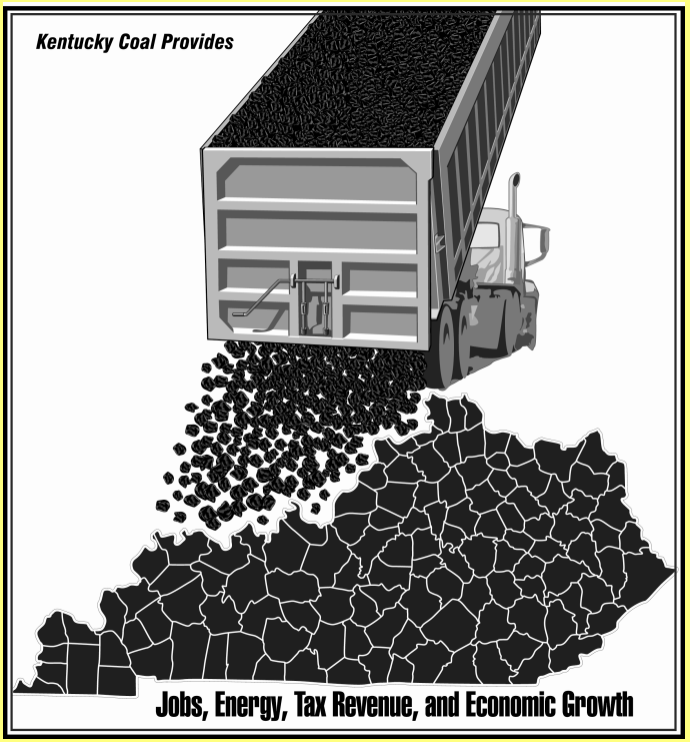
2007-2008 POCKET GUIDE

KENTUCKY COAL FACTS



Prepared by the

Kentucky Office of Energy Policy

Division of Fossil Fuels & Utility Services

and the

Kentucky Coal Association

Edition 10

Highlights

Electricity

Average electricity costs in Kentucky were 5.43 cents/kilowatt-hour in 2006, the fourth lowest in the United States.

Production

Kentucky produced 125.96 million tons of coal in 2006, compared to the record production of 179.4 million tons set in 1990. Kentucky has been one of the top three coal producers in the United States for the last 50 years.

Employment

The Kentucky coal industry paid $1.035 billion in direct wages in 2006, directly employing 17,669 persons and indirectly providing 3 additional jobs for every miner employed. The average weekly wage for coal miners in Kentucky was $1,126 during 2006.

Economy

The Kentucky coal industry brought over $3.5 billion into Kentucky from out-of-state during 2006 through coal sales to customers in 30 other states and 4 foreign countries. Kentucky coal companies paid $221.42 million in coal severance taxes in Fiscal Year 2006-07.

Coal Markets

Electric power plants, located in 30 states, accounted for almost 89.3% of the Kentucky coal sold during 2006.

Approximately 79.5% of the coal produced in Kentucky is sold out-of-state each year.

There are 22 major coal-burning electric generating plants in Kentucky, and almost all (92.2%) of Kentucky's electricity is generated from coal.

Environment

All surface-mined land today is reclaimed equal to or better than it was prior to mining. Kentucky mining companies have received 25 national reclamation awards from 1986 thru 2005 for outstanding achievement in surface mining.

Coal mining creates valuable lands such as wildlife habitats, gently rolling mountaintops, wetlands, and industrial sites where only steep, unproductive hillsides had once existed.

Kentucky operators have paid over $978.48 million into the Federal Abandoned Mine Land Fund since 1978 to reclaim abandoned coal mines. Nationwide, operators have paid over $7.94 billion into this fund. However, $1.96 billion remains unallocated for AML reclamation.

Coal Resources

Kentucky has two distinct coal fields, one in Western Kentucky and one in Eastern Kentucky. Kentucky's 87.1 billion tons of coal resources remaining represent 83% of the original resource.

Teacher Resources

Coal education resources materials are now available to teachers and students on the Internet at the web site www.coaleducation.org. Additionally, a coal education multimedia library kit with interactive learning tools are available in every public and private elementary, middle, and high schools, and county libraries in Kentucky.

April 2008. This publication is for informational use only. It includes some extrapolative second and third party data as well as some broad estimates, and should not necessarily be construed as official source data or be construed as advocating or reflecting any policy position of the Kentucky Division of Fossil Fuels & Utility Services or the Kentucky Coal Association.

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Changes & Trends

Three centuries after it was discovered in America, coal is still providing power for the nation. As we begin a new century, coal faces many challenges to its premier status, but its importance can never be questioned. The fuel, coal, that enabled the United States to become the wealthiest industrialized nation in the world is still responsible for over half the nation's electrical power.

Coal provides 49% of the electricity in this country, and in Kentucky 92.2% of our electricity comes from coal.

Average electricity costs in Kentucky were 5.43 cents per kilowatt-hour during 2006, the fourth lowest in the United States, 39% below the national average in 2006. **These low rates are largely due to our reliance on coal-fired generation,** sold at cost-based rates, as well as sound utility management and excellent public policy.

What Changes are Occurring?

Kentucky's share of the steam coal market to U.S. electric utilities declined from 23.2% of the market in 1973 to 10.5% in 2006 *(see page 37).*

As Kentucky coal companies have consolidated into a globally competitive industry the number of mines has decreased. The number of mines currently in Kentucky is 442 compared to 2,063 mines which existed in 1984 (see page 8).

Post-mining land use changes are providing long term economic, social, and environmental benefits to Kentucky, and the benefits are increasing (see pages 25 and 26).

Is there a Trend?

Kentucky shipped 119 million tons to 30 states compared to the 44 million tons it received from 11 states in 2006 (see page 20).

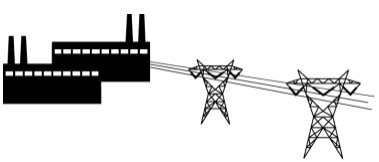
In comparison to other fuels, coal continues to be the lowest-cost fuel for electric generation.

Underground and surface mining in Kentucky continue to show steady safety improvements.

Over $3.95 billion continues to be brought into Kentucky each year from coal sales to 30 other states and 4 foreign countries (see page 16).

The number of successful mining reclamation bond releases in Kentucky continues to grow each year (see page 24).

Source: See individual reference pages as listed.



On the Horizon?

A new coal-fired electric utility company power plant went online in 2005, the first in over 15 years. In 2005, the Kentucky PSC approved another coal-fired power plant, and in 2006 applications were pending before the PSC for two additional coal-fired power plants.

Contacts

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Division of Mine Permits	Phone:	502-564-2320
#2 Hudson Hollow Road, Frankfort, KY 40601	FAX:	502-564-6764
Division of Mine Reclamation and Enforcement	Phone:	502-564-2340
#2 Hudson Hollow Road, Frankfort, KY 40601	FAX:	502-564-5848
Office of Administrative Hearings	Phone:	502-564-7312
35-56 Fountain Place, Frankfort KY 40601	FAX:	502-564-4973
Office of Mine Safety & Licensing	Phone:	502-573-0140
1025 Capital Center Dr., Suite 201, Frankfort, KY 40602	FAX:	502-573-0152
Independent Commissions		
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132 Brighton Park Boulevard, Frankfort, KY 40601	FAX:	502-573-0344
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501 High Street, Frankfort, KY 40601	FAX:	502-564-5977
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501 High Street, Frankfort, KY 40601	FAX:	502-564-8368
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Division of Planning, Coal Haul Section	Phone:	502-564-7183
200 Mero Street, 5th Floor, Frankfort, KY 40622	FAX:	502-564-2865
UK Center for Applied Energy Research	Phone:	859-257-0305
2540 Research Park Drive, Lexington, KY 40511	FAX:	859-257-0220
United States Department of Energy		
National Energy Information Ctr., EI-30, Forrestal Bldg., IE-238, 1000 Independence Avenue, SW, Washington, D.C. 20585	Phone: FAX:	202-586-8800 202-586-0114

History of Coal

1701 Coal discovered in Virginia.

1748 **First recorded U.S. coal production.**

1750 April 13th-Dr. Thomas Walker was the first recorded person to discover and use coal in Kentucky.

1755 Lewis Evan's map showing coal in what is now the Greenup County and Boyd County area of Kentucky.

1758 First commercial U.S. coal shipment.

1792 Issac Shelby becomes the first Governor of Kentucky (1792-1796).

1820 First commercial mine, known as the "McLean drift bank" opened in Kentucky, near the Green River and Paradise in Muhlenberg County.

328 short tons mined and sold in Kentucky.

1843 100,000 tons of Kentucky production.

1850 Lexington and Big Sandy Railroad proposed.

Kentucky Geological Survey established.

1860 Pre-Civil War Kentucky production record of 285,760 tons.

1861 Kentucky-born Abraham Lincoln becomes the 16th President of the United States (1861-65).

1866 Surface mining begins near Danville, Illinois.

1870 Post-Civil War Kentucky production decline to 150,582 tons.

St. Louis & Southern Railroad completed from Henderson to Earlington, Kentucky.

1872 First train off the Big Sandy Railroad.

1877 Coal mined with steam-powered shovel.

1879 One million tons of Kentucky production.

1880 Mechanical stokers introduced.
First coke ovens in West Kentucky.
Mine Ventilation Law.
First train from Williamson, West Virginia to Pike County, Kentucky.

Coal mining machines come into general use.

1890 N&W Railroad's first mine at Goody in Pike County.
Hopkins County in West Kentucky leading coal producer in the state for 18 straight years.
Miner Pay Law.
United Mine Workers of America formed.
Machines developed to undercut coalbeds.

5,000 kilowatt steam turbine generates electricity.

1900 Child Labor Law.
Edgewater Coal Company's first production in Pike County.
First train off the Lexington and Eastern Railroad.

Independent Geological Survey established.

1910 First train from the Cumberland Valley Railroad.
Fordson Coal Company's first production at Pond Creek.

Pike-Floyd Coal Company's first production at Betsy Layne.

1914 World War I increases demand for coal; Kentucky produced 20.3 million tons.

Short-flame or "permissible" explosives developed.

Mine Safety Law.

1918 First pulverized coal firing in electric power plants.

1920 Federal Mineral Leasing Act.

42.1 million tons of Kentucky production.

1923 All-time high U.S. employment of 704,793 bituminous coal and lignite miners.

First dragline excavators built especially for surface mining.

1932 Walking dragline excavators developed.

1940 World War II - coal production in Kentucky rises to 72.4 million tons for the war effort.

Auger surface mining introduced.

1942 Republic Steel Company's first production - Road Creek, Kentucky.

Post-War Marshall Plan - production rose to 88.7 million tons in Kentucky.

Continuous underground mining systems developed.

Kentucky Water Contamination Legislation.

1947 Kentucky Coal Association founded.

1950 82.2 million tons of Kentucky production.

1956 Fish and Wildlife Coordination Act.
Railroads converting from coal to diesel fuel.

Roof bolting introduced in underground mines.

1960 Railroads began using unit coal trains.
First longwall mining with powered roof supports.

Kentucky Surface Mining Legislation.

History of Coal

1963 **Kentucky coal production exceeded 100 million tons.**
1966 National Historic Preservation Act.
C&O Railroad to John's Creek constructed - Pike County.
1969 Federal Coal Mine Health and Safety Act.
1970 Federal Clean Air Act.
1972 Kentucky Coal Severance Tax established.
Federal Water Pollution Control Act.
Kentucky becomes the leading coal production state.
1973 Endangered Species Act.
OPEC oil embargo: Coal production and prices rise.
1976 Federal Coal Leasing Amendments Act.
1977 Federal Surface Mine Control and Reclamation Act.
1980 Congress enacts the National Acid Precipitation Assessment Program (NAPAP) Study, a 10 year research program, which invested $550 million for the study of "acid rain." Industries spend over $1 billion on Air Pollution Control Equipment during 1980.
1983 **OPEC cuts oil prices for first time.**
Martha Layne Collins becomes Kentucky's first woman Governor (1983-87).
U.S. Clean Coal Technology Demonstration Program established $2.5 billion in Federal matching funds committed to assist the private sector to develop and demonstrate improved clean coal technologies.
1988 Kentucky Supreme Court rules that the unmined minerals tax on coal is subject to the same state and local property tax rates as other real estate.
TVA 160-MW Atmospheric Fluidized Bed Combustion Unit on line.
Wyoming displaces Kentucky as the leading coal producing state.
1988 Broad Form Deed legislation passes in Kentucky.
1990 Federal Clean Air Act Amendments of 1990.
Kentucky record production - 179.4 million tons.
U.S. coal production exceeds 1 billion tons.
1992 U.S. Energy Policy Act of 1992.
1993 CEDAR, Inc. (Coal Education Development and Resources) formed in Pike County.
1994 Western Kentucky CEDAR, Inc. was formed in Webster and Union Counties.
1996 **Kentucky Coal Education (www.coaleducation.org) was introduced to the Internet.**
Workers' Comp Reform Laws are passed in Kentucky.
1997 The Kentucky Fish and Wildlife Commission voted to re-introduce elk into 14 East Kentucky counties on post-mined lands, citing mountain-top removal areas and old mine benches as good elk habitat. This is to be the only large free-ranging elk herd in the Eastern United States.
1998 Mountaintop mining comes under attack.
Federal synthetic fuel tax credit for use of coal fines begins.
2001 Natural gas prices increase over 50% in one year.
Electricity shortages result in rolling blackouts in California.
2004 Governor Fletcher unveils Kentucky's first comprehensive energy strategy, " *Kentucky's Energy: Opportunities for Our Future*."
2005 East Kentucky Power Cooperative's Gilbert coal-fueled fluidized-bed power plant begins operation, the first coal-fired plant in over 15 years.
Energy Policy Act of 2005 signed by President Bush; includes major Clean Coal Technology programs.
2006 Kentucky Energy Security National Leadership Act (HB 299) enacted; Act calls for strategy for producing liquid and gaseous fuels from Kentucky coal.
Kentucky Coal Academy founded to train new coal miners.
Kentucky becomes the first coal state to adopt a drug testing program for certification of coal miners.
Congress passes Mine Improvement & New Emergency Response Act, (MINER Act). The most significant federal mine safety legislation in 30 years, requiring underground coal operators to improve accident preparedness.
2007 **No underground coal mining fatalities in Kentucky since records began in 1890.**
House Bill 1, providing incentives for development in Kentucky of industries for producing transportation fuels and synthetic natural gas by gasification of coal enacted.
U.S. Air Force flies B-52 bomber and C-17 transport aircraft on a 50-50 blend of conventional jet fuel and jet fuel produced by the Fischer-Tropsch process that converts gasified coal into liquid fuels and chemicals

Sources: Energy Information Administration, (www.eia.doe.gov), Kentucky Department of Mines and Minerals, Annual Reports, and Willard Rouse Jillson, Coal Industry in Kentucky, 1922.

Types of Mining

Kentucky has two distinct coal fields, each containing numerous deposits of bituminous coal of various characteristics and mines of every type and size. In surface mining the use of large mining equipment maximizes the recovery through the excavation of one or more coal seam deposits in the large area surface mines of the gently rolling **Western Kentucky** coal field and in the large mountain top mines in the steeper terrain of the **Eastern Kentucky** coal field. Both the eastern and western Kentucky coal fields have large, modern, and efficient underground mines (of various entry types) utilizing improved mining methods with increased mechanization including continuous miners, longwall mining panels, or both.

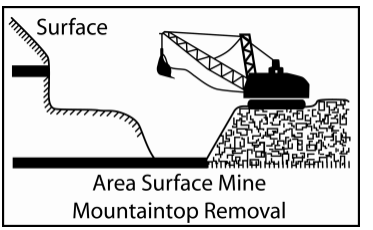
Of Kentucky's 120.8* million tons of 2006 coal production, 73.2 million tons were produced by underground mining methods and 47.6 million tons were produced by surface mining methods.

