

Raise the Bar for **ENERGY SAVINGS**

How variable-frequency drives helped Owens Corning cut energy costs in half and meet its sustainability goals.



Owens Corning is a world leader in building materials systems and composite solutions, with a corporate commitment to sustainability. As part of a company-wide effort to reduce energy costs, its Guelph Glass Plant installed real-time metering equipment to measure and monitor energy use for its major manufacturing processes. One challenge for the plant was to find ways to reduce energy costs of fans on a critical cooling section of the process. Variable-frequency drives (VFD) were the answer.

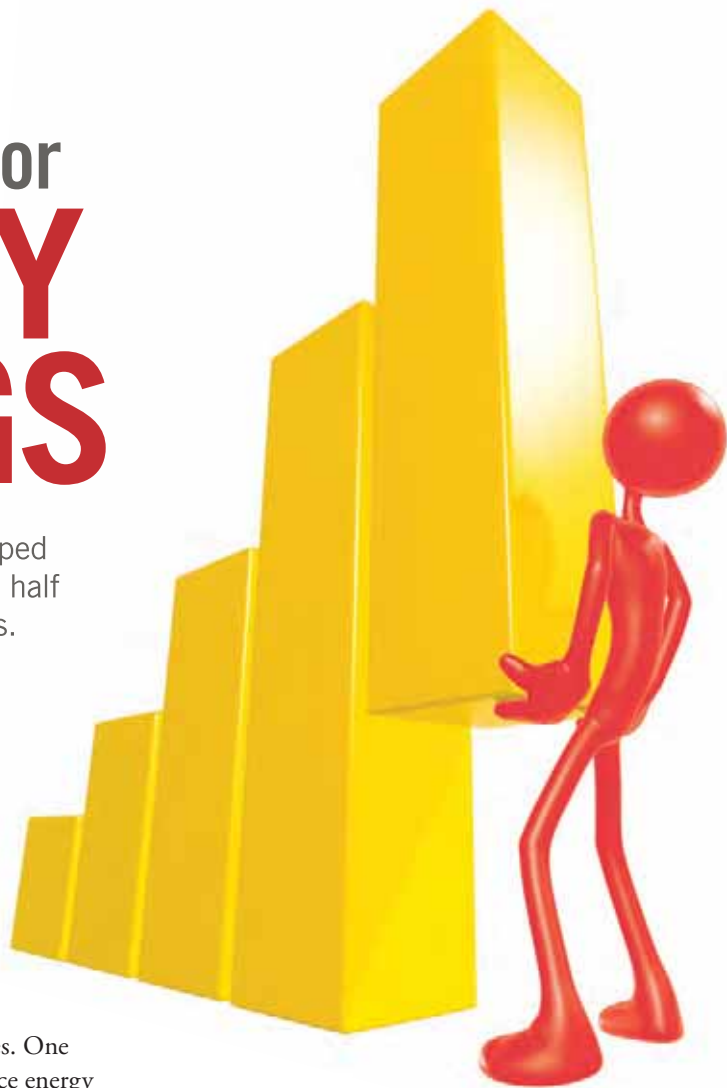
The 400,000-square-foot facility in Guelph, Ontario, annually produces tens of thousands of tons of glass fiber. Customers

“Real-time metering lets you know where you use energy. And if you make changes, you can see where the paybacks are. You don’t know what you’re losing unless you measure it.”

— Frank Peel, Owens Corning

use the fiber to make products such as interior car-door panels, ladder rails, bathtubs and windmill blades. Energy intensive blowers, fans, pumps and compressors are required to move, heat and cool tons of molten glass used to produce glass fibers.

Since 2007, the Guelph plant has invested nearly \$344,000 in energy conservation projects as part of a multi-million-dollar investment in energy efficiency at Owens Corning operations around the world. The investment in



10 energy-efficiency projects at the plant annually reduces electricity consumption by more than 2.3 MWh, and saves more than \$150,000 a year.

The Plan to Slash Electricity Consumption

Managers wanted to reduce the speed of the 125-hp cooling fan and the three 40-hp recirculation fans on the oven, while not affecting the integrity of the product.

Improper cooling can reduce tensile strength of the web of glass fibers and cause it to break as it’s being wound into rolls. Using real-time metering equipment, plant engineers evaluated potential savings of installing VFDs on the fans. They also verified that reduced fan speed wouldn’t affect product volume and quality.

Measurement also was essential to determine potential return on investment (ROI) required to apply for the Ontario Power Authority’s Electricity Retrofit Incentive Program (ERIP). The ERIP promotes hydro conservation and management by focusing on improvements in lighting; motors; heating, ventilation, air conditioning (HVAC); and overall electrical systems.

Reduce Downtime

Rockwell Automation has listed ServiceDrive® cable as an Encompass referenced product ...



...recommended in their new Wiring and Grounding Guidelines for PWM AC Drives.

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Variable-frequency drives helped Owens Corning achieve its sustainability goals by providing energy savings of nearly 50% on chop-strand mat line fans, with an ROI in less than one year.

By employing VFDs, this project aimed to reduce fan speeds to 80% for 50% energy savings, with ROI in less than one year.

AC Drives Help Save Energy

Guelph plant engineers turned to its longtime business partner Rockwell Automation and its local Westburne Ruddy drives specialist. They recommended the Allen-Bradley® PowerFlex® 700 AC drive to control the 125-hp cooling fan, and installed three PowerFlex® 70 AC drives on the 40-hp oven recirculation fans.

The PowerFlex VFDs help Owens Corning achieve its sustainability goals by providing energy savings of nearly 50% on chop-strand mat line fans, with an ROI in less than one year. Reducing fan speeds also contributes to additional advantages, such as longer motor life, increased safety and reduced use of natural gas on oven burners.

The four PowerFlex drives help provide the company with total annual energy savings of 500 MWh. Payback on the investment in drives was approximately 10 months, based on three 12-hour shift schedules, or 6,570 hours per year. □

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Allen-Bradley PowerFlex Drives

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