State of Illinois

Department of Commerce and Economic Opportunity

2010

The Illinois Coal Industry

DCEO

Report of the Office of Coal Development

June 2010

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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. Coal not only plays a vital role as an energy source, but the industries involved in the mining, transportation and use of coal provide billions of dollars in economic activity, thousands of jobs for Illinoisans and stability to many communities across the state.

Vision

The Office of Coal Development seeks to advance carbon capture and storage technologies; provide financial incentives for advanced gasification projects using Illinois coal; develop and promote new markets for Illinois mined coal and coal byproducts; and promote a comprehensive, long-range energy policy that secures America's energy future and creates jobs.

Illinois Department of Commerce and Economic Opportunity

The Honorable Pat Quinn
The Honorable John Cullerton
The Honorable Christine Radogno
The Honorable Michael Madigan
The Honorable Tom Cross

RE: The Illinois Coal Industry Report

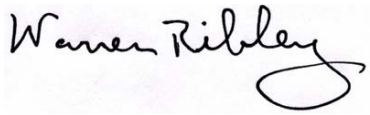
Dear Governor and Members of the Illinois General Assembly:

In the 200th year of coal production in what is now the State of Illinois, the Illinois Department of Commerce and Economic Opportunity submits its 2010 annual report on the Illinois Coal Industry. This report contains data and analysis for the 2008 and 2009 calendar years and is submitted in compliance with Section 1105/8(b)(5) of the Natural Resources Act.

Much has changed since we first discovered the presence of coal under the hills and prairies of Illinois. Modern equipment, technology and training put worker safety and environmental concerns at the forefront of developing this American resource. Today's underground mines use highly-mechanized equipment and sophisticated technology to monitor the atmosphere and control coal dust in the work environment. Surface mines bustle in well-choreographed motion that increases mining efficiency and productivity. You may not realize that a large portion of DCEO grants to the coal industry go toward mine safety equipment and training. In all cases, the surface land is restored to previous productivity standards after the coal is extracted.

Working together, we can continue to promote mine safety, energy security, and emissions reductions while using Illinois coal. I hope you enjoy this report about Illinois coal production, coal transportation and distribution, mine safety expenditures, the size of Illinois' coal reserves, the effects of emission regulations on the Illinois coal industry, and significant projects in development.

Sincerely,



Warren Ribley
Director

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Copies of this report may be obtained from:

Department of Commerce and Economic Opportunity
Office of Coal Development
500 East Monroe
Springfield, Illinois 62701-1643
(217) 782-6370
TDD: (800) 785-6055
http://www.illinoiscoal.biz

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Contents

The pick axe and shovel have been replaced by the remote-controlled continuous miner. Cutting up to 32 tons per minute, the miner can fill a transport, or "ram" car in less than 60 seconds.

A highwall miner is used to remove coal from the highwall of a surface pit. The large wheel holds the power cable feeding a cutting head similar to the continuous miner above. It is controlled by pressure readings. An average of 2,300 tons of coal is removed with each cut.

200 Years of Mining Energy from the Illinois Prairie

Gone are the pick axes, mules, wooden carts and canaries in a cage. Today's underground mines use highly-mechanized equipment to cut and transport coal. Sophisticated technology monitors the atmosphere and controls coal dust in the work environment. Surface mines bustle in well-choreographed motion that increases mining efficiency and productivity. In all cases, the surface land is restored to previous productivity standards after the coal is extracted. All of this is done while protecting the health of the workers and the environment.

Of mining techniques commonly used in Illinois, the workhorse is the room-and-pillar mine, where remote-controlled continuous miners cut up to 32 tons per minute and fill a "ram car" for haul-away in less than 60 seconds. Ram cars transport coal to conveyor belts that carry it to the surface. Modern mines have two continuous miners and three to five ram cars per unit. Pillars of coal are left for primary roof support. Roof bolting provides the secondary means of roof support.

Growing in use in Illinois is longwall mining, a capital intensive but highly productive underground coal mining technique. Longwall mining machines consist of multiple coal shearers mounted on a series of self-advancing hydraulic ceiling supports. Massive shearers cut coal from a wall face, which falls onto a conveyor belt for removal. Rather than leaving pillars of coal to support the surface, longwall miners extract 1000-foot wide "panels" - rectangular blocks of coal. As a longwall miner advances along a panel, the roof behind the miner's path is allowed to collapse in a planned sequence as dictated in the mining permit.

Track dozers, wheeled end-loaders and haul trucks are the backbone of Illinois' surface mines. The carrier dozer moves approximately 15 cubic yards with every pass. Today's haul trucks can carry 100 tons of soil, rock or coal.

A new addition to the surface mine is the highwall miner. This technological wonder bores into an earth wall -- at the level of a seam of coal -- extracting 2,300 tons of coal from every cut. This method safely and efficiently extracts a significant amount of coal that would have otherwise been left behind, increasing the mine's productivity.

Yet even with the best, most-sophisticated equipment, the worker is still the heart and soul of the coal mine. Today's workers are proficient in:

- Skilled trades including welding, hydraulics, electronics, repair;
- Professional and technical services including engineering, GPS, computers, cartography, hydrology and mining law;
- Coal cleaning and transportation, including chemical analysis, sales and dispatch;
- Mine safety including training, accident prevention, safety inspections, mine ventilation, record keeping and treating medical emergencies; and
- Equipment operation including conveyor systems, computers and mining machines.

Some worker characteristics haven't changed: dependability, integrity, teamwork, problem-solving, the desire to mine coal, and getting a bit dirty are still part of the job.

Illinois Coal Production on the Rise

In 2008 and 2009, Illinois coal production was 32.8 and 33.5 million tons (MT), respectively. Coal was mined in 11 counties. New mines were permitted for Franklin, Montgomery and Washington counties. New mine permits were submitted and deemed complete by the Illinois Department of Natural Resources' Office of Mines and Minerals for mines in Christian and Hamilton counties. Seven mines operated continuously throughout the past decade.

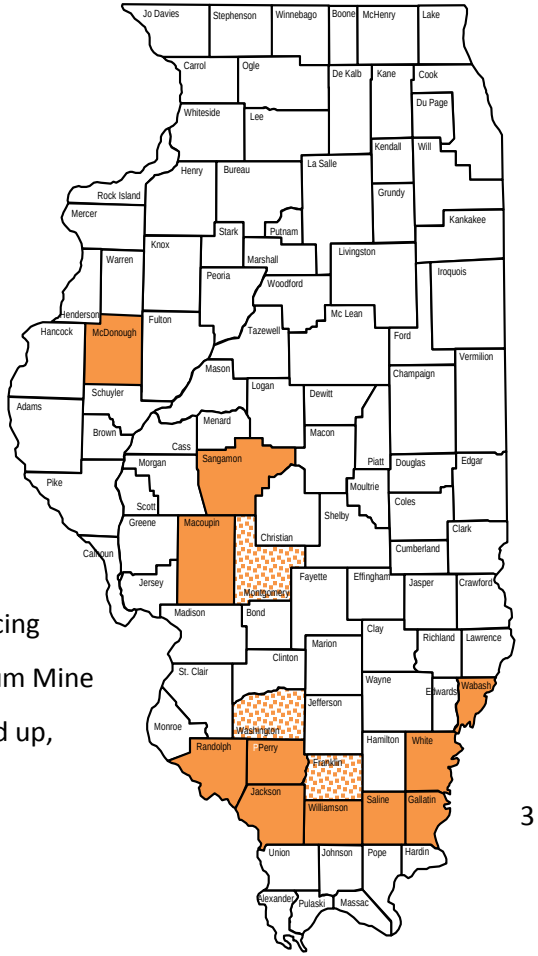
Three underground mines of similar size, Peabody Midwest Mining Gateway Mine in Randolph County, International Coal Group Viper Mine in Sangamon County, and White County Coal Pattiki Mine in White County, managed to maintain or increase coal production, as well as employment levels, over the past 10 years. They weathered market fluctuations, geological challenges, and in the cases of Viper and Gateway, bankruptcy by the parent company.

Credit goes to new, stronger parent companies, improved mine infrastructure, stable coal contracts, and aggressive, talented workforces, and, in most cases, assistance from state coal development programs.

In Gallatin County, Wildcat Hills Cottage Grove Mine's production continued to remain above 2 MT annually. In addition, 700,000 tons was produced yearly in Saline County at the Wildcat Hills Underground Mine which opened in 2005. The Saline County complex was a steady supplier of coal and jobs in southeastern Illinois.