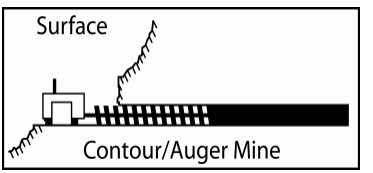
The EKY and WKY breakdown for the number of mines and production for both surface and underground mining methods used in Kentucky is as follows:

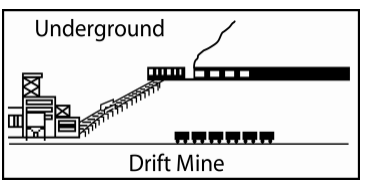
2006 Production by Mine Type

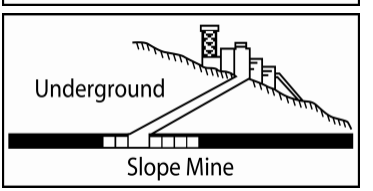
Mine Type	No. of Mines	Production (million tons)
Surface	**215**	**47.6**
E KY	202	44.2
W KY	13	3.4
Underground	**227**	**73.2**
E KY	214	56.4
W KY	13	23.9
State Totals	**442**	**120.8**

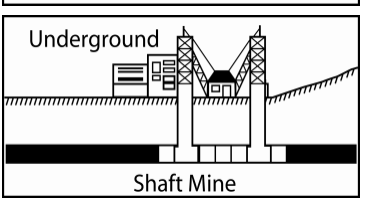
***NOTE:** This is the official U.S. DOE number for Kentucky. State and Federal numbers typically differ.











U.S. Coal Production

KY and U.S. Coal Production* 1970—2006 (millions of tons)

	Kentucky			United	Kentucky as
Year	Eastern	Western	Total	States	% of U.S.
1970	72.5	52.8	125.3	602.9	20.8
1971	71.6	47.8	119.4	552.2	21.6
1972	68.9	52.3	121.2	595.4	20.4
1973	74.0	53.7	127.6	591.7	21.6
1974	85.4	51.8	137.2	603.4	22.7
1975	87.3	56.4	143.6	648.4	22.1
1976	91.1	52.8	144.0	678.7	21.2
1977	94.0	52.3	146.3	691.3	21.2
1978	96.2	39.5	135.7	665.1	20.4
1979	104.1	42.5	146.5	777.9	18.8
1980	109.2	41.0	150.1	829.7	18.1
1981	117.9	39.7	157.6	823.8	19.1
1982	111.2	39.0	150.2	838.1	17.9
1983	95.6	35.6	131.2	782.1	16.8
1984	117.3	42.3	159.5	895.9	17.8
1985	113.3	39.0	152.3	883.6	17.2
1986	112.7	41.2	153.9	890.3	17.3
1987	119.9	45.3	165.2	918.8	18.0
1988	117.5	40.3	157.9	950.3	16.6
1989	125.7	41.6	167.4	980.7	17.1
1990	128.4	44.9	173.3	1,029.1	16.8
1991	117.2	41.8	159.0	996.0	16.0
1992	119.4	41.7	161.1	997.5	16.2
1993	120.2	36.1	156.3	945.4	16.5
1994	124.4	37.2	161.6	1,033.5	15.6
1995	118.5	35.2	153.7	1,033.0	14.9
1996	117.0	35.5	152.4	1,063.9	14.3
1997	120.9	34.9	155.9	1,089.9	14.3
1998	116.7	33.6	150.3	1,118.1	13.4
1999	110.0	29.6	139.6	1,100.4	12.7
2000	105.0	25.8	130.7	1,073.6	12.2
2001	109.1	24.7	133.8	1,125.9	11.9
2002	99.4	24.7	124.1	1,094.3	11.3
2003	91.3	21.5	112.8	1,071.8	10.5
2004	90.9	23.4	114.2	1,112.1	10.3
2005	93.3	26.4	119.7	1,131.5	10.6
2006	93.6	27.2	120.8	1,162.7	10.4

Note: These are the official U.S. DOE production numbers for Kentucky. (Federal and state (page 8) production numbers typically differ.

U. S. Leading Coal Producers

Kentucky ranked third in the United States in coal production during 2006.

2006 Rank	State	Millions of Tons
1.	Wyoming	447.0
2.	West Virginia	157.0
3.	**Kentucky**	**120.8**
4.	Pennsylvania	61.1
5.	Texas	45.5
6.	Montana	41.8
7.	Colorado	36.3
8.	Indiana	35.1
9.	Illinois	32.8
10.	Virginia	30.4

Sources: U.S. DOE - Energy Information Administration; Coal Industry Annual, 1993-2006, Coal Production, 1977 - 1992. U. S. Bureau of Mines, Mineral Yearbook, 1970-1976.

Kentucky Production

Kentucky produced 125.9 million tons of bituminous coal in 2006, down over 53 million tons from the record 179.4 million tons set in 1990.

	UNDERGROUND		SURFACE		STATE
Year	East Ky.	West Ky.	East Ky.	West Ky.	TOTALS
1965	37,740,473	13,341,646	9,587,626	26,537,294	87,207,039
1970	44,068,538	19,430,489	28,527,422	33,281,946	125,308,395
1975	41,280,096	24,757,456	46,957,448	31,209,511	144,204,511
1980	59,603,430	19,558,157	49,582,095	21,400,291	150,143,973
1985	75,530,607	21,188,598	52,294,115	22,602,743	169,616,063
1990	81,577,417	27,375,465	49,393,390	21,026,997	179,373,269
1995	73,922,358	24,763,534	47,288,817	11,812,973	157,787,682
2000	59,956,626	21,543,143	44,335,363	6,010,856	131,845,988
2002	59,562,704	21,244,764	44,615,777	5,979,552	131,402,797
2003	52,952,957	19,055,260	40,751,963	4,360,719	117,120,899
2004	54,250,895	19,288,512	41,544,662	3,930,444	118,954,473
2005	52,679,423	21,751,538	45,073,132	4,903,482	124,407,575
2006	50,853,952	25,971,680	45,537,968	3,597,011	125,960,611

Source: Kentucky Division of Mines & Minerals, Annual Reports, 1960-2002; Office of Mine Safety & Licensing, Annual Reports, 2003-2006.

Number of Mines, 1986-2006

	Kentucky			Eastern Kentucky			Western Kentucky		
Year	Surface	Underground	Total	Surface	Underground	Total	Surface	Underground	Total
1986	723	830	1,553	633	802	1,435	90	28	118
1987	612	816	1,428	532	791	1,323	80	25	105
1988	492	738	1,230	426	714	1,140	66	24	90
1989	429	670	1,099	358	644	1,002	71	26	97
1990	360	627	987	301	601	902	59	26	85
1991	296	542	838	243	513	756	53	29	82
1992	270	482	752	225	459	684	45	23	68
1993	250	446	696	197	425	622	53	21	74
1994	248	425	673	206	401	607	42	24	66
1995	237	361	598	201	339	540	36	22	58
1996	237	307	544	197	287	484	40	20	60
1997	221	308	529	193	289	482	28	19	47
1998	205	277	482	186	259	445	19	18	37
1999	198	260	458	178	243	421	20	17	37
2000	162	246	408	148	234	382	14	12	26
2001	203	264	467	187	253	440	16	11	27
2002	194	233	427	180	219	399	14	14	28
2003	213	187	400	174	201	375	13	12	25
2004	196	223	419	185	212	397	11	11	22
2005	208	224	432	193	211	404	15	13	28
2006	215	227	442	202	214	416	13	13	26

Source: U.S. DOE-Energy Information Administration, Coal Industry Annual, 1993-2006; Coal Production, 1984-2004.

Number of Mine Licenses in Kentucky

The number of actual mines is smaller than the final number of mine licenses issued each year. A new license is required when the company name or ownership changes.

	UNDERGROUND		SURFACE		STATE
Year	East Ky.	West Ky.	East Ky.	West Ky.	TOTALS
1960	2,563	74	179	70	2,886
1965	1,959	49	176	45	2,229
1970	1,449	34	502	73	2,058
1975	1,614	31	1,743	182	3,570
1980	1,131	32	1,349	136	2,648
1985	1,153	31	1,548	139	2,871
1990	799	27	860	83	1,769
1995	456	28	665	48	1,197
2000	309	14	256	26	605
2002	300	18	310	20	648
2003	268	17	240	16	541
2004	282	14	298	14	608
2005	278	16	281	19	594
2006	287	15	329	16	647

Source: Kentucky Division of Mines & Minerals, Annual Reports, 1960-2002; Office of Mine Safety & Licensing, Annual Reports, 2003-2006

County Production

There were 620 mines in Kentucky during 2006. These 620 mines were issued 647 mine licenses and produced 125.9 million tons.

245 underground mines (302 licenses) accounted for 61.0% of Kentucky's production and 375 surface mines (345 licenses) accounted for 39.0% of Kentucky's production.

88% of Western Kentucky and 53% of Eastern Kentucky's coal production was from underground mines during 2006.

In 2006, 32 Kentucky counties produced coal; eight Western Kentucky counties and 24 Eastern Kentucky counties.

*2006 Production by County and Type of Mine License**

	Underground		Surface		Total	
County	Licenses	Tonnage	Licenses	Tonnage	Licenses	Tonnage
EASTERN KENTUCKY						
Bell	8	1,012,546	23	1,742,281	31	2,754,827
Breathitt	2	687,666	7	1,598,788	9	2,286,454
Clay	3	101,536	7	94,819	10	196,355
Elliott	-	-	1	20,000	1	20,000
Floyd	39	1,948,958	21	2,034,108	60	3,983,066
Harlan	50	8,585,933	26	3,249,239	76	11,835,172
Jackson	-	-	7	66,036	7	66,036
Johnson	2	1,543,278	11	387,329	13	1,930,607
Knott	31	5,317,885	22	3,662,497	5	8,980,382
Knox	10	221,085	10	453,037	20	674,122
Laurel	-	-	2	134,799	2	134,799
Lawrence	3	209,470	13	883,153	16	1,092,623
Lee	-	-	1	24,084	1	24,084
Leslie	5	3,096,748	10	1,789,424	15	4,886,172
Letcher	26	6,342,546	34	3,480,209	60	9,822,755
Magoffin	-	-	4	2,053,610	4	2,053,610
Martin	13	2,726,415	14	2,067,572	27	4,793,987
Morgan	2	771	6	80,237	8	81,008
Owsley	-	-	4	106,125	4	106,125
Perry	10	4,154,284	28	9,884,628	38	14,038,912
Pike	82	14,884,057	73	11,509,998	155	26,394,055
Rockcastle	-	-	1	60,989	1	60,989
Whitley	1	20,774	1	148,712	2	169,486
Wolfe	-	-	2	6,294	2	6,294
EKY Total	287	50,853,952	328	45,537,968	615	96,391,920
WESTERN KENTUCKY						
Crittenden	-	-	1	32,668	1	32,668
Daviess	-	-	1	1,808	1	1,808
Henderson	1	1,870,214	1	1,296,328	2	3,166,542
Hopkins	6	11,292,382	7	191,512	13	11,483,894
Muhlenberg	2	2,342,190	6	1,879,959	8	4,222,149
Ohio	1	1,284,459	-	-	1	1,284,459
Union	2	4,851,334	1	194,736	3	5,046,070
Webster	3	4,331,101	-	-	3	4,331,101
WKY Total	15	25,971,680	17	3,597,011	32	29,568,691
KY Totals	**302**	**76,825,632**	**345**	**49,134,979**	**647**	**125,960,611**

***NOTE:** The number of licenses is greater than the number of mines because a mine may be relicensed if the company changes name or ownership.
Source: Kentucky Office of Mine Safety and Licensing, Annual Report, 2006

Employment

The Kentucky coal mining industry has a current work force of approximately 17,959* people directly employed in coal mining jobs. The Western Kentucky coal field directly employs approximately 2,949 persons; while the Eastern Kentucky coal field provides 15,010 direct mining jobs.

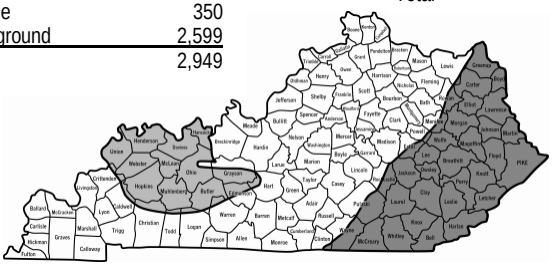
Kentucky's Coal Mining Work Force, 2006

Eastern Kentucky Coal Field

Surface	5,707
Underground	9,303
Total	15,010

Western Kentucky Coal Field

Surface	350
Underground	2,599
Total	2,949



Eastern Kentucky averaged just over 84% of Kentucky's coal mining work force and accounted for about 78% of Kentucky's total coal production in 2006. Western Kentucky averaged approximately 16% of Kentucky's coal mining work force and accounted for about 22% of Kentucky's total coal production in 2006.

Kentucky produced 120.8 million tons during 2006 while direct mining employment continued to increase over the past two years.

Kentucky Coal Mining Employment, 1979—2006

	Western Kentucky			Eastern Kentucky			Kentucky
Year	Surface	Underground	Total	Surface	Underground	Total	Totals
1979	4,343	6,945	11,288	12,838	23,064	35,902	47,190
1980	3,995	7,879	11,874	11,819	22,702	34,521	46,395
1981	4,056	6,489	10,545	13,473	24,032	37,505	48,050
1982	4,120	5,639	9,759	12,319	22,782	35,101	44,860
1983	3,415	4,918	8,333	10,485	17,615	28,100	36,433
1984	4,022	4,053	8,075	11,327	18,474	29,801	37,876
1985	3,421	4,294	7,715	10,516	18,583	29,099	36,814
1986	2,327	4,297	6,624	8,718	17,312	26,030	32,654
1987	2,345	4,605	6,950	8,740	16,900	25,640	32,590
1988	1,825	4,388	6,213	8,261	16,085	24,346	30,599
1989	1,870	4,166	6,036	8,034	16,586	24,620	30,656
1990	2,095	3,491	5,586	7,505	17,407	24,912	30,498
1991	1,910	3,603	5,513	6,251	14,878	21,129	26,642
1992	1,722	3,483	5,205	6,014	13,405	19,419	24,624
1993	1,887	3,465	5,352	5,683	13,028	18,711	24,063
1994	1,803	2,988	4,791	5,728	12,849	18,577	23,368
1995	1,109	3,176	4,285	5,474	11,366	16,840	21,125
1996	1,095	2,601	3,696	4,855	10,275	15,130	18,826
1997	937	2,578	3,515	5,053	10,369	15,422	18,937
1998	747	2,763	3,510	5,493	9,924	15,417	18,927
1999	615	2,309	2,924	4,973	9,314	14,287	17,211
2000	450	2,060	2,510	4,162	8,828	12,990	15,500
2001	558	1,864	2,422	5,197	9,915	15,112	17,534
2002	495	2,029	2,524	5,237	9,281	14,518	17,042
2003	443	1,773	2,216	4,896	8,143	13,039	15,255
2004	370	1,880	2,250	4,901	8,371	13,272	15,522
2005	446	2,254	2,700	5,407	8,883	14.290	16,990
2006	350	2,599	2,949	5,707	9,303	15,010	17,959

***Note:** State employment numbers differ from federal EIA numbers.
Source: U.S.DOE—EIA; Coal Industry Annual 1993-2006, Coal Production 1979-1992.

Productivity

Kentucky Coal Mine Productivity

The average Kentucky and U.S. coal mine productivity peaked in 2000, and has decreased slightly through 2006.

