REQUEST FOR INFORMATION (RFI) ON THE DEPARTMENT OF ENERGY'S PLAN TO RESTRUCTURE FUTUREGEN

SUMMARY: The purpose of this announcement is to notify potentially interested parties of the Department of Energy's intent to restructure the FutureGen project to ensure that it more closely reflects the immediate and future needs of the Nation, its power sector and the taxpaying public. FutureGen's primary goal is to demonstrate advanced technology that produces electricity from coal, the Nation's lowest cost and most abundant domestic energy resource, in ways that mitigate the atmospheric emissions of carbon dioxide (CO_2). Over the past few years, U.S. has furthered efforts to reduce greenhouse gas emissions, policy dynamics in the U.S. have followed suit, and as a result there is now an increasing need to accelerate clean coal technology, particularly the deployment of the FutureGen concept, since coal will continue to be a viable domestic energy source.

As is well-known, there have been extraordinary increases in the number of coal-fired electric power plants being constructed throughout the developing world, especially China. This unprecedented growth over the past five years has led to significant global escalations in material and labor costs associated with the construction of new power plants. It has also heightened concern about the growth of greenhouse gas emissions, and increased the desire to promote technological approaches such as carbon capture and storage (CCS) and market-linked mechanisms such as cap and trade systems to help limit power plant emissions of CO_2. In the U.S., over the past few years, several States have acted to require that all new coal-fired power plants be built with the capability for CCS. In a few instances, State imposed policies and regulations have virtually prohibited or at least highly discouraged further construction of power plants without CCS capability. Collectively, these changes impose upon the power industry serious barriers to the construction of new coal-based generation capacity, and have heightened the need for demonstrating the commercial viability of a new generation of advanced coal-based power systems that can cost effectively be coupled with CCS subsystems, such as Integrated (Coal) Gasification Combined Cycle (IGCC) systems with CCS (IGCC-CCS) technology.

To better reflect the current and future needs of the U.S. coal-fired electric power sector, DOE is revising its approach to meeting FutureGen's important goals. Specifically the revised approach will place emphasis on gaining early commercial experience validating clean coal technologies through multiple demonstrations of CCS technology in commercially operated IGCC-CCS electric power plants. This revised approach will allow for early deployment of commercial IGCC-CCS power plants under actual industrial settings. The experience gained in these multiple commercial deployments will accelerate broad public acceptance of CCS technology. And, the revised FutureGen is expected to provide the opportunity for international coordination designed to benefit all

participants interested in future deployment of low emissions coal-fired electric power plants.

The revised approach to FutureGen emphasizes early-commercial technology demonstrations, and eliminates the "living laboratory" aspects of the concept announced in 2003. Ultimately this revised approach, when combined with DOE's other clean coal-related research and development programs, will provide for new, advanced coal-fired electric power generation and CCS technologies aimed at improving the reliability, efficiency and economic performance of electric power plants, while sequestering more carbon dioxide emissions.

In summary, DOE seeks to build upon current power market trends. At the present time, over 30 IGCC power plants are in various proposal stages and major barriers to their deployment include the uncertainties regarding future CO_2 emissions regulations and the actual costs of constructing and operating IGCC-CCS power plants. The restructured FutureGen is designed to help understand, address, and solve technical, siting, permitting, regulatory and fiscal aspects of CCS deployment in various commercial settings.

Through this RFI, DOE seeks input and public comment on DOE's restructured approach and expressions of interest from power producers who would consider participating in the revised FutureGen initiative. Responses will help shape a competitive Funding Opportunity Announcement (FOA) expected to be released in the second quarter of calendar year 2008.

DESCRIPTION OF REVISED APPROACH: The FutureGen project will focus on full-scale, commercial demonstrations, integrating electric power production with the geologic sequestration of CO_2. The Department is interested in funding multiple demonstrations of CCS technology at a commercial scale of at least 300 gross MW per unit plant power train, per demonstration. The plant may include additional power production trains. DOE will contribute not more than the incremental cost associated with CCS technology for the single power train. Approximately 90 percent CO_2 capture and sequestration for the integrated power train will be required. During the demonstration period (see below), at least one million metric tons of CO_2 per year must be stored in a saline storage formation; CO_2 in excess of one million metric tons may be used for enhanced oil recovery, enhanced gas recovery, or other uses that result in permanent storage of CO_2. Emissions of sulfur dioxide, nitrogen oxide, particulate matter, and mercury shall not exceed the original FutureGen target levels (see below).

