



ENERGY EFFICIENCY PROGRAM



CASEYVILLE WATER TREATMENT PLANT TEAMS WITH AMEREN ILLINOIS TO STOP ENERGY DRAINS

Reclaiming and conserving precious natural resources is all in a day’s work at the Caseyville Township Water Reclamation Facility. And these days, it’s not just about water, but conserving energy, too.

Built in the mid-1960s, the facility has undergone two major plant expansions over the years to meet growing demand in the bustling Metro East area. While growing with the flow, the team at the Caseyville plant is always on the lookout for opportunities to do more with less energy.

One such opportunity came courtesy of the Illinois Environmental Protection Agency (EPA). The Illinois EPA’s Wastewater Treatment Plant Energy Assessment Program offers a free facility walk-through, utility bill analysis, and assessment report. Conducted in July 2019 by the Illinois Sustainable Technology Center (ISTC), the assessment of the Caseyville plant pinpointed additional ways to reduce electricity use and identified utility incentives to help fund those upgrades.

“I was really surprised to learn about the Ameren Illinois incentives. It’s a deal you can’t pass up,” says Randy LePere, Sewer System Manager at the plant. “The Illinois EPA evaluation and the Ameren Illinois Energy Efficiency Program is a win-win for anybody wanting to save and get ahead.”

Shine a Light on Savings

With lighting technology advancing by leaps and bounds, Caseyville stood to save significantly by installing state-of-the-art LED bulbs and fixtures. In late 2019, the Caseyville facility worked with local Program Ally, Jarvis Electric, Inc., to upgrade lighting in offices, plant buildings, and the garage. Plans are in place to upgrade external lighting to LEDs as well.

“Lighting is a great place to start saving, and LEDs have set a new standard for efficiency,” says Jim Dillon, Senior Manager, Energy Efficiency Operations at Ameren Illinois. “With low out-of-pocket costs and streamlined paperwork and installation, our Small Business Direct Install Initiative makes energy savings easy for municipalities and small businesses.”

In fact, LePere reports: “The lighting upgrades we made were basically free, and the new lighting is saving us close to \$400 a month.”

Easier on the eyes, the benefits of LED lighting go beyond cost savings.

“It’s amazing the difference the new lighting makes. It’s a much whiter, brighter light,” notes LePere. “At one point, when half the lighting upgrades were done and half of the old lighting remained, you could see a considerable difference.”

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Illinois EPA Wastewater Treatment Plant Energy Assessment Program

To help municipalities reduce the cost of wastewater treatment, the Illinois EPA Office of Energy, in partnership with the Smart Energy Design Assistance Center (SEDAC) and the Illinois Sustainable Technology Center (ISTC), is offering free energy usage assessments to publicly owned wastewater treatment plants. Visit sedac.org/wastewater to learn more or apply for a free energy assessment.

To learn about Illinois EPA grant funding for energy efficiency improvements at publicly owned wastewater treatment plants, visit www2.illinois.gov/epa/topics/energy/eewwtp

The Lowdown on LEDs

ENERGY STAR® qualified LED lighting uses at least 80 percent less energy than incandescent lighting, which cuts operating costs. And because it lasts 35 to 50 times longer than incandescent lighting — and up to five times longer than fluorescent lighting — you’ll save on maintenance costs, too.



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Energy Efficiency Pays

Every year, the award-winning Ameren Illinois Energy Efficiency Program provides millions in incentives to help businesses, nonprofits, and public organizations reduce their annual energy costs. Incentives are available for a variety of energy-saving projects, including lighting, heating and cooling, refrigeration, motors, steam system improvements, and compressed air.



125 HP Blower Motors



300 HP Blower Motor



VFDs for 3, 300 HP Blower Motors

Matching Motor Speed to Need

Another significant source of savings was found in the plant's aeration system, where blowers supply oxygen to the microorganisms that break down organic matter into harmless byproducts.

The Illinois EPA assessment recommended the use of variable frequency drives (VFDs) on blower motors to better match motor speed to need.

"Typical motors have two settings: on and off. VFDs save energy by allowing the motor to work at a lower speed during less demanding times," explains Dillon. "Our incentives cover up to 75 percent of the cost to add VFDs to motors on fans or pumps, providing a quicker payback on projects."

With the help of Illinois Electric Works, an Ameren Illinois Program Ally, in the summer of 2020 Caseyville installed six variable frequency drives on three 125 HP aeration blower motors and three 300 HP aeration blower motors to help control the varying demand of a plant load that averages 4.4 million gallons per day.

"In the past, we ran the blower at maximum capacity and throttled valves to slow down air flow as needed. Now, we keep valves wide open and use VFDs to adjust motor speeds. It's a much more effective way to run blowers," says LePere. "Before we added VFDs, our blowers were running at 100 percent around the clock. Today, they operate at 70 percent capacity."

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Sewer System Manager

Ameren Illinois incentives, which reduced the payback from years to months, put the costly project within reach for the Township.

"We only paid a small portion of the costs of the blower upgrades," says LePere. "Most projects have a payback between four and seven years. With Ameren Illinois incentives, we reduced our payback to six months on the blower upgrades."

Cash In on Incentives

"Ameren Illinois is pleased to offer incentives that help municipalities conserve budget funds and natural resources," says Dillon. "The Caseyville water treatment plant is a great example that it pays to pursue the opportunities available to your organization."

Altogether, the lighting and motor upgrades will reduce the township's energy use by more than 2.3 million kilowatt-hours every year and deliver six-figure savings in annual energy costs.

As a self-sustaining operation that receives no local or state tax funds, the Caseyville Township Water Reclamation Facility must operate solely on what it charges residents. Anything they can do to reduce energy use could help avoid or delay increases in customer charges.

"The more we can save on our power bill, the more resources we have to invest in other areas," says LePere, who hopes to add an electric truck to the township fleet in the coming years. "We're always looking at ways to lower our carbon footprint."

"The Township Board didn't question these projects once they saw the incentives from Ameren Illinois."

— Randy LePere,
Sewer System Manager

"The dollars we invested in these projects was very small compared to what Ameren Illinois paid," says LePere. "The Township Board didn't question these projects once they saw the incentives from Ameren Illinois."

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