

# C.J. Miller uses VFDs to pave the way to energy savings

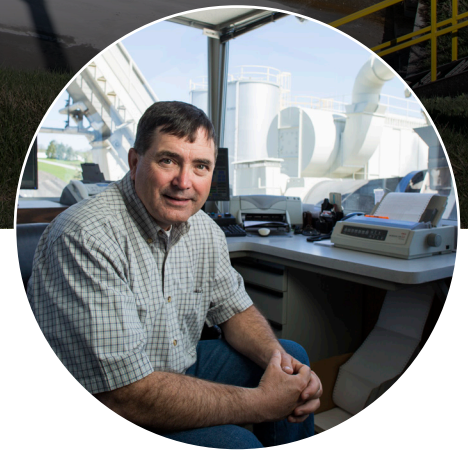
The folks at C.J. Miller have been in the site development business for more than 50 years. In addition to site clearing and demolition, the company churns out asphalt at rates in excess of 300 tons per hour for its paving business. To reduce its environmental footprint, the company uses recycled asphalt in its pavements and is taking steps to reduce energy use at its asphalt plants.

At its Finksburg and Westminster plants, for example, C.J. Miller installed variable frequency drives (VFDs) to provide greater control of the high-horsepower motors used in asphalt production. With the help of incentives from BGE's Smart Energy Savers Program®, the company cut the cost of the VFD installation in half. What's more, the energy savings made possible by the VFDs will save more than \$30,000 a year in energy costs.

## The opportunity

Production of asphalt starts with heating and drying a mixture of sand and rocks, known as aggregate, and then combining it with asphalt cement. The resulting mixture is stored piping hot in silos until it's transferred to dump trucks and hauled to a construction site and spread onto a roadway.

C.J. Miller operates asphalt production plants at its Finksburg and Westminster locations. Fans, driven by 200-horsepower electric motors, are critical to the process of heating the aggregate because they help control the amount of airflow. Until recently, the company used dampers to control the airflow, with the fans running at 100% power all the time. But the dampers were inefficient and did not allow for variability in production levels throughout the day.



**“By operating more efficiently, we’ve reduced our carbon footprint by an estimated 128 tons.”**

—Pat Talbert,  
asphalt plant maintenance manager  
C.J. Miller

## The BGE solution

According to Pat Talbert, C.J. Miller's asphalt plant maintenance manager, the company heard about BGE's Energy Solutions for Business Program from equipment vendors and contractors. Talbert contacted his BGE account manager to learn about the incentives available for installing VFDs.

BGE's program made selecting qualifying equipment and determining available incentives easy because no complex engineering analyses were required. The BGE account manager walked him through the predetermined incentive levels for prescriptive VFD equipment.

After outlining the estimated energy and cost savings and describing the incentives to his management team, Talbert said the decision to install the VFDs was an easy one. "Each VFD was a significant amount of money to lay out," he says, "so the incentives were a big plus in that area. The incentives made the return on our investment a lot quicker."

C.J. Miller installed a total of four VFDs at its Finksburg and Westminster plants, two at each facility, and has plans to install three more at its other plants. Talbert scheduled the upgrades to occur during the off-season to minimize the effect of the projects on operations. "We did the work during our normal winter maintenance, when the plants were down," he says, "so we'd be more efficient when we restarted production in the spring."

## The benefits

The biggest benefit is the energy savings. "Instead of running the motors full bore all day, the VFDs let us slow things down, saving a significant amount of energy," Talbert says. Electricity costs at the Westminster plant, for example, are down almost one-third.

In total, the company is saving an estimated 233,910 kilowatt-hours (kWh) of electricity a year since the VFDs were installed. That translates into a cost savings of about \$30,000 annually.

An added benefit is a reduction in natural gas use in the huge dryers used to heat the asphalt. "Slowing down the air velocity in the dryer with the exhaust fan and burner blower, we increased our natural gas fuel efficiency," Talbert says, "which was an unexpected savings."

Another unanticipated benefit is that the fans run slower, so they're quieter, which the employees appreciate.

The experience with VFDs has made Talbert and his colleagues true believers. "A lot of people don't understand VFDs and what they do," he says. "It's a newer technology. I'm not sure the industry understands the energy-saving potential. But you can save much more money using the VFDs."

There are benefits to the environment and community as well. Using less energy reduces C.J. Miller's carbon footprint. "To be a good community member, everybody has to look at what they contribute to climate change," Talbert says. "I think it's important for any business to look for opportunities to improve their energy efficiency. BGE's program is a great place to start."

The BGE Energy Solutions for Business Program provides financial incentives and technical assistance to help businesses and non-profit organizations maximize energy efficiency and reduce costs. Financial incentives cover up to 50% of the cost for retrofit projects and up to 75% of the cost difference between standard- and high-efficiency equipment for new construction and replacement of end-of-life equipment. For more information, visit [BGESmartEnergy.com](http://BGESmartEnergy.com).

EmPOWER Maryland programs are funded by a charge on your energy bill. EmPOWER programs can help you reduce your energy consumption and save you money. To learn more about EmPOWER and how you can participate, go to [BGESmartEnergy.com](http://BGESmartEnergy.com).

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## Savings at a glance

C.J. Miller installed VFDs on the motors that power its asphalt production facilities in Finksburg and Westminster.

BGE program:  
**Energy Solutions  
for Business**

Energy savings:  
**233,910 kWh/year**

Cost savings:  
**\$30,000/year**

Incentives paid:  
**\$24,858**

Payback:  
**Less than 2 years**