KEY GOALS OF REVISED FUTUREGEN: FutureGen, in concert with continuing coal-based Research Demonstration &Deployment, will prove the technical and economic feasibility of IGCC-CCS technology through implementation of a single, integrated power train per plant. Its objectives are to:

- Demonstrate in the United States commercial integrated operation of a

gasification-based, coal conversion system with CO_2 capture and storage;

- Verify the effectiveness, safety, and permanence of carbon sequestration;

- Demonstrate approximately 90 percent CO_2 capture and storage on one nominal 300 MW train with annual requirements of one million metric tons in a saline aquifer, and
  - > 99 percent sulfur removal
  - < 0.05 lb/million Btu NOx emissions
  - < 0.005 lb/million Btu particulate matter emissions
  - > 90 percent mercury removal;

- Help establish standardized technologies and protocols for deployment of IGCC – CCS, including CO_2 monitoring, mitigation and verification;

- Verify that IGCC with CCS meets commercially-accepted operability and reliability standards;

- Accurately quantify storage potential of the target geologic formation;

- Detect and monitor surface leakage, if any, and in the unlikely event of leakage, demonstrate the effectiveness of mitigation strategies;

- Develop information necessary to estimate costs of future CO_2 management approaches using IGCC with CCS;

- Demonstrate the practical reality of IGCC with CCS coal-based electric power plants operated with different coal types and at different U.S. locations; and

- Produce the technical and economic data needed for these types of plants to gain acceptance by the coal, electricity, and banking industries; the environmental and international communities; and the public as cost-effective means for producing electric power in a carbon-constrained world.

PROJECT COSTS: Currently, DOE anticipates that up to $1.3 billion (in as-spent[1] dollars) will be available (FY 2007 to FY 2020, subject to annual appropriations) to fund multiple CCS demonstration projects. For each project, DOE will contribute not more than the incremental cost associated with CCS technology. Since under this approach FutureGen is focused on a commercial power train, the project recipient will be responsible for absorbing project cost growths with the remainder of the plant as it would in any other commercial venture.

[1] In this context, "as-spent" means current dollar or nominal dollar, where escalation and/or inflation is included. It represents the dollar value in the year that it was actually received or paid.

SCHEDULE: DOE is proposing an aggressive schedule for implementing the revised approach to FutureGen. Public comments on the Request for Information (RFI) are due on March 3, 2008. DOE intends to issue a competitive Funding Opportunity Announcement (FOA) on the Industry Interactive Procurement System (IIPS) (http://e-center.doe.gov) approximately three months after the close of this public comment period, and expects to evaluate proposals and announce selections by the end of December 2008. After successful completion of National Environmental Policy Act (NEPA) requirements, commercial operations are expected to begin in 2015.

REQUEST FOR PUBLIC COMMENTS:

Companies or organizations that may have an interest in submitting either an expression of interest or comments in response to this RFI are requested to provide the following information:

- Name, Point of Contact, Telephone Number, Mailing Address, E-Mail Address.
- Location of project.
- Narrative description of project that includes the status of project development and the technical and financial qualifications of the project team to conduct the project.
- Discussion of the company's ability to meet or exceed the time frame set forth in the above schedule.
- Estimated amount of DOE contribution (in percentage and/or dollars) that would be required for the company to pursue the project with IGCC-CCS technology.
- Any technological, financial, or legal issues or barriers that DOE should be made aware of that limit the effectiveness or feasibility of DOE's restructured approach to FutureGen.
- Other information or concerns that would assist DOE in implementing the revised FutureGen.

DOE seeks comments on whether the revised FutureGen approach should allow for advanced coal technology systems, other than IGCC, that would also meet the performance requirements stated above. If an interested party believes such an alternative technology is warranted, such party should provide the same information requested in the bullets above.

DOE also seeks comments on whether the carbon transport and storage of CO_2 may reasonably be decoupled from the power generation aspects of the project and performed by separate entities.

DOE requests that expressions of interest and comments be limited to 10 pages.

With this restructured approach, more than one site may be selected as a host for the commercial demonstration of CCS technology. The Department recognizes the tremendous effort expended by the four sites – two in Illinois and two in Texas – evaluated in the Department's Environmental Impact Statement (EIS) issued in November 2007 and is available at: http://www.netl.doe.gov/publications/press/2007/07078-FutureGen_EIS_Released.html. The site announced by the FutureGen Industrial Alliance in December 2007, Mattoon, IL, as well as the other three sites evaluated in the EIS may be eligible to host a commercial-scale IGCC plant with CCS technology. DOE encourages applicants to include these four sites in their consideration for this restructured FutureGen approach since the site analysis and characterization data at those four sites may be applicable to future environmental analyses under this restructured approach.

Business confidential information contained within a submission should be identified and marked accordingly. The Department will protect the confidential information received to the extent permitted by law.

Interested parties should submit their comments by e-mail: Keith.Miles@NETL.DOE.GOV. It is requested that e-mails identify on the Subject line "COMMENTS ON REVISED FUTUREGEN."

DISCLAIMER: This Request for Information shall not be construed as a commitment by the Government to release a solicitation or make awards at this time.