

KENTUCKY COAL FACTS

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Table of Contents

Summary	4
COAL PRODUCTION	
U.S. Coal Production, 2012	5
Kentucky Coal Production, 2012.....	6
Types of Coal Mining	7
Kentucky Coal Production, 1960-2012.....	8
Eastern Kentucky Coal Production.....	9
Western Kentucky Coal Production	10
MINING EMPLOYMENT & PRODUCTIVITY	
Coal Mine Employment	11-13
Coal Mine Productivity by Region	14
COAL DISTRIBUTION & MARKETS	
Kentucky Coal Consumers, 2012	15
Kentucky In-State Coal Consumption.....	16
Kentucky Coal Deliveries	17
Eastern Kentucky Coal Deliveries.....	18-19
Western Kentucky Coal Deliveries.....	20
Kentucky Coal Distribution, 2011	21
Kentucky Coal Distribution, 2011	22
SEVERANCE REVENUE, COAL PRICES, & CHEMICAL PROPERTIES	
Induced and Indirect Effects.....	23
Coal Severance Receipts by Region	24
Delivered Price of Coal by Coal Mine State.....	25
Delivered Price of Coal by Kentucky Coal Mine County	26
Steam Coal Properties by Coal Mine State	27-28
Steam Coal Properties by Kentucky Coal Mine County	29-30
ELECTRICITY GENERATION, EMISSIONS, & PRICES	
Coal-fired Power Plants in Kentucky	31
Why Kentucky Uses Coal.....	32
Kentucky vs. United States Electricity Generation	33
Kentucky Electricity Prices	34-35
Kentucky Electric Power Emissions	36
KENTUCKY & COAL	
Coal Formation & Properties	37
History of Coal in Kentucky	38-40

Table of Contents

MINE SAFETY, LICENSING, & RECLAMATION

Coal Mine Safety & Training.....	41
Active Mines & Licensing.....	42-43
Mine Reclamation.....	44-45
Post-Mining Land Use.....	46-48

COUNTY LEVEL PRODUCTION, EMPLOYMENT, & MARKETS

Kentucky Coal Producing Counties, 2012.....	49
Bell County	50-51
Boyd County.....	52
Breathitt County.....	53-54
Clay County	55-56
Daviess County	57-58
Floyd County.....	59-60
Harlan County.....	61-62
Henderson County.....	63-64
Hopkins County.....	65-66
Johnson County	67
Knott County.....	68-69
Knox County.....	70
Laurel County	71-72
Lawrence County.....	73
Leslie County	74-75
Letcher County	76-77
Magoffin County.....	78-79
Marshall County	80
Martin County	81-82
McCreary County.....	83
Muhlenberg County	84-85
Ohio County	86-87
Perry County.....	88-89
Pike County	90-92
Union County.....	93-94
Webster County	95-96
Whitley County.....	97

DATA SOURCES & AGENCY CONTACT INFORMATION	98-100
Acknowledgements.....	101

Summary

Overview

After two centuries of commercial mining operations, Kentucky's domestic supply of coal remains a significant component of the Commonwealth's economy. In 2012, Kentucky remained the third-highest coal producer in the United States. Coal was by far the largest source of domestic energy production in the Commonwealth. Coal mines employed nearly 14,100 individuals on-site at the end of 2012, and mining directly contributed billions of dollars to the economy of Kentucky. A quarter of the coal produced in Kentucky is consumed within the Commonwealth; however, the largest market for Kentucky coal remains the generation of electrical power across the United States, namely in the South East.

Production

Kentucky coal production decreased in 2012 by more than 16 percent from 2011, to 91.4 million tons, the lowest level since 1965. Eastern Kentucky coal production decreased in 2012 by 27.6 percent from 2011 to 49.4 million tons—the lowest level since 1965. Production slowed at both underground and surface mines. Eastern Kentucky production has declined by 53.5 percent since the year 2000, and by 62.3 percent since peaking at 131 million tons in 1990. Western Kentucky coal production increased by 2.5 percent from 2011 to more than 42 million tons. All of this increase was due to production in Union and Ohio Counties. During 2012, Union County became the largest coal producing county in Kentucky, surpassing Pike County by 543,700 tons, or 4.2 percent. By the end of 2012, the rate of production in Western Kentucky was greater than in Eastern Kentucky for the first time since 1960.