Mine Productivity, 1977-2006 (tons/miner/hour)

Year	Eastern Kentucky	Western Kentucky	Kentucky Average	Appalachian Coal Field	Interior Coal Field	Western U.S. Coal Field	U.S. Average
1977	1.71	2.22	1.86	1.36	2.42	5.85	1.82
1978	1.62	1.97	1.71	-	-	-	1.79
1979	1.54	1.94	1.64	1.33	2.21	5.47	1.81
1980	1.67	1.96	1.74	1.39	2.30	5.64	1.93
1981	1.76	2.12	1.84	1.51	2.35	6.15	2.10
1982	1.79	2.01	1.84	1.51	2.38	6.26	2.11
1983	1.98	2.43	2.08	1.75	2.69	7.60	2.50
1984	2.13	2.61	2.24	1.86	2.80	8.30	2.64
1985	2.13	2.57	2.23	1.90	2.81	8.55	2.74
1986	2.31	2.94	2.45	2.09	3.14	9.27	3.01
1987	2.59	2.98	2.69	2.30	3.33	10.42	3.30
1988	2.68	2.95	2.74	2.44	3.45	11.01	3.55
1989	2.58	3.62	2.78	2.49	3.84	11.63	3.70
1990	2.66	3.46	2.83	2.60	3.88	11.82	3.83
1991	2.90	3.37	3.01	2.74	3.98	12.42	4.09
1992	3.10	3.49	3.20	2.95	4.18	12.73	4.36
1993	3.18	3.49	3.25	3.00	4.43	13.53	4.70
1994	3.24	3.28	3.25	3.20	4.43	14.58	4.98
1995	3.47	3.97	3.57	3.32	4.97	15.68	5.38
1996	3.68	4.29	3.80	3.48	5.39	17.41	5.69
1997	3.83	4.38	3.94	3.76	5.54	17.75	6.04
1998	3.70	4.16	3.79	3.78	5.39	18.03	6.20
1999	3.74	4.57	3.89	3.84	5.64	19.05	6.61
2000	3.86	4.46	3.96	4.10	5.81	19.63	7.02
2001	3.52	4.43	3.66	3.85	5.56	20.64	6.82
2002	3.32	4.22	3.47	3.71	5.54	20.07	6.81
2003	3.32	4.23	3.46	3.71	5.56	20.82	6.95
2004	3.13	4.38	3.32	3.56	5.47	21.28	6.80
2005	2.93	4.11	3.13	3.28	5.29	20.47	6.36
2006	2.78	3.78	2.96	3.13	5.10	20.19	6.26

Western Kentucky Coal Mine Productivity, 1977-2006

Western Kentucky coal mine productivity peaked in 1999 at 4.57 tons per miner per hour.

Eastern Kentucky Coal Mine Productivity, 1977-2006

Eastern Kentucky coal mine productivity peaked in 2000 at 3.86 tons per miner per hour.

Source: U.S. Department of Energy—EIA: Coal Industry Annual 1993-2006, Coal Production: 1977-1992.

Employment / Wages by County

Coal County Employment and Wages, 2006

County[1]	Direct Mining Employment	% of Labor Force	Miners as % of Total Employed	Mining Wages	% of Total County Wages	Average Weekly Mining Earnings[3]
Eastern Kentucky						
Bell	1,038	10.7	11.6	$46,509,267	18.0	$861.67
Boyd	146	0.6	0.7	$12,545,464	1.3	$1,652.46
Breathitt	175	3.1	3.3	$11,860,343	12.4	$1,303.33
Carter	19	0.1	0.1	$817,696	0.5	$827.63
Clay	76	1.1	1.2	$3,613,721	3.6	$914.40
Floyd	986	6.5	6.9	$49,840,588	13.0	$972.08
Harlan	1,318	12.9	14.0	$80,624,789	30.9	$1,176.39
Johnson	158	1.6	1.8	$6,684,425	4.1	$813.59
Knott	1,408	21.4	23.0	$90,009,846	60.0	$1,229.37
Knox	52	0.4	0.5	$1,783,412	0.8	$659.55
Laurel	319	1.2	1.3	$18,142,538	2.8	$1,093.71
Lawrence	50	0.9	0.9	$1,959,136	2.1	$753.51
Leslie	532	14.3	15.7	$36,259,487	44.7	$1,310.71
Letcher	1,262	13.8	14.9	$65,135,393	31.8	$992.55
Magoffin	59	1.4	1.5	$1,965,406	3.3	$640.61
Martin	617	17.0	18.4	$33,589,519	40.1	$1,046.92
Perry	1,746	15.2	16.3	$106,981,132	23.5	$1,178.31
Pike	4,305	17.1	18.2	$250,825,423	30.5	$1,120.46
Whitley	47	0.3	0.3	$1,987,273	0.6	$813.12
Subtotal	14,313			$821,134,858		$1,103.27
EKY Total[2]	**14,433**			**$826,518,289**		**$1,101.27**

Fayette & Jefferson Counties

Note: The direct mining employment classification does not include most of the administrative/professional employees of coal companies located in these Kentucky metropolitan areas and does not include any private services or indirect employment.

Western Kentucky						
Daviess	6	0.1	0.1	$423,584	0.1	$1,357.64
Henderson	290	1.3	1.3	$22,570,615	3.4	$1,496.73
Hopkins	1,188	5.1	5.4	$82,819,340	13.8	$1,340.64
Muhlenberg	579	4.5	4.9	$37,633,835	15.4	$1,249.96
Union	576	8.0	8.5	$37,044,556	22.3	$1,236.80
Webster	220	3.3	3.4	$12,215,970	12.3	$1,067.83
Subtotal	2,859			$192,707,900		$1,296.23
WKY Total[2]	**2,983**			**$197,429,630**		**$1,272.79**
State Total[2]	**17,669**			**$1,034,834,951**		**$1,126.30**

1 Counties with less than three employers or one employer with 80% of the total county miner workforce were withheld to avoid disclosure of individual company data. These counties are as follows: Boyle, Clark, Elliott, Fayette, Greenup, Hancock, Jackson, Jefferson, Lee, McCreary, McLean, Mason, Ohio, and Pulaski. It is suspected that multi-county mining employment attributes to some counties being under reported and others being over reported.

2 Columns do not add to the EKY & WKY totals due to withheld data and do not equal state totals due to county of employment being reported outside of coal field.

3 Variation in average weekly mining income affected greatly by hours worked per week as well as hourly wage rate.

Values and methodologies used in this table may not be consistent with LGEDF regulations (page 15). Do not use these values for LGEDF estimates..

Safety and Training

Safety and health standards are highly regulated by the federal Mine Safety and Health Administration (MSHA) and the Kentucky Office of Mine Safety and Licensing (KOMSL).

All surface and underground mines are inspected regularly. Larger mines may have inspectors at the mine site every day.

All certifications and mining specialties, as established by the Kentucky Mining Board, must be signed by the Director (KOMSL) verifying the holder has completed the requirements for certification. All coal miners must be drug tested before being certified for a new job classification.

Training for Surface Miners

New miners must have 24 hours of training and pass a written exam before being eligible for employment at a surface mine. Workers at prep plants, rail sidings, and river terminals must also meet those training requirements. The inexperienced miner must work a minimum of 45 days at a surface mine before becoming a certified experienced miner. After the initial training, each surface mine employee is required to receive eight hours of annual retraining.

To obtain a Surface Mine Foreman Certification, a miner must have three years of surface mining experience achieved after age 18. To obtain certification, a surface mine foreman must specialize in either coal extraction or post mining activities (coal preparation or coal handling). The applicant must have at least one year of practical experience in the specialty category.

To become a blaster in a surface coal mine, the applicant must attend 30 hours of training and pass both a licensing and certification test. Two years of additional work experience under a licensed blaster is required.

Training for Underground Miners

New miners are required to have a minimum of 40 hours of training plus pass a written exam prior to starting work as an inexperienced miner.

An inexperienced miner must work a minimum of 45 days in an underground mine before becoming a certified experienced miner.

A minimum of 16 hours of annual retraining is required to maintain the miner certification and continue to work at an underground mine.

A newly hired miner (experienced or inexperienced) also must receive up to eight hours of mine site-specific training.

To receive an Underground Mine Foreman Certification, a miner must have five years of practical underground coal mining experience gained after age 18, with at least one year on an active working section of a coal mine. An Assistant Mine Foreman Certification requires three years practical experience.

Each miner receives new work assignment training (Task Training) to become certified for each new job classification.

To maintain their certification, and qualifications, certified electrical workers must satisfactorily complete annual electrical retraining classes.

Only certified shot-firers can detonate explosives within a mine.

Underground Miner Classifications

Experience Required	Underground Mining Position
5 yrs	Electrical Inspector* Mine Inspector/Mine Safety Analyst* Mine Foreman* Electrical Instructor*
3 yrs	Asst. Mine Foreman* Instructor
1 yr.	Electrical Worker* Hoisting Engineer*
45 days	Shot Firer* Certified Miners
SPECIAL TRAINING	
MET EMT	Mine Emergency Technician or Emergency Medical Technician First Aid

*Tests are required in addition to years of experience.

NOTE: Over 20,000 persons are trained or retrained annually for one or more surface and/or underground miner classification by the KOMSL to maintain the current Kentucky miner workforce of over 17,500 miners.

Source: Kentucky Office of Mine Safety and Licensing (KOMSL).

MET/EMT - At least two (2) emergency medical or mine emergency technicians shall be employed on every shift engaged in the production of coal, and at least one (1) emergency medical or mine emergency technician shall be employed on every non production shift. For underground mines, at least one (1) of the two (2) emergency or mine emergency technicians shall be underground at all times while miners are working in the mines. An additional emergency medical technician or mine emergency technician shall be employed for every additional fifty (50), or any portion thereof, employees per shift who are actively engaged in the extraction, production, or preparation of coal.

METs are certified through training and examination administered by KOMSL under regulations established by the KOMSL. The MET certification requires 40 hours of initial training, a current CPR certification and eight hours of annual retraining.

Severance Tax by County

Coal Severance Tax Revenue by County, FY 2006-2007

County	Gross Value of Severed Coal	Tax on Severed Coal	Gross Value of Processing	Total Tax Receipts
Eastern Kentucky (Boyd, Elliott, Laurel, Pulaski, Rockcastle and Wolfe County data withheld)				
Bell	$ 120,344,766	$ 5,264,150	$ 12,806,787	$ 5,830,791
Breathitt	146,927,408	6,608,258	7,260,776	6,934,993
Clay	2,205,549	156,135	5,828,256	417,842
Floyd	111,954,461	4,941,752	10,733,099	5,399,256
Harlan	490,345,623	20,462,020	46,190,318	22,320,091
Jackson	2,588,403	116,479	-	116,479
Johnson	25,595,487	1,194,749	2,014,939	1,285,422
Knott	440,881,778	19,810,214	32,705,148	21,281,331
Knox	16,330,513	803,796	3,920,797	945,547
Lawrence	39,005,459	1,693,658	1,644,600	1,759,507
Lee	709,021	31,906	48,984	34,110
Leslie	209,067,105	9,407,300	32,430,316	10,866,581
Letcher	378,667,708	17,064,738	26,558,432	18,259,694
Magoffin	45,717,351	2,049,531	101,431	2,054,080
Martin	198,914,639	8,812,885	26,246,304	9,993,968
Morgan	2,190,764	95,851	-	95,851
Owsley	2,516,100	141,270	2,513	141,383
Perry	435,106,046	19,553,236	41,465,759	21,418,788
Pike	1,061,847,049	47,482,781	140,106,507	53,744,264
Whitley	8,020,251	489,445	1,530,808	509,081
Eastern KY Total *	**$ 3,743,397,926**	**$ 166,385,792**	**$ 395,745,002**	**$ 183,800,275**
Western Kentucky (Crittenden, Daviess, Hancock, Henderson, Jefferson and Ohio County data withheld)				
Hopkins	$ 333,164,410	$ 14,960,785	$ 38,259,732	$ 16,682,472
Muhlenberg	99,411,425	4,473,694	21,147,488	5,425,498
Union	95,695,539	4,309,627	11,286,657	4,817,526
Webster	76,126,368	3,432,765	23,710,491	4,499,737
Western KY Total *	**$ 726,902,593**	**$ 32,689,593**	**$ 109,467,288**	**$ 37,615,787**
State Totals *	**$ 4,470,300,519**	**$ 199,075,385**	**$ 505,212,290**	**$ 221,416,062**

* Columns do not add to State Totals because of Boyd, Crittenden, Daviess, Elliott, Hancock, Henderson, Jefferson, Laurel, Ohio, Pulaski, Rockcastle and Wolfe Counties' information being withheld to avoid disclosure of individual company data.

Severance Tax Revenue (millions of dollars)
The gross value of coal mined and processed in Kentucky during FY 2006-2007 was $4.9 billion.

Source: Kentucky Revenue Cabinet
Prepared by: Office of Energy Policy—Division of Fossil Fuels & Utility Services.

Coal Taxes Returned

Coal Severance Taxes Returned to Counties, FY 1992 - 2006

Fiscal Year	Local Govt. Economic Assistance Fund (LGEAF)*		Local Govt. Economic Development Fund (LGEDF)**		Total % Returned
1991-92	$ 22,120,783	12%	$ 0		12%
1992-93	21,559,445	12%	5,389,862	3%	15%
1993-94	21,537,099	12%	10,768,550	6%	18%
1994-95	21,359,598	12%	15,218,716	9%	21%
1995-96	19,805,628	12%	20,383,293	13%	25%
1996-97	19,574,470	12%	24,806,340	16%	28%
1997-98	18,674,360	13%	24,260,750	18%	31%
1998-99	18,615,839	14%	25,627,772	21%	35%
1999-00	17,373,579	14%	27,081,883	24%	38%
2000-01	15,279,384	13%	29,105,903	27%	40%
2001-02	19,387,021	14%	37,017,575	30%	44%
2002-03	17,348,797	14.5%	35,041,129	32.5%	47%
2003-04	17,610,654	15.0%	38,215,684	35.0%	50%
2004-05	22,874,326	15.0%	38,183,105	35.0%	50%
2005-06	29,172,025	15.0%	51,727,887	35.0%	50%

* Established by the General Assembly fiscal years 1991-92.

** Established by the General Assembly FY 1992-93; does not include interest.

Coal Taxes Returned to Coal Producing Counties

Producing Counties	LGEAF* (FY06)	LGEDF** (FY06)	Unmined Minerals Tax - FY 06 County Estimate**** Average 84.50%	Total Tax Billed
Eastern KY				
Bell	$ 464,490	$ 934,647	$ 231,963	$ 274,746
Boyd	162,432	187,984	2,799	3,185
Breathitt	586,284	821,157	434,175	514,717
Carter	51,508	204,599	339	411
Clay	305,651	305,008	10,366	12,299
Elliott	157,135	183,742	537	631
Floyd	905,819	1,145,841	836,674	958,477
Greenup	0	132,105	0	0
Harlan	2,244,878	2,914,525	1,460,523	1,680,980
Jackson	192,786	73,011	3,300	3,831
Johnson	435,016	415,735	29,920	35,897
Knott	1,994,376	3,353,192	987,853	1,225,451
Knox	290,638	351,941	29,102	34,605
Laurel	392,779	151,560	1,621	1,944
Lawrence	935,076	555,840	68,619	79,284
Lee	73,176	385,314	1,036	1,202
Leslie	1,060,313	2,493,115	1,054,242	1,213,995
Letcher	2,082,707	2,713,511	953,755	1,115,967
McCreary	0	162,172	16,130	19,067
Magoffin	399,571	662,358	190,068	218,194
Martin	889,498	2,477,295	729,178	846,581
Menifee	33,570	95,579	0	0
Morgan	90,682	226,413	5,921	6,892
Owsley	69,022	326,330	3,176	3,638
Perry	1,993,951	2,395,319	1,338,561	1,595,631
Pike	5,742,129	6,175,312	2,771,497	3,244,096
Pulaski	0	0	10	12
Rockcastle	156,705	165,878	255	311
Whitley	291,128	200,721	18,017	21,860
Wolfe	0	0	132	158
EKY Total	**$ 22,001,320**	**$ 30,210,204**	**$ 11,179,769**	**$ 13,114,060**
Western KY				
Butler	0	0	0	0
Christian	0	79,635	0	0
Crittenden	140,158	209,679	1,897	2,286
Daviess	0	79,137	146	171
Hancock	58,820	99,110	1,510	1,804
Henderson	621,496	443,561	279,271	332,235
Hopkins	1,451,366	1,407,520	336,486	391,228
McLean	0	212,478	1,468	1,760
Muhlenberg	760,879	858,340	184,454	217,065
Ohio	301,182	255,547	32,902	39,651
Union	490,681	1,233,561	101,025	117,973
Webster	413,862	1,285,374	132,270	151,742
WKY Total	**$ 4,238,444**	**$ 6,163,942**	**$ 1,071,429**	**$ 1,255,915**
Multi - County* **		**$ 18,187,073**		
State Total	**$ 26,239,764**	**$ 54,561,219**	**$ 12,251,198**	**$ 14,369,975**

* County and municipal totals for FY2005- 2006. Thirty-four (34) coal producing counties and incorporated cities.

** Includes interest and taxes collected.

*** Counties may jointly apply for multi-county LGEDF Funds. State Allocation Total is only partially authorized.

**** Revenue generated from the Unmined Minerals Tax for some coal counties was unavailable at the time of this publication. The **ad valorem** tax rates on real property vary greatly from county to county. The Department of Revenue estimates the counties receive 84.5%, with the remainder being the state share. Not all billable taxes are collected. Columns do not add due to individual rounding.