Knight Hawk Coal Company (KHC) in Jackson and Perry counties grew steadily from one mine producing 800,000 tons in 2000, to six mines producing 3.7 MT in 2009. Production at KHC's original Creek Paum Mine slowed, but overall KHC production quadrupled as Red Hawk and Prairie Eagle surface mines ramped up,

2008 / 2009 Illinois Coal Producing Counties



including a new venture into underground mining at Prairie Eagle Underground and Prairie Eagle South Underground. Highwall mining, a first for Illinois, was successfully introduced and is being used at Prairie Eagle Mine.

Production at Galatia Mine in Gallatin County, the largest coal mine employer in Illinois, has fluctuated from 5.2 to 7.5 MT in the recent decade. Galatia's production in 2008 and 2009 was 5.3 and 6.3 MT, respectively. Crown III Mine remained open through a change in ownership, although coal production has steadily decreased since 2001.

Seven newcomers to the industry since 2000 have bolstered state coal production: Willow Lake Mine in Saline County, Elkville No.1 Mine in Randolph County, Friendsville Mine in Wabash County, North Grindstone Mine in McDonough County, Illinois Fuel I-1 Mine in Gallatin County and Mach #1 Mine in Williamson County. Willow Lake Mine opened in 2002 and averages 3.5 MT annually. Elkville No. 1 Mine opened in 2004, but was temporarily idled in 2009. Friendsville Mine opened in 2005 and has averaged 1 MT per year since 2007. Mach #1 Mine opened in late 2006 and quickly jumped to the most productive mine in the state, producing nearly 6 MT of coal with less than 200 employees. Illinois Fuel I-1 Mine started up in 2008 and produced 273,622 tons in 2009. North Grindstone Mine opened in 2009 and produced 137,468 tons. Table 1 shows coal production and employment data for Illinois coal mines in 2008 and 2009.

Shay #1 Mine, previously called Monterey #1, returned to production in late 2009 after being idled for over a year. The mine produced 300,000 tons in the first quarter of 2010 and is expected to reach 3 MT annually by 2011, with enough reserves for 30 years. Shay and Mach #1 are subsidiaries of Cline Resources. Two other Cline subsidiaries, Deer Run Mine in Montgomery County and MC #1 Mine in Franklin County, are currently under development. Prairie State Generating Company is developing the Lively Grove Mine in Washington County to supply the adjacent Prairie State Energy Campus with up to 6 MT of coal per year.

These mines have the potential of pushing Illinois coal production over 45 MT in the very near future. Coal mine employment is projected to increase by more than 500.

Table 1: Coal Production and Employment

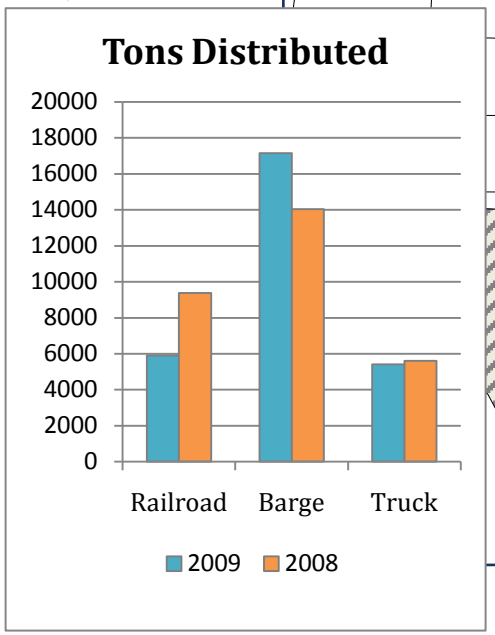
Operator Name	County	Mine Name	Average 2008 Employment	Average 2009 Employment	2008 Production	2009 Production
Peabody Midwest Mining LLC	Gallatin	Wildcat Hills Cottage Grove	166	152	2,230,577	2,116,574
Illinois Fuel Company LLC	Gallatin	I-1	30	34	91,138	273,622
Knight Hawk Coal LLC	Jackson	Creek Paum	74	60	1,068,071	557,109
S Coal Company	Jackson	Elkville No. 1	44	44	318,549	287425
Knight Hawk Coal LLC	Jackson	Royal Falcon	30	51	195,753	366,773
Tri County Coal LLC	Macoupin	Crown III	261	293	1,407,552	1,360,392
MaRyan Mining LLC	Macoupin	Shay #1	53	38	0	167,967
Black Nugget LLC	McDonough	North Grindstone	0	27	0	137,468
Knight Hawk Coal LLC	Perry	Red Hawk	33	33	660,126	504,943
Knight Hawk Coal LLC	Perry	Prairie Eagle Surface	23	49	433,234	472,002
Knight Hawk Coal LLC	Perry	Prairie Eagle Underground	74	93	1,112,101	1,720,076
Knight Hawk Coal LLC	Perry	Prairie Eagle South Underground	0	19	0	166,428
Peabody Midwest Mining LLC	Randolph	Gateway Mine & Prep Plant	228	253	3,198,251	3,347,916
American Coal Company	Saline	Galatia	854	885	5,263,019	6,267,253
Big Ridge Inc	Saline	Willow Lake Portal & Central Preparation Plant	462	479	3,621,056	3,447,491
Peabody Midwest Mining LLC	Saline	Wildcat Hills Underground	79	89	709,428	701,946
ICG Illinois LLC	Sangamon	Viper	268	292	2,261,029	2,251,948
Friendsville Mine LLC	Wabash	Friendsville	55	55	1,037,125	977,582
White County Coal LLC	White	Pattiki	314	329	2,653,250	2,472,635
Mach Mining LLC	Williamson	Mach #1	165	173	5,503,665	5,921,151
M-Class Mining LLC	Franklin	MC #1	0	52	0	0
Patton Mining LLC	Montgomery	Deer Run	0	8	0	0
Prairie State Generating Company LLC	Washington	Lively Grove	5	9	0	0
Totals			**3,218**	**3,516**	**32,893,707**	**33,518,701**

Source: U.S. Department of Labor, Mine Safety & Health Administration (MSHA), May 2010 http://www.msha.gov/drs/asp/extendedsearch/statebycommodityoutput2.asp

Coal Transportation and Distribution

Key to the success of the Illinois coal industry is one of the largest and most comprehensive transportation infrastructures in the United States. Illinois has 7,196 miles of railroad track and 1,118 miles of navigable rivers, lakes and canals, with direct links to the Atlantic Ocean and the Gulf of Mexico. In addition, three coast-to-coast interstates pass through Illinois.

In 2008 and 2009, Illinois coal was distributed by rail, barge and truck to 45 locations in 18 states outside of Illinois. Illinois coal producers also exported more than 3 MT of coal to Europe in 2008. (Export data for 2009 was not available at the time of printing, although it is believed to be below 2008 exports due to the recession's effect on global economies.)