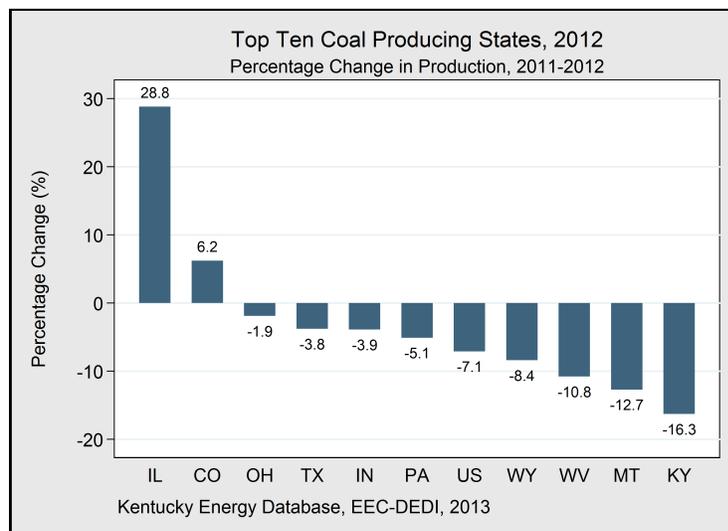
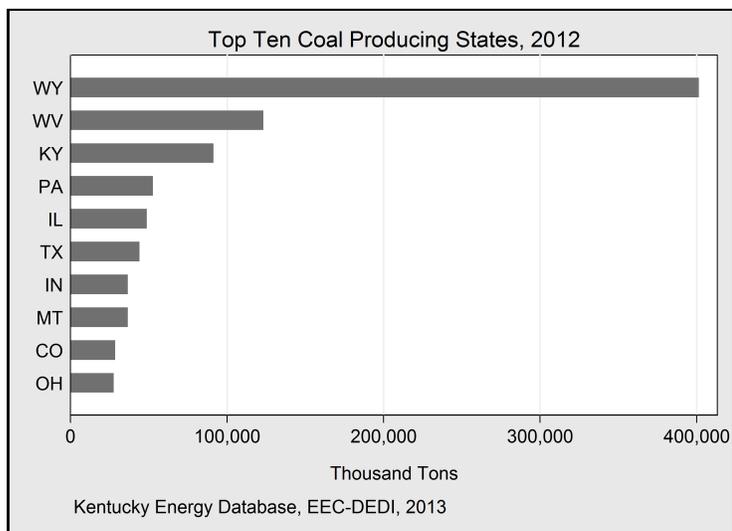
Employment

Employment at Kentucky coal mines decreased by over 22 percent from 18,111 at the beginning of the year, to an average of only 14,083 by December, 2012—a loss of 4,028 employees. Coal mine layoffs were concentrated in Eastern Kentucky where on-site employment fell by 29.9 percent from 13,608 in 2011 to only 9,540 in 2012, a loss of 4,068 employees. In Western Kentucky there were 4,543 persons employed at coal mines, approximately the same number as were employed in 2011. By the end of 2012, Kentucky coal mines employed 7,959 underground coal miners, 3,786 surface miners, 1,666 preparation plant workers, and 482 on-site office staff.

Markets

The markets and destinations for Kentucky coal during 2011 were predominantly concentrated in 20 states, with a small market for international exports. Approximately 25 percent of the coal mined in Kentucky during 2011 was consumed in the Commonwealth—primarily by electric utilities—making Kentucky the largest single market for Kentucky coal. However, the vast majority of Kentucky coal—60.6 million tons—was shipped to electric power plants in 19 different states, principally located in the Southeast. Following