

Liquids From Coal (LFC) plant in Campbell County, Wyoming, a project 15 times larger than the demonstration project conducted as part of the Clean Coal Technology Program.

In another commercial area, TEK-KOL, which owns and licenses the LFC process, is discussing options to license full-scale plants overseas. TEK-KOL Development Center has tested and analyzed 10 domestic and 21 foreign coals to determine the most promising candidate coals for LFC processing. Based on these tests, letters of intent for engineering and economic assessments are in place with two Indonesian companies, and other international opportunities are being developed. ENCOAL™ also has attracted the attention of the Chinese government which signed an agreement to study the feasibility of a 5,000-ton-per-day "coal refinery" for the Shandong Province of China.

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### **Tomorrow's Blast Furnaces - Injecting Coal Directly to Lessen the Need for Coke**

**C**oke is a necessary ingredient in traditional ironmaking processes, but the huge ovens needed to manufacture coke can emit large quantities of nitrogen oxide, sulfur dioxide and air toxic pollutants. A DOE co-funded Clean Coal Technology project, however, has shown how steel companies can cut their need for coke by up to 40%. The technology has caught the attention of the steel industry and the first commercial sales have occurred.

At its Burns Harbor site on Lake Michigan, the Bethlehem Steel Corporation is demonstrating the "coal injection" technology on high-capacity blast furnaces. The technology substitutes granulated coal for coke in the steel making process. The need for coke in the blast furnace is reduced by 40 percent. Sulfur pollutants from coal-burning are captured by limestone, and the gases leaving the furnace contain virtually no measurable SO<sub>2</sub> or NO<sub>x</sub> emissions.

This demonstration has shown the technology to be a cost-effective way to reduce coke usage and the attendant environmental damage of coke production. Based on its success, a new license for the technology has recently been sold to the United States Steel Company.