

- fossil energy
- environmental
- energy efficiency
- other

HIGH VALUE FROM "LOW-RANK" COALS

Description

States Impacted:

Montana, Wyoming

Benefit Areas:

Energy Security, Lower Cost of Electricity

Participants:

Rosebud SynCoal Partnership

FETC Contact:

Joseph Renk*

Office: (412) 386-6249
E-Mail: renk@fetc.doe.gov

MAIL ADDRESS:

* U.S. Department of Energy
P.O. Box 10940
626 Cochran Mill Road
Pittsburgh, PA 15236-0940

**U.S. Department of Energy
P.O. Box 880
3610 Collins Ferry Road
Morgantown, WV 26507-0880

WEBSITE:

www.fetc.doe.gov

The Rosebud SynCoal Clean Coal Technology Project in Colstrip, Montana, has demonstrated a way to upgrade low-quality subbituminous and lignite coals into a high heating-value, low-sulfur fuel. Following construction and testing of the dedicated pneumatic feed system for Montana Power Company's 330 megawatt Colstrip No. 2 generation unit in Colstrip, Montana, the Advanced Coal Conversion Process (ACCP) facility operates full time processing over 2 million tons of raw subbituminous coal. The facility has supplied over 1.3 million tons of SynCoal® to customers, primarily cement and lime plants industries, and utilities. This technology enhances low-rank western coals with typical moisture content of 20-40%, sulfur content of 0.5-1.5%, and heating values of 5,500-9,000 Btu/lb, by producing an upgraded SynCoal® product with a moisture content as low as 1%, a sulfur content as low as 0.5%, and a heating value up to 12,000 Btu/lb.

Rosebud SynCoal Partnership has signed a technology marketing agreement with Ube Industries, Ltd., of Tokyo, Japan, that will enable Ube Industries to have the non-exclusive right to represent Rosebud in marketing and commercialization of the SynCoal® technology outside the United States. Ube is currently conducting tests at the Advanced Coal Conversion Process Demonstration facility on Thailand coal.

Goals

To lower the moisture and sulfur content of low-rank coals.

Tangible Benefits

National: Rosebud's low rank coal upgrading technology can take advantage of the plentiful, low cost, low sulfur Powder River Basin coals and produce a high quality fuel such as SynCoal®. Handled properly, upgraded fuels like SynCoal® can lower SOx and NOx emissions from combustion, without the need for expensive or time consuming retrofits to existing power plants and industrial facilities.

Regional: Coal-fired electric utilities benefit from the generally lower cost of coal preparation processes to prevent sulfur oxide emissions. Additionally, coals found in the Powder River Basin in the western states naturally emit less nitrogen oxides during combustion than eastern U.S. bituminous coals proven yet.

Local: Local cement and lime industries have found that this fuel improves both capacity and product quality in their direct-fired kiln applications. The steady flame it produces appears to allow tighter process control and improved process optimization. A bentonite producer has been using SynCoal® as an additive in green sand molding product for use in the foundry industry. It is a very consistent product in the bentonite industry; allowing green sand binder customers to reduce the quantity of additive used and improving the quality of metal castings produced.