Kentucky, the states of Florida, Georgia, and South Carolina were the largest consumers of Kentucky coal during 2011. Coal producers in Kentucky exported 7.1 million tons, or 6.7 percent of total production, to foreign countries during 2011, with Canada and Mexico receiving the majority of international exports. Small quantities of coal were also exported to customers in Europe, China, and India during 2011.

U.S. Coal Production, 2012



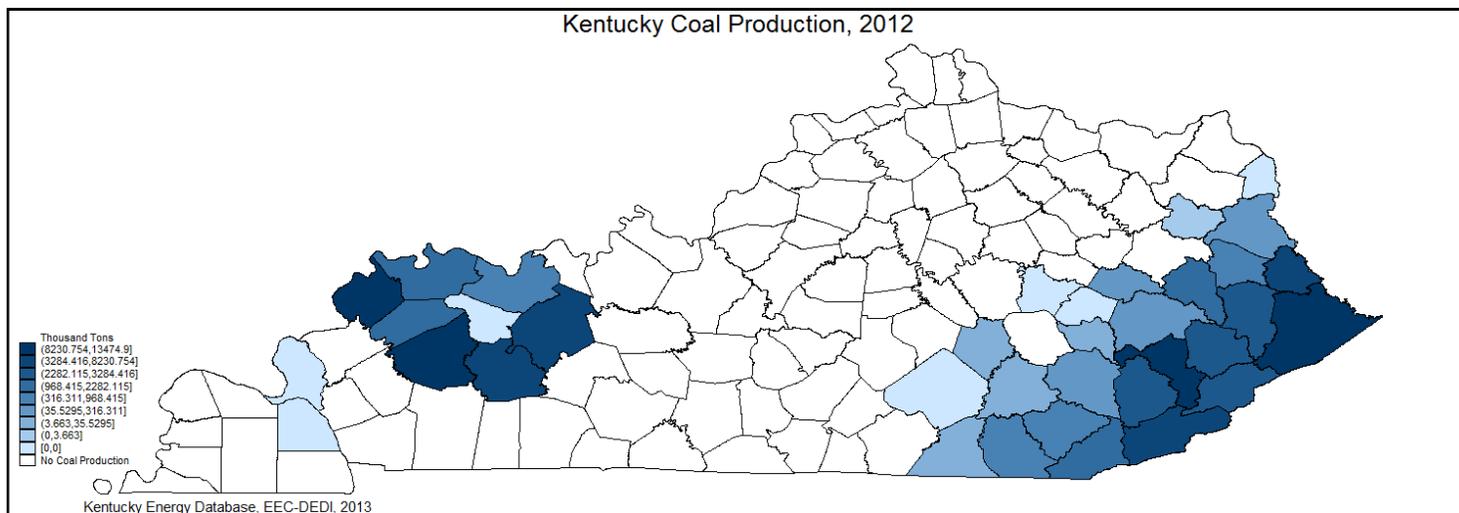
U.S. Coal Production by State, 2012			
State	Thousand Tons	1 Year Change	Percentage
U.S. Total	1,017,314	-7.1%	100.0%
Wyoming	401,442	-8.4%	39.5%
West Virginia	123,183	-10.8%	12.1%
Kentucky	91,407	-16.3%	9.0%
Pennsylvania	52,656	-5.1%	5.2%
Illinois	48,817	28.8%	4.8%
Texas	44,178	-3.8%	4.3%
Indiana	36,720	-3.9%	3.6%
Montana	36,694	-12.7%	3.6%
Colorado	28,569	6.2%	2.8%
Ohio	27,591	-1.9%	2.7%
North Dakota	27,529	-2.5%	2.7%
New Mexico	22,452	2.4%	2.2%
Alabama	19,563	0.9%	1.9%
Virginia	18,896	-15.8%	1.9%
Utah	16,277	-17.2%	1.6%
Arizona	7,493	-7.6%	0.7%
Louisiana	3,979	3.0%	0.4%
Mississippi	2,953	7.5%	0.3%
Maryland	2,120	-27.8%	0.2%
Alaska	2,052	-4.5%	0.2%
Tennessee	1,154	-19.5%	0.1%
Oklahoma	1,054	-8.1%	0.1%
Missouri	422	-9.3%	<0.01%
Arkansas	98	-26.4%	<0.01%
Kansas	16	-57.4%	<0.01%

