

**ENVIRONMENTAL CONCERNS RE: LIGNITE MINING AND ITS USE AS A  
REPLACEMENT FOR COAL OR OTHER FOSSIL FUELS – A Presentation Made To t  
Delta Grassroots Caucus**

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Lignite is a fossil fuel with low energy content. It is high in moisture; it produces large amounts of ash; and it is uneconomical to transport in its natural state. Further, it produces and releases huge amounts of carbon dioxide when burned. All in all it is a low grade, highly inefficient fuel that should stay in the ground.

Surface mining of lignite is detrimental to the environment unless carefully regulated, inspected, and monitored. Arkansas has an effective surface mining regulatory program and its surface mining reclamation programs and efforts have restored hundreds of acres. Yet, if lignite mining is to take on the same intensity as natural gas extraction in the Fayetteville Shale, it will easily overwhelm the state's surface mining regulatory program. I have the following concerns with lignite – its extraction and its use as a fuel either for coal plants or as a synthetic replacement fuel.

First, lignite mining can be detrimental to surface- and ground- water. Lignite has high concentrations of sulfur that can create acidic discharges to adjacent water bodies. To reach lignite, groundwater must be pumped out to below lignite seams – thus contributing to regional hydrological deficits. Catastrophic flooding as we seen several times the past years can overwhelm retention basins for containing and treating acid runoff. For example, in the late 1980s, the retention basin for a barite mine on the South Fork of the Caddo River collapsed and barite tailings and acid discharge destroyed the South Fork to its confluence with the Caddo River proper.

Second, mercury levels are significant in the Gulf Coastal Plain's wetlands. Disturbance of soil and run off from lignite mining sites could lead to greater impairment of local lakes and rivers and their fisheries.

Third, once lignite is mined, to what use is the land restored? My recommendation is that the land should be restored to its original condition prior to mining -- if natural forest then back to natural forest; if pasture then back to pasture. Lignite deposits are located on prime hunting and fishing lands in south Arkansas that hunters and anglers have used for generations. These lands generate millions of dollars in hunting and fishing fees, leasing fees, and important revenue to state and local economies.

Fourth, lignite mining can lead to health problems in nearby communities such as respiratory problems due to mining dust and releases of ash and sulfur dioxide. Mining dust can find its way into surrounding rivers, reservoirs and ground water.

Fifth, once extracted, lignite power emits high emissions of greenhouse gases. Burning one ton of lignite releases one ton of carbon dioxide (CO<sub>2</sub>). Lignite power produces high amounts of ash thus contributing to air quality impacts and health impacts to the elderly and young alike. Mercury air emission levels from burning or refining lignite also are high, so strict and costly emission controls must be installed on coal plants and synthetic fuel refineries.

Sixth, because of its low energy density, lignite is inefficient to transport and is not traded extensively on the world market compared with higher coal grades. It is burned in power stations constructed close to mines, such as Luminant's Monticello plant in

Texas. Carbon dioxide emissions from lignite-fired plants are higher than for comparable black coal plants.

Seventh, local communities pay a higher price than the price of lignite. In Europe, lignite is sold to power plants for about 10 Euros (\$15 dollars per ton). An investigation of the European environmental agencies on lignite subsidies has shown that hidden costs such as exclusion from taxes and fees, health detriments, and the contribution to global warming impose an additional financial burden on society of at least 25 Euros (\$37.50) for each ton of lignite that is mined and burned. The maximum estimate is nearly 200 Euros (\$300) per ton when all effects on future generations are included.

Eighth, lignite has a high content of volatile matter that makes it easier to convert into gas and liquid petroleum products than higher-ranking coals. However, its high moisture content and susceptibility to spontaneous combustion can cause problems with transportation and storage.

In summary, if Arkansas should decide that lignite is part of its future energy mix, and given its potential environmental problems and the extent of lignite deposits, the extraction and use of lignite as a fuel source should require a comprehensive state environmental, health, and economic impact analysis. The impact study should be available to the public for review and comment. Further, all pertinent state agencies should be required to participate in the documents preparation including the Arkansas Departments of Health, Environmental Quality, Arkansas Game and Fish Commission, Economic Development Commission, Highway and Transportation, and Arkansas Heritage. If the State pursues this industry, it should adhere to an “Eyes Wide Open”

policy.

Further, if mining and processing of lignite is authorized and permitted, the extraction industry should provide comprehensive health insurance to miners and other employees involved in lignite extraction. Severance Taxes should be substantial and made available to state regulatory agencies for permitting, monitoring, inspecting, and corrective action if necessary. Funds should be made available to assist local communities with infrastructure improvements and repair, such as roads, wastewater and sewage treatment facilities.

However, from my perspective, Arkansas is better served if we invest our funds into biofuel development; wind, solar, and biomass electrical generation; and more natural gas. I think most reasonable people understand that we cannot continue our dependence on coal, lignite, and petroleum, and that catastrophic storm events and melting of ice caps are related to greenhouse gas emissions and our use of fossil fuels.