FY 2005 - 2006 Impacted Counties

The LGEAF table does not include non-producing counties impacted by coal transportation, referred to as "Impacted Counties." These 43 counties and the cities within them received **$2,932,261** in coal severance taxes during FY06.

Economic Impact

The Kentucky coal industry:

- employed 17,669 miners earning over $1.04 billion in wages during 2006.
- created a total of 72,970 jobs statewide.
- paid $221.42 million in severance taxes during FY 2006-07 and generated total state tax revenues of $634.0 million.
- was a $4.97 billion industry which brought into Kentucky receipts totaling more than $3.95 billion from approximately 30 states and 4 foreign countries in 2006.
- created economic activity throughout Kentucky totaling $10.85 billion.

NOTE: Estimated values of coal sold in each state are based upon average per ton gross value of coal produced and processed.

2006 Estimated Impact of $4.97 Billion

The $4.97 billion in receipts from coal produced and processed in Kentucky in 2006 generated additional economic activity totaling $5.88 billion and 55,301 jobs. This additional economic activity plus coal production and processing yielded total economic activity in Kentucky of $10.85 billion and 72,970 jobs.

	Coal Industry		Indirect		Coal Industry and Indirect	
	Output ($billions)	Jobs (number)	Output ($billions)	Jobs (number)	Output ($billions)	Jobs (number)
Mining Wages & Benefits	1.64	17,669	1.60	18,287	3.24	35,956
Operating Costs	1.74	N/A*	2.44	19,477	4.18	19,477
Other	1.59**	N/A*	1.84	17,537	3.43	17,537
Totals	4.97	17,669	5.88	55,301	10.85	72,970

* Not Applicable
** General administration, depreciation, taxes, royalties, net income
Source: Updated to 2006 by Dr. Charles F. Haywood from University of Kentucky Center for Business and Economic Research, Economic Impact Analysis of Coal in Kentucky (1995) by Dr. Charles F. Haywood and Dr. William Baldwin.

Benefits Throughout the Kentucky Economy

Due to the economic impact of the coal industry throughout Kentucky in 2006, in addition to 17,669 persons working at the mines, 7,216 persons worked in factories making everything from mining equipment to home appliances; 3,136 persons drove coal trucks and cargo trucks, worked in other transportation activities; 15,224 persons worked in warehouses, sold groceries, clothing, appliances, and other items in retail establishments; 14,944 persons provided services in banks, law offices, engineering firms, accounting firms, and other service businesses; 5,232 persons constructed homes, offices, factories, and roads; and 9,549 others were teachers, state and local government officials and employees, and a wide variety of other professions and occupations not elsewhere classified..

Industry	Employment	Product Value
Coal mining & processing	17,669 jobs	$ 4.97 billion
Manufacturing	7,216 jobs	$ 1.57 billion
Transportation	3,136 jobs	$ 360 million
Wholesale/retail trade	15,224 jobs	$ 870 million
Services	14,944 jobs	$ 910 million
Construction	5,232 jobs	$ 510 million
Other	9,649 jobs	$ 1.65 billion
Totals	72,970 jobs	$10.85 billion

Source: Updated in 2006 by Dr. Charles F. Haywood from University of Kentucky Center for Business and Economic Research. Economic Impact Analysis of Coal in Kentucky, (1995) by Dr Charles F. Haywood and Dr. William Baldwin.

Coal Prices

Coal Prices

There are as many coal price averages as there are coal qualities (i.e., sulfur, Btu), market types (i.e., steam coal, metallurgical or coking, industrial, export), sales conditions (i.e., spot market, extended spot market, short-term contract, long-term contract), sales locations and included costs (i.e. FOB—Free on Board the mine, railcar, river terminal, export terminal, FAS—Free Along Side, CIF—Cargo Cost/Insurance Freight, total delivered cost). Within each of these ways to sell coal, there are wide ranges of price .

Average Value of KY Coal FOB Mine, 2006 (dollars per ton)

	Eastern Kentucky			Western Kentucky			KY
Year	Underground	Surface	Average	Underground	Surface	Average	Average
1976	$26.37	$20.36	$23.03	$15.12	$13.41	$14.18	$19.79
1977	25.98	18.71	21.67	19.88	14.80	17.07	20.02
1978	28.86	22.58	25.30	22.78	18.35	20.36	23.86
1979	30.18	24.85	27.62	26.26	18.79	22.17	26.04
1980	30.98	26.23	28.73	27.40	22.28	24.72	27.62
1981	32.47	28.86	30.72	30.92	25.03	27.66	29.95
1982	32.71	28.85	30.87	32.50	26.53	29.25	30.44
1983	30.71	28.43	29.63	30.72	25.97	28.09	29.20
1984	29.29	27.84	28.61	28.68	25.50	26.81	28.13
1985	29.83	27.41	28.77	26.79	26.68	26.73	28.24
1986	26.89	25.67	26.38	24.25	26.56	25.31	26.09
1987	27.48	25.74	26.71	25.06	24.16	24.68	26.15
1988	27.72	25.92	26.97	24.89	22.32	23.96	26.20
1989	25.69	25.96	25.80	23.03	21.79	22.48	24.97
1990	25.49	26.44	25.84	24.42	22.01	23.32	25.19
1991	26.29	26.51	26.37	24.83	20.26	22.88	25.45
1992	25.32	24.49	25.00	24.75	20.94	23.10	24.50
1993	25.42	25.63	25.50	23.84	20.45	22.36	24.77
1994	26.19	23.92	25.25	25.95	20.07	23.63	24.88
1995	26.52	25.24	26.00	21.33	19.46	20.75	24.79
1996	25.98	23.53	24.98	21.04	18.79	20.38	23.91
1997	26.26	22.45	24.65	20.67	19.92	20.49	23.72
1998	25.36	23.57	24.59	21.23	20.24	21.01	23.82
1999	24.59	23.51	24.14	21.71	19.25	21.15	23.50
2000	25.32	23.59	24.58	21.42	17.91	20.69	23.80
2001	28.11	27.76	27.96	21.72	21.10	21.58	26.77
2002	29.77	28.11	29.04	22.37	21.81	22.23	27.77
2003	29.83	29.03	29.49	22.23	21.44	22.05	28.15
2004	35.56	34.60	35.15	23.77	22.87	23.60	32.74
2005	43.55	43.05	43.33	27.48	25.87	27.19	39.68
2006	46.88	46.46	46.68	30.52	24.29	29.76	42.73

Electric Utility Consumption of Coal, 2006

The U.S. electric power plant sector reported 1,035.3 billion tons of coal consumed during 2006. The average delivered price of coal to electric utilities was $34.31 per ton.

Almost 92% of all coal consumed in the U.S. was in the electric power sector, the driving force for all coal consumption. Coal consumption in the U.S. electric power sector decreased by 11.0 million tons from 2005. Kentucky's electric power generation from coal was 92.2% in 2006, while 3.3% came from petroleum coke, 2.6% from hydro, 1.3% from natural gas, 0.5% from renewables, and 0.1% from petroleum.

Sources: U.S. Bureau of Mines, Minerals Yearbook, 1976, U.S. DOE, Bituminous Coal & Lignite Production and Mine Operations, 1977-1978, and Coal Production, 1979-1992, DOE-EIA, Coal Data: A Reference, May 1989, and Coal Industry Annual, 1993-2006.

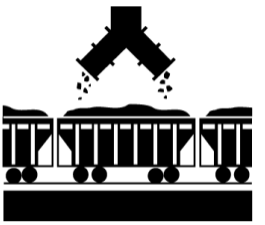
Transportation

In multimodal coal transportation the initial transportation mode from the mine site is not always the primary mode of coal transportation due to the following:

Shipments of coal moved to consumers primarily by rail can include coal hauled to or away from a railroad siding by truck;

Shipments of coal moved to consumers via river by barge include coal hauled to or away from coal river terminals by truck, rail, or conveyor.

Coal Transportation by Rail in Kentucky



Kentucky has over 2,621 miles of railroad lines. 83 million tons of Kentucky coal were transported over these lines in 2006.

There are two Class I railroads, one regional railroad, and two short line railroads that operate totally in Kentucky or originate coal in Kentucky.

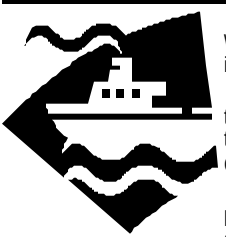
These railroads, along with privately owned cars for lease, have over 71,399 hopper cars dedicated to the transport of coal.

Kentucky has approximately 97 coal rail loading facilities.

Almost all (90+%) rail shipment of Kentucky coal moves by unit train service.

Source: Association of American Railroad, 2005. U.S. DOE EIA Coal Industry Annual, 2006.

Coal Transportation by Barge in Kentucky



Kentucky has more than 1,000 miles of navigable rivers over which approximately 21 million tons of Kentucky coal were shipped in 2006.

Statewide, 45 coal river terminals on the Ohio River and its tributaries serve Kentucky coal shippers (34 within Kentucky). In total, 14 coal river terminals are located near Eastern Kentucky, 6 in Central Kentucky, and 25 near Western Kentucky.

Of these, 18 of the coal river terminals have rail access, 40 have truck access, 17 have barge off-loading access, and 5 have conveyor access. Automated blending is found in 27 of the coal river terminals with 29 having automatic sampling, 16 having some coal crushing equipment, and 7 having stoker preparation equipment.

Source: Division of Fossil Fuels, Kentucky Coal Marketing Updates-Coal River Terminals, 2007. U.S. DOE EIA Coal Industry Annual, 2006

Coal Transportation by Truck in Kentucky

Approximately 3,740 miles of state-maintained highways are used for transporting coal.

Truck shipments are a very important mode of coal transportation in Kentucky. In 2006, approximately 1.83 billion ton-miles of coal transportation by truck were reported in at least one leg of the many different types of multimodal coal transportation market routes.

Over 2,667 coal trucks were registered during 2006 in Kentucky, indicating that over 2,667 coal truck drivers were employed in Kentucky. The sale of extended weight coal decals generated $833,294 in 2006.

Sources: Kentucky Transportation Cabinet, Official Coal Haul Highway System; Department of Vehicle Regulation—Division of Motor Vehicle Licensing.

Uses of Coal

Distribution of Coal By Consuming Sector, 2006

U.S. TOTAL
1,167,169,311 Tons

Electric power plants represent the largest market for U.S. and Kentucky coal.
The three major markets for coal are electric power, industrial and the export markets.

Electric Power Plants	88.4%	1,032,147,475 Tons
Other Industrial	5.1%	59,556,771 Tons
Exports	4.3%	49,647,000 Tons
Coke Plants	1.9%	21,975,997 Tons
Resident/Commercial	0.3%	3,226,546 Tons
Unknown	<0.1%	615,522 Tons

KENTUCKY TOTAL
121,781,745 Tons *

Combining market sectors shows 97.8% of Kentucky's coal goes to the domestic market in 30 states. Kentucky's remaining coal is exported.

Electric Power Plants	89.3%	108,783,679 Tons
Other Industrial	7.9%	9,545,296 Tons
Resident/Commercial	0.5%	612,849 Tons
Exports	2.2%	2,676,500 Tons
Coke Plants	0.1%	163,421 Tons

Eastern Kentucky
94,546,427 Tons

Eastern Kentucky's electric power plant market remains predominate at 87.0% while the industrial market, the export and coking markets have steadily decreased.

Electric Power Plants	87.0%	82,240,120 Tons
Other Industrial	9.5%	9,006,588 Tons
Exports	2.8%	2,676,000 Tons
Resident/Commercial	0.6%	517,065 Tons
Coke Plants	0.1%	106,654 Tons

Western Kentucky
27,235,318 Tons

Western Kentucky's market almost totally depends on the electric power market with 97.5% of its coal going to electric power plants. The other market sectors have continued to decline.

Electric Power Plants	97.5%	26,543,559 Tons
Other Industrial	2.0%	538,708 Tons
Resident/Commercial	0.4%	95,784 Tons
Exports	<0.1%	<500 Tons
Coke Plants	<0.1%	56,767 Tons

* Distribution figures may differ from production figures due to the stockpiling of coal.
Source: U.S. DOE—Energy Information Administration, Coal Industry Annual, 2006. Preliminary data figures as of 1-8-08.

Coal Deliveries — State to State

* Total receipts by all consuming sectors.

Kentucky shipped coal to thirty (30) states.		**Kentucky received coal from eleven (11) states**	
Destination State	Total tons **	Origin State	Total tons **
Alabama	3,987,807	Alabama	970
		Colorado	2,338,762
Arkansas	55,710		
Delaware	184,268		
Florida	13,033,227		
Georgia	18,200,791		
Illinois	373,470	Illinois	403,289
Indiana	1,371,160	Indiana	1,582,967
Iowa	316,123		
Kansas	7,471		
Kentucky	24,955,953	Kentucky	
		East	7,433,149
		West	17,522,804
Louisiana	26,609		
Maryland	1,660,873		
Massachusetts	10,518		
Michigan	5,623,923		
Minnesota	110,548		
Mississippi	1,256,129		
Missouri	57,383		
New Jersey	13,784		
New York	113,290		
North Carolina	10,000,957		
North Dakota	11,639		
Ohio	7,997,089	Ohio	1,466,991
Oklahoma	1,049		
Pennsylvania	186,266	Pennsylvania	8,137
South Carolina	14,092,012		
Tennessee	8,287,472	Tennessee	139,870
Utah	190		
Virginia	5,233,634	Virginia	16,385
West Virginia	1,198,989	West Virginia	9,288,174
Wisconsin	736,911		
		Wyoming	3,721,170
TOTALS	**119,105,245**		**43,922,668**

***** Kentucky distributed a total of 121,781,745 tons of coal in 2006.**
79.5% of Kentucky coal is shipped out of state.
20.5% of Kentucky coal remains in state.

* All consuming sectors include Electricity generation, coke plants, Industrial plants, Residential & Commercial.
** Does not include export shipments.
*** Includes 2,676,500 tons of coal that was exported.

Source: U.S. DOE—Energy Information Administration, Coal Industry Annual 2006.

Electric Utility Shipments

Kentucky coal was shipped to electric power plants in 25 states in 2006. The Eastern Kentucky coal field shipped approximately 82.2 million tons of coal to electric power plants located in 25 states during 2006. The Western Kentucky coal field sold approximately 26.5 million tons of coal to electric power plants in 9 states during 2006. These electric power plants purchased 108.7 million tons of Kentucky coal during 2006.

Kentucky Coal Shipments To Electric Utility Plants, 2006

Eastern Kentucky Coal Field

Destination (State)	Receipts in Tons
Alabama	2,557,941
Delaware	184,268
Florida	8,948,442
Georgia	16,973,665
Illinois	530
Indiana	136,761
Iowa	22,741
Kansas	7,471
Kentucky	6,324,981
Maryland	1,462,294
Michigan	4,503,675
Minnesota	89,755
Mississippi	1,256,129
Missouri	6,733
New Jersey	13,784
New York	7,884
North Carolina	8,987,316
North Dakota	11,639
Ohio	6,996,290
Pennsylvania	23,202
South Carolina	13,126,528
Tennessee	4,397,277
Virginia	4,780,247
West Virginia	1,151,860
Wisconsin	268,707
EKY Utility Shipments	**82,240,120**

Western Kentucky Coal Field

Destination (State)	Receipts in Tons
Alabama	1,342,560
Florida	3,738,395
Illinois	224,306
Indiana	745,292
Kentucky	17,492,844
Michigan	80,121
Missouri	7,463
Ohio	15,470
Tennessee	2,897,108
WKY Utility Shipments	**26,543,559**

Source: U.S. DOE—Energy Information Administration, Coal Industry Annual 2006.

Coal Exports / Imports

In 2006, the U.S. exported 49.6 million tons of coal. U.S. coal exports in 2006 were down by 62.9 million tons from the record high of 112.5 million tons in 1981. U.S. coal imports totaled 36.2 million tons in 2006. U.S. imports have steadily increased from the 1.04 million tons 1981.

Kentucky's 2006 exports of 2.7 million tons were 5.5% of total U.S. exports.

U.S. Coal Imports*

Columbia (25.3 million tons), Venezuela (4.2 million tons), Canada (2.0 million tons), Indonesia (3.1 million tons), and Australia (0.2 million tons) were the largest suppliers of imported coal in 2006.

