Status of the Coal Projects in Illinois

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Office of Coal Development
Department of Commerce and Economic Opportunity
Our Mission

- DCEO’s Office of Coal Development is dedicated to the development and use of Illinois' extensive coal resources as a fuel source for the 21st century:
  - Support research, development and demonstration of CCTs
  - Provide financial incentives for new energy developments
  - Develop markets for Illinois-mined coal and coal by-products
  - Promote comprehensive, long-range energy policy
  - Promote energy education and awareness
DCEO’s Office of Coal Development promotes and supports the Illinois coal industry by:

- financing research, development and demonstration of technologies that offer environmentally safe and economically viable methods of coal extraction and utilization;
- identifying new uses and markets for Illinois-mined coal and coal byproducts;
- advocating the use of proven clean coal technologies as a means of environmental compliance;
- developing policies and strategies for compliance with state and federal initiatives including the Clean Air Act Amendments, global-warming policy and electric utility industry restructuring;
- promoting comprehensive, long-range energy policy in which Illinois coal plays an major role;
- conducting education and awareness campaigns on the advantages of Illinois coal through the media, schools and special projects; and
- changing public perception about coal and its utilization.
DCEO Program Funding

Coal Technology Dev. Assistance Fund
- ~$24 million annually from the Public Utility Tax
  - Coal Research & Development Program (ICCI)
  - Coal Competitiveness Program

Coal and Energy Development Bond Fund
- $683 million lifetime authorization to finance projects with sale of General Obligation Bonds
  - Coal Demonstration Program -- $183 M (exhausted)
  - Coal Revival Program -- $500 M
# Expenditures by Program

<table>
<thead>
<tr>
<th>DCEO Program</th>
<th>$ Spent to Date</th>
<th>$ Leveraged to Date</th>
<th>FY2008 Budget</th>
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</thead>
<tbody>
<tr>
<td>Coal Research &amp; Development (ICCI)</td>
<td>$ 87.3 M</td>
<td>$ 9.2 M</td>
<td>$ 5.0 M</td>
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<tr>
<td>Coal Competitiveness</td>
<td>$ 138.7 M</td>
<td>$ 964.8 M</td>
<td>$ 15.0 M</td>
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<tr>
<td>Coal Demonstration (including $17 M for FutureGen)</td>
<td>$ 146.3 M</td>
<td>$ 752.7 M</td>
<td>$ 25.0 M</td>
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<tr>
<td>Coal Revival</td>
<td>$ 0</td>
<td>$ 0</td>
<td>$ 50.0 M</td>
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<td>$ 95.0 M</td>
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Coal Research & Development Program

- Administered and funded by DCEO, technically managed by the Illinois Clean Coal Institute in Carterville, Illinois.
- Classic peer-reviewed university research program.
- $4 to $5 million is awarded annually
  - Approx. 20-25 research projects funded at 80-100%
  - Approx. 3-5 development projects funded at 50%
- $87.3 million awarded for 813 R&D projects since program started in the mid-1980’s
Coal R&D Funding Priorities
(listed in order of priority)

- Carbon Management
- Coal Gasification
  - Economics of Gasification
  - Coal-to-Liquids
  - Syngas Cleanup
  - Gasification Byproducts
- Advanced Coal Mining Technologies
- Coal Preparation and Other Production Business Practices
- Power Generation and Plant Efficiencies
- Flue-Gas Cleaning, Mercury Emissions and Other Air Toxics
- Coal Chemistry
- Commercialization and Technology Transfer
- Other Research
Coal Research and Development

**Fly ash Brick Project**
- Process developed by ISGS
- Peoria plant site
- 50 million bricks/year
- 30-40% Fly ash

**USDOE FutureGen Initiative**
- Site evaluations
- Sequestration studies
- Legal issues

**Marion Baseball Stadium**
- Fly ash concrete used in walkway construction
Coal Competitiveness Program

- Program aimed at making Illinois coal more competitive in existing markets and gaining access to new markets.
- Provides cost-sharing incentives for businesses to improve and expand the coal mining, transportation and utilization systems in Illinois.
- Grant awards for up to 20% of project cost.
Coal Competitiveness Program (cont)

- Proposals received from producers, shippers, coal terminals, electric utilities, manufacturers, regional planning commissions, etc.
- Projects encompass mine, prep plant, rail, barge, road and power plant upgrades and new installations.
- 332 projects funded since program started 1996.
  - $137 million in state funds through FY2007.
  - $965 million in private funds leveraged, to date.
FY2008 Coal Competitiveness Program

- $15 million budgeted for grants
- RFP mailed August 17, 2007
- Proposals received in Sept./Oct. 2007
- 37 proposals received to date
- 26 companies participating
- $54.9 million in grant funds requested
- $1.4 billion in total project costs

FY2009 RFP to be mailed in June 2008
“Typical” Coal Competitiveness Projects
Recent Coal Competitiveness Projects

2004: Gas Technology Institute Flexible Fuel Test Facility ($0.5M grant)

2006: Corn Products International's 140MWe FBC installation at Bedford Park ($6.0M grant)
Competitiveness Projects Underway