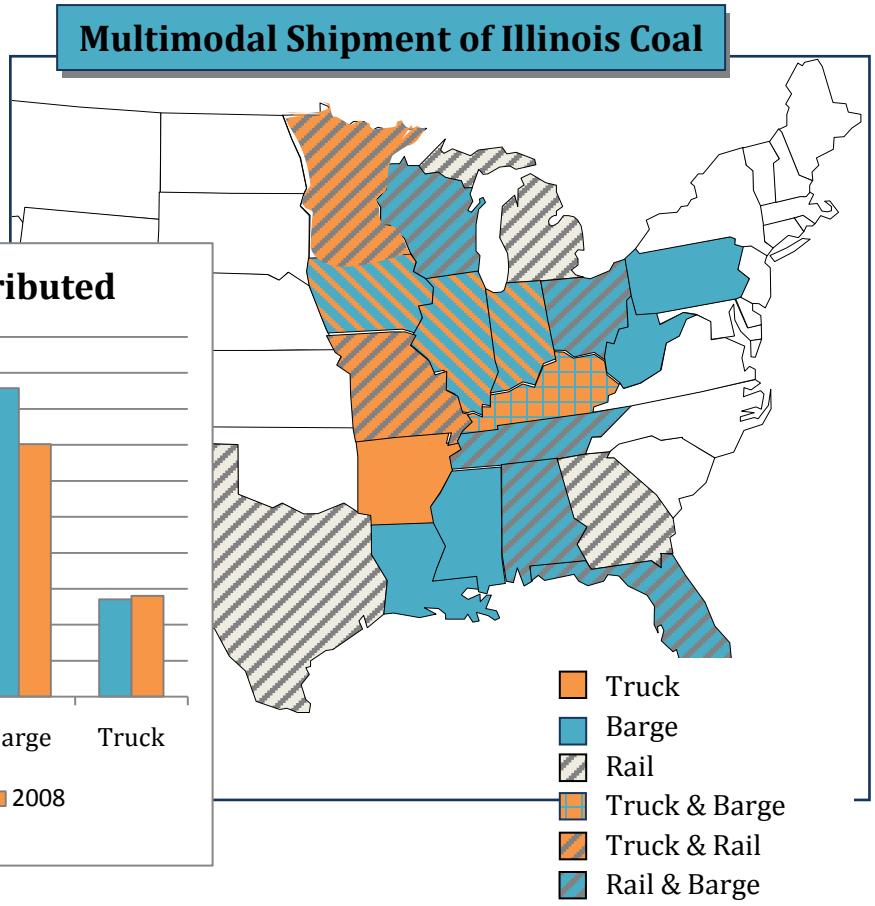


Table 2. Multimodal Distribution of Illinois Coal

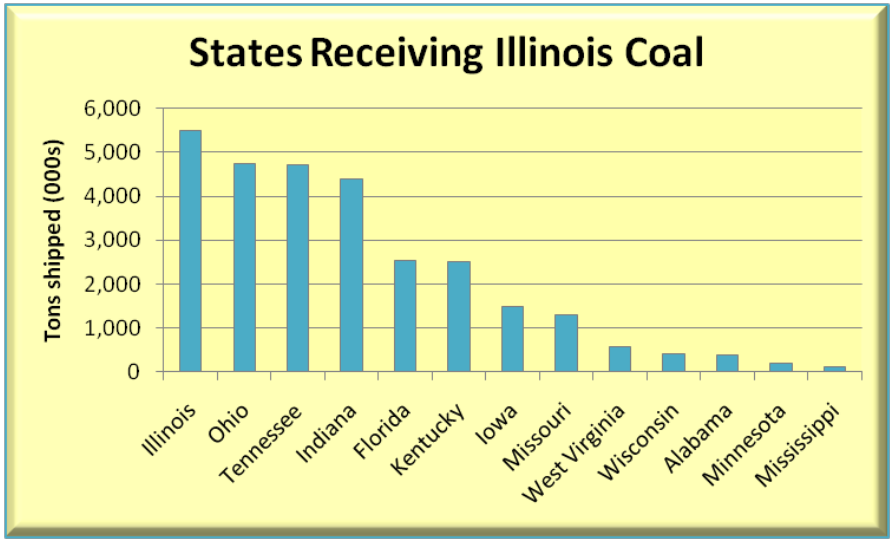
Operator Name	Mine Name	Shipping Method(s)	2008 Tonnage	2009 Tonnage
American Coal Company	Galatia	Barge, Rail, Truck	5,263,019	6,267,253
Big Ridge Inc	Willow Lake	Barge, Truck	3,621,056	3,447,491
Black Nugget LLC	North Grindstone			4Q 137,468
Friendsville Mine LLC	Friendsville	Rail	1,037,125	977,582
Illinois Fuel Company LLC	I-1		91,138	273,622
International Coal Group LLC	Viper	Truck	2,261,029	2,251,948
Knight Hawk Coal LLC	Creek Paum Prairie Eagle Prairie Eagle South Underground Prairie Eagle Underground Red Hawk	Barge, Rail, Truck	3,273,532	3,420,558
Mach Mining LLC	Mach #1	Rail	5,503,665	5,921,151
MaRyan Mining LLC	Shay #1			4Q 167,967
M-Class Mining LLC	MC #1			Developing
Patton Mining LLC	Deer Run			Developing
Peabody Midwest Mining LLC	Gateway Wildcat Hills Cottage Grove Wildcat Hills Underground	Barge, Rail, Truck	3,198,251 2,230,577 709,428	3,347,916 2,116,574 701,946
Prairie State Generating Company LLC	Lively Grove	Mine Mouth for PSEC		Developing
Tri County Coal LLC	Crown III	Rail	1,407,522	1,360,392
White County Coal LLC	Pattiki	Barge, Rail	2,653,250	2,472,635



Consumers of Illinois Coal

Approximately 23 MT of Illinois coal was distributed for electricity generation at electric utilities, independent power producers or electric utility combined heat and power w/cogeneration in both 2008 and 2009.[1] Five MT were distributed to industrial plants and 600,000 tons went to commercial and institutional users.

More than 1.3 MT of Illinois coal were received in Illinois, Ohio, Tennessee, Indiana, Florida, Kentucky, Iowa and Missouri. More than 570,000 tons were shipped to West Virginia. Wisconsin and Alabama received 400,000 tons. Smaller amounts of Illinois coal were also used in Minnesota, Mississippi, Arkansas, Pennsylvania, Louisiana, Texas and Michigan.



The largest consumers of Illinois coal were Tennessee Valley Authority (4.7 MT), Dayton Power & Light Co. (4.1), Northern Indiana Public Service Co.(2.6) and Tampa Electric Co. (2.5).[2] City of Springfield (IL), used 1 MT and, Duke Energy Indiana Inc., Kentucky Utilities Co. and Southern Illinois Power Cooperative each used slightly more than 900,000 tons each. Archer Daniels Midland (ADM) was the largest industrial consumer. ADM bought more than 888,000 tons of Illinois coal for its Illinois and Iowa grain processing plants. AGC Division of APG Inc. in Indiana used nearly 824,000 tons.

[1] Energy Information Administration, Domestic Coal Distribution 2008 Report and preliminary quarterly reports for 2009. http://www.eia.doe.gov/cneaf/coal/page/coaldistrib/a_distributions.html.

[2] Energy Information Administration, Monthly Fuel Receipts & Fuel Quality Database preliminary report 2009. http://www.eia.doe.gov/cneaf/electricity/page/eia423.html

Sales/Marketing Contact	Division/Mine Name(s)	Transportation Options
Mr. Bob Gardiner, President **International Coal Group, Illinois LLC** Phone: 217-566-3000 Email: bgardiner@intlcoal.com URL: http://intlcoal.com	Viper Mine	Truck
Mr. Andrew Carter **Knight Hawk Coal LLC** Phone: 618-426-3662, ext 249 Email: andrewcarter@knighthawkcoal.com URL: http://www.knighthawkcoal.com/	Creek Paum Mine Prairie Eagle Mines Red Hawk Mine	Rail: Canadian National Truck to Barge
Mr. Ed Lane, Sales Manager **Murray Energy Corporation** Phone: 859-543-9220 Email: elane@coalsource.com URL: http//murrayenergy.net/index.shtml	American Coal/Galatia Mine	Rail: Canadian National
Mr. Scott Mayer, Director of Transportation **Peabody CoalSALES LLC** Phone: 812-434-8568 Email: smayer@peabodyenergy.com URL: http://www.peabodyenergy.com	Peabody Midwest Mining/Gateway Mine Peabody Midwest Mining /Willow Lake Mine Peabody Midwest Mining /Wildcat Hills Mine	Rail: Union Pacific Truck to Barge Truck to Barge
Mr. Michael F. Moran, Sales & Marketing **The Cline Group** Phone: 704-846-8248 Mobile: 704-502-7472 Email: michaelfmoran@yahoo.com Mr. Tony Rowser, Director of Sales & Marketing **Foresight Management** Mobile: 219-670-4236 Email: trowser@clineres.com	Williams Energy/Mach Mining LLC/Mach # 1 Mine Macoupin Energy/MaRyan Mining LLC/Shay #1 M-Class Mining LLC/MC # 1 Mine (opening 2011) Hillsboro Energy/Patton Mining LLC/Deer Run Mine (opening 2012)	Rail: Canadian National Rail: Union Pacific, Norfolk So. Rail: Canadian National Rail: Union Pacific

Ms. Jennifer Robertson, Customer Service Manager **Tri-County Coal LLC/Capitol Sales** Phone: 217-698-3380 Email: jrobertson@Springfieldcoal.com	Crown III Mine North Grindstone	Rail: Canadian National Truck
Mr. John Harman, President of Operations **Vigo Coal Company, Inc.** Phone: 812-759-8446 Email: info@vigocoal.com URL: http://vigocoal.com	Friendsville Mine	Rail: Norfolk Southern
Mr. Jim Plaisted, General Manager - Sales **White County Coal LLC** Phone: 270-685-3100 Email: jimplaisted@arlp.com URL: http://www.arlp.com/operations/il_pattiki.htm	Pattiki Mine	Rail: Evansville Western

