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SunCoke seeks Kentucky board approval for coke plant power facility

Waste heat from the coal coking process to be used to generate up to 90 MW

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The Kentucky State Board on Electric Generation and Transmission Siting has received an application requesting a construction certificate for a power plant, which would be fed by waste heat from a planned coking plant, and associated electric transmission line in northern Greenup County.

A review has determined that the application is complete as filed Oct. 24, said the board in an Oct. 29 announcement. The application, from **SunCoke Energy South Shore LLC**, proposes construction of a 90-MW plant in conjunction with a coke plant to be built on about 250 acres along the Ohio River, two miles northeast of the city of South Shore. The site is currently in agricultural use, but is near other industrial facilities.

SunCoke Energy South Shore LLC is a subsidiary of **SunCoke Energy** (NYSE: SXC), which produces coke for use in steelmaking. Coke production involves heating coal to drive off volatile compounds, leaving behind a material that is pure carbon. The proposed SunCoke plant would capture and burn the volatile compounds to produce steam, which would drive a turbine to generate electricity. The plant could generate up to 90 MW, but would typically produce 40 MW to 80 MW, according to SunCoke's application.

SunCoke Energy has been working on permitting and **PJM Interconnection** approvals for this project for several years. Connection to the grid would be via a 138-kV transmission line to an American Electric Power substation in New Boston, Ohio, a distance of about a mile. The electricity would be sold on the open, wholesale market.

The Siting Board is an agency within the Energy and Environment Cabinet. Under a law passed in 2002 by the Kentucky General Assembly, the Siting Board is charged with reviewing applications for merchant power plants which sell electricity on the wholesale, unregulated market.

The proposed coke plant would consist of a heat recovery coke facility (including heat recovery coke ovens, a common tunnel to transfer heat, flue gas desulfurization, and a final stack to emit the desulfurized flue gas) as the source of steam to the merchant electric generating facility. Waste heat converted to high-pressure, high-temperature steam at the heat recovery coke facility would feed the merchant electric generating facility's steam turbine generator (STG) to convert the steam to electricity. To maximize the amount of power produced, the STG includes a vacuum condenser which subcools condensate from the steam to create a vacuum to extract the maximum amount of power.

The company also proposes to construct a new 138-kV electric radial tie line to the existing AEP Millbrook Park substation, located approximately one mile and nearly due north across the Ohio River, in the City of New Boston, in Scioto County, Ohio. Roughly 0.7 miles of the radial tie line would be located in Kentucky, traversing only facility property and the Ohio River.

The application noted about a section of state law: "Given the symbiotic relationship of generating electricity from steam recovered by waste heat from the coke making process, SESS believes the requirement of locating the proposed facility

on a site where existing electric generating facilities are located, as stated in KRS278.706(2)(g), is not applicable to the proposed SESS facility. The access to barge transportation for supply of metallurgical coal, approximately 50% of which may be sourced from Kentucky, access to the rail line that would be used to carry the finished coke product offsite, the ability to utilize surface water from the Ohio River for the project's process and non-process operations, and the industrial setting all make the proposed facility location ideal."

ABOUT THE AUTHOR

Barry Cassell

Barry Cassell is Chief Analyst for *GenerationHub* covering coal and emission controls issues, projects and policy. He has covered the coal and power generation industry for more than 26 years, beginning in November 2011 at *GenerationHub* and prior to that as editor of SNL Energy's *Coal Report*. He was formerly with *Coal Outlook* for 15 years as the publication's editor and contributing writer, and prior to that he was editor of *Coal & Synfuels Technology* and associate editor of *The Energy Report*. He has a bachelor's degree from Central Michigan University.

Barry can be reached at barryc@pennwell.com.