



Office of Coal Development FY2010 Annual Report

Illinois coal resources support thousands of jobs



In this age of insecurity and unknowns, Illinois coal resources are a comforting constant. With a 250-year supply, Illinois leads the nation in bituminous coal reserves.

When mined, this coal provides thousands of jobs, a secure fuel source and low-cost electricity. Recent research shows promises to reducing the carbon footprint from Illinois coal.

DCEO Office of Coal Development (OCD) is dedicated to the development and use of Illinois' extensive coal resources.

Coal is not only a low cost, abundant and secure fuel source, but

the mining of Illinois coal provides above average wages to more than 3,500 miners and 2,980 transportation workers in downstate Illinois.

The Illinois coal mining industry also supports nearly 20,000



workers in the companies that supply the mines with steel, limestone, electricity, fuel, machinery and parts and in the food service, entertainment and housing industries.

A recent report to the Illinois Chamber Foundation by the Regional Economics Application

Laboratory at the University of Illinois estimated the impact on the state's economy of a variety of alternative uses for coal.

Each of the projects, if built, would provide a secure energy supply in the form of syngas, electricity and transportation fuels and significant construction and operation jobs. Indirect benefits include increased mining operations and the economic ripple effect in the local communities that imported energy sources would not produce.



New power plant and coal mine stoking local economy

Prairie State Energy Campus (PSEC) and the adjacent Lively Grove Mine are under construction in Washington County. The total project cost exceed \$4 billion.

More than 2,300 construction workers are on-site building the 1600 MW power station and the

coal mine that will supply it with 6.3 million tons of coal per year. The combined facility will require 500 permanent employees.

The power station will use super-critical pulverized coal technology and state-of-the-art devices to clean flue gas post-combustion. Carbon emissions

will be 15 percent lower than the typical U.S. coal plant.

PSEC will pump \$80 million of earnings and income annually into the Illinois economy, including \$64 million locally. Studies show PSEC will contribute \$22.6 billion in economic activity in Illinois over 30 years.

Economic Impact of Coal Mining in Illinois, 2008

Contribution to GDP (\$millions)

Direct **\$1,244**

Indirect and Induced **\$1,902**

Employment

Direct **6,700**

Mine Workers **3,380**

Support Activities **340**

Transportation **2,980**

Indirect and Induced **19,030**

Labor income (\$millions)

Mining Direct **\$89,559**

State Average, All Industries
\$56,100

Tax Contribution (\$millions)

Overall **\$776**

State and Local Only **\$334**

PricewaterhouseCoopers, Economic Contribution of U.S. Mining in 2008, October 2010

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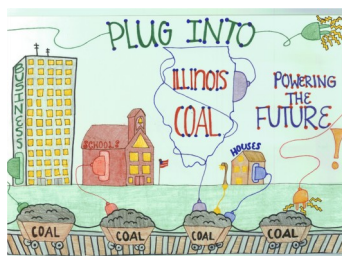
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Two winning posters in the 2011 Coal Calendar Contest



Learning about Illinois coal and coal mining

Each year approximately 5,000 students participate in coal awareness programs sponsored by OCD through their schools or the Museum of Science and Industry in Chicago.

In 2010, more than 1,400 students in fifth through eighth grade participated in the Illinois Coal Calendar Contest. The contest, conducted jointly by OCD and the Illinois Coal Association, provides an outlet for young essayists and artists to practice their talents while studying about

coal, its long history in Illinois, and the many uses of coal byproducts.

Over 120 teachers from across the state attend the annual Coal Education Conference held at Rend Lake Resort each summer. The four-day conference consists of lectures by experts in the field, hands-on activities correlated to the Illinois Learning Standards and tours of coal mines and a coal-fueled power plant.

By including coal education in their classrooms, teachers

bring to their students and communities an awareness of our state's greatest natural resource and the positive role coal plays in our day-to-day lives and our state's economy.

OCD staff also responds to numerous requests from land owners, public officials, and economic development organizations looking for information on Illinois coal. Staff keep abreast of clean coal technology research activities and share information with policy makers and economic developers.