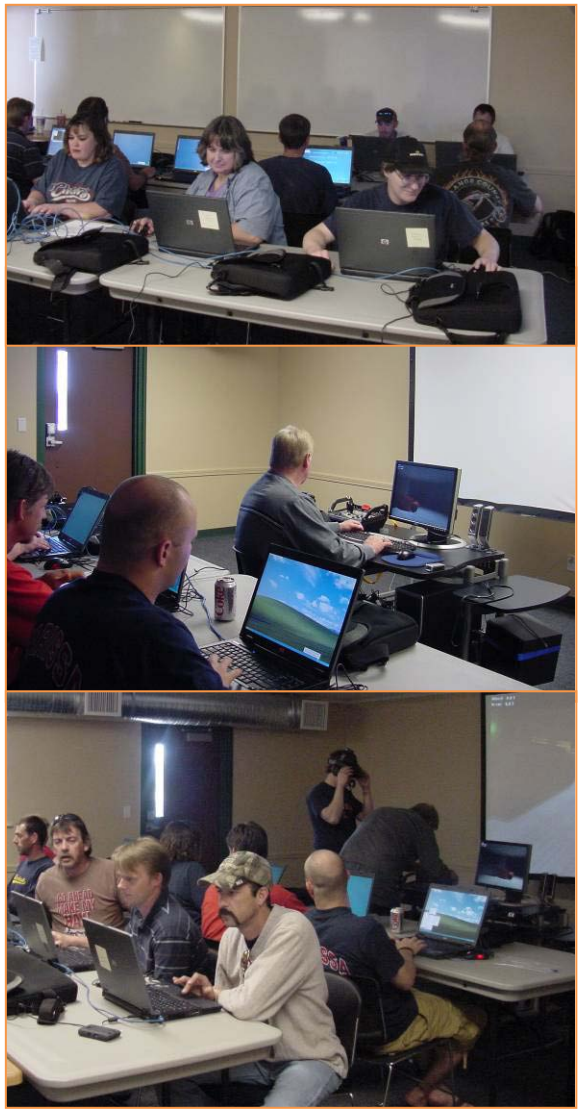
Keeping Our Workers Safe

The creation of the U.S. Bureau of Mines and Minerals following a mine disaster in 1883 signaled the first of many regulators that would oversee the coal industry. Today state and federal laws set requirements for mine inspections, ventilation plans, mine rescue stations, analytical laboratories and health and safety standards for the workers. Regulators also oversee reclamation of mined lands.

Following a mine tragedy at Sago, WV, Congress adopted the Mine Improvement and New Emergency Response Act of 2006 (Miner Act) to amend the Federal Mine Safety and Health Act of 1977. The Act took significant steps in requiring coal operators to prepare for mine emergencies. In compliance with the law, mine rescue stations must be with a specified radius of any coal mine. In Illinois, certified mine rescue stations are equipped and maintained in Benton, Springfield, Harrisburg and Lively Grove (Washington County). In 2008, federal law also established additional equipment requirements for mine rescue teams. The Office of Coal Development has provided grants to coal mine operators, community colleges and the Department of Natural Resources Office of Mines and Minerals to comply with the new regulations.

Provisions within the Miner Act require all underground coal mines to "make available two certified mine rescue teams." Each six-member mine rescue team must practice for eight hours per month in full gear, as shown in the photos to the right. Mine rescue teams include

a team captain who advances the team through the mine, a map man who records every condition and object, two gas men who construct air flow curtains and take atmospheric readings, a co-captain who relays information to the base and leads the retreat, and a base person stationed in fresh air that relays information to the surface. Teams are knowledgeable in the basic concepts of explosive gases, ignition sources, mining plans and survivor rescue.



Mine safety and miner training in Illinois have received special attention from the Office of Coal Development (OCD) since 2006. A portion of the Coal Competitiveness Grant Program has been designated to fund miner equipment that will keep Illinois mines and rescue stations in compliance with new federal standards. Grants have also been targeted to funding training facilities that are some of the most advanced in the nation. Between 2008 and 2009, OCD issued nearly $6 million in grants for mine safety and miner training.

Miner Training Funded by OCD Coal Competitiveness Program

Illinois Eastern Community Colleges (IECC) purchased three computer-based training systems (CBTs) and three simulators for training on the continuous miner and roof bolter. The CBTs are ideal for teaching trainees basic knowledge of the machines before beginning simulator training and/or training on actual equipment. The simulator develops the operating skills of a trainee and can be used to polish skills of a novice operator. The technology is portable and has been used with success at four Illinois coal mines. The photos at the left were taken at Prairie State-Lively Grove Training Center.

IECC also designed and purchased a mobile training gallery, or smoke truck, for carrying out Self-Contained Self-Rescuer (SCSR) training task requirements under conditions similar to real life emergency situations. The SCSR is a single use, self-contained, air-tight

breathing apparatus that will assist a person in escaping from an area containing smoke, toxic gases or an oxygen-deficient atmosphere. The training requires the miner to don or exchange an SCSR, then find and utilize lifelines (ropes that guide one through an escape route. The gallery can simulate smoke or an equivalent environment where visibility is restricted. The gallery is available for on-site training at all Illinois coal mines.

In 2009, 690 coal miners at four mines were surveyed after training. Ninety-five percent of the miners felt they will be better prepared to deal with an actual mine emergency after training in the smoke truck.

On a larger scale, Rend Lake College in Jefferson County designed and constructed a new Coal Mine Training Center (at right and bottom) to provide training for new coal miners and refresher training for experienced miners. The facility includes a mock mine training area, classrooms and an open lab area. Students can earn an Associate in Applied Science degree (A.A.S.) with electrical qualification or Occupational Certificates in Advance Mining, Mine Electricity, Mine Mechanics, Mine Operations and Mine Supervisory.

RLC graduated its first associate degree student in Mining Technology in 2009, along with six graduates with Mining Technology Certificates. Enrollment increased in the New Miner Training classes from 21 in the fall 2009 class to 50 in the spring 2010 class. In the 2009 school year, 720 miners completed annual retraining or other training at RLC.

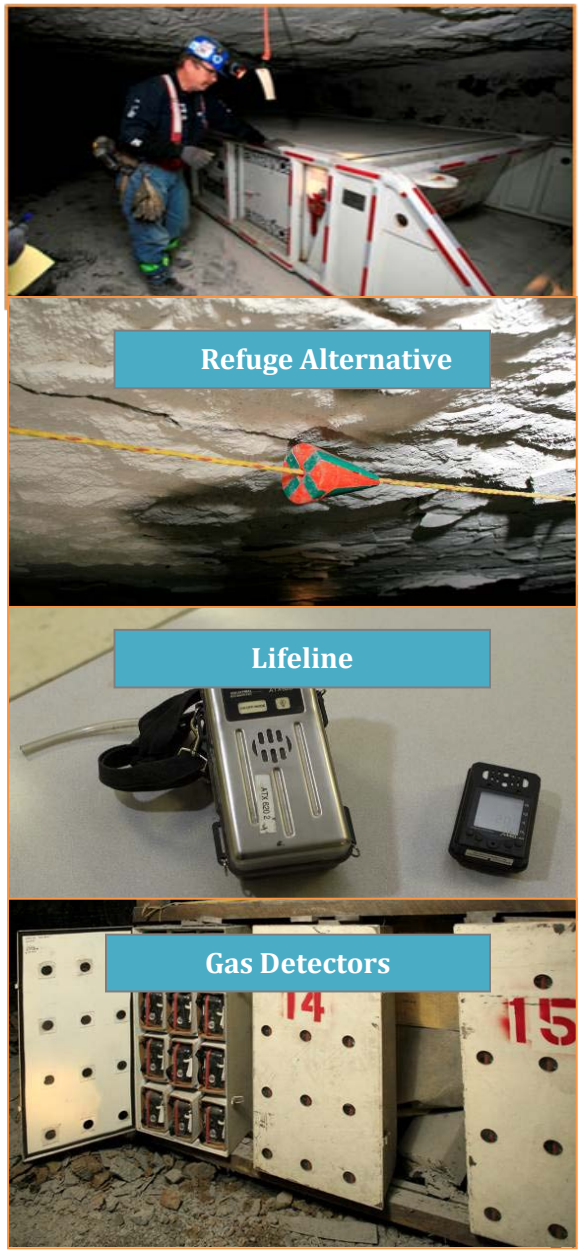
Safer Mines Thanks to OCD Support

To support coal mine safety and satisfy the new regulations, OCD issued nearly $2.3 million in grants directly to Illinois coal companies for the purchase of equipment. OCD grants were used to purchase refuge chambers, lifelines, taglines, multi-gas detectors, fire suppression systems, wireless communication systems, tracking equipment, SCSRs and SCSR cache storage containers.

Refuge alternatives are designed to provide life support for miners trapped underground. Once activated, the chamber expands to provide a safe refuge from smoke and poor atmospheric conditions. The chamber contains oxygen, food and water supplies for 30 miners for 96 hours.

Lifelines are installed in escape ways. In areas of low visibility, a miner would grasp the lifeline and it would lead the miner out of the mine. Directional cones on the lifeline keep the miner moving toward an exit rather that going further into the mine.

