

INNOVATIVE CLEAN COAL TECHNOLOGY DEPLOYMENT NOVEMBER 1988

PURPOSE

Innovative clean coal technology deployment increases the options available for the use of coal and its applications within growing environmental concerns. This report outlines the types of technology which would resolve the conflict between the use of coal (strategically essential for the nation's economy and security), and the constraints of increasingly restrictive environmental policies (the costs of compliance) and the resulting regulations.

This report contains a review of environmental policies and regulations and recommendations on the strategy for innovative clean coal technology (ICCT) to achieve commercial maturity, and it summarizes the deployment process through which ICCT and other new technologies may achieve commercial maturity. The report also addresses the need for Federal and State Governments to facilitate deployment by removing disincentives, providing financial support, and modifying regulations.

FINDINGS

A review of key issues pertaining to the deployment of ICCT was prepared in November 1988. The clean coal technology (CCT) programs sponsored through the leadership of Senators Byrd and Johnston, Congressman Dingell and other energy- and environment-conscious bipartisan congressional members were in their early phases in 1988. Since then, approximately 42 CCT projects have been jointly funded by the Department of Energy. Proposals for CCT V were submitted to the Department of Energy on December 7, 1992.

Coal was and still is the focus of two independent and conflicting national policy agendas - energy and environment. As the most abundant domestic fossil energy resource, it is essential to the United States economy today and to the nation's future energy security. The nation also has a deep and continuing commitment to a clean environment which has historically conflicted with coal use.

The accelerated deployment and early commercial application of ICCT was recommended to provide the most cost-effective long-term answer. Through 1988, private industry had spent more than \$1 billion to develop ICCT to the point of demonstration. To date, the private sector and the Federal Government have jointly committed over \$2.5 billion for CCT programs which would produce efficient and environmentally clean energy from coal.

ICCT must be commercially proved and broadly available during this decade to meet both the requirements of existing and potential environmental policies and the challenge to the nation's power supply and industrial capabilities. If ICCT is to be successfully deployed, then the technical, commercial, environmental, and regulatory constraints to further private sector initiative must be addressed. The status of the Federal budget and concern for the international competitiveness of United States industry argue strongly for new incentive-based policies which emphasize economic efficiency in environmental protection. Completion of the United States government co-sponsored ICCT demonstration initiative has proved an essential step in reducing the risks associated with ICCT deployment. This co-sponsorship also has opened the door for industry in the United States to export its products globally to enhance the world environment.

The general findings of this study are as follows.

- Coal's public image has improved as technological advances and environmental progress have safeguarded the workers' health while substantially reducing emissions.

- The collaborative venture approach to the government co-sponsored ICCT demonstration has permitted the private sector to determine successfully the commercial application envelope for the array of promising ICCT options. Also, it has stimulated the market forces which ultimately determine the commercial potential of technology both in the United States and abroad.
- The technology developer/supplier and the user assume a significant risk in successfully deploying ICCT. The challenge is more acute due to the volatile nature of the energy market. The ability to recover the required financial commitment may be uncertain because of regulatory or other governmental actions.
- Other nations have developed targeted industry strategies that involve government-industry consortia designed to capture market share in global markets. Coal utilization and related power generation is one such targeted industry.
- ICCT deployment policy should distinguish between two technology applications - retrofit emission controls and new plants and repowering systems.
- ICCT deployment will be encouraged if environmental regulations utilize market incentives providing maximum opportunity to choose among compliance alternatives and avoid biases in favor of specific solutions which may mask the true cost of compliance.
- A successful national ICCT demonstration and deployment initiative can ultimately provide a coal processing technology foundation capable of refining and synthesizing a wide range of products including electricity, transport fuels, and chemical feedstocks, while recovering essential mineral credits. ICCT has the potential to provide a secure energy and resource foundation for the United States and a fundamental economic capability for the developing world as well.

RECOMMENDATIONS

The Secretary of Energy is urged to do the following:

- Complete the ongoing Department of Energy-sponsored ICCT demonstration initiative as planned.
- Encourage utility and industrial participation in ICCT deployment, and to conduct an ICCT public education and consensus-building campaign.
- Ensure that air quality legislation places priority on sustaining the remarkable national progress made in emissions reduction over the past 15 years. Lower regulatory barriers to wider use of ICCT options. Modify applicable Federal law to permit United States companies to form trading groups for the export of coal and CCT.
- Establish a bipartisan coal and technology export policy coordinating council under the auspices of Congress and the President.