Coal production in the United States fell by 7.1 percent compared with 2011 to 1.01 billion tons. Wyoming remained the largest coal-producing state in the Country, representing 40 percent of national production with 401.4 million tons in 2012. Coal from Wyoming is produced from deposits in the Powder River Basin, and is generally characterized by low sulfur content, low Btu content, and a relatively low cost.

The second largest coal producer during 2012 was the state of West Virginia, which accounted for 12 percent of national production and supplied consumers with 123 million tons of low-sulfur, Central Appalachian Basin coal.

Kentucky, the third largest producer with 9 percent of national production in 2012, provided coal supplies from deposits of the Central Appalachian Basin in the eastern portion of the state and the Illinois Basin in the western portion of the state. Coal production in Kentucky decreased by 16 percent in 2012 to 91.4 million tons. Peak coal production was reached in 1990 when the Commonwealth mined 179.4 million tons of coal. Since 1990, coal production in Kentucky has been in decline.

Kentucky Coal Production, 2012



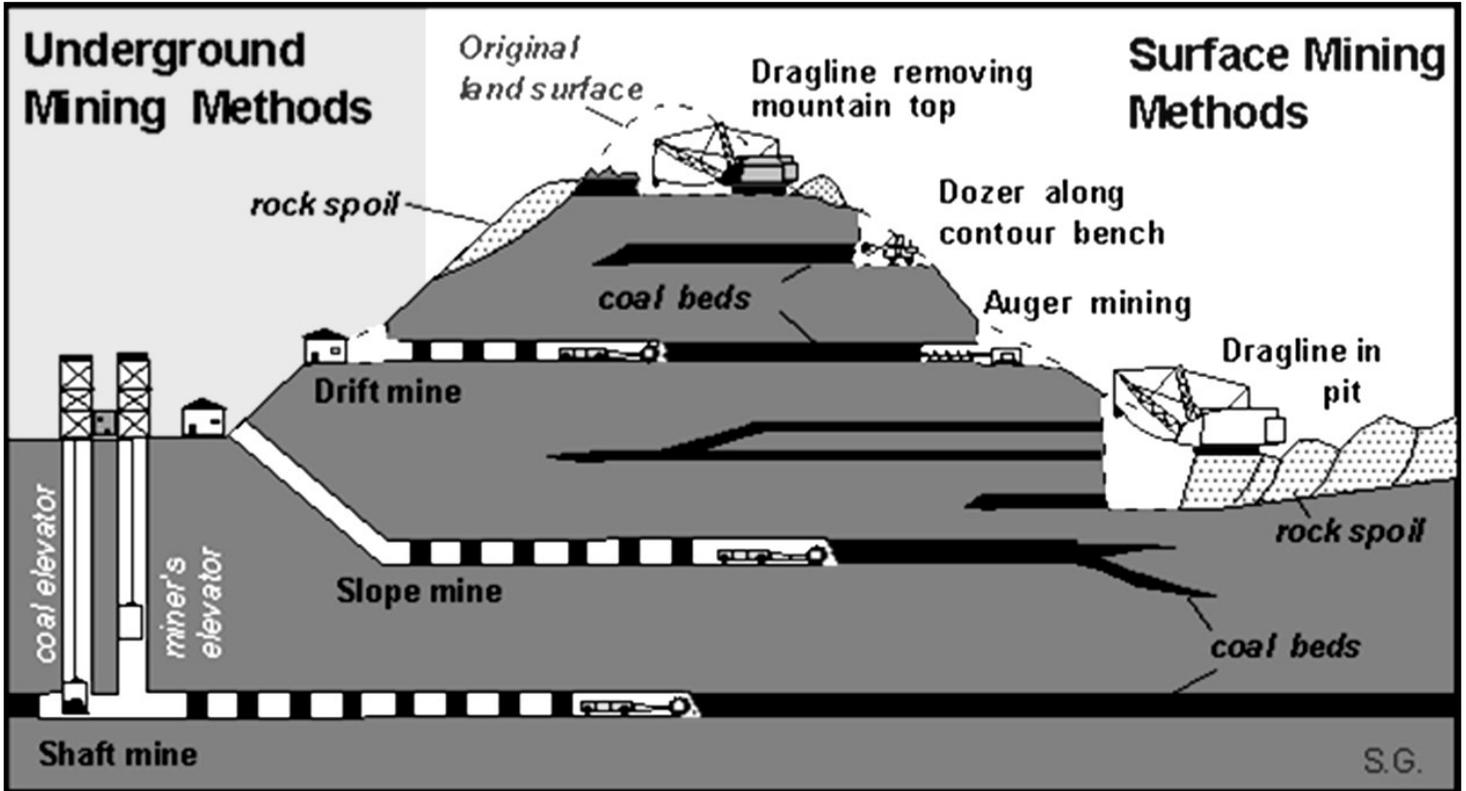
County	Tons	1 Year Change	Percentage
Total	91,407,310	-16.7%	100.0%
Union	13,474,900	9.3%	14.7%
Pike	12,931,200	-17.9%	14.1%
Perry	9,231,478	-30.1%	10.1%
Hopkins	8,945,605	1.8%	9.8%
Ohio	7,231,326	30.5%	7.9%
Harlan	7,034,754	-28.1%	7.7%
Webster	5,550,427	-3.1%	6.1%
Muhlenberg	4,887,921	-14.9%	5.3%
Martin	3,587,476	-36.0%	3.9%
Leslie	3,008,930	-30.7%	3.3%
Letcher	2,979,510	-36.1%	3.3%
Knott	2,641,000	-45.1%	2.9%
Floyd	2,382,712	-18.1%	2.6%
Magoffin	2,015,308	-31.9%	2.2%
Henderson	1,558,006	-36.9%	1.7%

County	Tons	1 Year Change	Percentage
Bell	1,161,442	-26.0%	1.3%
Knox	643,887	65.7%	0.6%
Daviess	395,164	-2.5%	0.4%
Johnson	327,683	41.2%	0.4%
Clay	293,829	-23.0%	0.3%
Breathitt	287,783	-65.5%	0.3%
Whitley	263,881	-50.2%	0.3%
Lawrence	234,628	189.6%	0.3%
Wolfe	39,315	+ ∞ %	<0.1%
McCreary	31,744	+ ∞ %	<0.1%
Owsley	26,647	-61.3%	<0.1%
Laurel	12,627	+ ∞ %	<0.1%
Rockcastle	4,930	+ ∞ %	<0.1%
Elliott	2,396	-94.9%	<0.1%

State and County-level statistics are aggregated from MSHA Form 7000-02 quarterly reports through 2012.

In Kentucky, coal mining is divided between two distinct geologic basins: The Central Appalachian Basin of Eastern Kentucky, and the Illinois Basin of Western Kentucky. Both of these resource fields contain rich deposits of bituminous coal, and have seen coal mining activities in numerous counties for over 100 years. During 2012, coal production in the Commonwealth decreased to 91.4 million tons, the lowest level of recorded annual production since 1965. Additionally, though Pike County remained the largest coal producing county in the Eastern Coalfield, Union County in Western Kentucky supplanted Pike County as the leading coal producing county in the Commonwealth in 2012.

Types of Coal Mining



Several different mining methods are used in the Commonwealth to access coal deposits in the Central Appalachian Basin of Eastern Kentucky and the Illinois Basin of Western Kentucky. The selected mining approach, or combination of mining approaches, at a given mine site is largely dictated by local geography and hydrology, as well as the amount of soil and rock overburden in place above a coal seam. For simplicity of accounting, coal mines are generally divided between surface operations and underground operations, though several sub-categories exist to describe exact mining approaches and mine permits.