Gas detectors measure the percent of oxygen, carbon monoxide and methane gas in the atmosphere. The larger detector (shown in the photo, at right) is used by a mine safety



examiner tor measure gases behind sealed areas. The smaller detector checks atmospheric conditions in all working areas of the mine.

New regulations in mine safety require caches of SCSRs to be stored and maintained in escape ways throughout the mine. SCSRs contain enough oxygen for one hour of heavy activity. The caches are strategically located to provide fresh supplies of oxygen as needed in an atmospheric emergency.

Historically, communication between the surface and underground operations has proven difficult in emergencies, as phone lines are disrupted. Wireless communication technology is now being used in most Illinois coal mines. Special radio systems, have been installed in the primary and secondary travel ways. Miners communicate their locations via radio to monitors on the surface.

An Illinois mine rescue team was part of the post-disaster response to the Sago Mine disaster. In its aftermath, safety leaders realized there is a critical need to pinpoint the location of miners underground in the event an extreme emergency disrupts all communication. The Miner Act of 2006 required tracking systems to be installed in all underground mines. Tracking systems are a technological challenge due to the nature of the constantly changing underground environment, but some Illinois mines are in the process of adopting a matrix tracking system which will be installed in the near future. A device is attached to the hard hat worn by a coal miner. A computer on the surface constantly tracks the device and logs the location on a mine map. A database holds the log of information.

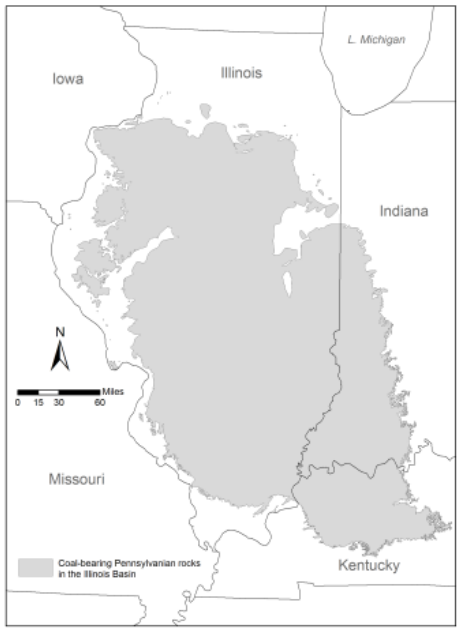
The database is unique in that it also has the capability of holding medical information if the employee chooses to provide that information. For example, if a miner has a health condition, such as diabetes or heart problems, and the tracking device shows no activity, rescuers could be alerted of the miner's exact location and could be made aware of possible scenarios. Likewise, if a mine examiner normally reached a certain location by a designated time, an alarm could be set to alert the monitor of a possible problem. In the event of a mining emergency, the exact location of underground workers would be automatically available.

Illinois Coal Resources

The Illinois Basin covers nearly 37,000 square miles in Illinois and in portions of Indiana and western Kentucky. Coal deposits began to form more than 300 million years ago during the Pennsylvanian Period, when the land that is now Illinois was near the Equator. Thick mats of plant debris accumulated on the floor of tropical swamps and were buried to form peat. Over millions of years, the layers of peat were compressed into coal.

This process created more than 75 layers or "seams" of coal that range from a few inches up to ten-feet thick. Some of the coal seams cover thousands of square miles in Illinois and adjacent states, but most occur in small, more limited areas. **Table 3, Coal Seams Mined in Illinois, details the nomenclature of the coal seams.**

The Illinois State Geological Survey has extensive information from core samples taken throughout Illinois. The Survey Web site provides maps, publications, and data sheets addressing coal characteristics, seam thickness, and availability of resources. The following information was excerpted from "Coal Geology in Illinois" by Russ Jacobsen. For more information and detailed maps, see http://www.isgs.uiuc.edu/maps-data-pub/coal-maps.shtml.



The Illinois Coal Basin covers nearly 37,000 square miles in Illinois and portions of Indiana and western Kentucky.

Table 3. Coal Seams Mined in Illinois

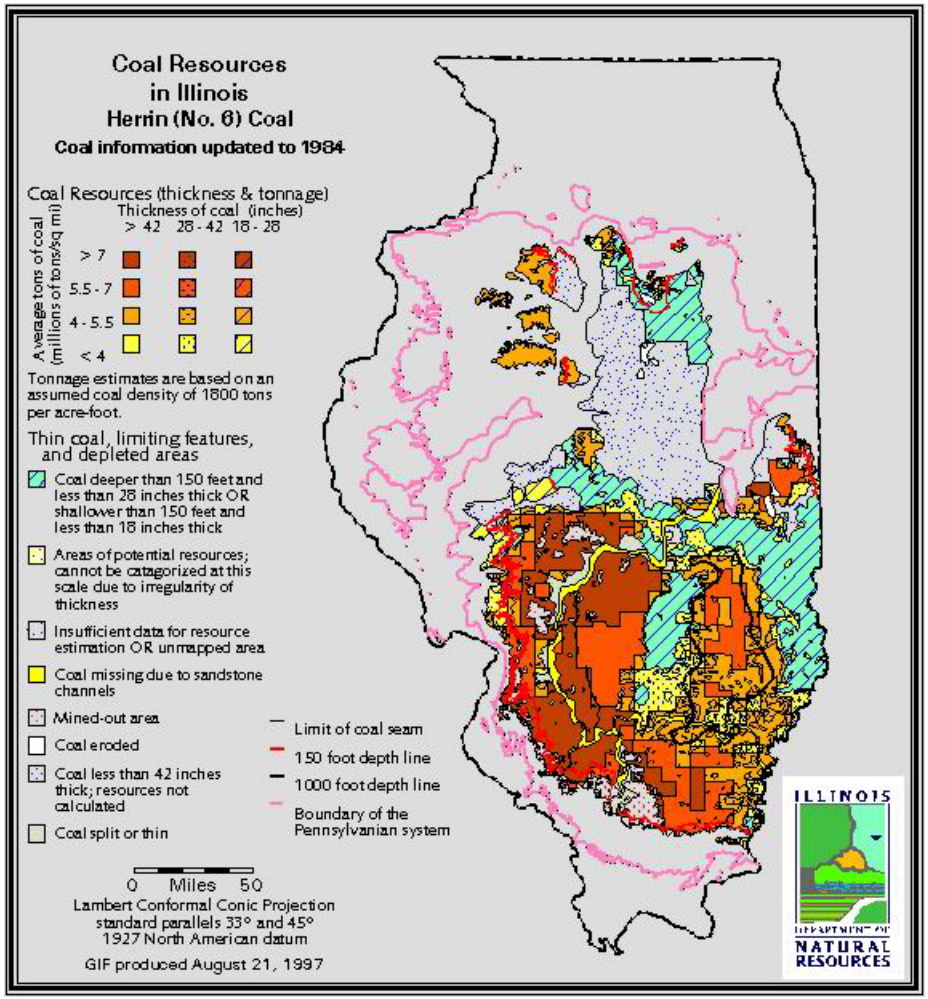
Correlation of coal seams and rock formations in the Illinois Basin							
Illinois		**Indiana**		**West Kentucky**		**Standardized Terms**	
Modesto Fm.		**Shelburn Fm.**		Sturgis Fm.	Coiltown (W. Ky. No.14) Baker (W. Ky. No. 13) Paradise (W. Ky. No. 12)	**Shelburn Fm.**	
Carbondale Fm.	**Danville (No. 7)** Jamestown **Herrin (No. 6)** **Springfield (No. 5)** Summum (No. 4) Shawneetown **Colchester (No. 2)**	Dugger	Danville (VII) Hymera (VI) **Herrin**	Carbondale Fm	**Herrin Fm** (W. Ky. No.11) Briar Hill (W. Ky. No. 10) **Springfield** (W. Ky. No. 9) Ruff Well **Dekoven** (W. Ky. No. 7) **Davis** (W. Ky. No. 6)	Carbondale Fm	**Herrin** **Springfield** Houchin Creek Survant **Colchester**
		Petersburg	**Springfield (V)** Houchin Creek Survant (IV)				
		Linton Fm	**Colchester (IIIa)**				
Spoon Fm	**Dekoven/Seelyville** **Davis** **Murphysboro** New Burnside Bidwell Rock Island (No. 1)	Staunton Fm.	**Seelyville (III)** Buffaloville	Tradewater Fm.	Manningtown (W.Ky.No.4)	Tradewater Fm.	
Abbott Fm	Willis Reynoldsburg	Brazil Fm	Minshall Upper Block Lower Block		Bell (W. Ky. No. 1b)		
Caseyville Fm.	Gentry	Mansfield Fm	Mariah Hill Blue Creek St. Meinrad Pinnick French Lick	Caseyville Fm.	Main Nolin	Caseyville Fm.	

