



Industries of the Future-West Virginia

Co-Funded By:
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Low-Cost Reliable Energy & Chemical Feedstocks for Energy-Intensive Industry Clusters: Feasibility Study of a Coal-Fired Co-Generation Facility in Marshall County, WV

Project Summary:

Clusters of energy-intensive industries that require large amounts of electricity, heat, and chemical feedstocks have a high potential to capitalize on the potential benefits of modern coal-based technology. In many cases these industries are highly dependent on natural gas for both energy and feedstock requirements, and the increasing cost of natural gas threatens their economic viability. Access to low-cost electricity, heat and chemical feedstocks from a modern coal gasification plant, in combination with an integrated combined-cycle power plant, has the potential to convert the current cost disadvantage into a competitive advantage. However, the economic feasibility of such a project depends on the identification of sufficient cost benefits to justify the large capital investment. Technical and environmental feasibilities of such a project must also be assessed. Synergies among the independently owned and operated units within the cluster are likely to be critical to evaluating the viability of such an investment.

In the Northern Ohio Valley, and more specifically in Marshall County, West Virginia and adjacent Belmont County, Ohio, there exists a concentration of energy-intensive production facilities in-

cluding ORMET (primary aluminum), Bayer (petrochemicals), PPG (chlor-alkali), that consume large amounts of electricity as well as significant quantities of natural gas which is used both as a fuel and as a chemical feedstock. Against the recent backdrop of rising natural gas prices, a facility capable of efficiently producing power from a cheaper and less economically volatile fuel, namely eastern bituminous high-sulfur coal, is worthy of investigation. An additional compelling reason for considering such a facility is found when the synergies associated with cogeneration of synthesis gas and the possibility of supplying chemical raw materials from such a facility to local industries in the region are considered.

The overall goal of this study is to lay out a step-by-step process that could lead to a coal-fired electric power and chemical co-generation facility in Marshall County, WV serving energy intensive industries in the eastern Ohio and northern West Virginia region of the Ohio River Valley. A key enabling step to establishing such a co-generation facility could be co-funding through round three of the U.S. DOE's Clean Coal Power Initiative (CCPI-3) as an alternative to self-funding of the project by a utility or local industry.