (AMR) technology, accurate meter sizing and typing, leak detection and other water loss control measures. These methods can lower operational costs and allow you to reallocate resources. We can also show you how to reduce energy consumption 10–20% through energy conservation.

Wastewater opportunities

Water and wastewater treatment are high-energy demand processes. In fact, they account for 30–40% of the electricity used by mid-sized cities.² You can reduce costs and save resources by integrating water and energy efficiency strategies. Johnson Controls can provide pumping and aeration improvements, facility retrofits, and renewable energy solutions, like digester gas recovery and solar, that help power a treatment plant.



A water-efficient, green building solution

Hospitals, hotels, schools, public housing, correctional facilities and other commercial and government facilities typically have many opportunities to save both water and energy. By performing water and energy retrofits on your facilities, you can reduce energy and water consumption by 10-50% through conservation and operational changes. Johnson Controls can implement a variety of upgrades, from occupancy sensors for lighting to storm water management for irrigation. Working with you through the entire process, we can also help you educate tenants, employees and residents about water conservation and how to save water by saving electricity.

Our efficiency upgrades include solutions for:

- Water conservation (water-saving toilets, shower heads, faucets and pedal valves)
- Sterilization processes
- Commercial laundries
- X-ray equipment cooling
- Kitchen & cleaning systems
- Process cooling
- Water reclamation
- Weather-based smart irrigation
- Cooling tower efficiency
- Renewable energy solutions

Making conservation possible and feasible

Performance contracting, a proven procurement tool, allows you to offset the costs of energy and water conservation improvements with the savings they generate. Over time, the improvements pay for themselves. Renewable Energy Credits, state renewable energy incentives, and state revolving funds may also be options in your state.

Now more than ever, you must do more with fewer resources. Performance contracting helps you reduce emissions, reduce waste, decrease water usage, lower energy use and lower operational costs, all while reducing budgetary pressure.

Energy efficiency at a wastewater treatment plant.

City of Rome, NY

Rome, NY turned to Johnson Controls to trim costs at its wastewater treatment facility. Johnson Controls installed variable speed drives on low-lift pumps and a fine bubble aeration system to replace mechanical aerators. The updated plant can process additional volumes of waste, thereby allowing for new economic development without plant expansion. Reduced energy consumption will result in savings of more than \$100,000 annually.



AMR technology provides cost savings and conservation.

Tulare, CA

California drought conditions prompted a state law mandating municipalities to install water meters on all commercial and residential properties. Through a performance contract with the City of Tulare, Johnson Controls installed some 16,000 meters with radio transmitters, allowing city employees to drive down the street and automatically record readings. This saves labor costs, prevents errors and reduces city insurance and liability costs. We also installed water-efficient fixtures in municipal buildings and solar panels at the wastewater treatment plant.



New central utility plant shores-up utility expenses.

Phoenix Children's Hospital, Phoenix, AZ

Phoenix Children's Hospital is one of the country's ten largest healthcare facilities for children and families. Johnson Controls has designed a new central plant that will produce huge energy, natural gas and water usage savings. Cooling tower makeup water is saving 5.6 million gallons per year - enough to meet the water needs of 120 households. Plus, discharges to the sanitary sewer system will be reduced by 600,000 gallons per year, saving capacity and cost.



Water conservation in unlikely places.

Milwaukee County Zoo, Milwaukee, WI

Johnson Controls is helping to make animal habitats more energy and water efficient, while guaranteeing \$1.4 million in savings over a 12-year period. The contract features measures that will help the zoo decrease the amount of water it uses by half (100 million gallons annually). These include replacing inefficient plumbing fixtures and installing efficient sinks, aerators, toilets and valves; filling drinking trays for the birds every hour, instead of continually; and shutting down water in the Japanese Macaque Island Exhibit at night when it isn't needed.



Reduced water use is part of \$8 million DOE annual savings.

Oak Ridge National Laboratory, Tennessee

Johnson Controls is helping the Oak Ridge National Laboratory reduce water consumption by 16% (nearly 170 million gallons) annually through a bundle of water and energy savings performance contract initiatives. The reduced water use is a result of replacing steam boilers with a biomass gasification steam plant, installing aerators, urinal flush valves, and low flow shower heads and toilets in 62 buildings. In addition, the installation of an evaporative fluid cooler will eliminate once-through water flow for cooling of compressed air equipment.



www.johnsoncontrols.com/water

1 - EPA.gov
2 - Sandia National Labs, DOE

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