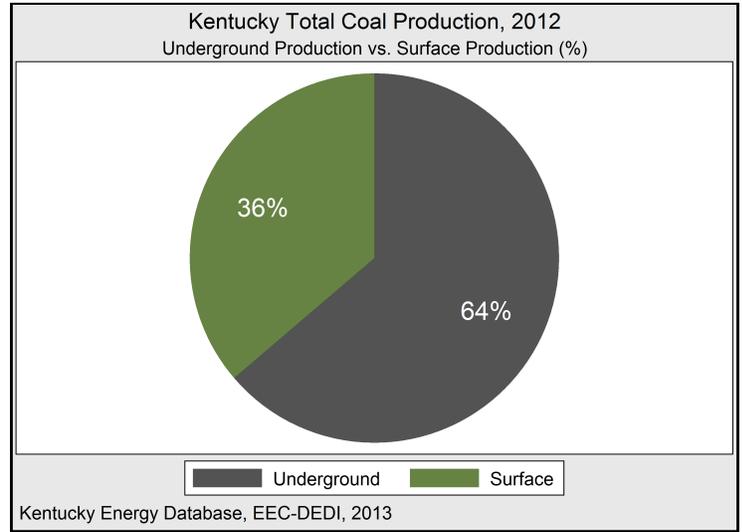
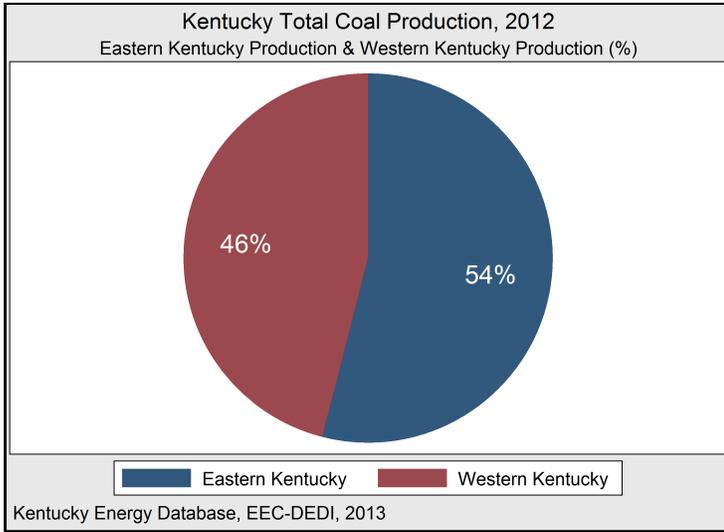
Underground mine operations accounted for 64 percent of coal production in Kentucky in 2012, with room and pillar systems being the most common form of mining method. Various categories of surface mines accounted for 36 percent of statewide production. Historically, underground mines have provided the bulk of employment and coal production in the state. During 2012, combined coal production from underground operations and surface operations was more than 91 million tons with the majority of production concentrated in Eastern Kentucky.

Mine Type	Auger	Culm Bank/Refuse Pile	Dredge	Strip/Quarry/Open Pit	Underground	Total
State	984,673	63,660	5,983	32,074,272	58,278,720	91,407,312
EKY	846,269	63,660	5,983	24,260,740	24,187,308	49,363,960
WKY	138,404	-	-	7,813,534	34,091,412	42,043,352

*Source: U.S. Department of Labor, Mine Safety and Health Administration, "Quarterly Mine Employment and Coal Production Report" (MSHA Form 7000-02). The above table summarizes the five types of mining methods—as categorized by MSHA—that registered coal production in Kentucky during 2012. As a result of this summarization, small quantities of coal that are counted in total statewide production may not necessarily be represented in the above totals.

Refuse recovery mines and culm bank mines register production only when new coal is brought to market. These types of mines extract new coal from waste material discarded or impounded by previous mining operations.

Kentucky Coal Production

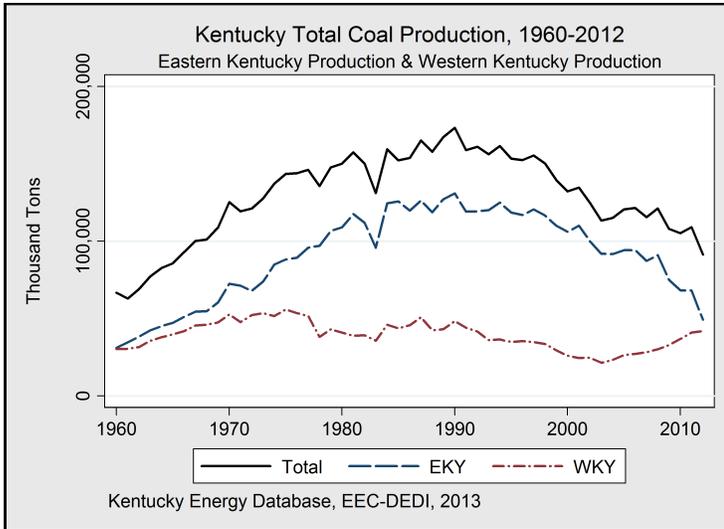


Region	Tons	1 Year Change
Total	91,407,310	-16.3%
Eastern Kentucky	49,363,960	-27.6%
Western Kentucky	42,043,350	+2.5%