U.S. Coal Imports*

Year	Quantity (millions)	Average Price/Ton
1981	1.043	$28.47
1982	0.742	$30.40
1983	1.271	$33.59
1984	1.286	$35.37
1985	1.952	$36.04
1986	2.212	$36.02
1987	1.747	$32.04
1988	2.134	$29.96
1989	2.851	$34.14
1990	2.699	$34.45
1991	3.390	$33.12
1992	3.803	$34.46
1993	7.309	$29.89
1994	7.584	$30.21
1995	7.201	$34.13
1996	7.127	$33.45
1997	7.487	$34.32
1998	8.724	$32.18
1999	9.089	$30.77
2000	12.513	$30.10
2001	19.787	$34.00
2002	16.875	$35.51
2003	25.044	$31.45
2004	27.280	$37.52
2005	30.460	$46.71
2006	36.246	$49.10

* NOTE: Includes China, Puerto Rico and Virgin Islands.

Source: U.S. DOE Energy Information Administration, Coal Industry Annual, 2006.

Petroleum Coke

Since 1984, petroleum coke received by electric power plants increased 21 fold, from 335,200 tons to 7,092,000 in 2006.

Petroleum Coke—Electric Utilities

Year	Tons (000)	Cents per Million Btu
1984	335	128.6
1986	359	105.5
1988	355	97.2
1990	554	80.3
1992	687	75.0
1994	1,263	68.9
1996	1,410	78.2
1998	6,216 *	71.2
1999	4,690 *	65.4
2000	4,153 *	58.5
2001	2,019 (Utility Plant only)	78.4
2001	N/A (Non-Utility Plant)	N/A
2002	2,677 (Utility Plant only)	62.5
2002	1,770 (Non-Utility Plant)	100.8
2003	5,720	74.0
2004	7,358	89.0
2005	8,066	129.0
2006	7,092	149.0

* NOTE: Includes utility and non-utility plants.
N/A: Not Available

Source: U.S. DOE Energy Information Administration, Petroleum Coke Tables, Electric Power Monthly, Cost & Quality, 2006.

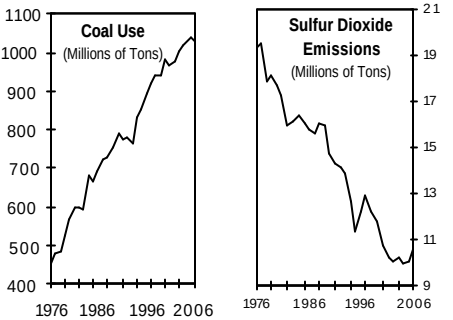
Air Quality / By-Products

Coal Use and Sulfur Dioxide Emissions from Electric Power Utility Plants

Coal is being burned more cleanly today than ever before. Air pollution from coal is decreasing, while coal use is increasing.

U.S. sulfur dioxide emissions have decreased by 51% from 1976 to 2006, even though power plants increased their coal use by 131% in that time period (1976 - 448,371,000 tons consumed and 2006 - 1,035,469,000 tons consumed)

U.S. NO_x emissions have decreased by 36 percent during the same time period.



Kentucky's 2006 sulfur dioxide emissions of 427,576 tons have been reduced by 71% from the 1976 sulfur dioxide emissions level of 1,496,000 tons.

Kentucky's NO_x emission of 171,787 have been reduced by 49% from the 1988 NO_x emissions level of 334,000 tons.

Sources: Environmental Quality Commission (EQC), The State of Kentucky's Environment: 2000-01 Air Quality; U.S. DOE - EIA, Electric Power Annual 1989-2006; Cost and Quality of Fuels for Electric Utility Plants, 2006.

Coal Combustion By-Products

There are currently 9 ash landfills permitted totaling 1,044 acres of land for disposal of ash from existing power plants. Approximately one acre of landfill space is required to dispose of 100,000 tons of ash. At the current rate, 1,000 acres of permitted area will accommodate the existing volume of ash being landfilled for the next 20 years, the average life expectancy of a landfill. Coal combustion in Kentucky produced 3.1 million tons of fly ash, 1.3 million tons of bottom ash, and 3.7 million tons of flue gas desulfurization (FGD) materials during 2006. According to a 2006 University of Kentucky Center for Applied Energy Research survey, 30.1% (2.5 million tons) of the 8.1 million tons coal combustion by-products produced within Kentucky were reused. Combustion materials generated within Kentucky do not include the coal combustion material generated from the combustion of Kentucky coal shipped to 30 other states during 2006.

Existing Consumption

- Cement and concrete products
- Road base/subbase/Pavement
- Snow and ice control
- Grouting/wallboard
- Coal mining applications
- Structural fill/flowable fill
- Embankments
- Mineral filler in asphalt
- Blasting grit/roofing granules
- Waste stabilization
- Agriculture
- Aggregate

2006 U.S. Coal Combustion By-Product Production & Consumption (million tons)

	Production	Consumption	% Used
Fly Ash	72.4	32.4	45.0
Bottom Ash	18.6	8.4	45.0
Boiler Slag	2.0	1.7	83.0
FDG Material (combined)	31.8	11.7	37.0
Totals	124.8	54.2	43.4

More than 43% of overall CCP's (Coal Combustion Products) were utilized in a beneficial use rather than being landfilled.

Reclamation

Mined land must be returned to its approximate original contour, with the exception of mountaintop removal operations, in accordance with the federal Surface Mining Control and Reclamation Act of 1977.

According to the 1977 law, mountaintops may be reclaimed as flat land, which leaves the land more valuable for development. Reclaimed land must be as useful as the land was before mining. Land is frequently more valuable and useful after mining reclamation.

Stringent regulations govern the design, operation, and environmental impact of every mine. Mining and reclamation sites are inspected on a regular basis by state inspectors. Federal inspectors also conduct random oversight inspections.

Kentucky coal operators through FY 2007 have paid $978.4 million into the Federal Abandoned Mine Land program to reclaim land mined prior to August 3, 1977.

Before surface mining begins, Kentucky coal operators must post bonds to ensure proper reclamation.

Under Kentucky's 1984 Permanent Program or "Primacy Program", bonds are not fully released until a coal operator has demonstrated five years of consecutive successful reclamation (see chart below).

As of December 2007, the Kentucky mining industry had a total of 9,144 outstanding bonds valued at $786.9 million. The bonds assure timely and successful reclamation.

Mining reclamation bonds are released in the following phases:

Bond Release Phase	Reclamation Release Type	% of Bond Released	Time/Phase Requirement
Phase I	Backfilling, grading, seeding, & drainage	60%	Complete landscaping
Phase II	Vegetation	25%	Two years of successful reclamation
Phase III	Final	15%	Five years of consecutive successful reclamation

Successful Mining Reclamation/Primacy Bond Releases, 1984—2006

	Phase I			Phase II			Phase III		
Year	# of Releases	Acres* Released	Bond Amount	# of Releases	Acres* Released	Bond Amount	# of Releases	Acres* Released	Bond Amount
1984	4	123	$277,886	-	-	-	-	-	-
1985	40	767	$1,946,323	2	84	$79,841	1	8	$11,600
1986	248	6,361	$16,781,470	-	-	-	1	14	$16,800
1987	332	8,379	$21,390,109	11	253	$289,767	4	155	$284,300
1988	561	15,583	$38,194,394	57	1,303	$1,261,810	-		-
1989	446	16,777	$32,058,350	60	1,632	$1,967,811	3	21	$38,500
1990	533	15,383	$28,108,146	260	7,298	$6,221,870	51	1,697	$1,569,147
1991	626	14,642	$28,373,662	428	12,667	$11,200,897	130	2,958	$6,890,877
1992	670	18,278	$33,822,612	477	13,338	$11,489,035	255	8,101	$6,811,872
1993	498	13,893	$25,386,134	416	12,661	$11,242,965	448	15,986	$8,629,089
1994	452	15,933	$27,423,038	319	10,828	$9,768,647	406	14,098	$8,709,946
1995	525	16,650	$32,343,224	427	13,141	$12,399,017	517	18,419	$16,338,524
1996	619	23,968	$47,602,996	419	14,784	$17,378,599	784	27,018	$22,365,232
1997	393	13,179	$23,571,000	373	13,323	$13,463,098	806	30,768	$29,923,783
1998	351	12,646	$28,589,902	255	8,104	$9,370,064	747	21,387	$18,859,893
1999	357	11,259	$20,644,178	192	5,971	$6,719,383	602	19,774	$23,043,414
2000	285	10,237	$18,529,971	206	6,380	$9,449,942	587	20,678	$17,215,050
2001	268	9,837	$13,321,034	175	7,963	$12,064,790	439	13,274	$14,176,508
2002	398	14,380	$19,236,198	142	5,929	$6,130,207	449	15,384	$16,013,176
2003	396	12,296	$16,879,563	143	5,855	$5,424,044	367	10,462	$11,291,162
2004	328	11,974	$18,229,856	136	3,941	$3,581,106	412	10,772	$13,163,416
2005	243	9,325	$15,142,951	151	5,336	$4,535,338	333	12,922	$12,687,628
2006	428	15,558	$24,028,630	113	4,724	$8,563,414	259	7,823	$9,135,598
Total	**9,001**	**287,428**	**$531,881,627**	**4,762**	**155,515**	**$162,601,645**	**7,601**	**251,719**	**$237,175,515**

Source: Kentucky Natural Resources and Environmental Protection Cabinet, Department of Surface Mining Reclamation & Enforcement.

Post-Mining Land Uses

Post-mining land use changes go hand-in-hand with economic development in Kentucky, especially in many parts of Eastern Kentucky where much needed level to gently rolling land for development is still at a premium.

Post-Mining Land Use and County

Regional Airports

Big Sandy Regional Airport	Martin
Hatcher Field Airport	Pike
Carroll Field Airport	Breathitt
Ford Airport	Perry
Ohio County Airport	Ohio

Correctional Facilities

Federal Correctional Institute	Clay, Martin
East Kentucky Correctional Complex	Morgan
Medium Security Prison	Muhlenberg, Knott (in development)
Otter Creek Correctional Center	Floyd
Juvenile Boot Camp	Breathitt

Government Facilities

Earle C. Clements Job Corps Ctr.	Muhlenberg
Army National Guard Training Ctr.	Muhlenberg
U.S. Postal Service	Laurel
County Park	Ohio
Madisonville South By-Pass	Hopkins
Solid Waste Landfills	Daviess, Greenup, Ohio, Hopkins, Perry, Lee
Hazard Armory	Perry
Jail and State Police Barracks	Perry
Veterans' Nursing Home	Perry

Fish & Wildlife

Duck Refuge Areas	Ohio, Perry, Breathitt, Knott, Martin, Muhlenberg
Catfish Farming	McLean
Wildlife Management Area	Muhlenberg, Ohio, Perry
Wetland Development	Muhlenberg

Elk in the Mountains of East Kentucky Again

Free-ranging elk returned to the mountains of East Kentucky, with reclaimed mountaintop removal areas, old reclaimed mine benches, and hardwood forests serving as their home once again. The first hunter in more than 150 years to legally kill an elk in Kentucky did so in 2001.

Farms

Starfire Project	Perry
MAPCO / Morehead Agriculture Ctr.	Martin
Martin County Coal Corp. Farm	Martin
D&R Brangus Farm	Perry
Hog Farm	Hopkins, Knox
Avian Farms	Wayne
Agricultural Projects / Sites	Daviess, Pike
Chicken / Broiler Houses	Hopkins, McLean, Muhlenberg, Webster
Livestock Feed	Greenup, Harlan, Lee, Johnson, Wolfe, Whitley

Industrial / Commercial

Electrical Construction Office and Shop	Hopkins
Electric Utility Operations Center	Hopkins
Industrial Scrubber Sludge Disposal	Ohio, Daviess, Webster
Explosive Manufacturing	Muhlenberg
Wood Fabrication Plant	Breathitt, Perry, Pike (proposed)
Apparel Manufacturing	Perry, Boyd
Mine Shops / Welding / Machine / Equip.	Johnson, Hopkins, Knox, Muhlenberg, Ohio, Union, Whitley
Trucking Company	Muhlenberg, Boyd
Truck / Equipment Sales	Butler
Explosive Company	Perry, Hopkins
Farm Equipment	Hopkins
Sawmill / Logs / Lumber	Bell, Butler, Clay, Jackson, Laurel, Pike, Whitley, Wolfe
Recycling Facility	Letcher
Blacktop / Concrete Facilities	Laurel, Perry
Oil / Gas Facilities	Clay, Lee, Elliott
Cabinet Factory	Perry

(Continued on page 26)

Post-Mining Land Uses cont.

(Continued from page 25)

Industrial / Commercial continued

Clay-Leslie Regional Industrial Park	Clay, Leslie
Coalfields Regional Industrial Park	Breathitt, Harlan, Leslie, Perry
Corbin Tri-County Industrial Park	Knox
EastPark Regional Industrial Park	Boyd, Carter, Elliott, Greenup, Lawrence
Equipment Rental / Sales	Boyd
Gateway Regional Business Park	Floyd, Knott, Letcher, Pike
Honey Branch Regional Business Park	Floyd, Johnson, Magoffin, Martin, Pike
Little Goose Industrial Site	Clay
Maggie Mountain Industrial Park	Floyd
Paul Coffey Industrial Park	Boyd
Pine Mountain Regional Business Park	Bell, Harlan, Knox, Letcher, Whitley
Retail Outfitters	Clay
South McCreary Industrial Park	McCreary (in development)
Tooling Company	Clay
Uniform Rental Services	Carter
Utility	Boyd, Knott, Perry
Wireless Communications	Carter
Plastic Injection Molding Company	Perry
Mine / Electronics Supply	Martin
Industrial Parkway	Greenup
United Parcel Services	Perry, Boyd
Unified Power Distribution	Martin

Rail-to-Trails: Old coal haul rails have been removed to make walking trails in Hopkins, Muhlenberg, Union, and Webster counties.

R&R / Sport

Baseball Fields	Boyd
Coal Hollow Park	Floyd
Elkhorn Educational Recreation Park	Floyd
Golf Courses	Clay, Laurel, Letcher, Floyd, McLean, Owsley (proposed)
Recreational Area	Lee, Greenup
Red Fox Resort	Knott (in development)
Stonecrest Golf Course	Floyd
Wayland Park	Floyd
Golf (drive & putt)	Webster
Recreational Area & Fishing Lake	Pike
Athletic Facilities	Letcher
Fairgrounds	Morgan
Riding Stables & Trails	Muhlenberg
Campground (proposed)	Hopkins
Hunting Reserve	Webster

Mountaintop Mining: Mining is only a temporary land use. Mountaintop mining has created several sites for new schools, hospitals, shopping centers, parks, golf courses, housing, airports, industry, agriculture and timber in Eastern Kentucky.

Structural Building Sites

High Schools	Pike
Elementary School	Boyd
Flea Market	Perry
Athletic Complexes	Letcher, Pike
Appalachian Regional Hospital	Perry
Housing Developments	Bell, Boyd, Clay, Floyd, Greenup, Harlan, Johnson, Knox, Laurel, Lee, Leslie, Letcher, Martin, Perry, Pike
Church, Daycare	Laurel, Perry
Mobile Home Sales	Laurel
Shopping Centers	Breathitt, Clay, Knox, Laurel, Leslie, Letcher, Pike, Perry
Car / Truck / Equipment Sales	Perry
Motel / Hotel	Laurel, Perry
Office Complex	Boyd, Greenup, Morgan, Martin, Perry, Pike (proposed)
Storage Rental Facility	Hopkins, Perry
Off Track Betting	Perry
Telecommunications Call Center	Perry

Numerous small businesses in Eastern Kentucky

Sources: Environmental and Public Protection Cabinet, Area Development Districts.

AML Reclamation

Abandoned Mine Land (AML) Reclamation

The federal Surface Mining Control and Reclamation Act of 1977 established authority for the AML Fund. Production fees of $0.35 per ton for surface-mined coal and $0.15 per ton for underground-mined coal are collected from coal producers at all active coal mining operations. These funds reclaim pre-law (1977) and certain interim program (1977-1982) sites left abandoned, un-reclaimed, or insufficiently reclaimed.

