PractiCoal: Illinois Coal and Energy Development

Bill Hoback
Office of Coal Development
Dept. of Commerce and Economic Opportunity

Illinois Coal Gasification Opportunities

Royster-Clark
Taylorville Energy Center
Bunge
FutureGen (Site not yet determined)
Southern Illinois Clean Energy Center
Why Promote Illinois Coal?

- 50% of Illinois electric power comes from coal.
- Coal is an affordable (lowest cost), reliable and secure U.S. energy source.
- Coal mining is a $1 billion industry in Illinois.
- Coal and related business have huge socioeconomic impact on downstate Illinois regions.

Abundant

- High-Btu coal underlies 65% of Illinois
Affordable

Delivered Cost of Coal, Oil, Natural Gas, 1998-2003

- Natural Gas
- Oil
- Coal

Not Affordable

- Record-high oil prices hold U.S. hostage
  - Sticker shock at gas pump
  - U.S. economy, jobs threatened
- Natural gas prices follow suit
  - Home heating costs soar
  - 50% U.S. fertilizer products now imported
  - Newly constructed gas-fired electric plants spiked prices in 2001; now idled by high fuel costs
**World Natural Gas Reserves**  
*(EIA 2004)*

*Known* world gas reserves will last 64 years at current rates of consumption.

The former Soviet Union has 8 times the gas reserves of North America, and the Middle East has about 10 times.

**World Oil Reserves**  
*(EIA 2004)*

*Known* world oil reserves will last 43 years at current rates of consumption.

The Middle East holds about 63 percent of proven reserves while North America holds about 6 percent.

---

**Reliable, All-American Fuel**

- Coal is widely available in the U.S., with established, uninterruptible supply chains
- Low-cost fuel for new IGCC electric plants with sequestration of CO2
- Synthetic natural gas from IGCC
- Ultra clean low SO2 motor fuels using Fischer-Tropsch technology
- Affordable feedstock for U.S. nitrogen fertilizer
“New Coal” Projects

At Various Planning Stages

- Southern Illinois Clean Energy Center
  - Mine-mouth IGCC plant (Conoco-Phillips)
  - 545-MW electric power & 95 mcf/day of SNG
  - 2.8 MT of coal per year; 750-800 new jobs
  - Air permit filed; FEED Study underway
  - $5 million from state and Illinois Clean Coal Review Board
  - Eligible for $36 million Coal Revival grant

- Royster-Clark/Rentech Nitrogen Plant
  - $422 million project to convert from natural gas feedstock to Illinois coal
  - Low-SO₂ Fischer-Tropsch diesel for fleets; 70 MW electricity
  - 1 MT/yr coal usage; 1,300 new jobs
  - $3 million from state, $2.5 from Clean Coal Review Board for feasibility, FEED Study
“New Coal” Projects

At Various Planning Stages

- Taylorville Energy Center
  - Erora Group $1.1 billion IGCC project
  - 677-MW mine-mouth facility (GE-Eastman)
  - Mine permitted; air permit pending
  - 1.8 MT/yr coal usage
  - Completed study for Clean Coal Review Board
  - Request for $5 million development and engineering work pending
  - Projected groundbreaking in 2006; startup in 2009-10

World Coal Supplies

North America: 116.7 billion tons
Eastern Europe and FSU: 113.3 billion tons
Western Europe: 25.8 BT
Other Asia: 74.9 BT
China: 62.2 BT
Africa & Middle East: 61.4 BT
South & Central America: 7.8 BT
Australia: 47.3 BT

BT = Billion Tons
FutureGen

- FutureGen
  - 275 MW zero-emissions IGCC prototype
  - $1 billion U.S. DOE hydrogen fuel/CO₂ sequestration initiative
  - New legislation sets eligibility for numerous Illinois incentives
  - Midwest Geological Sequestration Consortium at second phase of site review