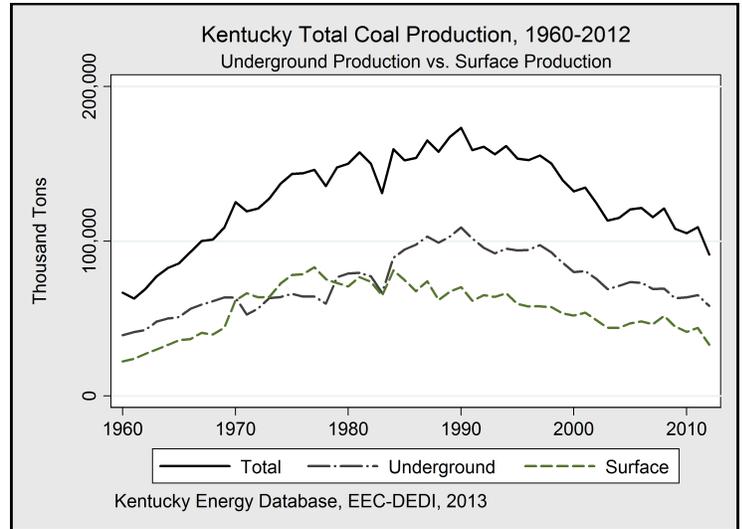
Eastern Kentucky has on average represented 75 percent of annual coal production over the last 35 years. During 2012, the region represented 54 percent of statewide production.

Mine Type	Tons	1 Year Change
Total	91,407,310	-16.3%
Underground	58,278,720	-10.6%
Surface	33,128,590	-24.7%

Following the Surface Mining Control and Reclamation Act of 1977 (SMCRA), annual coal production in Kentucky has been consistently led by underground operations.

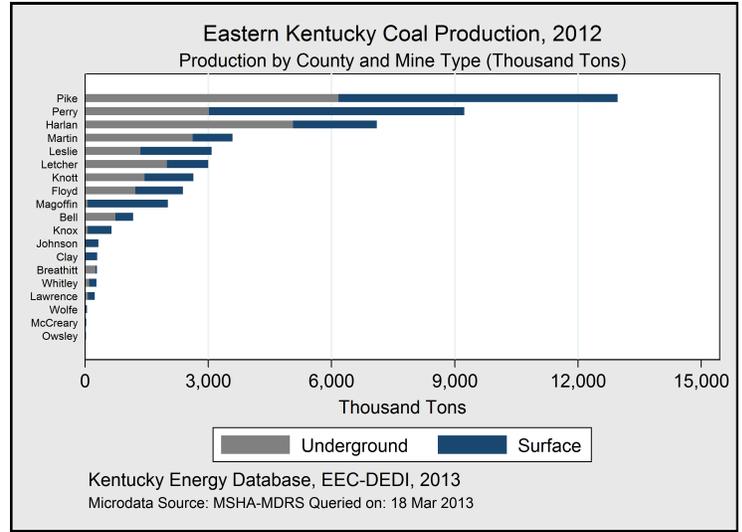
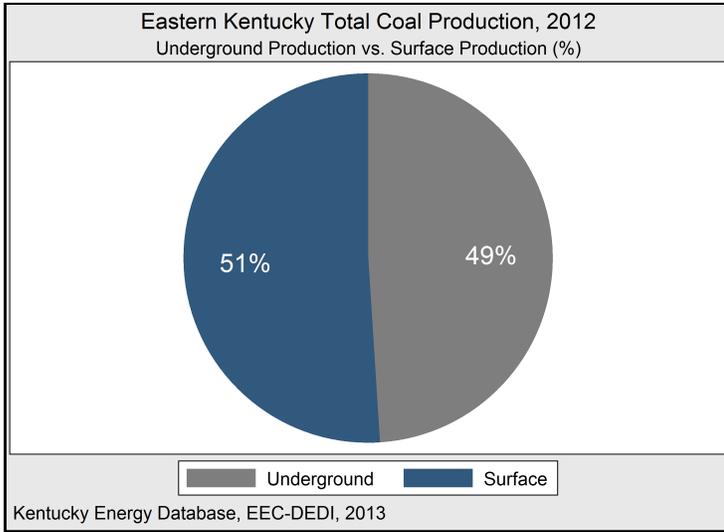


The two Coalfields of Kentucky produced 91.4 million tons of coal in 2012. For the year, the coal mining counties of Eastern Kentucky remained the largest concentration of production, representing 54 percent of statewide tonnage. Coal mined in Western Kentucky topped 42 million tons, and represented 46 percent of total production. Overall, the statewide trend in coal production has been downward since 1990. However, during the last 3 months of 2012, the rate of production in Western Kentucky was greater than in Eastern Kentucky for the first time since 1960.



Coal production in Kentucky was led by underground mines in 2012. Accounting for 58 million tons and 64 percent of total production, underground output decreased by 10.6 percent compared with 2011. Surface mine operations, which generated 33 million tons of coal, decreased production by 24.7 percent relative to 2011. The decreases in production of both underground and surface operations during 2012 were concentrated most-heavily in the coal mining counties of Eastern Kentucky.

