

efficiency MAINE

Corning Incorporated Upgrades at Kennebunk Facility

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case study

The Science of Energy Efficiency

Corning Incorporated's Life Sciences business, located in Kennebunk, is a global leader in consumable glass and plastic laboratory tools for life science research. Based on our experience working with Corning, Efficiency Maine would like to showcase the management and staff of Corning Life Sciences for their exceptionally well-managed approach to energy efficiency. Elements of Corning's energy management model could be of use by any business that wants to reduce costs, improve productivity and lessen its environmental impact through energy efficiency.

Corning's Leadership

Corning's Kennebunk plant was built more than 35 years ago and officials recognized that its electric equipment was inefficient by today's standards. Areas where employees seldom worked were brightly lit 24 hours a day with older technology lighting. Electric chillers ran throughout the year to supply process-cooling water.

Concerned with rising electricity costs at the plant, Sharon Staz, General Manager of Kennebunk Power and Light, recommended that Corning contact Efficiency Maine for help. Two years ago, two of Corning's facility engineers attended a Building Operator Certification (BOC) course offered through Efficiency Maine. The knowledge they brought back to the plant soon led to a savings of 5 percent in electricity for the Kennebunk plant.



Around this time, the parent company, Corning Inc., announced its Global Energy Management (GEM) Program, a global-wide corporate commitment to increasing energy productivity by 30% within the next 5 years.



Shown here are Efficiency Maine's David Kyle (far left) Denis Bergeron (far right), and Corning's Dave Blunt.

Energy Process Excellence Team Formed

Motivated by all of these factors, management formed an Energy Process Excellence Team, or PEX, a team of seven employees charged with identifying ways to make the Kennebunk plant more energy efficient, safer and a more enjoyable workplace.

Dave Blunt, facility engineer and PEX team co-leader, says the team brainstormed hundreds of ideas. "We looked to identify those items that would give us both the quickest return on investment and the greatest impact towards increasing energy productivity."

The benefits of energy efficiency are not only financial and environmental. "Our employees have told us that they can do their jobs better now because of the improved lighting," says Vatcher. Management has instituted a suggestion board for employee energy conservation ideas, and has received a strong response. "They can see the difference efficiency makes, and they come to us with ideas on how we can save even more energy. The changes have raised the energy awareness of everyone in the company. What we're seeing here is a culture change."

Blunt is enthused about learning additional steps that he and the PEX team can take as they continue with their goal of increasing energy productivity. He is currently enrolled in another Efficiency Maine BOC course as the cycle of learning and implementation continues.

Steps for Effective Energy Management

1. Senior management identifies energy savings as a priority
2. Senior management sets "stretch" targets for energy reduction
3. Senior management creates a cross-functional Energy Team with energy champions at the lead
4. Energy Team measures energy use, researches efficiency opportunities
5. Energy Team sets specific goals
6. Energy Team implements changes
7. Energy use is measured and tracked
8. Senior Management and Energy Team communicate with all employees about their individual role in energy management
9. Senior Management institutes new operations and maintenance practices that save energy with "buy-in" and feedback from all workers
10. Senior management acknowledges accomplishments of Energy Team and revises energy targets

About Corning Incorporated

Corning Incorporated (www.corning.com) is the world leader in specialty glass and ceramics. Drawing on more than 150 years of materials science and process engineering knowledge, Corning creates and makes keystone components that enable high-technology systems for consumer electronics, mobile emissions controls, telecommunications and life sciences. Their products include glass substrates for LCD televisions, computer monitors and laptops; ceramic substrates and filters for mobile emission control systems; optical fiber, cable, hardware and equipment for telecommunications networks; optical biosensors for drug discovery; and other advanced optics and specialty glass solutions for a number of industries including semiconductor, aerospace, defense, astronomy and metrology. Corning Inc. is headquartered in Corning, New York with 25,000 employees worldwide. The company is ranked 439 among America's Fortune 500 companies.



Partnering with Efficiency Maine

Blunt invited contractors to submit bids on a few of the larger projects, and he contacted the Efficiency Maine staff for technical assistance in identifying the most promising projects, and those projects that would qualify for Efficiency Maine incentives.

With advice from Efficiency Maine, Corning decided to move forward with four projects:

1. A total overhaul of the facility's lighting system;
2. Installing an "economizer" to use cold outdoor air in the winter months for chilling process water;
3. Adding a variable frequency drive and optimized impellers on the cooling tower circulation pumps; and,
4. Adding a variable frequency drive and optimized impellers on the chilled process water circulation pumps.

"Lighting was the most visible project we did," explained Blunt. "We replaced the original lighting with high efficiency T8 fluorescent lights and electronic ballasts, and installed occupancy sensors and solid reflectors to direct light away from the ceilings and back down to the workspace."

In total, the company upgraded or replaced 1,630 fixtures. Efficiency Maine estimates that those improvements alone will save the company about 40 percent on its electricity usage for lighting.

Altogether, the four projects Corning has undertaken in partnership with Efficiency Maine will lower the plant's electricity usage by approximately 1.8 million kWh per year, and reduce greenhouse gas emissions by over 1,300 tons per year.

Under Efficiency Maine guidelines, all four Corning projects qualified for incentives totaling \$59,000. These incentives brought project payback periods down to 1.3 years from 2.8 years. These returns were so compelling that Corning's corporate office agreed to fund the remaining costs through its Global Energy Management Program. The corporate support left the Kennebunk plant facility's budget intact to provide funding for even more improvements.

Efficiency Maine offers free advice and cash incentives for qualifying equipment upgrades. For more information, call toll-free 866-376-2463 or visit the Web site at www.efficiencymaine.com.



Efficiency Maine is a statewide effort to promote the more efficient use of electricity, help Maine residents and businesses reduce electricity costs, and improve Maine's environment.