

FACT SHEET

BIGAS PILOT PLANT FACILITY

(I) BACKGROUND

The BIGAS Pilot Plant, which is situated on a 35-acre site at Homer City, Pennsylvania, is a complete grassroots process development facility that was designed to convert up to 5-tons per hour of coal into high-Btu pipeline-quality gas. The gasification program was initiated in 1963, when DOE's Office of Coal Research employed Bituminous Coal Research (BCR) to recommend a coal gasification process for further development. This work was carried out in two phases. Phase I consisted of a review of the state-of-the-art in coal gasification. This review led to the preparation of a two-stage, entrained-flow, high-pressure slagging gasifier concept and a recommendation for its further development. Phase II consisted of the process research and development work required to provide information for design of pilot-scale equipment for the process. This work was completed in late 1971.

Koppers Company was subsequently retained by BCR to develop a process design and prepare a bid package for the pilot plant. Stearns-Roger, Incorporated was selected for its detailed design and construction. Construction of the plant began in May 1973, and the plant was completed and ready for start-up in August 1976. The two-stage, entrained-flow gasifier was designed and built by Babcock & Wilcox.

Originally, Phillips Petroleum Company was responsible for managing the pilot plant facility. However, Stearns-Roger was the most recent prime contractor, program manager, and operator. Although the American Gas Association (AGA) and the Gas Research Institute (GRI) provided financial support in the early years of the program, the U.S. Department of Energy is currently the sole sponsor of the project.

The Homer City BIGAS pilot plant was designed as a R&D installation aimed at carrying out those research and development efforts required to develop high-pressure processes for the production of SNG from coal. It is currently the only available facility that is capable of integrating all of the gasification process operations, from coal receiving to final methanation. As a result of the work performed to date, all of the objectives of the original development program have been achieved. Some of the major accomplishments include:

- o Development of a dependable ignition system for operation under high-pressure
- o Design of a unique char burner for feeding recycle char, oxygen, and steam to a high-pressure, entrained-bed gasifier
- o Continuous operation for 172 hours on Montana Rosebud coal

- o Design of a safety interlock system
- o Demonstration of the BIGAS concept of coal gasification (i.e., high-temperature, two-stage slagging gasification of coal).

(II) REVIEW OF FUNDING ACTIVITIES

- The original objectives of the R&D program for this facility were achieved by the end of FY 1981. The budget request for FY 1982 contained only \$1.14 million for closing down the facility and placing it in a protected standby status.
- Although DOE had not requested funds for continuing work at the BIGAS pilot plant in fiscal years 1982 and 1983, Congress provided sufficient funds to support activities although at a reduced level of effort.
- In FY 1984 Congress provided \$6.0 million to operate the facility and requested that DOE submit a plan to Congress on how best to use that facility.
- A plan was submitted to Congress on February 10, 1984 and modified on April 25, 1984.