Seventeen coal seams have been mined in Illinois. The coals are referred to by geographic names. Several of the more important coals are also referred to by number -- the lower the number, the older the coal.

85 to 90 percent of Illinois coal production comes from the Herrin No. 6 and the Springfield No. 5

Most Significant Coal Seams Mined in Illinois

Herrin coal, also known as No. 6 coal, is the chief source of coal in southern Illinois (outside of the Wabash-Saline-Gallatin County area in southeastern Illinois). The thickness of the Herrin coal in southwest Illinois is generally between 6- to 8-feet. In southeast Illinois, the Herrin becomes thinner and irregular in thickness.



Springfield coal, No. 5 coal, has been surface mined extensively in western Illinois. It is the only coal that has been mined in the Sangamon, Logan, and Menard counties. The Springfield has also been mined in southwestern Illinois, principally in Perry, Randolph, Jackson and Williamson counties. It was mined in small operations in McLean and Edgar counties. Springfield coal has a usual thickness of 4.5 to 6 feet in most areas where it has been found.

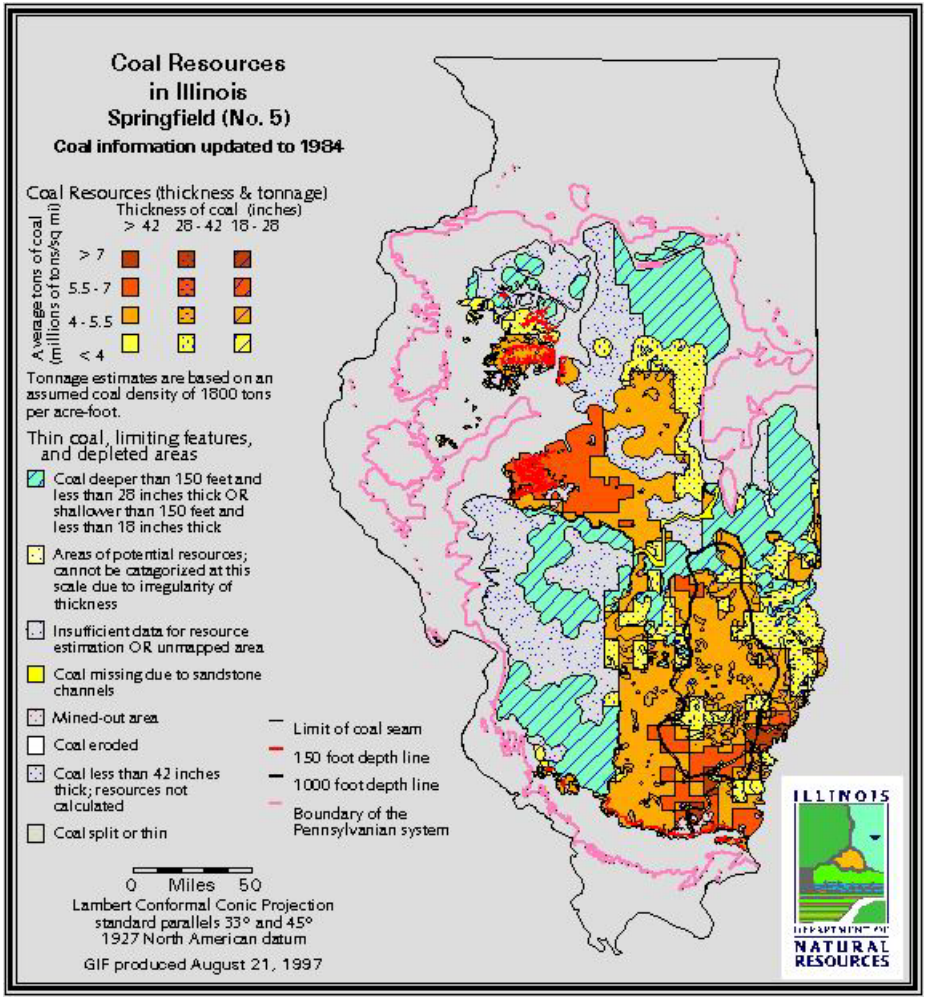
Illinois Bituminous Coal Is Abundant

Illinois has the largest overall bituminous coal reserves and the largest, strippable bituminous coal reserves anywhere in the United States. Illinois has the third-largest total coal reserves of any state and is second only to Montana in terms of demonstrated reserve base.

The Energy Information Administration (EIA) reported the following figures for Illinois bituminous coal reserves in its *Annual Coal Report 2008*.[3] Illinois' demonstrated reserve base includes publicly available data on coal mapped and found at depths and in coal bed thicknesses considered technologically minable at the time of determinations. The demonstrated reserve base is 104.3 billion tons.

The total recoverable reserves, which is the quantity of coal that can be recovered from existing coal reserves at reporting mines, is nearly 1.2 billion tons.

The estimated recoverable reserves include the coal in the demonstrated reserve base considered recoverable (excluding coal estimated to be unavailable due to land use restrictions or currently economically unattractive for mining after applying assumed recovery rates). Illinois' estimated recoverable reserves are reported to be 37.9 billion tons. Of the estimated recoverable reserves, 27.876 billion tons are available by underground mining methods, and 10.060 billion tons are available through surface mining methods.



[3]United States. Energy Information Administration. Annual Coal Report 2008. By Fred Freme, under the direction of Thomas Leckey and William Watson. <http://www.eia.doe.gov/cneaf/coal/acr/acr.pdf>. March 2010, Table 11 and Table 15.

The productive capacity, defined as the maximum amount of coal that can be produced annually as reported by mining companies on Form EIA-7A, stands at 43,129,000 tons. Of that, 35,100,000 tons are from underground mines and 7,028,000 tons are from surface mines.

Illinois Bituminous Coal Reserves

37.9 *BT - the estimated recoverable coal reserves*

104.3 *BT - the demonstrated reserve base*

Characteristics of Illinois Coal

The important heat value of Illinois coal ranges from 11,000 Btu/lb in the northwestern part of the state to about 15,000 Btu/lb in the southeastern part of the state.[4] The average ash content is approximately 10 %. Mineral matter, or incombustible components in the coal, varies significantly from place to place.

Sulfur in Illinois coal beds is commonly related to the character of the strata overlying the coal. Usually the coals overlain by marine strata have a sulfur content ranging from three to five percent. In certain non-marine areas when gray shale exceeds 20 feet in thickness above the coal, the sulfur content is less than 2.5 %, commonly averaging 1.5 %.

[4]Russell J. Jacobson, Geologist and Acting Head, and Christopher Korose, Geologist, Coal Section, Illinois State Geological Survey. "Coal Geology of Illinois" 2003.

Sulfur exists in two forms: organic and pyritic. The organic sulfur content of Illinois coals varies from a minimum of about 0.4 % to a maximum of about 5 %. Pyritic sulfur varies from nearly zero to as high as 5 %. Virtually all Illinois mined coal is cleaned at preparation plants, reducing the sulfur content of the final product by as much as one-third.

The occurrence of ash is irregular and unpredictable for large areas of the individual coal seams. The average ash content of Illinois coals is about 10%, with local variances commonly in the order of two to three percent. The composition of mineral matter varies significantly from place to place and between coal seams. Detailed information on Herrin and Springfield coal seam characteristics may be found in Table 4,

Determining the Characteristics of Illinois Coal in the field, in the lab, and in the work place

Range of Typical Analyses, Herrin Coal and Springfield Coal by Counties.

