

PROJECT facts

DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY
FEDERAL ENERGY TECHNOLOGY CENTER

ADVANCED CLEAN/EFFICIENT
POWER systems

PS001.0697

DEVELOPMENT/TESTING OF AN INDUSTRIAL-SCALE COAL-FIRED SLAGGING COMBUSTION SYSTEM

PRIMARY PROJECT PARTNERS

Coal Tech Corporation
Marion Station, PA

MAIN SITE

Coal Tech Corporation
Philadelphia, PA

TOTAL ESTIMATED COST

\$2,035,000

COST SHARING

DOE	\$2,012,000
Non-DOE	\$23,000

Project Description

This project will conduct extended duration testing and improve automated control of a 20 MMBtu/hr commercial scale, air cooled, slagging combustor. These tests are expected to demonstrate very low capital and operating costs burning coal or solid waste fuels. Costs are expected to be substantially lower than alternative coal-fired systems and will be competitive with gas-fired turbine systems.

The combustor has already undergone 2000 hours of development and demonstration testing as part of a prior DOE Clean Coal project. A minimum of 500 hours of verification testing is planned in this project to demonstrate commercial readiness of this technology.

This project, now in its final stage, began in September 1991 and will continue through September 1997. The final stage involves design, fabrication and testing of a commercial version of the combustor to be marketed in the U.S. and abroad. Results to date with the commercial version show major improvements in combustion efficiency and ash capture in the combustor as well as reductions of SO_x emissions to nearly 1/2 and NO_x emissions to 1/4 the level today's Federal standards allow.

Program Goals

The program strives to develop advanced coal systems for industrial and commercial scale applications. The systems will improve efficiency, lower emissions, and lower costs to a level competitive with natural-gas powered systems. In addition to meeting all of these program goals, the Coal Tech combustor also can use high ash coals and can dispose of potentially hazardous solid wastes by encapsulating them within environmentally inert slag.

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CONTACT POINTS

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Project Benefits

This project will yield a commercially ready coal combustor with low capital and operating costs. Within the combustor NO_x emissions can be lowered to 1/4 of today's allowable levels and SO_x emissions to 1/2 of today's allowable levels. The combustor is well suited to handling high ash coals which makes it attractive to overseas markets. It is also suitable for retrofit to existing coal, oil, or natural gas combustors.

Cost Profile

(Dollars in Thousands)

Department of Energy*

Private Sector Partners

* Appropriated Funding

Prior Investment	FY95	FY96	FY97	Future Funds
\$2,035	—	—	—	—
\$23	—	—	—	—

Key Milestones

FY96	FY97
500 Hours of Tests	
	Decommission
	Final Report