The Kentucky coal industry (through FY 2007) has contributed $978.48 million to the Abandoned Mine Land (AML) Reclamation Fund since 1978. Nationally, over $7.94 billion (through FY 2006) has been paid by active coal operators across the United States.

Fifty percent of the total Kentucky AML fees go directly to the state share account However, $134.83 million (September, 2007) is unallocated due to the federal appropriation process (see Kentucky State Share Balance column in table below).

$1,956,225,224 of AML taxes remain unallocated for reclaiming abandoned mines across the United States.

Abandoned Mine Land (AML) Reclamation Fund (millions)

Fiscal Year	Kentucky Collection	Kentucky State Share*	KY AML Grant Disbursement	KY State Share Balance**
1978	$20.38	$14.98	$ 0	$15.0
1979	31.18	16.85	0.6	31.8
1980	34.64	17.51	0	49.3
1981	36.52	17.91	1.4	67.2
1982	38.60	18.29	16.4	69.6
1983	31.46	15.56	28.9	56.7
1984	38.12	18.87	36.8	44.8
1985	36.91	17.30	32.3	31.4
1986	35.29	17.25	19.7	31.6
1987	35.02	17.61	16.4	36.7
1988	26.34	13.17	15.3	37.5
1989	35.39	17.69	27.6	38.5
1990	38.40	19.41	6.4	43.3
1991	37.04	18.45	11.0	47.8
1992	35.60	17.82	28.2	54.9
1993	36.18	18.04	11.5	62.8
1994	36.82	18.24	18.7	70.7
1995	35.49	17.61	15.5	77.1
1996	33.98	16.90	16.0	83.6
1997	34.66	17.24	16.1	90.1
1998	35.04	17.45	15.7	97.4
1999	32.38	16.15	16.5	103.4
2000	30.49	15.19	17.0	108.0
2001	29.42	14.71	18.8	111.9
2002	30.16	15.03	16.7	116.9
2003	26.71	13.35	16.4	120.5
2004	26.38	13.19	16.0	124.4
2005	26.00	13.00	15.0	124.4
2006	26.20	13.10	13.8	128.8
2007	27.68	13.84	13.8	134.8
Totals	**978.48**	**491.71**	**478.5**	

*** NOTE:** Includes reclamation fees, interest, and audit adjustments and will not equal exactly 50%.
**** NOTE:** Adding across table will not equal balance, due to all adjustments not being included in table.

AML Reclamation Accomplishments in Kentucky (through 2007)

Kentucky AML Projects	Federal AML Projects
1,120 Multi-site State AML Projects	Over 1,300 Multi-site AML Projects
$465 million in expenditures	$140.7 million in expenditures
66,530 acres reclaimed (GPRA acres)	Rural Abandoned Mine Program
(plus various projects currently under construction)	Emergency and Non-Emergency

From 1978-2007, AML projects undertaken in Kentucky by both the federal and state programs have reclaimed thousands of acres and expended over $600 million in AML funds.

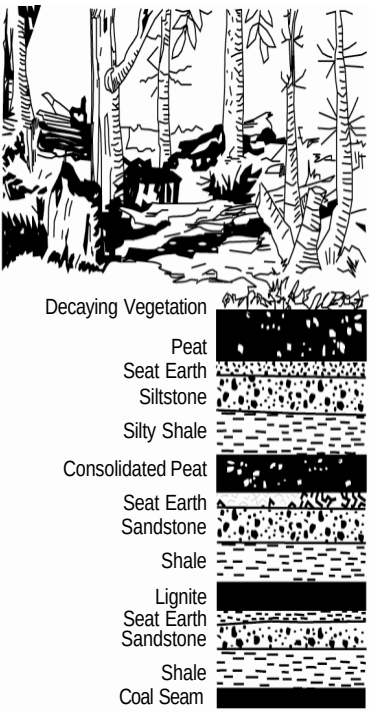
Some accomplishments to date of the state's AML projects in Kentucky are:

98 water line projects—$80.6 million.	2,019 mine portal closures.
over 27,298 feet of high wall eliminated.	196 vertical shafts sealed.
over 258 hazardous structures removed.	47.1 miles of stream restoration.
over 2,156 acres of landslide projects stabilized.	289.7 acres of mine fires controlled.

Today's coal industry in Kentucky is reclaiming mined land to uses as good as or better than before mining, and through contributions to the AML fund, helping to restore previously mined lands to current reclamation standards.

Sources: Environmental and Public Protection Cabinet; Division of Abandoned Lands; Office of Surface Mining (OSM); U.S. Department of Agriculture, RAMP

Coal Origin and Properties



It is generally accepted that coal originated from plant debris including ferns, trees, bark, leaves, and seeds some of which accumulated and settled in swamps.

This unconsolidated accumulation of plant remains is called peat. Peat is being formed today in marshes and bogs.

Layers of peat, covered by sediment receiving heat and pressure from the subsidence of the swamps, went through a metamorphic process called coalification to form coal.

The metamorphic process is thought to have occurred in several stages. The conditions of the metamorphic process and the swamps and bogs greatly affected the formation of the coal.

Several factors which greatly affected the content, makeup, quality, and rank of the coal were:

Temperature	Fresh water/sea water
Pressure	Swamp acidity
Time	Types of plant debris
Layering process	Types of sediment cover

Coal first formed from peat has a high moisture content and a relatively low heating value.

Coal Rank

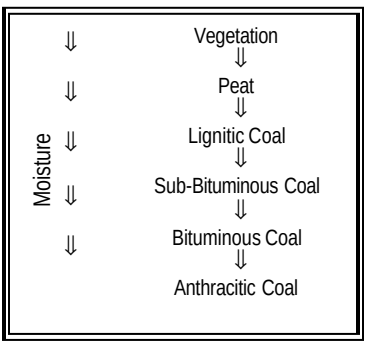
Coal usually is divided into two main classes - anthracite (hard coal) and bituminous (soft coal). When anthracite was formed, it was squeezed under greater heat and pressure than was bituminous. As a result, anthracite contains the highest percentage of carbon and the lowest percentage of moisture. Anthracite makes up only a small part of the world's supply of coal. About half of the world's coal reserve is bituminous coal. (See U.S. Coal Reserves map.) Remaining coal reserves are even softer (lignite and sub-bituminous).

Moisture decreases, rank increases.

Rank increases, fixed carbon increases.

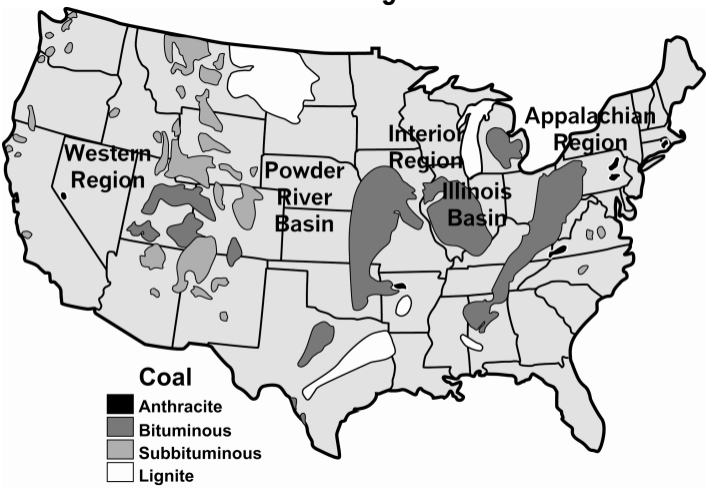
Rank increases, volatile matter decreases.

Rank increases, heating value increases (optimum Btu at low-volatile bituminous).



U.S. Comparisons — Production

U.S. Coal Fields and Coal Producing Areas



Coal Production by State, 2006 (thousand tons)

State and Region	Total	Anthracite	Bituminous	Sub-Bituminous	Lignite
Alabama	18,830	—	18,830	—	—
Alaska	1,425	—	—	1,425	—
Arizona	8,216	—	8,216	—	—
Arkansas	23	—	23	—	—
Colorado	36,322	—	27,122	9,200	—
Illinois	32,729	—	32,729	—	—
Indiana	35,119	—	35,119	—	—
Kansas	426	—	426	—	—
Kentucky, Total	**120,848**	**—**	**120,848**	**—**	**—**
Eastern	**93,607**	**—**	**93,607**	**—**	**—**
Western	**27,241**	**—**	**27,241**	**—**	**—**
Louisiana	4,114	—	—	—	4,114
Maryland	5,054	—	5,054	—	—
Mississippi	3,797	—	—	—	3,797
Missouri	394	—	394	—	—
Montana	41,823	—	—	41,445	378
New Mexico	25,913	—	11,971	13,941	—
North Dakota	30,411	—	—	—	30,411
Ohio	22,722	—	22,722	—	—
Oklahoma	1,998	—	1,998	—	—
Pennsylvania	66,029	1,529	64,500	—	—
Tennessee	2,804	—	2,804	—	—
Texas	45,548	—	—	—	45,548
Utah	26,018	—	26,018	—	—
Virginia	29,740	—	29,740	—	—
Washington	2,580	—	—	2,580	—
West Virginia, Total	152,374	—	152,374	—	—
Northern	42,398	—	42,398	—	—
Southern	109,976	—	109,976	—	—
Wyoming	446,742	—	—	446,742	—
Appalachian Total	391,159	1,529	389,631	—	—
Interior Total	151,389	—	97,930	—	53,459
Western Total	619,449	—	73,328	515,332	30,789
East of Miss. River	490,046	1,529	484,720	—	3,797
West of Miss. River	671,952	—	76,169	515,332	80,451
U.S. Total	**1,162,750***	**1,538***	**561,632***	**515,332**	**84,248**

Source: U.S. DOE - Energy Information Administration, Coal Industry Annual 2006
(* Note: U.S. Totals include 743,000 tons of Bituminous and 9,000 tons of Anthracite Refuse Recovery).

U.S. Coal Reserves

2006 U.S. Demonstrated Coal Reserve Base (millions of tons)

The U.S. Demonstrated Coal Reserve Base is an estimate of the tonnage of economically available coal.**

Coal Producing Region and State	Anthracite	Bituminous	Sub-Bituminous	Lignite	Total** (millions of tons)
Appalachian Region					
Alabama		3,091.00		1,083.00	4,174.00
Georgia		3.60			3.60
Kentucky, Eastern		10,362.00			10,362.00
Maryland		634.00			634.00
North Carolina		10.70			10.70
Ohio		23,260.00			23,260.00
Pennsylvania	7,196.00	20,153.00			27,349.00
Tennessee		770.00			770.00
Virginia	125.49	1,516.51			1,642.00
West Virginia		32,706.00			32,706.00
Appalachian Total	**7,321.49**	**92,506.81**		**1,083.00**	**100,911.30**
Interior Region					
Arkansas	104.00	287.40		25.37	416.77
Illinois		104,408.00			104,408.00
Indiana		9,431.00			9,431.00
Iowa		2,189.00			2,189.00
Kansas		972.00			972.00
Kentucky, Western		19,452.00			19,452.00
Louisiana				416.00	416.00
Michigan		128.00			128.00
Missouri		5,989.00			5,989.00
Oklahoma		1,551.00			1,551.00
Texas				12,328.00	12,328.00
Interior Total	**104.00**	**144,407.40**		**12,769.37**	**157,280.77**
Western Region					
Alaska		697.00	5,400.00	14.00	6,111.00
Arizona		6.67			6.67
Colorado	25.00	8,300.00	3,700.00	4,133.00	16,158.00
Idaho		4.40			4.40
Montana		1,350.00	102,100.00	15,750.00	119,200.00
New Mexico	2.3	3,520.70	8,570.00		12,093.00
North Dakota				9,015.00	9,015.00
Oregon			17.00		17.00
South Dakota				366.00	366.00
Utah		5,350.00	1.00		5,351.00
Washington		303.00	1,029.00	8.00	1,340.00
Wyoming		4,300.00	59,500.00		63,800.00
Western Total	**27.30**	**23,831.77**	**180,317.00**	**29,286.00**	**233,462.07**
U.S. Total	**7,452.79**	**260,745.98**	**180,317.00**	**43,138.37**	**491,654.14**
			East of the Mississippi		**234,330.30**
			West of the Mississippi		**257,323.84**

There is disagreement about the size of U.S. coal resources and of the coal resources of individual states. In 1974, the U.S. Geological Survey estimated total U.S. coal resources (identified and undiscovered) at 3,968.3 billion tons. In 1997, the U.S. EIA estimated that 507.7 billion tons of the total resource was technologically mineable; this was identified as the Demonstrated Reserve Base or DRB and has been updated by EIA in the table above as 491.7 billion tons. In 2004, the U.S. EIA estimated that about 54 percent of the DRB, or 275.1 billion tons, would meet accessibility and economic criteria for recovery by mining; this was designated as the Estimated Recoverable Reserves or ERR. The ERR is frequently cited by decision-makers as being the US coal endowment.

However, recent studies have indicated that both the total U.S. coal resources and the DRB (and consequently the ERR) might be substantially underestimated. The American Energy Security Study, done in 2006 by the Southern States Energy Board, states that the research reinforces the possibility that the 491.7 billion ton estimate of the DRB is a better approximation of ultimately recoverable U.S coal reserves than the 275 billion ton ERR.

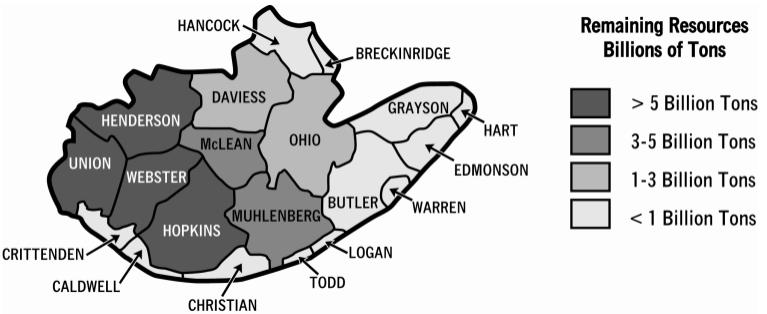
** Kentucky coal resource values are considered by some to be too high, while the Eastern Kentucky "Demonstrated Coal Reserve Base" value is still openly rejected by many others as being too low.

Source: U.S. DOE—EIA, U.S. Coal Demonstrated Reserve Base: 2006 Update (January 2006).

Kentucky Coal Resources

Western Kentucky Coal Field — 2006

The Western Kentucky coal field covers 6,400 square miles and contains over 35.6 billion tons of remaining resources. (Part of this cannot be mined economically using today's technology). The remaining resources and their locations are illustrated below.

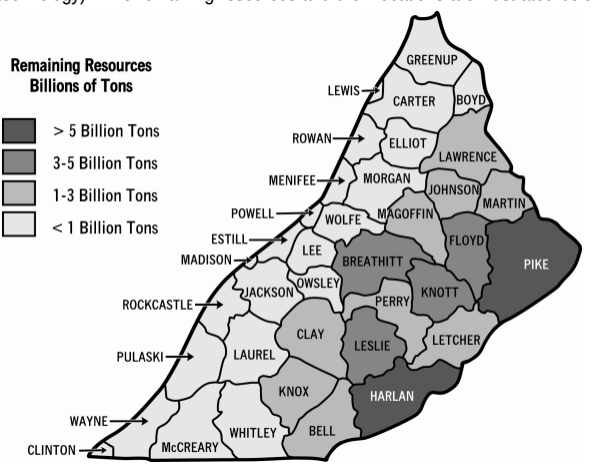


There are 35 named coal beds, of which seven principal coal beds contain about 94% of the resources in Western Kentucky.

Over 5.44 billion tons of coal have been mined or lost due to mining, amounting to only about 13.3% of total Western Kentucky coal resources.

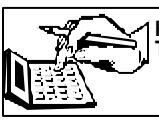
Eastern Kentucky Coal Field — 2006

The Eastern Kentucky coal field covers 10,500 square miles and contains approximately 51.5 billion tons of remaining resources. (Part of this cannot be mined economically using today's technology). The remaining resources and their locations are illustrated below.



There are more than 80 named coal beds in the Eastern Kentucky coal field which covers parts of 37 counties.

Approximately 12.56 billion tons of coal have been mined or lost due to mining, amounting to only about 19.6% of total Eastern Kentucky coal resources.



