

CLEAN COAL TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT FEBRUARY 1994

PURPOSE

This report presents the National Coal Council's recommendations to the Secretary of Energy regarding the future directions for the Clean Coal Technology (CCT) program. The report provides advice and recommendations in five specific areas: 1) the current state of U.S. industry acceptance of technologies supported by the Clean Coal Technology Demonstration Program; 2) technology gaps within the program; 3) the need for further federal initiatives to overcome hurdles with the commercialization of clean coal technologies; 4) technologies; and 5) the need to carry out the international technology transfer called for by Section 1332 of the Energy Policy Act.

Coal is the fuel used most widely to generate electricity in the United States, and it will remain critically important for the foreseeable future. Deploying clean coal technology as widely and quickly as possible is an important strategy in meeting the objective on continuing the use of coal and reducing the environmental impact of its use. Further, coal is abundant throughout much of the world and will be utilized widely as standards of living rise and electrification spreads. In addition, there will be a strong export market for clean, cost-effective technology, and a strong U.S. clean coal technology industry could create many domestic jobs. The National Coal Council believes that future emphasis should be focused on the commercial deployment of clean coal technologies and that a government risk-sharing program for first-of-a-kind and near-commercial offerings of advanced systems is in the nation's interests.

Clean coal technologies represent an important opportunity for sustainable development, both domestically and internationally. The magnitude of this market opportunity domestically is estimated to be between 7 and 62 GW between 1994 and 2010.

Department of Energy surveys initiated in 1992 show that there is limited awareness of the details of the Clean Coal Technology Program at this time.

Successful commercialization of the selected demonstration technologies is influenced by a number of factors. Primary among these is the time necessary for the power generation and financial industries to demonstrate and then commit to a new technology. While the CCT Program focused on 45 development projects, these projects in many cases are composed of several technological innovations that are key to total performance. Many of the components have been commercialized, but the overall technology systems have not moved into the marketplace as fast as originally envisioned.

The domestic need for CCTs will come albeit not until late in the 1990s or, more likely, in the following decade. International demand will require demonstration of commercial technologies before acceptance. The Department of Energy needs to develop a program now to support initial commercialization in the belief that it will create a sustainable market long-term. This is the prudent direction for the Secretary of Energy to take, particularly to assure a role for CCTs in international markets.

RECOMMENDATIONS

The National Coal Council developed eight recommendations based on the data collected and the overall findings.

- Further solicitations under the existing CCT demonstration program are not needed.
- CCTs should be recognized broadly as environmental technologies in current and future Administration programs, not only providing opportunities to prevent pollution, but to improve the global environment.
- A new federal-level CCT incentive program is needed to stimulate initial and sustainable commercial deployment of clean coal technologies. The program recommended includes \$1.1 billion in capital incentives and \$0.3 billion in performance incentives over a 15-year period. The incentive would apply to up to the first five commercial units

in the integrated coal gasification combined cycle, pressurized fluidized bed combustion, advanced pulverized coal-fired power plant, and innovative component system fields.

- The market assessment and CCT communication program underway within the Department of Energy should continue.
- The potential of converting old plant sites in depressed areas to new CCT sites needs to be explored.
- Commercial cost data need to be widely disseminated to the marketplace.
- If funds remain in the existing CCT demonstration program, the money should be used to continue commercial operation of the demonstration plants to gather relevant operating data, to improve products, and to enhance performance.
- Policies are needed that will minimize barriers to commercial deployment, and partial funding of CCT international deployment efforts is recommended.