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# ARKANSAS GEOLOGICAL SURVEY

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Governor

## Lignite Historical Facts

- **The Arkansas General Assembly appropriated funds for the period 1975-1985 for the Arkansas Geological Survey (AGS) (previously the AGC) to investigate the lignite resources in the state.**
- **The AGS purchased two truck-mounted drill rigs and drilled approximately 1700 reconnaissance exploration holes across southern Arkansas and the Crowley's Ridge area to determine the regional extent of the resource.**
- **The AGS published an agency report in 1985 (AGC Information Circular 28-C) summarizing the drilling program and estimated that approximately 9 billion tons of lignite resource occurs within 0 – 150 feet from the surface. The drill hole information was sent to the U.S. Geological Survey and entered into a national coal database.**
- **In 2005, the AGS transferred the original drill hole data from the 1975-1985 study into a modern GIS map product and digital database for a more rigorous analytical assessment of these resources (AGC FF-MMS-100). The new map also indicates known lignite resources that have been drilled by industry.**
- **In 2007, the AGS provided updates and presentations to the Joint Energy Committee, and the House and Senate Committees on Agriculture regarding the status of natural gas development associated with the Fayetteville Shale and the untapped lignite resources within south Arkansas.**
- **In 2007, the AGS assisted Congressman Mike Ross' office with attracting suitable speakers for a lignite conference that was held at Southern Arkansas University (SAU). The AGS participated in a speaker panel for the conference and put forth an ambitious research proposal that would provide the baseline research needed to understand and promote this energy resource within the state.**
- **In 2007, following the Lignite Conference at SAU a \$1.1 Million lignite research proposal was submitted to the AGS by the Energy & Environmental Research Center (EERC) located in Grand Forks, North Dakota. This grant proposal provides \$550,000 in federal matching funds (Department of Energy) and the proposal is predicated on the state providing 75-100 lignite drill cores from south Arkansas and \$550,000 in matching funds for the commercial testing of the lignite cores in a pilot plant research facility.**

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- In 2007, the AGS secured research agreements with several industry partners to obtain lignite exploration drilling data covering an area of approximately 1.5 million acres in south Arkansas. The exploration industry data obtained from these agreements defines the major lignite deposits in the state. AGS geologists are currently modeling this industry data to assess the depth, thickness, structural setting, and character of the lignite deposits.
- In 2007, two pieces of lignite legislation were passed by the Arkansas Legislature. Act 641 created the “*Arkansas Lignite Resources Pilot Program*” to develop a strategy for developing the lignite resources within the state. ACT 1406 provided \$ 1 Million in appropriation to SAU for expenses associated with a lignite feasibility study. At this time, only \$100,000 has been allocated to SAU for the feasibility study.

### **Commercial & Industrial Applications of Lignite**

- The AGS maintains that the highest economic return for Arkansas’ lignite resources would likely result from the multiple refined products that are generated from a Synfuels plant. A Synfuels plant would result in higher economic returns because the energy products are refined within the state before they are sold. Employment opportunities at a Synfuels plant would yield high paying and technical jobs that can boost the local economies. Synfuels technology lends itself to carbon and sulfur capture thus reducing emissions which is good for the environment.
- The technology associated with a lignite based Synfuels plant is commercially proven and these facilities generate clean sources of energy with economically important bi-products.
- A lignite based Synfuels plant is capable of producing some or all of the following products: diesel, gasoline, natural gas, Liquid Petroleum Gas (LPG), methanol, ethanol etc.

### **Status of Arkansas Lignite Resources & Recommendations**

- Currently, Arkansas is not utilizing its lignite resources; whereas, Texas, Mississippi, Louisiana and North Dakota regard lignite as an important energy source for electrical power generation or Synfuels production. Development of the lignite resources in those states provides important tax revenues, industries, and jobs.
- The AGS has over 30 years experience with lignite research in the state and proposes that the state fund its share of the EERC research proposal in order to complete the commercial testing of Arkansas’ lignites for power generation and liquid fuels.
- The EERC research proposal was submitted to the AGS on July 3, 2007 and no decision has been made by the State of Arkansas with regard to funding this project. The state has a window of time to respond to the proposal or the \$550,000 in federal matching funds will be lost. The AGS believes that this lignite research project is timely and prudent given the fact that the resource is large, undeveloped, and that energy prices continue to soar. Funding for this project is an investment for the future energy needs of all Arkansans and our nation.