

Will Environmentally Acceptable Mid-Continent Coal Reserves Be Adequate for Electric Power Generation in the 21st Century?: Abstract

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ABSTRACT

In 1993, 2.9 million tons of medium- to high-sulfur bituminous coal was produced mostly at surface mines, while about 80 million tons of mostly low-sulfur subbituminous coal was consumed at 150 electric-power generators that produced 34,000 megawatts per hour (MW/hr) in 5 Mid-Continent states (Arkansas, Iowa, Kansas, Missouri, and Oklahoma). These 5 states contain 98 billion tons of identified bituminous coal resources of which 41 billion tons are recoverable reserves (documented by state geological surveys) and 11 billion tons are included in the Demonstrated Reserve Base of the United States Department of Energy.

Bituminous coal reserves are available in these Mid-Continent states to produce at least 34,000 MW/hr of electricity. However, the technology of most of these states' power plants, coupled with increasingly restrictive, federally mandated air-pollution regulations, has resulted in economics-driven decisions by the electric power utilities to use "compliance," low-sulfur, subbituminous coal from Wyoming.

Only one million tons of Oklahoma high-sulfur bituminous coal is used in a state-of-the-art fluidized-bed combustion, co-generation, 320 MW/hr power plant.

I believe 110 large (300 MW/hr) FBC plants, whose technology removes air-polluting sulfur, ash, and trace elements (at a temperature 500 degrees cooler than conventional plants) would have to be on-line, before the medium-to high-sulfur bituminous coal reserves could be burned and meet federal and state clean air standards in these 5 states. Otherwise these states' large bituminous coal reserves will not be adequate to generate the required electric power now or far into the 21st century.

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