How To Calculate Tons of Coal

Total Tons = _____ Acres **x** _____ Inches **x** 145 tons per acre - inch
(acres of coal) **x** (height of coal) **x** (density of coal)

Source: Brant and Others, Coal Resource Series, 1980-1983. (Kentucky Geological Survey)

Kentucky Coal Resources

Original resource estimates for Western and Eastern Kentucky were 41 and 64 billion tons respectively. The resources currently remaining after 216 years of mining are estimated to be 35.5 billion tons in Western Kentucky and 51.5 billion tons in Eastern Kentucky. As shown in the Demonstrated Reserve Base (DRB) tables on page 30, assumptions on the percentage available for development reduce those values even further.

Western Kentucky Coal Resources, 2006

County	Original	Mined	Lost	Remaining
Butler	413.69	30.20	30.20	353.29
Daviess	1,330.32	62.33	62.33	1,205.66
Henderson	6,852.78	82.19	82.19	6,688.40
Hopkins	8,814.80	804.35	804.35	7,206.10
McLean	3,576.41	19.73	19.73	3,536.95
Muhlenberg	4,723.84	758.36	758.36	3,207.12
Ohio	1,824.55	269.31	269.31	1,285.93
Union	6,506.98	342.43	342.43	5,822.12
Webster	6,322.95	323.17	323.17	5,676.61
Other*	623.08	25.58	25.58	571.92
WKY Total	**40,989.40**	**2,717.65**	**2,717.65**	**35,554.10**

Original Coal Resources Estimate (40.99 Billion Tons)

2.72 billion tons mined 1790-2006

2.72 billion tons lost due to mining 1790-2006

19.45 billion tons in DRB**

16.10 billion tons remaining, but not in DRB**

* **NOTE**: "Other" includes Breckinridge, Caldwell, Christian, Crittenden, Edmonson, Grayson, Hancock & Warren Counties.

**** NOTE**: Kentucky coal resource values are considered by some to be too high of a value, while the Eastern Kentucky "DRB" value is rejected by many others as being too low. Three-fourths of the remaining coal resources in EKY are not considered to be part of the "DRB".

Caution: coal reserve estimates affected by static terms like "today's technology" and "economically recoverable" may not apply tomorrow.

Eastern Kentucky Coal Resources, 2006

County	Original	Mined	Lost	Remaining
Bell	3,194.70	307.04	307.04	2,580.62
Boyd	630.68	19.93	19.93	590.82
Breathitt	4,112.20	212.48	212.48	3,687.24
Carter	501.96	18.63	18.63	464.70
Clay	1,536.11	62.31	62.31	1,411.49
Elliot	316.32	9.93	9.93	296.46
Floyd	4,168.08	466.70	466.70	3,234.68
Greenup	204.87	10.42	10.42	184.03
Harlan	7,881.12	940.45	940.45	6,000.22
Jackson	375.87	11.42	11.42	353.03
Johnson	1,419.44	101.36	101.36	1,216.72
Knott	4,385.10	351.30	351.30	3,682.50
Knox	1,381.93	76.71	76.71	1,228.51
Laurel	408.04	36.22	36.22	335.60
Lawrence	2,024.68	29.97	29.97	1,964.74
Lee	363.98	8.53	8.53	346.92
Leslie	3,554.65	269.05	269.05	3,016.55
Letcher	3,692.80	577.65	577.65	2,537.50
McCreary	444.97	55.34	55.34	334.29
Magoffin	1,969.10	59.13	59.13	1,850.84
Martin	3,319.97	401.61	401.61	2,516.75
Morgan	849.40	15.31	15.31	818.78
Owsley	574.14	10.15	10.15	553.84
Perry	3,596.70	620.02	620.02	2,356.66
Pike	11,391.70	1,474.83	1,474.83	8,442.04
Whitley	987.44	91.87	91.87	803.70
Wolfe	443.92	7.17	7.17	429.58
Other***	334.89	33.30	33.30	268.29
EKY Total	**64,064.76**	**6,278.83**	**6,278.83**	**51,507.10**

Original Coal Resources Estimate (64.06 billion tons)

6.28 billion tons mined 1790-2006

6.28 billion tons lost due to mining 1790-2006

10.36 billion tons in DRB**

41.15 billion tons remaining, but not in DRB**

**** NOTE**: Kentucky coal resource values are considered by some to be too high of a value while the Eastern Kentucky "DRB" value was increased but is still rejected by some as being too low.

***** NOTE**: " Other" includes Clinton, Estill, Pulaski, Rockcastle, and Wayne Counties.

Sources: Smith and Brant (Kentucky Geological Survey, 1980), Mined and Lost and Remaining Resources updated by the Division of Fossil Fuels and Utility Services from the Kentucky Office of Mine Safety and Licensing Annual Reports.

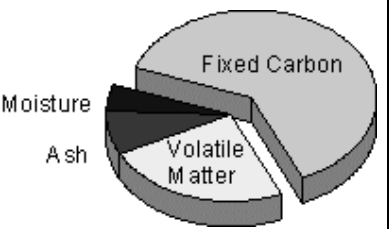
Coal Properties / Improvements

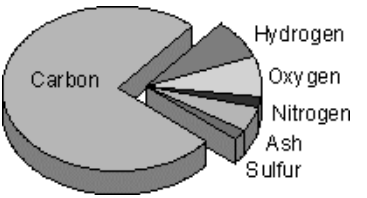
There are two different types of analyses used to determine the nature of bituminous coal: **Proximate and Ultimate analysis**.

Proximate Analysis

Determines (on an as-received basis):

- **Moisture content**
- **Volatile matter** (gases released when coal is heated).
- **Fixed carbon** (solid fuel left after the volatile matter is driven off).
- **Ash** (impurities consisting of silica, iron, alumina, and other incombustible matter).





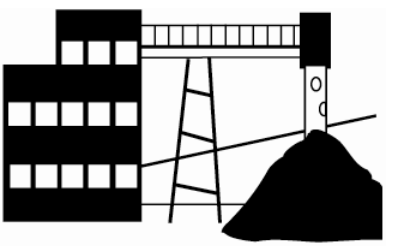
Ultimate Analysis

Determines the amount of carbon, hydrogen, oxygen, nitrogen, and sulfur.

- **Btu—**Heating value is determined in terms of Btu both on an as-received basis (including moisture) and on a dry basis.

Improving the Properties of Mined Coal

Kentucky coal is improved by the partial removal of the impurities—sulfur and ash. The cleaning process to remove impurities from the coal is often called *beneficiation, coal preparation,* or *coal washing.*



In general, coal cleaning is accomplished by separating and removing inorganic impurities from organic coal particles. The inorganic ash impurities are predominantly more dense than the coal particles. This property is generally the basis for separating the coal particles from the ash impurities.

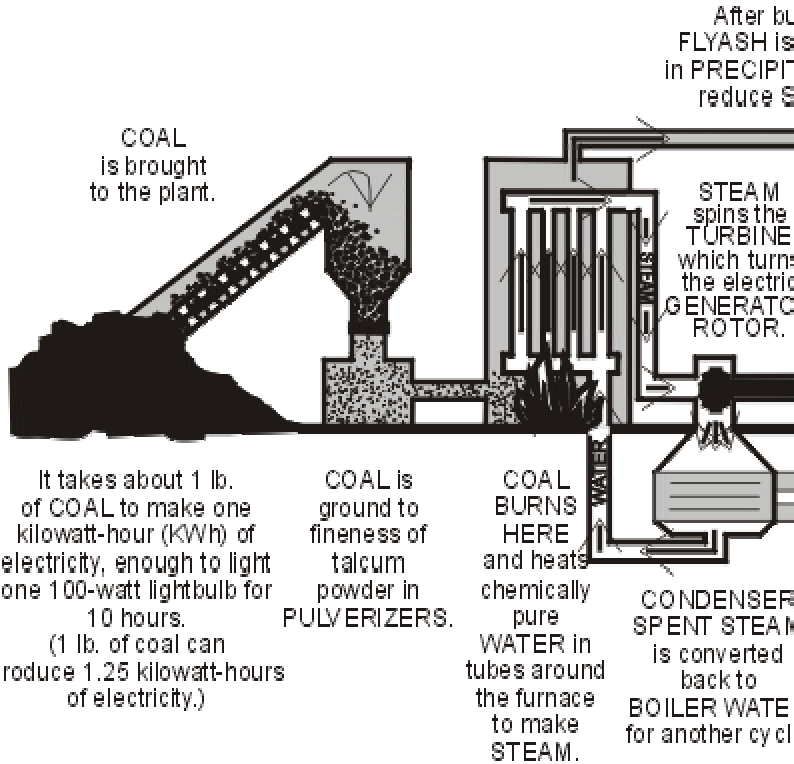
Western Kentucky had 13,120 tons per hour of coal preparation design capacity at approximately 18 coal preparation plants during 2007. **Eastern Kentucky** had 43,670 tons per hour of coal preparation design capacity at approximately 64 coal preparation plants during 2007.

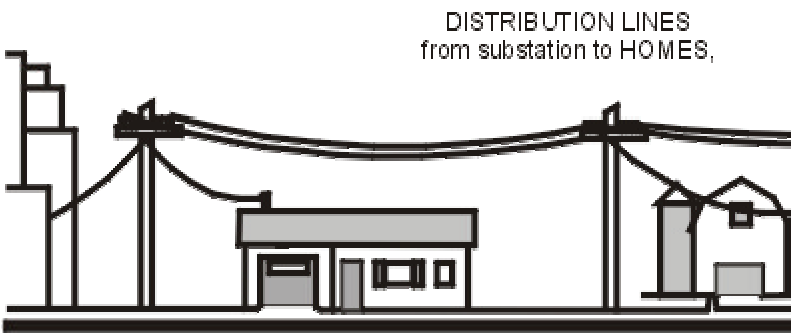
Each coal seam has a different wash ability characteristic. The range of improvement to a particular seam by mechanical washing varies from plant to plant and location to location.

In Western Kentucky, sulfur (inorganic sulfur) and ash are the two main impurities removed. Considering the seven principal mined seams in this area, 0.5% to 2.5% can be subtracted from the average sulfur content and 9% to 13% can be subtracted from the ash content after the coal washing process.

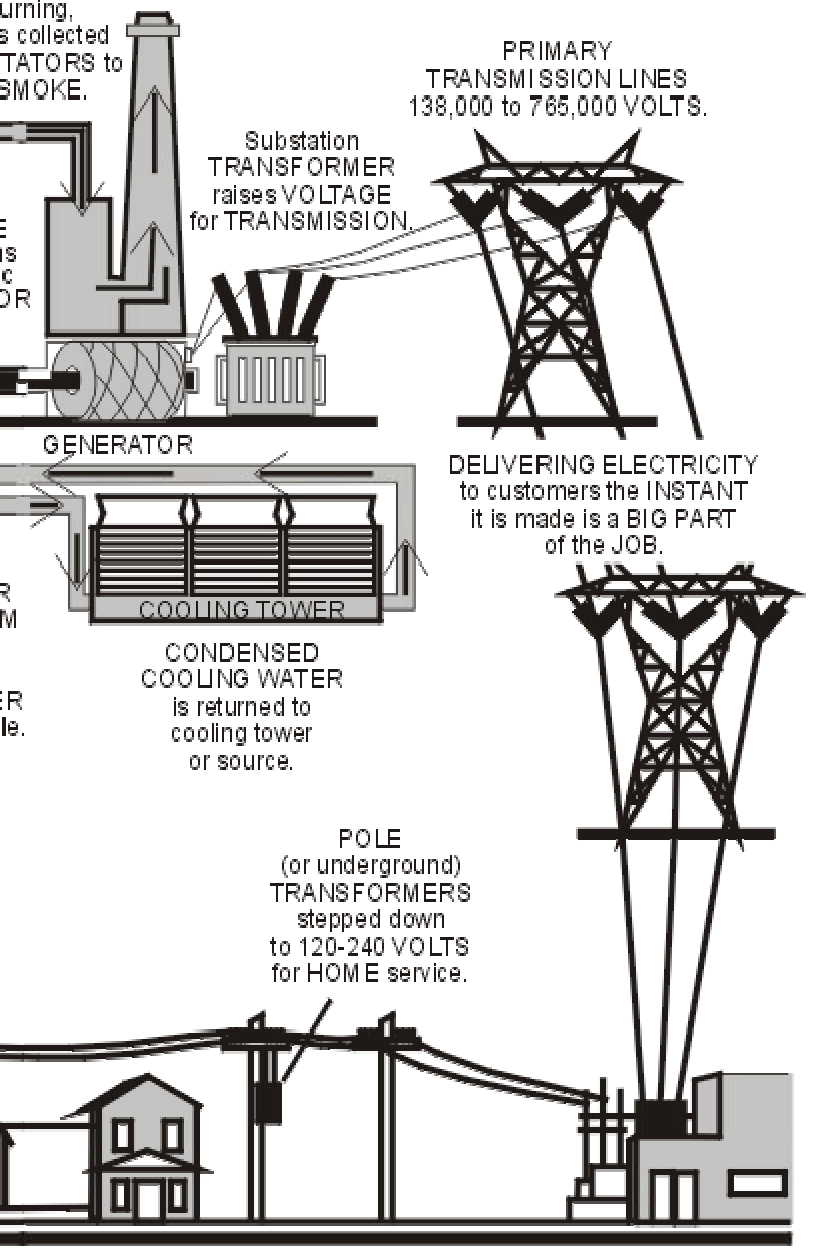
In Eastern Kentucky, coals with very high ash contents are washed. High ash content results from seam impurities, splits, or partings in the seam, or ash accumulating mining methods. In these seams the ash is the main impurity removed—10% to 15% can be subtracted from the ash content after the coal washing process and with only a slight reduction in the sulfur content.

Source: Kentucky Office of Energy Policy, Division of Fossil Fuels and Utility Services.





Source: American Electric Power


urning,
s collected
TATORS to
SMOKE.
PRIMARY
TRANSMISSION LINES
138,000 to 765,000 VOLTS.
Substation
TRANSFORMER
raises VOLTAGE
for TRANSMISSION.
GENERATOR
DELIVERING ELECTRICITY
to customers the INSTANT
it is made is a BIG PART
of the JOB.
COOLING TOWER
CONDENSED
COOLING WATER
is returned to
cooling tower
or source.
POLE
(or underground)
TRANSFORMERS
stepped down
to 120-240 VOLTS
for HOME service.
S.
SUBSTATION TRANSFORMERS
step down the VOLTAGE to
34,500 - 12,470 VOLTS for
street poles or underground.

Electricity Costs

Average electricity costs in Kentucky were 5.43 cents per kilowatt-hour during 2006, **the 4th lowest** in the United Sates. There are twelve states that have average electricity costs that are two to two-and-one-half times the average electricity costs in Kentucky. All Kentuckians enjoy the many advantages of low-cost power due to Kentucky coal. Kentucky's electricity cost is 39% lower than the national average.

Average Revenue per KWh for All Sectors of Consumers by State, 2006

U.S. Average Revenue per KWh is 8.90 cents

STATE	CENTS PER KWh
IDAHO	4.92
WEST VIRGINIA	5.04
WYOMING	5.27
KENTUCKY	**5.43**
UTAH	5.99
NEBRASKA	6.07
WASHINGTON	6.14
NORTH DAKOTA	6.21
MISSOURI	6.30
INDIANA	6.46
OREGON	6.53
SOUTH DAKOTA	6.70
VIRGINIA	6.86
KANSAS	6.89
MONTANA	6.91
TENNESSEE	6.97
SOUTH CAROLINA	6.98
MINNESOTA	6.98
ARKANSAS	6.99
IOWA	7.01
ILLINOIS	7.07
ALABAMA	7.07
OKLAHOMA	7.30
NEW MEXICO	7.37
NORTH CAROLINA	7.53
COLORADO	7.61
GEORGIA	7.63
OHIO	7.71
WISCONSIN	8.13
MICHIGAN	8.14
ARIZONA	8.24
LOUISIANA	8.30
MISSISSIPPI	8.33
PENNSYLVANIA	8.68
NEVADA	9.63
MARYLAND	9.95
DELAWARE	10.13
TEXAS	10.34
FLORIDA	10.45
DISTRICT OF COLUMBIA	11.08
VERMONT	11.37
MAINE	11.80
NEW JERSEY	11.88
CALIFORNIA	12.82
ALASKA	12.84
NEW HAMPSHIRE	13.84
RHODE ISLAND	13.98
CONNECTICUT	14.83
NEW YORK	15.27
MASSACHUSETTS	15.45
HAWAII	20.72

KWh = Kilowatt-hour
Note: The average revenue per kilowatt-hour of electricity sold is calculated by dividing revenue* by sales.

