

Utilizing Waste Blast Furnace Gas for Electricity Generation at an Indiana Steel Mill

Project Description

This project will convert waste blast furnace gas (BFG) generated during iron making operations into electricity at the ArcelorMittal Indiana Harbor plant in East Chicago, Indiana. This plant is the largest steel mill in the Western Hemisphere and has the largest blast furnace in the United States (known as the IH-7 blast furnace).

With the current IH-7 blast furnace system, 46 billion cubic feet of BFG—22% of the furnace’s annual BFG production—is flared into the atmosphere and wasted each year. ArcelorMittal will install an 80% efficient energy recovery boiler that will use the wasted BFG to generate 350,000 pounds per hour of steam. The steam will be used to drive existing turbo-generators at the facility to produce 38 megawatts of power, equivalent to 333,000 megawatt hours of electricity per year. The electricity generated by the steam will be used on-site and will displace power generated by the local electric utility from primarily coal-fired power plants.



ArcelorMittal USA blast furnace gas flare capture project under construction in 2012.

Photo courtesy of ArcelorMittal USA

Benefits for Our Industry and Our Nation

This project will create new jobs related to the design and construction of the energy recovery boiler system and the manufacture of the equipment to be installed. The project will also support the retention of direct and indirect permanent jobs associated with the operation and maintenance of the plant and equipment.

The facility will save an estimated 3.66 trillion British thermal units (Btu) annually from the 46 billion cubic feet of waste gas that is currently flared. The project will also reduce carbon dioxide emissions by 340,000 tons per year, lower energy costs, and improve the competitiveness of the mill.

Project Partners

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| Recipient Organization | ArcelorMittal USA Inc. |
| Location | East Chicago, Indiana |
| Award Date | November 2009 |
| Expected Operational Date | July 2012 (boiler startup) Fall 2012 (system completion) |
| Funding | \$31.6 million in U.S. Department of Energy funding from the American Recovery and Reinvestment Act of 2009; \$31.6 million in private-sector cost share |
| Equipment | Boiler fired by blast furnace gas |