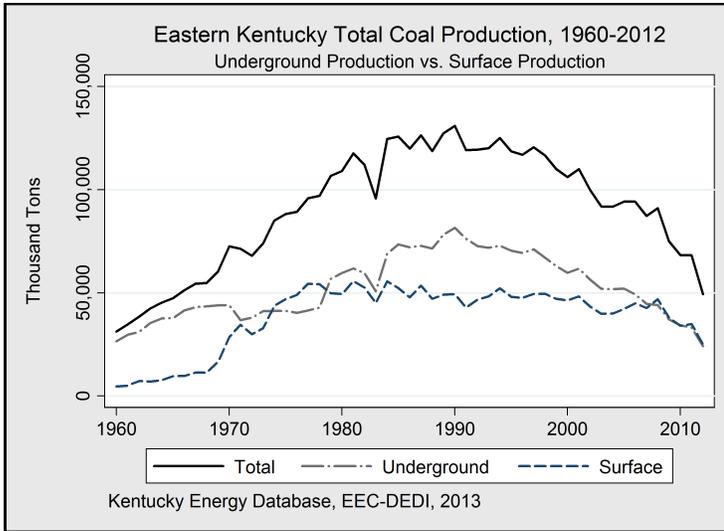
Eastern Kentucky Coal Production



Mine Type	Tons	1 Year Change
Total	49,363,960	-27.6%
Surface	25,176,650	-27.8%
Underground	24,187,310	-27.3%

County*	Tons	1 Year Change
Pike	12,931,200	-17.9%
Perry	9,231,478	-30.1%
Harlan	7,034,754	-28.1%
Martin	3,587,476	-36.0%
Leslie	3,008,930	-30.7%
Letcher	2,979,510	-36.1%
Knott	2,641,000	-45.1%
Floyd	2,382,712	-18.1%
Magoffin	2,015,308	-31.9%
Bell	1,161,442	-26.0%
Knox	565,092	45.5%
Johnson	327,683	41.2%
Clay	293,829	-23.0%
Breathitt	287,783	-65.5%
Whitley	263,881	-50.2%
Lawrence	234,628	189.6%
Wolfe	39,315	+ ∞ %
McCreary	31,744	+ ∞ %
Owsley	26,647	-61.3%
Laurel	12,627	+ ∞ %
Rockcastle	4,930	+ ∞ %
Elliott	2,396	-94.9%
Other / Multiple	299,595	NA

Approximately 9,500 people were directly employed by coal mines in Eastern Kentucky in 2012. Direct coal mine employment was highest in Pike County during the year.

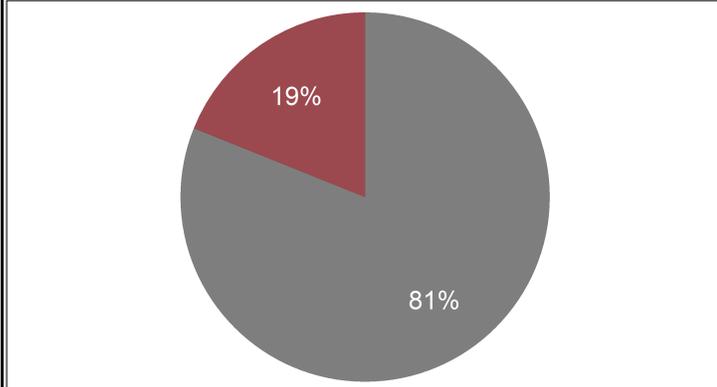


The Coalfield of Eastern Kentucky, part of the Central Appalachian Basin, contains deposits of bituminous coal characterized by high heat content and frequently with low sulfur content. Eastern Kentucky coal production decreased in 2012 by 27.6 percent to 49.4 million tons—the lowest level since 1965—as production slowed at both underground and surface mines. Moreover, coal production in Eastern Kentucky has declined by 53.5 percent since the year 2000, and by 62.3 percent since peaking in 1990 at 131 million tons.

Pike County remained the largest coal producing county in Eastern Kentucky during 2012, but is no longer the largest coal producing county in Kentucky. Union County of Western Kentucky produced 543,700 more tons than Pike County in 2012 to become the largest coal producing county in the Commonwealth.

Western Kentucky Coal Production

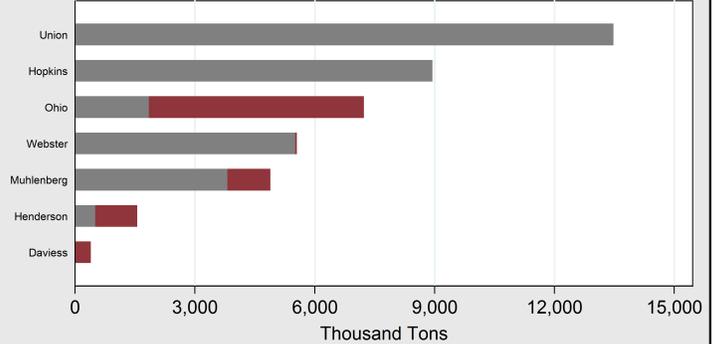
Western Kentucky Total Coal Production, 2012
Underground Production vs. Surface Production (%)



Legend: Underground (Grey), Surface (Red)

Kentucky Energy Database, EEC-DEDI, 2013

Western Kentucky Coal Production, 2012
Production by County and Mine Type (Thousand Tons)



Legend: Underground (Grey), Surface (Red)