* Includes energy charges, demand charges, consumer service charges, environmental surcharges, fuel adjustments, and other miscellaneous charges. Taxes assessed on the consumer, "pass through" taxes, are not recorded in the operating revenues of the utility and are not included; however, taxes assessed on the utility are included in the electric utility's operating revenue.

Source: U.S. DOE—Energy Information Administration, Electric Sales and Revenue, 2006.

Electric Utility / Non-Utility

Kentucky shipped 108.7 million tons of steam coal to U.S. electric power plants in 2006.

Kentucky shipped 20 million tons less steam coal to the U.S. electric utilities than in 1990.

Kentucky's share of the U.S. steam coal market declined to 10.5% in 2006, compared to 23.2% in 1973.

Wyoming increased steam coal shipments by 261 million tons since 1990, increasing its market share to 42.4% of the U.S. electric utility steam coal market, compared to 3.5% in 1973.

U.S. Electric Power Plant Shipments

	Million Tons				Market Share %			
Year	KY	WV	WY	U.S. TOTAL	Year	KY	WV	WY
1973	87	47	13	375	1973	23.2	12.6	3.5
1974	90	42	18	385	1974	23.4	10.8	4.7
1975	101	44	22	432	1975	23.5	10.2	5.0
1976	102	45	26	455	1976	22.5	9.8	5.7
1977	110	44	42	490	1977	22.4	9.0	8.6
1978	99	38	53	476	1978	20.7	8.0	11.2
1979	111	50	69	557	1979	19.9	8.9	12.4
1980	112	53	90	594	1980	18.9	8.9	15.1
1981	112	51	101	579	1981	19.4	8.8	17.5
1982	106	64	102	601	1982	17.7	10.6	17.0
1983	95	66	107	593	1983	16.1	11.1	18.1
1984	119	74	127	684	1984	17.4	10.8	18.6
1985	111	65	138	667	1985	16.6	9.7	20.7
1986	115	73	138	687	1986	16.7	10.6	20.1
1987	124	81	142	721	1987	17.2	11.2	19.8
1988	116	80	158	728	1988	15.9	11.0	21.7
1989	120	83	166	753	1989	16.0	11.1	22.0
1990	129	89	176	787	1990	16.4	11.3	22.4
1991	114	85	184	770	1991	14.8	11.0	24.0
1992	117	85	182	776	1992	15.1	10.9	23.4
1993	120	75	202	769	1993	15.6	9.8	26.3
1994	127	93	226	832	1994	15.2	11.1	27.2
1995	121	91	254	827	1995	14.6	11.0	30.7
1996	117	102	269	863	1996	13.6	11.8	31.2
1997	122	104	269	881	1997	13.9	11.8	30.7
1998 *	120	106	305	929	1998 *	13.0	11.4	32.8
*Deregulation began in 1998					*Deregulation began in 1998			
1999	115	105	328	942	1999	12.2	11.2	34.8
2000	106	105	324	905	2000	11.7	11.6	35.9
2001	98	111	351	935	2001	10.5	11.9	37.5
2002	84	101	360	884	2002	9.5	11.4	40.7
2003	67	87	365	849	2003	7.9	10.2	43.0
2004	76	84	383	892	2004	8.5	9.4	43.0
2005	88	79	393	1,013	2005	8.7	7.8	38.8
2006	109	107	437	1,032	2006	10.6	10.4	42.4

Note: Shipment numbers are rounded to nearest million ton.

Source: U.S. DOE/EIA--Cost and Quality for Fuels for Electric Utility Plants, 1973-1998, Coal Industry Annual, 1999-2006.

BLACKOUT

August 14, 2003

Utility experts say the national system of electric transmission lines, known as the grid, is being asked to do more than it was designed to do.

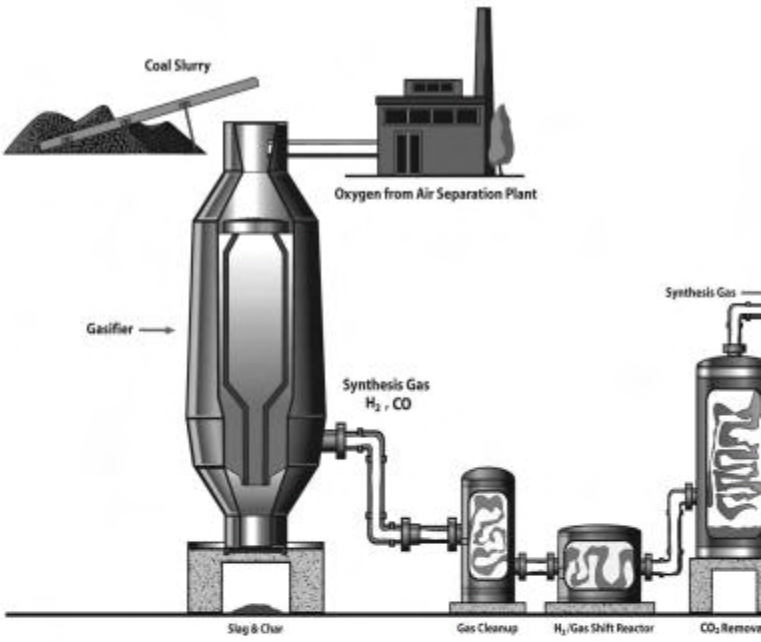
Trends that could lead to power failures:

1. More electric power transactions over longer distances as a result of deregulation.
2. Increased competition producing less coordination among utilities.
3. Independent "merchant power plants" being added to the grid.
4. The creation of Regional Transmission Organizations.
5. Staff reductions by investor-owned utilities.

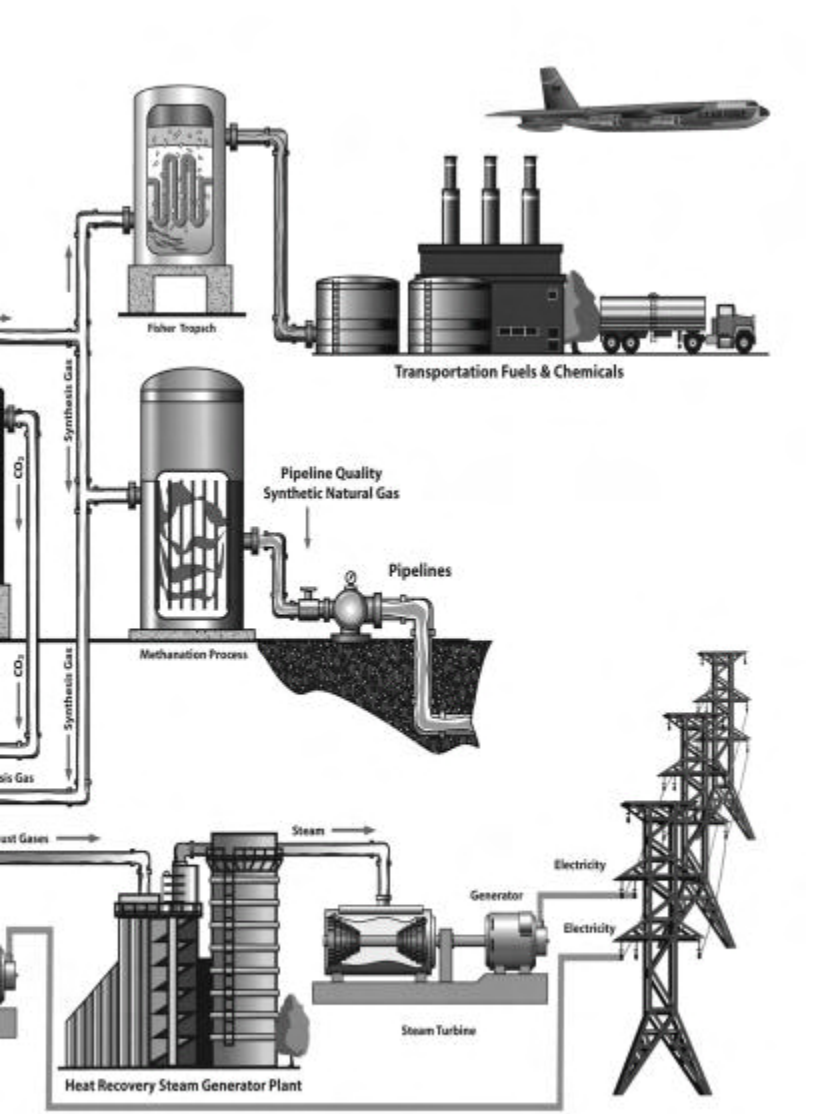
Source: Kentucky Living Magazine, November 2003.

Coal–Super-Clean Fuels and Power for America's Energy Future

If America is to decrease its growing dependence on imported petroleum and natural gas and have sufficient electricity for its growing economy, it must turn to coal, the nation's most abundant energy resource. Coal can be gasified into a mix of hydrogen and carbon monoxide, or syngas. The syngas can be converted in a Fischer-Tropsch unit into super clean transportation fuels or chemicals, or it may be converted in a methanation unit into pipeline quality substitute natural gas. The syngas may then be burned to drive a gas turbine electricity generator. Hot gas from

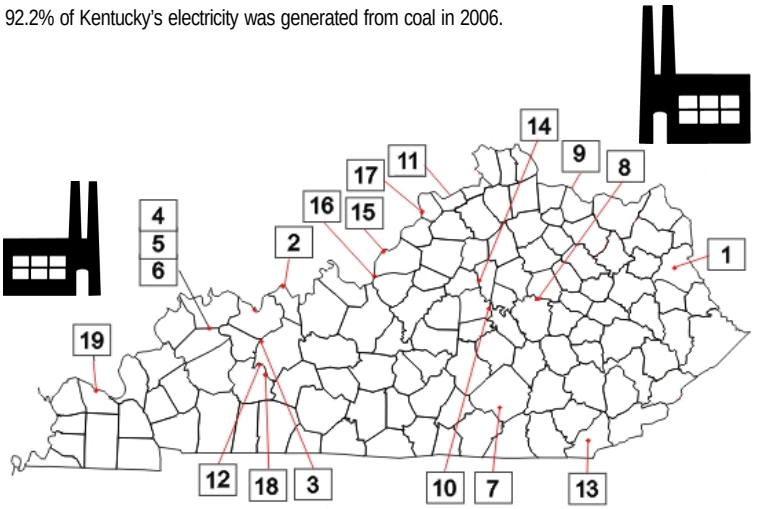


the gas turbine and heat produced in the gasification and conversion processes can be used to make steam to drive a steam electricity generator. This highly efficient electricity generation process is known as Integrated Gasification Combined Cycle. The gasification technology makes possible highly efficient separation and capture of carbon dioxide (CO_2). The CO_2 can be used to enhance recovery of oil and natural gas or it can be stored, or sequestered, in depleted oil or gas reservoirs, in unminable coal seams, in deep geological formations, or in deep saline aquifers. Thus, coal can ensure for America an energy future with greatly reduced emissions of carbon dioxide thought by many to contribute to global climate change.



Coal-Fired Power Plants

92.2% of Kentucky's electricity was generated from coal in 2006.



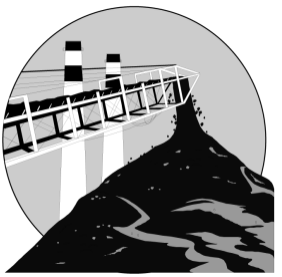
Note: Not all power plants offer tours on a regular basis.

Coal-Fired Power Plant		Plant/County	Phone	Age Group
Kentucky Power Company (AEP)	1	Big Sandy/Lawrence	606-686-2415,	all ages
Contact: Diana Frasher			Ext. 1133	
East Kentucky Power Co-op.	7	Cooper/Pulaski	859-744-4812	5th grade
Contact: Belinda Stafford	8	Dale/Clark	Ext. 671	& up
	9	H.L. Spurlock/Mason		
Kentucky Utilities Company	10	Brown/Mercer	859-367-1105	6th grade
Contact: Cliff Feltham	11	Ghent/Carroll		& up
	12	Green River/Muhlenberg		
	13	Pineville/Bell		
	14	Tyrone/Woodford		
Louisville Gas & Electric Co.			502-627-2713	5th grade
Contact: Sandy Gentry	15	Cane Run/Jefferson		& up (others
	16	Mill Creek/Jefferson		considered
	17	Trimble County/Trimble		upon request)
Tennessee Valley Authority				
Contact: Beverly Morehead	18	Paradise/Muhlenberg	270-476-3301	middle
Debby Abell	19	Shawnee/McCracken	270-575-8001	school & up
Western Kentucky Energy	2	Coleman/Hancock	270-844-6004	3rd grade
Contact: Jennifer Keach	3	D.B. Wilson/Ohio		& up
	4	Green/Webster		
	5	Henderson/Webster		
	6	Reid/Webster		

Information Assistance

Visit our educational web site at www.coaleducation.org

Welcome to the Kentucky Coal Education Web Site



- Classroom Lesson Plans
- Coal Education Resources
- Coal Mining History
- Coal Related Issues Info
- Modern Mining Technology
- Glossary of Terms
- Kentucky Coal and the Regulatory Authority Agencies of the Coal Industry
- Kentucky Coal Facts Book
- Kentucky Coal Tree
- Question and Answer Forum
- Technical Abstracts of Coal Related Periodicals
- Mining T.V.

Kentucky coal data, information, and referral assistance to government, private organizations, and individuals are available from the following:

Kentucky Commerce Cabinet **502/564-4270**
Capital Plaza Tower, 24th Floor, Frankfort, Kentucky 40601
Marcheta Sparrow, Secretary

Governor's Office of Energy Policy
Division of Fossil Fuels & Utility Services **502/564-7192**
500 Mero Street, Capital Plaza Tower, Room 1209, Frankfort, Kentucky 40601 Fax 502/564-7484
William H. Bowker, Director william.bowker@ky.gov

Dennis McCully, Division of Fossil Fuels & Utility Services **270/824-7543**
625 Hospital Drive, Room 228 Fax 270/824-8315
Madisonville, Kentucky 42431 dennisg.mccully@ky.gov

Kentucky Coal Association **859/233-4743**
340 South Broadway, Suite # 100 Fax 859/233-4745
Lexington, Kentucky 40508 (www.kentuckycoal.org)
Bill K. Caylor, President bcaylor@kentuckycoal.com
David A. Moss, Director of Governmental Affairs dmoss@kentuckycoal.com
Roberta A. James, Office Manager rjames@kentuckycoal.com

Kentucky Geological Survey (KGS) **859/257-3896**
228 Mining and Mineral Resources Bldg., Room 124, University of Kentucky (www.uky.edu/kgs)
Lexington, Kentucky 40506

Coal Education Programs

CEDAR, Inc. **Cell: 606/477-3456**
P. O. Box 1375, Pikeville, Kentucky 41502 jjustice@naxs.net
John F. Justice, President (www.cedarinc.org)

CEDAR West, Inc. **270/824-7543**
625 Hospital Drive, Room 228, Madisonville, Kentucky 42431 dennisg.mccully@ky.gov
Dennis McCully, Advisor

Kentucky Coal Academy Office: **859/256-3187**
300 North Main Street, Versailles, Kentucky 40383 bill.higginbotham@kctcs.edu
Bill Higginbotham, Executive Director (http://coalacademy.kctcs.edu)

Kentucky NEED **866/736-8941**
P. O. Box 176055, Covington, Kentucky 41017 kreagor@need.org
Karen Reagor, Coordinator (www.need.org/states/kentucky)

Coal Teaching Materials

American Coal Foundation
101 Constitution Avenue, NW, Suite 525 E
Washington, D.C. 20001
202/463-9785—Fax 202/463-9786
(www.teachcoal.org)

KET, The Kentucky Network
(www.ket.org/trips/coal/)

U. S. Department of Energy
(www.fossil.energy.gov/education/)

University of Kentucky, Center for Applied Energy Research
(www.caer.uky.edu)

Office of Surface Mining
(www.osmre.gov/learn.htm)

Center for Energy and Economic Development
(www.ceednet.org/ceed)

COAL

Abundant

Affordable

Reliable

Clean

Jobs

Kentucky
UNBRIDLED SPIRIT