FutureGen

As planned, FutureGen, a \$1.3 billion private partnership between the U.S. Department of Energy (DOE) and the FutureGen Alliance (FGA), will demonstrate the technical and economic feasibility of efficiently producing low-cost electricity from coal while nearly eliminating emissions.

It includes the capture and permanent storage of CO₂ in a deep saline aquifer safely below all fresh water and mineral deposits.

FutureGen will create unique opportunities for scientific exploration, education and stakeholder engagement concerning carbon capture storage (CCS) technology. It will create jobs and add to the economic stability of the region.

Executives with Peoria-based Caterpillar Tractor Company who recently signed on with the FGA, said in a statement that clean-coal technology to

be tested at the plant — including underground storage of carbon dioxide — is essential to the nation's energy future and to reducing emissions blamed for global warming.

The FGA is made up of Alpha Natural Resources, Anglo-American, Caterpillar, China Huaneng Group, Consol Energy, Exelon Energy, Peabody Energy, Rio Tinto Energy America and Xstrata Coal.

"Clean-coal plays a critical role in our energy supply, energy security and environmental protection," said vice chairman Doug Oberhelman, Caterpillar Tractor.



Workers installing geophones in a monitoring well on the ADM Decatur site.

MGSC a leader in carbon capture and storage research

As one of seven national partnerships with the U.S. DOE, the Midwest Geological Sequestration Consortium (MGSC) is studying the safety and efficiency of CCS in the Illinois Basin.

The MGSC is led by the Illinois State Geological Survey in conjunction with the Indiana and Kentucky State Geologi-

cal Surveys. MGSC partnered with host Archer Daniel Midland (ADM) in Decatur and Schlumberger Carbon Services on the entire CCS process—pre-injection characterization, injection monitoring, verification monitoring, and post-injection monitoring.

One million tons of carbon dioxide from ADM will be

injected over a period of three years at a rate of 1,000 metric tonnes per day in the Mt. Simon Sandstone at a depth of 5,600 ft. to 7,200 ft.

The results of this project will provide baseline information for future development of CCS opportunities in the vast Illinois Basin.

Illinois coal programs leverage more than \$100,000,000

At a time of economic uncertainty in other sectors, Illinois Coal Programs continued to reverse the tide—leveraging over \$100 million dollars in private spending.

The Illinois Coal Competitiveness Program is aimed at improving the safety and efficiency of the Illinois coal industry, enhancing the competitive position of Illinois coal in domestic and international markets and opening new markets for coal and coal byproducts.

To this end, seven grants to-

taling \$5.1 million were awarded in FY2010. The funding leveraged \$92.1 million in private investment at coal mines in Illinois.

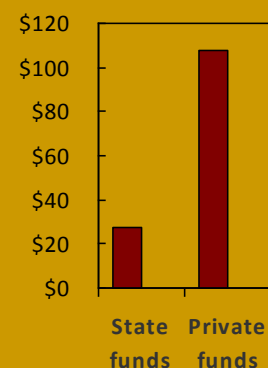
The Illinois Coal Research and Development Program provides grants to universities and research institutions. Fifteen institutions received grants totaling \$4.6 million for 26 projects.

The investments leveraged \$12 million in private spending on projects that show great promise in using coal with fewer harmful emis-

sions to produce electric power and synthetic natural gas for homes and businesses.

The Illinois Coal Demonstration Program provides partial funding for selected large-scale demonstration of advanced coal systems for utility and industrial use. A grant for \$18 million was issued to fund a portion of a cost facility report required by the Illinois Clean Coal Portfolio Standard Act. The grant has the potential to leverage \$3.8 billion in private spending.

Private Dollars
Leveraged
(in millions)



Miners exit IECC 'smoke truck' after training exercise.

Miner safety focus of Coal Competitiveness grant to IECC

In FY2010, OCD provided major funding to Illinois Eastern Community Colleges to design and purchase a self-contained mobile "training gallery", or "smoke truck", which enables instructors to offer miners realistic escape and evacuation training at all Illinois mine sites.

