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CASE STUDY - INDUSTRIAL ENERGY EFFICIENCY

The quickest way to slow down energy waste.

For Philips Lightolier, the answer was VFDs.



Some companies claim a commitment to the environment. Philips Lightolier shows it.

Since the early 80s, they've reached countless sustainability goals, from reducing water consumption to replacing harsh chemicals with environmentally friendly alternatives. And Philips Lightolier is just getting started.

Sustainability Spotlight:

Over the last 15 years, Philips Lightolier has reduced:

-  VOC emissions by **99%**
-  Use of toxic chemicals by **58%**
-  Electricity use by **60%**
-  Natural gas use by **55%**
-  Water use by **70%**



Based in Fall River, Massachusetts, Philips Lightolier (a division of Philips Lighting, the global leader in lighting) is a premier manufacturer of 9,000 different recessed lighting products – performing hydroforming, metal spinning, buffing, anodizing, powder coating and assembly in-house at their 326,000 square foot facility. More than 250 employees help create the lighting products used by businesses across the country. But there's one person who's the driving force behind Philips Lightolier's environmental, energy-saving efforts – Ron Westgate, facility and environmental manager of Philips Lightolier.

Under Ron's leadership, the facility has carried out countless conservation and sustainability projects. After more than 30 years of completing successful energy efficiency upgrades, Ron turned to National Grid and Leidos, National Grid's lead engineering vendor, to help him identify new ways to reduce energy use.

"Our goal here is to make energy-efficient lighting solutions and consume the least amount of energy and natural resources during our manufacturing process."

– Ron Westgate, Philips Lightolier facility and environmental manager

PUTTING THE FOCUS ON OFF-HOURS

Leidos shifted their attention to Philips Lightolier's off-hours base load to find new ways to save energy. With the help of a thorough assessment from the University of Massachusetts' Industrial Assessment Center using 27 data loggers, about 12 energy-saving opportunities were identified. Components for compressed air and HVAC units were outfitted with shutoff valves to eliminate off-hour operation. One opportunity, however, stood out from the rest: installing new, high-efficiency motors and variable frequency drives on three wet scrubber exhaust fans.



"Philips Lightolier was on a strict payback criteria, so we had to take a fine-tooth comb to all of their manufacturing processes to be sure we didn't miss any energy-saving opportunity." – Alex Quintal, Leidos

FROM IDEA TO INSTALLATION

To ensure air quality, the wet scrubbers used with three anodizing lines are required to operate 24/7 – but they don't need to operate at full speed during off-hours. That's where the new motors and VFDs come in. With the help of National Grid incentives, a local supplier and contractor installed and fine-tuned the new motors and VFDs. Now, Philips Lightolier can operate the motors at 50% speed once first shift ends, which reduces energy consumption by 80%.

	Project cost	Annual energy savings	Annual energy cost savings	National Grid incentives provided	Payback period
New motors and VFDs on 3 scrubber exhaust fans	\$47,953	289,481 kWh	\$37,633	\$23,977	6 months

MORE UPGRADES, MORE BENEFITS

Philips Lightolier didn't stop with VFDs. They also identified and repaired compressed air leaks and upgraded facility lighting. By sealing multiple air leaks and replacing 1000W metal halide and T12 fixtures with Philips SB Series High Bay T5s and KW Series T8 Task Lights, they achieved significant energy and money savings, as well as benefits beyond reduced energy consumption and costs.

	Project cost	Annual energy savings	Annual energy cost savings	National Grid incentives provided	Payback period
Compressed air leak survey and repair	\$7,500	381,951 kWh	\$47,389	\$3,300	About 1 month

Other important benefits:

Increased employee productivity – Improved lighting and sealed compressed air leaks create a more comfortable workplace. By repairing the leaks, more power can be delivered to the air tools, increasing productivity. Thanks to new Philips lighting, visibility is improved, enabling employees to more efficiently and accurately complete their tasks.

Enhanced safety – When everyone can see better, there's less risk of accidents, trips and falls in the facility.



Combine these upgrades with all of their other efforts, and Philips Lightolier is, of course, helping the environment, but also enhancing their position in the marketplace.

“Philips Lighting is looking to become carbon neutral by 2020, so reducing our energy usage is helping the company achieve that goal,” Ron said.



A CULTURE OF SUSTAINABILITY

At Philips Lightolier, everyone is involved in saving energy. Employees are encouraged to support sustainability in their day-to-day roles. As part of a process improvement program, employees can submit ideas and suggestions (in the spirit of kaizens) for consideration. The person with best idea is recognized each week at a company meeting and awarded some cafeteria vouchers.

Additionally, the company holds an annual contest, where facilities compete to have the winning kaizen energy-saving solutions. Teams are formed and competitions take place on a local, regional and even global level.



"We're fortunate to have good employee involvement. They know that by helping to keep our overhead costs down, they're protecting their jobs and the environment at the same time."

– Ron Westgate, Philips Lightolier facility and environmental manager



Looking to upgrade your facility? Here's one tip from Ron:

"Get to know your National Grid account manager. They're smart people who can see opportunities when they visit your facility and connect you with incentives."

National Grid is ready to help you experience the benefits of energy efficiency. We've got the financial incentives and technical support you need to successfully complete your upgrades.

Connect with us today: [1-800-787-1760](tel:1-800-787-1760) energysavings@ngrid.com ngrid.com/business