Case Study: Wastewater Upgrades Save Energy and Taxes

Improvements at the wastewater treatment plant reduced energy use by 30 percent and solid waste by 20 percent.
Photo courtesy of Johnson Controls

Evansville, the third largest city in Indiana, is part of a thriving community that serves as the commercial, medical, educational, and cultural hub for the Indiana/Kentucky/Illinois tristate region. To support the mayor's smart city initiative, the city entered into an energy savings performance contract with Johnson Controls, allowing the city to invest $39 million in much-needed infrastructure without raising taxes.

The improvements started at the wastewater treatment plant and included both traditional and unconventional measures—energy-saving upgrades such as lighting, HVAC, controls, and power factor correction along with valve automation and a solid waste centrifuge—to reduce energy use by 30 percent and solid waste by 20 percent.

By generating power from restaurant commercial kitchen fats, oils, and grease, the process now supplies 40 percent of the energy at the plant. Across the city, a new automated metering system was implemented to increase meter-reading accuracy and efficiency by gathering real-time data from 64,000 meters throughout the city and from 10 wireless towers.

The energy-efficient upgrades will generate an estimated $3.1 million in annual savings over the next 20 years for the city, positioning the Indiana city for future growth.

Adding Value Through ESPCs

As energy efficiency gains increasingly more attention on local, national, and international fronts—often enabled and assisted by NEMA Member products—many companies are opening business arms related to efficiency or founding new efficiency-minded businesses. The prime example of this is the energy service company (ESCO) model where business is generated in servicing, improving, and monitoring a building or facility or municipal power grid.

A favored vehicle to undertake capital improvements such as these is through an energy savings performance contract (ESPC) whereby the business performs retrofitting and improvements for no charge and in turn is awarded a percentage of the operating funds saved by the facility owner post-completion over a designated period of time.

ESPCs are attractive to federal agencies because they increase efficiency and thereby reduce their energy costs using private sector funding and expertise. Using an ESPC eliminates the need for appropriated dollars for equipment replacement and for operations and maintenance of the energy-using equipment.