Dense theater smoke and a flexible maze housed within the 40-foot Freightliner truck simulate what might be en-

countered following a mine fire or explosion. Miners follow directional lifelines, like those provided in all underground mines, to experience finding the way out of a dark mine in low visibility and poor atmospheric conditions.

The truck is used in conjunction with quarterly hands-on Self-Contained Self-Rescuer (SCSR) training. Ninety-five percent of the miners surveyed feel they are better

prepared to deal with an actual mine emergency after training in the smoke truck.

Additionally, IECC's Workforce Education group provides on-site annual refresher training and initial electrical training and retraining, EMT continuing education classes, and specialized maintenance mini-courses at five training locations in Illinois.

Coal gasification projects promise jobs and economic stability

Power Holdings is a \$2 billion coal-to-synthesis gas project in Jefferson County. The facility will use 4.5 million tons of Illinois coal to output 55 billion cubic feet of substitute natural gas per year. Developing the facility will create approximately 1,100 construction jobs, 300 mining jobs and 250 plant jobs.

The Taylorville Energy Center is a \$2.5 billion coal-to-synthesis gas project in Christian County that will convert 1.8 million tons of Illinois coal into pipeline-suitable gas to generate wholesale electricity. Building the facility will create approximately 1,500 construction jobs, 150 mining jobs and 155 plant jobs.

Chicago Clean Energy is a \$2 billion coal-to-synthesis gas project being developed on a brownfield site within the Chicago-Calumet industrial corridor. The facility will output 40 billion cubic feet of substitute natural gas per year.



Every energy solution creates economic opportunity. Coal projects create thousands of jobs and provide secure, long-lasting energy sources.



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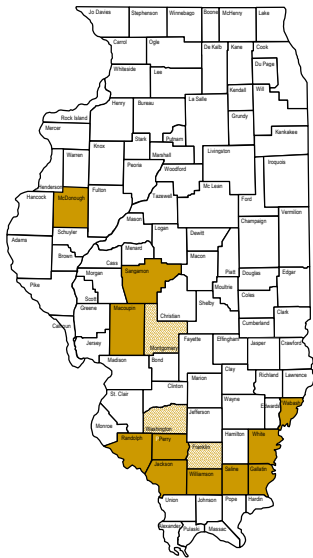
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We're on the web!
www.illinoiscoal.biz

2010 Coal Production Statistics

- 33,047,000** tons produced
- 3,615** average mine employee count
- 14** counties where coal is produced
- 12** active underground mines
- 8** active surface mines

Source: <http://www.msha.gov/drs/asp/extendedsearch/statebycommodityoutput2.asp> Feb. 10, 2011



Coal mines under development in Montgomery, Washington, and Franklin Counties are projected to increase annual coal production by 15 million tons.

Looking ahead

Illinois continues to be well-positioned for any demand-led rebound for its still under-developed coal industry. Certain new market growth is anticipated as coal from the Illinois Basin displaces Appalachian coal, based on price spread, as well as in markets where new power plant air emissions controls remove decades-long advantages for lower-sulfur fuels.

Growth also hinges on how export markets evolve and how uncertainties are resolved regarding federal CO₂ cap-and-trade law, or other new environmental regulations.

Selection as host site for the \$1.3 billion, near-zero-

emissions FutureGen project attests to the position of national leadership Illinois has established in the field of carbon capture and sequestration. It is the capstone of an effort, led by the OCD, in which Illinois has pursued deployment of coal gasification facilities that are the needed linkage to the future of coal in what is likely to be a carbon-constrained world.

Illinois also should be able to benefit substantially from its early partnership and investments in the Decatur-ADM CO₂ injection project and the coal-fueled Taylorville Energy Center.

The groundwork also has been laid to address increas-

ing demands for safer coal mines and a better-trained generation of new coal miners, many of whom are expected to find employment at new mining complexes being developed in the southern and central regions of Illinois.

Sitting under the grain fields of central and southern Illinois coal is a plentiful and secure energy source. Illinois coal production could increase by 50 percent in the near future, spurring economic development. Current research promises to reduce coal's carbon footprint. The Office of Coal Development is working to make coal a clean bridge to a bright future.