Central Illinois Basin Sequestration Fairway Emerges

Oil Fields EOR Class
- Predominately Miscible
- Predominately Near-Miscible

Coal Depth
- Herrin greater than 1,000 feet
- Springfield greater than 1,000 feet

Mt. Simon elevation (msl)
- -6,000 to -8,000 feet
- -8,000 to -10,000 feet
- 1,000 foot contours
### Dollars Invested in the Illinois Coal and Energy Industry

<table>
<thead>
<tr>
<th>DCEO Program</th>
<th>$ Spent to Date</th>
<th>$ Leveraged to Date</th>
<th>FY2005 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal Competitiveness</td>
<td>$97.9 M</td>
<td>$678.9 M</td>
<td>$17.4 M</td>
</tr>
<tr>
<td>Coal Research and Development (ICCI)</td>
<td>$55.5 M</td>
<td>$9.2 M</td>
<td>$3.9 M</td>
</tr>
<tr>
<td>Coal Technology Demonstration</td>
<td>$134.4 M</td>
<td>$708.5 M</td>
<td>$12.0 M</td>
</tr>
<tr>
<td>Coal Revival</td>
<td>$0 M</td>
<td>$0 M</td>
<td>$50 M</td>
</tr>
</tbody>
</table>

### Investment in Coal Industry Competitiveness: $777 million

**Program Total**

- Millions of Dollars: $678.9
- FY2004: $16.0, $129.6
- FY2003: $17.2, $128.0
- FY2002: $16.6, $128.4
- FY2001: $15.0, $105.2
- FY2000: $11.6, $72.3
- FY1999: $11.8, $84.6
- FY1998: $11.8, $30.7
- FY1997: $11.8, $7.9
Thank you

Coal Development Programs

- Education and Marketing
- Coal Competitiveness
- Research & Development
- Coal Revival
Education and Marketing

- Heighten public understanding about coal’s deep traditions, economic importance and future potential in Illinois
- Create a positive image for the mining and utilization of Illinois coal
- Develop and initiate strategies to sustain and expand Illinois coal markets

Illinois Coal Competitiveness Program

- Launched in FY1997 as the Coal Infrastructure Program
- Program to leverage private investment in coal production, transportation and utilization
- 20 percent cost share, projects selected on economic criteria
- $17.4 million available for grants in FY2005
- OCD issued Request for Applications in June 2004, with first grant awards in late fall.
Illinois Coal
Demonstration Program

- $183 million bond authorization to demonstrate and deploy clean coal technologies in Illinois
  - $35 million reserved by statute for the Baldwin Station scrubber
- Provides up to 20% cost share, may go higher
- Selection based on technical feasibility, economic benefits, Illinois coal use, Illinois site
- Requires project specific appropriations; hence long lead time in project development

Illinois Coal
Revival Program

- Created by the Resource Development and Energy Security Act
- $500 million bond authorization for financial assistance (grants) to new electric generating projects in Illinois
  - To qualify, facilities must generate 400 megawatts and create 150 Illinois mining jobs.
  - Grant size determined by tax revenues derived from new IL coal purchases for the plant.
- $50 million appropriated in FY2005
## Dollars Invested in the Illinois Coal and Energy Industry

<table>
<thead>
<tr>
<th>DCEO Program</th>
<th>$ Spent to Date</th>
<th>$ Leveraged to Date</th>
<th>FY2005 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal Competitiveness</td>
<td>$97.9 M</td>
<td>$678.9 M</td>
<td>$17.4 M</td>
</tr>
<tr>
<td>Coal Research and Development (ICCI)</td>
<td>$55.5 M</td>
<td>$9.2 M</td>
<td>$3.9 M</td>
</tr>
<tr>
<td>Coal Technology Demonstration</td>
<td>$134.4 M</td>
<td>$708.5 M</td>
<td>$12.0 M</td>
</tr>
<tr>
<td>Coal Revival</td>
<td>$0 M</td>
<td>$0 M</td>
<td>$50 M</td>
</tr>
</tbody>
</table>

**Thank you**