Table 4. Range of Typical Analyses, Herrin Coal and Springfield Coal by Counties (as received)

Counties	Moisture (%)	Volatile matter (%)	Fixed Carbon (%)	Ash (%)	Sulfur (%)	Calorific Value (Btu/lb)	Rank Index*	Ash Fusion (deg F)
Herrin Coal								
LaSalle, Grundy	13-16	36-41	35-40	7-11	3-5	10,500-11,400	116-123	1,950-2,150
Bureau, Stark, Henry, Knox	6-20	31-35	37-40	8-13	3-5	9,700-10,300	111-118	1,900-2,120
Peoria, Fulton	15-19	32-35	37-43	8-13	2-4	10,000-10,700	111-120	NA
Sangamon, Macoupin	12-16	34-40	37-41	9-11	3-5	10,400-10,900	116-123	1,930-2,160
Christian, Montgomery, Bond, Madison	12-14	35-40	38-41	9-11	3-5	10,500-11,000	117-125	1,920-2,170
Douglas, Vermillion	4-16	32-36	38-41	8-12	1-3	10,400-11,100	118-128	2,080-2,220
Clinton, St. Clair	10-13	34-40	37-42	9-12	1-4	10,000-10,700	121-129	1,920-2,090
Marion, Washington, Randolph, Perry	8-12	35-39	38-44	9-13	1-4	10,800-11,300	124-133	1,920-2,610
Springfield Coal								
Peoria, Fulton, Tazewell, Schuyler	14-18	33-38	34-40	9-12	2-4	10,100-10,800	115-122	1,890-2,270
McLean, Logan, Menard, Sangamon	13-17	34-39	35-41	9-12	3-5	10,400-11,000	117-125	1,890-2,600
Macon, Shelby	12-16	36-39	35-40	8-12	3-4	10,500-11,100	119-127	NA
Edgar	10-12	36-40	37-43	8-10	3-4	11,200-11,500	NA	NA
Randolph, Perry	8-13	35-38	40-44	9-12	4-5	11,000-11,400	124-135	2,168-2,174
Jackson	8-9	35-36	44-55	1	3-4	11,600-11,800	130-135	1,940-2,010
Gallatin, Saline, Williamson	5-7	33-38	47-53	2-5	2-5	11,900-12,500	132-141	2,040-2,090
Gallatin (Eagle Valley)	4-5	34-37	48-52	3-4	3-4	12,400-12,700	130-147	NA

*Calorific value of moist coal on a mineral-matter-free basis to the nearest 100 Btu/lb.

Source: "Coal Geology in Illinois", Russell J. Jacobson, Geologist and Acting Head, and Christopher Korose, Geologist, Coal Section, Illinois State Geological Survey.

The Effects of Emission Regulations on the Illinois Coal Industry

Celebrating its 40th anniversary during 2010, the U.S. Environmental Protection Agency has had a profound effect on coal mining and the Illinois coal industry in carrying out its mission. Today's air, land and water are considerably cleaner than in 1970. A progressive series of emission regulations over the past 40 years has changed the way fossil fuels are produced and used. A partial list of clean air regulations impacting the coal industry can be found in **Table 5, Emission Regulations Affecting the Coal Industry.**

Loss in Sales Means Lost Jobs

The Clean Air Act (CAA) of 1970, followed by the CAA Amendments (CAAA) of 1990, virtually eliminated the markets for Illinois-mined coal in the Illinois power industry. When the CAAA went into effect, 61 percent of the coal used at Illinois utilities came from Illinois mines. To comply with the CAAA, operators of most large Illinois coal-fueled power plants chose to switch from Illinois high-sulfur coal to low-sulfur coal from other areas. Illinois coal sales to Illinois facilities plummeted from 15.4 MT in 1990 to 2.5 MT in 2009[5]. **See Table 6, The Change in Coal Use by Illinois Utilities, for the amount of coal used by Illinois utilities.**

The Effects of Emission Regulation on the Illinois Coal Industry

	Illinois Coal	Out-of-State Coal	Illinois Mine Employment
1990	15,394.7	9,858.6	10,129
2009	2,533.4	50,145.8	3,516

Illinois mining companies needed to find new markets or close. Illinois mines employed 10,129 persons in 1990. In 2009, the average annual employment at Illinois mines was 3,516.

In 2009, just five percent of the coal used at Illinois power plants came from Illinois. During that same time, coal use in Illinois more than doubled from 25.3 MT to 52.7 MT. In 2009, Illinois utilities used 50 MT of low-sulfur coal from the Powder River Basin in Wyoming.

[5] Energy Information Administration. May 15, 2010 http://www.eia.doe.gov/cneaf/electricity/page/eia423.html

Table 5. Emission Regulations Affecting the Coal Industry

1970 Clean Air Act
•Limits how much of a pollutant can be in the air anywhere in the United States to curb acid rain, urban air pollution and toxic air emissions
1990 Clean Air Act Amendments (CAAA)
•Set emission standards on existing fossil-fueled generating units, a national permits program and a stepped-up enforcement program
1990 National Ambient Air Quality Standards
•Establishes standards for each of the criteria pollutants -- sulfur dioxide (SO_2), nitrogen oxide (NOx) and particulate matter (PM)) -- to determine "attainment" and "nonattainment "areas in terms of air quality standards.
1995 Phase I of Acid Rain Program (ARP)
•Phase I requires 263 of the largest, dirtiest generating units to reduce SO_2, NO_x and particulate matter (PM)
2000 Phase II of Acid Rain Program
•Extends ARP to every fossil-fueled plant greater than 25 MW
2005 Clean Air Interstate Rule
•Establishes three separate cap and trade programs for reduction of SO_2, $PM_{2.5}$ and NO_x to reduce ozone formation
Illinois Pollution Control Board (IPCB) Mine Related Water Pollution Regulations (Amended 2008)
•Part 401 - 407 outline state and NPDES permits and requirements for water quality
IPCB Emission Standards and Limitations for Stationary Sources (Amended 2009)
•Part 212, 214-220, 223, 225 outline requirements for visible particulate matter, sulfur, organic material, carbon monoxide, nitrogen oxides, nonmethane organic compounds, and control of emissions from large combustion sources
IPCB Waste Disposal Regulations
•Part 816 outlines alternative standards for coal combustion power generating facilities' waste landfills
2010 Mandatory Reporting of Greenhouse Gases
•Requires reporting of greenhouse gas (GHG) emissions from all sectors of the economy

Table 6. The Change in Coal Use by Illinois Utilities

Plant Operator	Plant Name	EIA 2008 Nameplate Capacity MW	County	Total Illinois Tons 1990 (000s)	Total Out-of-State Tons 1990 (000s)	Total Illinois Tons 2009 (000s)	Total Out-of-State Tons 2009 (000s)
AmerenEnergy Generating	Coffeen	1,005.4	Montgomery	1,746.4	0	145.2	2,483.8
AmerenEnergy Generating	Meredosia	496.3	Morgan	477.4	40.1	0.0	329.1
AmerenEnergy Generating	Newton	1,234.8	Jasper	1,074.9	960.2	0.0	4,927.0
AmerenEnergy Resources	Edwards Station	780.3	Peoria	189.0	1,80.0	0.0	2,966.4
AmerenEnergy Resources	Duck Creek	441.0	Fulton	861.0	0	409.8	1,509.5
Dynegy Power Corporation	Baldwin	1,892.1	Randolph	3,995.2	0	0.0	6,916.9
Dynegy Power Corporation	Havana	4880	Mason	0	495.8	0.0	1,287.9
Dynegy Power Corporation	Wood River	500.1	Madison	472.2	265.3	0.0	1,887.7
Dynegy Power Corporation	Hennepin	306.3	Putnam	629.7	58.6	0.0	1,202.1
Electric Energy, Inc	Joppa	1,099.8	Massac	1,756	1,721.5	0.0	4,339.4
Dominion Energy Services Co.	Kincaid	1,319.0	Christian	2,335.0	0	0.0	4,237.5
Midwest Generation EME, LCC	Joliet (9 & 29)	1,680.4	Will	0	1,503	0.0	4,433.0
Midwest Generation EME, LLC	Powerton	1,785.6	Tazewell	0	1,969.0	0.0	5,591.5
Midwest Generation EME, LLC	Will County	1,268.8	Will	0	856.0	0.0	3,182.5
Midwest Generation EME, LLC	Waukegan	681.7	Lake	0	850.0	0.0	2,283.8
Midwest Generation EME, LLC	Crawford	597.4	Cook	0	254.4	0.0	1,459.7
Midwest Generation EME, LLC	Fisk	374.0	Cook	0.0	400.2	0.0	992.6
Southern Illinois Power Coop.	Marion	272.0	Williamson	739.0	0.0	905.5	115.4
Springfield City Water, Light & Power	Dallman I-IV**	548.0	Sangamon	922.0	0.0	1,072.9	0.0
Total Tons in 000s				**15,394.7**	**9,858.6**	**2,533.4***	**50,145.8**

*Users of less than 100,000 tons annually and industrial users were not included.

**City of Springfield add Dallman IV in 2010

Source: Existing Electric Generating Units in the United States 2008. http://www.eia.doe.gov/cneaf/electricity/page/capacity/capacity.html

Pending Legislation Affecting Coal

Several pending issues will impact the Illinois coal industry. Changes in federal regulations and designations of fossil fuel combustion (FFC) wastes[6] are being closely monitored, as they have the potential to dramatically increase the cost of using coal. FFC includes all ash, slag, and particulates removed from flue gas of coal-fueled power plants. Coal ash is currently used in construction materials, deposited in landfills or backhauled to the coal mine and used for fill or deposited in regulated impoundments. However, the EPA is proposing to regulate, for the first time, coal ash to address the risks from the disposal of the wastes generated by electric utilities and independent power producers.

