



PROCESS ENERGY ADVISOR HELPS VESUVIUS UNCOVER MOUNTAIN OF SAVINGS OPPORTUNITIES

Major steel companies around the world rely on Vesuvius USA. Powered by a team of 100 — and about 8.6 million kilowatt-hours of electricity a year — the Vesuvius plant in Charleston, Illinois produces ceramic materials used in the continuous casting process, which transforms molten metal into steel.

Already a lean operation, Vesuvius' management team continues to search for ways to make operations even more efficient. In recent years, the plant has partnered with the Ameren Illinois Energy Efficiency Program to make LED lighting upgrades and enhance efficiency of its compressed air system.

Having experienced the benefits of Ameren Illinois incentives firsthand, Lean Engineer Zachery Savoie did not hesitate when he heard the utility was offering a free, in-depth Energy Assessment for large industrial customers. The Process Energy Advisor Pilot Initiative provides a unique opportunity to scour an entire facility for energy-saving opportunities.

"Ameren Illinois launched this unique Pilot in 2020 where we embed an experienced Process Energy Advisor at the customer's facility for a week," says Jim Dillon, Senior Manager, Energy Efficiency Operations. "The goal is to provide a roadmap of energy-saving opportunities and quantify the cost savings that could be achieved."

And that help brings a wealth of experience.

Each Ameren Illinois Process Energy Advisor has extensive experience — often, decades — in energy efficiency technologies and manufacturing. Depending on the needs of the customer, the assessment can be tailored to a specific area of interest or involve a top-to-bottom "treasure hunt."

The latter was the case at Vesuvius. After examining plant processes for a week, the advisor identified a variety of recommended energy-saving measures, both large and small.

The most impactful upgrades centered on the plant's HVAC system. High-efficiency HVAC equipment upgrades could potentially reduce the plant's energy use by 450,000 kWh per year while maintaining strict temperature and humidity requirements.

Cash Incentives for Equipment Upgrades

After a Process Energy Advisor identifies energy-saving measures at your facility, the Ameren Illinois Energy Efficiency Program can reduce your payback period with these equipment-specific incentives:

- HVAC & Water Heaters
- Lighting
- New Construction
- Steam Traps
- Retro Commissioning
- Specialty Equipment
- Variable Frequency Drives
- Metering & Monitoring
- Water-Saving Devices
- Custom Incentives

Why Your Facility Needs a Process Energy Advisor:

- **Expertise:** Our Advisors bring many years of experience in manufacturing and knowledge of the latest energy efficiency technologies.
- **Objectivity:** A Process Energy Advisor brings a fresh perspective and a higher degree of objectivity.
- **Data:** The Energy Assessment you receive quantifies potential energy and cost savings, payback periods, and cash incentives to help defray the cost of upgrades — the kind of data needed to justify investments to management.
- **Time:** Plant staff seldom have the time to proactively explore energy-saving upgrades. Our energy experts conduct week-long on-site Energy Assessments focused exclusively on making your processes more efficient.

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— Zachery Savoie, Lean Engineer,
Vesuvius USA

Another key recommendation was to install variable frequency drives (VFDs) so the plant's robust vacuum system only uses the energy needed at any given time. Rather than running the system at full speed continuously VFDs would allow operators to safely ramp down fan speed depending on room occupancy and operational demands.

"This was a unique opportunity that aligned with what we're already trying to do at Vesuvius — plus, it was free," says Savoie. "It's hard to turn down free help."

Though Vesuvius' in-house maintenance staff had previously identified a need for VFDs, they had little time to explore the option in any depth. Detailed data provided by the Process Energy Advisor could help justify an investment in VFDs.

"Many of our larger manufacturing customers have cut back on staff and simply don't have the time or expertise to conduct this level of review in-house," says Dillon. "Even in the leanest organization, a Process Energy Advisor can shed light on amazing opportunities."

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While Vesuvius had already upgraded much of its lighting to high-efficiency LED technology, the Energy Assessment identified a related area for improvement: motion detectors that would automatically turn off lighting in unoccupied areas.

In total, the Energy Assessment identified upgrades that could reduce the plant's energy use by more than 10 percent. And when you upgrade to new, high-efficiency equipment, you reduce maintenance costs as well. For example, today's LED light bulbs last longer than conventional bulbs. And the use of VFDs reduces wear and tear on motors.

Implementation of all the recommended measures could mean a \$60,000+ boost to the bottom line. The report also identified nearly \$30,000 in incentives to help complete recommended upgrades.

"I was surprised at the savings identified by the Process Energy Advisor," says Savoie. "It was extremely helpful to have an expert here for an entire week to focus on process improvements and energy savings. It's really beneficial to have an outside perspective if you want to go beyond the low-hanging fruit."

Another positive development? The Energy Assessment spurred the creation of a Strategic Energy Management Team. The group now meets monthly with an Ameren Illinois Energy Advisor to evaluate the viability of projects identified in the Energy Assessment.

By quantifying potential energy and dollar savings, payback periods and cash incentives, a Process Energy Advisor can help plant operators make data-driven decisions — and justify upgrades to management.

"I would highly recommend the Process Energy Advisor Initiative to other manufacturers," says Savoie. "Our Energy Advisor was very knowledgeable and did all the groundwork and calculations in presenting projects. The Energy Assessment provides a good foundation for targeting projects and moving forward — and rebates from Ameren Illinois make the payback even better."

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