

Success Stories



Project Details:

Location:

26427 State Route 281
Defiance, OH 43512

Project Contact:

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Technologies:

Desiccant-based dehumidification equipment

Funding Source:

American Recovery and Reinvestment Act –
State Energy Program

Incentives:

\$518,232

Total Project Costs:

\$1,036,456

Energy Impacts:

- 14,603 MMBTU in net energy reduction, primarily from reducing coke use by 714 tons per year

Economic Impacts:

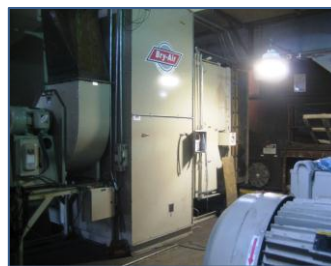
- \$436,215 cost savings per year
- Jobs created or retained: 25 FTE's*

Environmental Impacts:

- Reduced CO₂ emissions by more than 4,500,000 pounds per year, which is equivalent to taking 401 cars off the road.

*Job creation numbers are based on direct jobs created or retained using Full-Time Equivalent (FTE) hours.

General Motors Company



Background:

General Motors Company has become one of the world's largest and most well-known automobile manufacturers. The company began in 1908, has headquarters in Detroit, Michigan, and has 209,000 employees worldwide. The security and information service OnStar, which is a subsidiary, has become a leader in its class.

Challenge:

The General Motors plant in Defiance, Ohio has been using a cupola furnace that is fueled by foundry coke. The cupola creates cast iron that becomes automotive engine cylinder blocks and heads. The coke is 91 percent fixed carbon and its combustion releases high amounts of carbon dioxide into the atmosphere. Water vapor contained in the coke combustion air reacts to consume more than 700 tons of coke per year.

Solution:

To reduce energy costs and carbon dioxide emissions, the cupola was upgraded with a desiccant-based dehumidification system, removing 600 tons of water vapor from the cupola blast air used to combust coke. The lowered operating costs and emissions resulting from this project make Defiance Plant 1 more competitive in the global gray iron casting marketplace, help sustain its operations, and retain its employees.

"Implementation of this project is expected to significantly reduce gray iron manufacturing variation and cost at Defiance."

-Gene C. Tuohy, Global Director, GM Powertrain Manufacturing Engineering - Castings



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