Kentucky Consortium for Carbon Storage

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Acknowledgements

- Kentucky Legislature and the Governor’s Office of Energy Policy
- Funding from DOE CO₂ Regional Partnerships: MRCSP, MGSC, and SECARB
- Discussions with industry representatives
  - KYCCS Industry Partners

**Geologic CO$_2$ Storage Concept**

- **Power plant**
- **Pipeline**
- Multiple options at different locations
  - Unmineable coals
  - Organic-rich shales
  - Oil and gas reservoirs
  - Deep saline aquifers
While CO₂ EOR potential is significant, deep saline or Devonian shale storage will be needed to handle expected volumes.
State Funding for CO\textsubscript{2} Research

- Kentucky HB 1 was passed in a 2007 special session and signed into law August 30.
- Provides financial incentives for coal gasification plants
- Major energy projects will need carbon management programs
- Provides $5 million through the Governor’s Office of Energy Policy to provide data on carbon storage potential
2007 HB 1 Directives

- Quantify the potential for:
  - Enhanced oil and gas recovery
  - Enhanced coalbed methane recovery
- Test the Devonian shale for CO$_2$ enhanced gas recovery and CO$_2$ storage potential
- Drilling of deep wells in the eastern and western coal fields to estimate storage potential
Kentucky Consortium for Carbon Storage

- The Commonwealth realized that $5 million is not sufficient to accomplish all these goals.
- A joint industry–government consortium formed.
- Kentucky Consortium for Carbon Storage (KYCCS)
Consortium Model

- Industry involvement is necessary for the success of this project
  - Cost sharing and well access
  - Provides expertise not available at KGS
  - Justifies the Commonwealth’s investment in carbon management research
KYCCS

- Five subprojects:
  - Western deep saline CO$_2$ storage ($1.35$ million)
    - Rick Bowersox, Dave Williams
  - Eastern deep saline CO$_2$ storage ($1.35$ million)
    - Steve Greb, Warren Anderson
  - CO$_2$ Enhanced oil recovery ($800,000$)
    - Marty Parris
  - CO$_2$ Enhanced gas recovery ($800,000$)
    - Brandon Nuttall, Cortland Eble
  - Public Education and Outreach
    - Mike Lynch
Project Areas

- Major coal-producing area
- Coal field
Project Schedule

- Project to require 3 to 4 years for completion
- Subprojects to run concurrently
- Deep drilling to be first priority due to lead time required, identified partners, and costs
- Projects will remain open to new partners
Today’s Agenda

- Short progress reports on four HB 1 research projects
- Your questions and discussion are encouraged
Impact of Results

- Kentucky geology is not homogeneous
- Research sites will be as representative as possible, however:
  - A successful project will not prove sequestration is possible everywhere, and an unsuccessful project will not condemn the entire state
- We cannot guarantee success – there is risk involved
DOE CO$_2$ Regional Partnerships

Map from DOE-NETL
Industry interest is high; financial commitment varies by region and industry

**Western Kentucky**
- Large companies, significant matching funds, broad interest in proving and developing permanent CO₂ storage
- Aggressive schedule due to pending decisions

**Eastern Kentucky**
- Smaller companies and local/regional development groups
- Interest focused on specific properties

**CO₂ Enhanced Oil and Enhanced Gas Recovery**
- A few companies have shown interest and offered projects