Climate change legislation potentially will increase the costs associated with coal-fueled power plants -- and ultimately the price consumers pay for electricity. More than a dozen bills were proposed or introduced in the 111th Congress that were designed to reduce greenhouse gas emissions (GHG) in the United States by putting a price on those emissions[7]. Decisions about which gases to regulate, where regulation in the fossil fuel supply chain should occur, allowance allocation, and cost containment mechanisms will affect the competitive nature of industries dependent upon fossil fuels and the development and deployment of new low- and zero-carbon technologies. Curbing the amount of carbon dioxide released from coal-fueled facilities will undoubtably have an economic impact on the coal industry either directly or indirectly.

Illinois Producers' Perspective

In April 2010, Illinois Coal Association (ICA) members laid out several issues that were deemed priorities.[8] Since 2006, there have been continual changes to the Mine Improvement and New Emergency Response Act of 2006, the Miner Act,[9] to encourage more protection for coal miners and tighter penalties for violating federal mining safety standards. Meanwhile, federal and state mine inspections came under close scrutiny causing more citations to be formally written. The manner in which citations are appealed also changed, causing a backlog of court cases. Money and manpower are being used to implement new emergency response procedures and respond to the backlog of appeals for citations.

[6] U.S. EPA. Waste-Non-Hazardous Waste - Industrial Waste. June 17, 2010. http://www.epa.gov/osw/nonhaz/industrial/special/fossil/ccr-rule/
[7] Resources for the Future. An Introduction to Climate Change Legislation. June 17, 2010. http://www.rff.org/News/Features/Pages/climate-change-legislation-introduction.aspx
[8] Polly Wise meeting with the Illinois Coal Association members. April 2010.
[9] U.S. Dept. of Labor, Mine Safety and Health Administration. http://www.msha.gov/MinerAct/MinerActSingleSource.asp

While recognizing the value of emergency response preparedness, most Illinois operators would rather focus on making the mines a safe and healthy place to work.

All coal companies in Illinois were affected by the economic recession as the decline in industrial output cut into demand for power. Restrained financing opportunities limited the ability for mine expansion and reaching new markets abroad. On a positive note, long-term utility contracts helped coal prices remain relatively steady.

Several new mines are being developed in Illinois. From an employer standpoint, coal operators are blessed with a large number of applicants, although few applicants maintenance or mine management experience needed to round out new workforces. In some instances, employees are leaving established mines to work at a new mine closer to home, or at mines that are offering bonuses to experienced maintenance workers. The ripple effect is that established mines are faced with hiring replacements in a job market in need of additional experienced maintenance and repair training of new personnel.

Strengths of the Illinois coal industry remain the amount and quality of mineable coal reserves, and the overall quality of the personnel who work in coal mining. Miners and Illinois believe that what they do is important. They work long hours for good pay. They are dedicated to working safely and standing up for what they believe in. Away from the job, they serve disproportionately as emergency medical technicians and volunteer firefighters, soccer coaches, avid hunters and anglers. They are involved with their families, churches and communities. Illinois has a 250-year supply of bituminous coal and, just as importantly, dedicated men and women to get it out of the ground.

OCD Making a Difference

DCEO's Office of Coal Development is dedicated to the development and use of Illinois' extensive coal resources. Since inception, the coal grant programs administered by OCD have leveraged more than $2.7 billion in private investments in Illinois. Coal grant projects have been used to improve coal-related infrastructure and to fund coal research, as well as to develop and demonstrate new technologies that use coal more cleanly and efficiently. Altogether, new coal technology demonstration projects employ thousands of construction workers, retain thousands of coal mining job and increase the economic activity in many areas of Illinois.

DCEO Program	Dollars Spent thru FY2009	Dollars Leveraged thru FY2009
Coal Research & Development	$ 71.6 M	$ 90.1 M
Coal Competitiveness	$ 167.3 M	$ 1.9 B
Coal Technology Demonstration	$ 146.3 M	$ 752.7 M

The coal mining industry is a valuable economic engine in central and southern Illinois. In a comparison of average monthly salaries in eight Illinois counties, it was found that mining, quarrying and oil and gas extraction sector jobs average 42 % higher wages compared to all other sectors in the same counties.[10] According to the National Mining Association, the average annual wage in the Illinois mining industry is $65,000. Each coal mining job supports 4.5 jobs in other sectors[11].

$40.30 The average sales price of Illinois coal

4.5 to 1 The number of jobs in other sectors supported by one coal mining job

$65,000 The average annual wage in the Illinois mining industry

[10] Illinois Department of Employment Security, Local Employment Dynamics. Feb. 2010. Counties included: Jackson, Macoupin, Perry, Randolph, Saline, Sangamon, Wabash, and White.

[11] Department of Commerce and Economic Opportunity analysis using REMI economic impact model. June 2010

Carbon Capture and Storage Projects

Several projects currently under development in Illinois have the potential for making Illinois a leader in the clean and efficient use of coal. Archer Daniels Midland Company (ADM) in Decatur has teamed with the Midwest Geological Sequestration Consortium, the Illinois State Geological Survey, Schlumberger Carbon Services and National Energy Technology Laboratory to assess the safety and efficiency of CO_2 storage in the Illinois Basin. The main sequestration target is the Mount Simon Sandstone at a depth of 5,600 to 7,200 feet. One million metric tonnes of CO_2 will be injected over a three-year period at a rate of 1,000 metric tonnes per day. The results of the project will provide baseline information for future development of carbon capture and storage (CCS) opportunities in the Illinois Basin and the U.S. as a whole.

Denbury Resources, Inc. completed the *Midwest CO_2 Pipeline Feasibility Study* to gain information and data concerning the feasibility of creating infrastructure to facilitate the transportation of captured CO_2 from planned coal gasification plants in Illinois, Indiana and Kentucky to the Gulf Coast for safe and permanent sequestration underground through enhanced oil recovery operations. Over 200 miles of the Midwest CO_2 Pipeline would be in Illinois and connect one or more of several proposed gasification projects to Denbury's existing pipeline network in the Gulf States. The pipeline could prove to be an extraordinary catalyst for economic development.

Major Projects in Development

Prairie State Energy Campus and the adjacent Lively Grove Coal Mine are under construction in Washington County. The power station will use super-critical pulverized coal technology and state-of-the-art devices to clean flue gas post combustion. The plant will use 6.3 MT of coal per year. Carbon emissions will be 15 % lower than the typical U.S. coal plant.

As planned, **FutureGen,** a private partnership between the U.S. Department of Energy and the FutureGen Alliance, will demonstrate the technical and economic feasiblity of efficiently producing low-cost electricity from coal while nearly eliminating emissions. It includes the capture and permanent storage of CO_2 just west of Mattoon in Coles County.

The **Taylorville Energy Center** planned for Christian County will use Hybrid Integrated Gasification Combined Cycle technology to convert Illinois coal into pipeline-suitable synthetic natural gas to generate wholesale electricity. Fifty percent of the CO_2 produced will be captured and stored in saline aquifers or sold for enhanced oil recovery.

Chicago Clean Energy is a state-of-the-art coal gasification facility being developed on a brownfield site within the Chicago-Calumet industrial corridor. The Illinios coal-fueled facility will use the General Electric quench gasifier to produce substitute natural gas and electricity from the waste stream. Eighty-five percent of the carbon dioxide will be captured and sequestered.

When built, these projects will create thousands of jobs, spur economic development in the communities, replace power coming from 1950s era coal plants and demonstrate the clean use of Illinois coal.

Learning About Illinois Coal

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 2009, more than 1,500 students in fifth through eighth grade participated in the Illinois Coal Calendar Contest. The contest, sponsored jointly by OCD and the Illinois Coal Association, provides an outlet for young essayists and artists to practice their talents while studying about Illinois 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 posititive role coal plays in our day-to-day lives and the economy of the state.

Looking Ahead

Illinois continues to be well-positioned for any demand-led rebound for its still-underdeveloped 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 CO_2 cap-and-trade law, or other new environmental regulations. Selection as host site for the $2 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 Office of Coal Development, in which Illinois has pursued a public policy of fostering 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-in-the-game investments in the Decatur-ADM CO_2 injection project, the coal-fueled Taylorville Energy Center and the proposed development of the Denbury Resources Midwest CO_2 Pipeline.

The groundwork also has been laid to address increasing 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. To this end, more than $6 million in public funds has been spent over the past two years on safety and training initiatives.

Sitting under the corn fields of central and southern Illinois coal is a plentiful and secure energy source. Illinois coal production could increase by 50 % 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.