FutureGen and Advanced Electric Generation Technologies

Global Energy Challenges
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USA
Future Electric Generation Plans Must Consider Multiple Resources

- Pulverized Coal
- Natural Gas Combined Cycle
- Integrated Gasification Combined Cycle
- Nuclear Power
- Renewable Energy
- Efficiency and Conservation
FutureGen

A U.S.-led, 10-year, ≈$1 billion effort to pioneer coal-to-hydrogen and carbon management technologies for coal.

FutureGen will be the world’s first zero-emission power plant and an international test facility that:

- Pioneers advanced hydrogen production from coal.
- Emits virtually no air pollutants.
- Captures and permanently sequesters carbon dioxide.

DOE to share project costs with the private sector; FutureGen Alliance has pledged $250MM.

India first government to join partnership.
FutureGen
Organizational Structure

FutureGen Industrial Alliance, Inc.

Board of Directors / Officers

External Stakeholder Groups

Competitive Opportunities

- Technology Vendors
- A/Ess
- Advanced Technology
- Site Locations

U.S. DOE

Cooperative Agreement
FutureGen
Technology Goals

– Establish the technical, economic, and environmental viability of “zero-emission” coal plants by 2015; thus, creating the option for multiple commercial deployments by 2020

– Industry to validate DOE suggested goals:
  • Sequester >90% CO2 with potential for ~100%
  • >99% sulfur removal
  • <0.05 lb/mmbtu NOx
  • <0.005 lb/mmbtu PM
  • >90% Hg removal
  • >85% availability
  • With potential for a Nth plant commercial cost no more than 10% greater than that of a conventional power plant
Criteria for Technology Development and Deployment

- Performance
  - Environmental
  - Scale
- Reliability
  - Utility metrics
  - Flexible operations
- Cost
  - Capital plus Operation and Maintenance
  - Meets goals