**Pratt & Whitney @ GTI**
• Rocketdyne gasifier pilot plant

**Headwaters @ GTI**
• Fischer-Tropsch pilot plant

**SIUC Stoker Retrofit**
• w/ Babcock-Riley Power’s oscillating grate feeder system
Coal Demonstration Program

- $183 million bond authorization to demonstrate and deploy clean coal technologies in Illinois
  - $122 million in Coal Demonstration Program funds expended on 31 projects since 1982
  - $35 million reserved by statute for Baldwin scrubber
  - $17 million appropriated for FutureGen in FY2008
  - $5 million Ameren grant at GOMB for bond release
- Project selection based on technical feasibility, economic benefits, Illinois coal use, Illinois site
- Program shares in the financial risk of demonstrating new technologies
Past Coal Demonstration Program Highlights

- 1998: Fluidized Bed Combustion Boiler w/3 MW Cogen., SIUC/Steam Plant
- 1995: Gas Reburning-Sorbent Injection, IP/Hennepin & CWLP/Lakeside II Plant
- 1991: 150 MW Circulating Fluidized Bed Boiler, ADM Decatur Plant
- 1989: 40 MW Chiyoda CT121 FGD, U of I Abbott Plant
Recent Coal Demonstration Projects:

2001: Springfield’s City Water, Light and Power Scrubber Installation ($17M grant)

2003: Repowering Southern Illinois Power Cooperative’s 120-MW Marion Power Station ($6M grant)

2005: Oil-Dri Corporation’s SO₂ Scrubber installed at its Mounds plant ($1.4M grant)
Illinois Incentives for New Energy Facilities

- **Coal Revival Program (20 ILCS 605-332)**
  - $500 million bond authorization for grants to new electric generating or coal gasification facilities:
    - Generators of 400 MW, creating 150 Illinois mining jobs
    - Coal gasification facilities: SNG, chemicals and CTL products
  - Up to $100 million per project
  - Revenue neutral – through recapture of coal sales tax
  - No grants issued to date
  - $50 million appropriated in FY2008
  - $14 million Secure Energy grant at GOMB for bond release
Illinois Incentives for New Energy Facilities (cont.)

- **High-Impact Business Tax Incentives**
  - Illinois sales tax exemption on building materials and equipment
  - 0.5% investment tax credit
  - Exemption from the Public Utility Tax

- **Property Tax Abatement** for eligible project

- **Revenue Bond Financing.** Up to $450 million per project through the Illinois Finance Authority including low-interest Moral Obligation Bonds
Prairie State Energy Campus

- $2 billion project by Peabody Energy
- 1600 MW Pulverized coal plant
  - State-of-art flue gas cleanup
  - Twin-810 MW electric units
  - 6 MT of coal per year from adjacent mine
- Air permit issued 4/28/05
  - Env. Appeals Board denied appeal on 9/1/06
- Contractor and energy partners (were) in place
- $ 1.5 M in state grants to date
- Construction initiated late 2007
Taylorville Energy Center

- 630 MW IGCC facility with future SNG production
  - 2 GE radiant gasifiers
  - GE combined-cycle power block
    - 2 7FB turbines, 1 GE D-11 steam turbine
    - 2 heat recovery system generators, 2 SCRs
  - 2 Selexol acid gas removal trains
  - Activated carbon beds for 95% mercury removal
- Ownership: 50% Tenaska / 50% ERORA Group
- $1.5 billion project, 1.8 M tons/yr coal use
- Construction/PSD air permit issued 6/5/07
- $5 M in state grants to date for FEED study
- $31 M Coal Revival Grant available
- Construction to start in 2008?
Secure Energy Decatur Gasification Plant

- $330 million conversion of a former Caterpillar power facility to a coal-to-synthesis natural gas (SNG) plant
- 67 mcf/year pipeline-quality SNG
- Siemens to provide two gasifiers
- Will use 1 to 1.5 MT of coal used annually
- Air permit issued on April 6, 2007
- Eligible for $14 million Coal Revival Grant
- Construction to start in 2008
Power Holdings

- $1.3 billion coal-to-synthesis natural gas (SNG)
- GE-Global gasification technology
- 135 mcf/day pipeline-quality SNG
- 4 to 5 MT of coal used annually from nearby source(s)
- Air permit applied for
- $5 million in state grants for development (DCEO, CCRB)
- Project is not eligible by statute for Coal Revival Program
  “A new gasification facility does not include a pilot project located within Jefferson County or within a county adjacent to Jefferson County for synthetic natural gas from coal.”
- Gas purchase agreements in place to Ameren Energy, Nicor, Oneok

Waltonville
Ameren Duck Creek Scrubber

- Existing 336 MW PC plant built in 1976
  - Existing scrubber is inoperable
- New Wet FGD System
  - $208 million project
  - Construction/PSD air permit issued
- State incentives in exchange for long-term Illinois coal use commitment:
  - Enterprise Zone
  - $4 million Coal Competitiveness Grant
  - $5 million Coal Demonstration Grant
FutureGen Project

- A $1.8 billion public-private partnership to produce energy, hydrogen, and capture CO₂ and store it safely deep underground.
- 275 MW zero-emissions Integrated Gasification Combined Cycle (IGCC) prototype.
- $17 million Coal Demonstration Grant promised.
- $2.025 million Coal Competitiveness Grant promised.
FutureGen Status

- Two sites in east-central Illinois – Mattoon and Tuscola
- Environmental Impact Studies evaluations were completed
- On December 18, 2007 the FutureGen Alliance announced the selection of the Mattoon site
- On January 29, 2008 Secretary of Energy, Sam Bodman pulls funding commitment.
- OCD remains committed to project
For more information on DCEO coal programs, visit our websites at:

www.illinoiscoal.biz
www.futuregenforillinois.com/
www.icci.org
www.isgs.uiuc.edu/
www.sequestration.org/

Or, contact me at:

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Thank You.