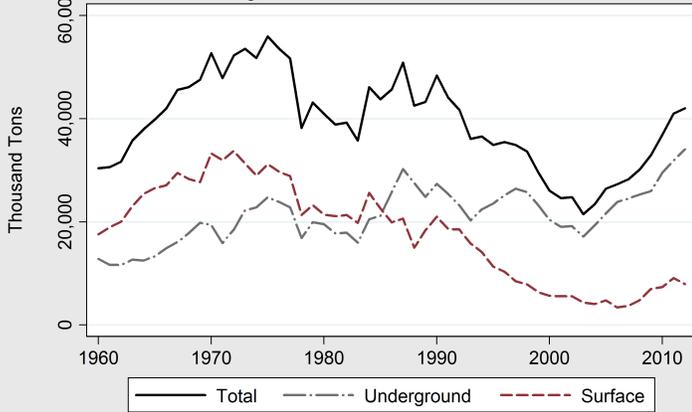
Kentucky Energy Database, EEC-DEDI, 2013
Microdata Source: MSHA-MDRS Queried on: 18 Mar 2013

Mine Type	Tons	1 Year Change
Total	42,043,350	+2.5%
Underground	34,091,410	+6.9%
Surface	7,951,940	-12.7%

More than 4,500 people were directly employed by coal mines in Western Kentucky in 2012. Direct coal mine employment was highest in Union County during the year.

County	Tons	1 Year Change
Union	13,474,900	+9.3%
Hopkins	8,945,605	+1.8%
Ohio	7,231,326	+30.5%
Webster	5,550,427	-3.1%
Muhlenberg	4,887,921	-14.9%
Henderson	1,558,006	-36.9%
Daviess	395,164	-2.5%

Western Kentucky Total Coal Production, 1960-2012
Underground Production vs. Surface Production

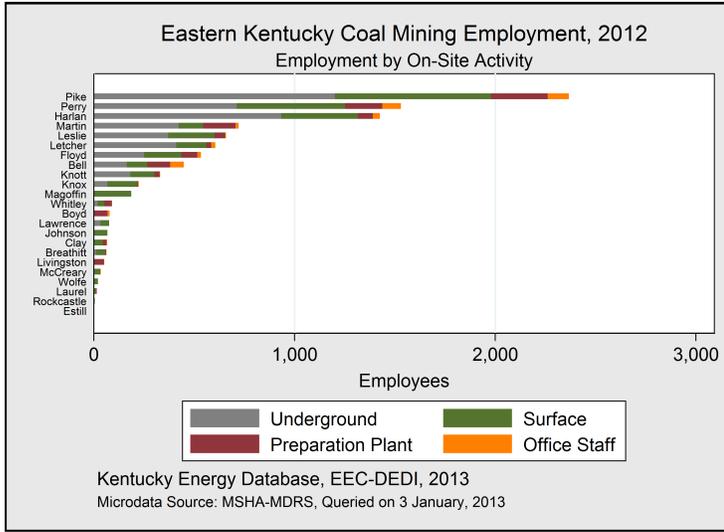


Kentucky Energy Database, EEC-DEDI, 2013

Coal produced in Western Kentucky comes from the Illinois Basin, and typically has a moderately high heat content and high sulfur content. Western Kentucky coal production increased by 2.5 percent from 2011 to more than 42 million tons, with 81 percent of total regional production coming from underground operations. The increase in regional production was led by rising output from Union and Ohio Counties. During 2012, Union County surpassed traditional leader Pike County of Eastern Kentucky to become the largest coal producing county in Kentucky.

Since 2002, underground mine development in Western Kentucky counties has resulted in increasing production for the region. Also, the topographic location of economically accessible coal seams in Western Kentucky differs from deposits in Eastern Kentucky. The gentle topography and basal structure of the Western Kentucky coalfield limits surface-accessible coal to the outer margin of the basin, and helps explain why surface mining has declined and underground mining has increased in the region since 1988.

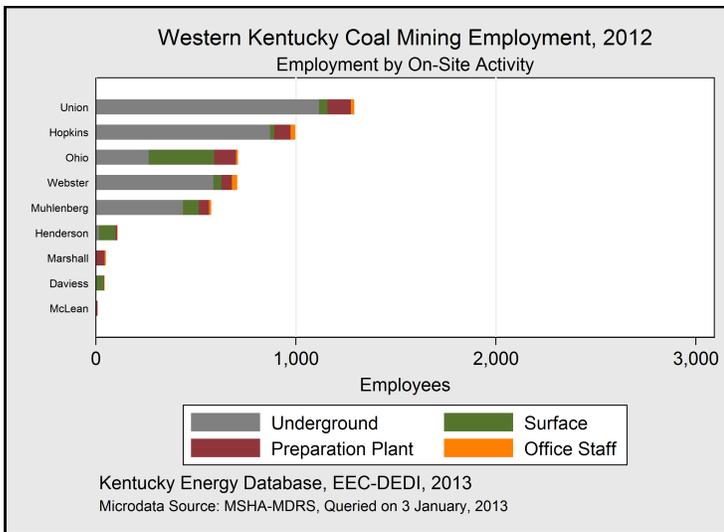
Coal Mine Employment, 2012



Eastern Kentucky Coal Mine Employment, 2012		
Mine Type	Employees	1 Year Change
Total	9,556	-29.7%
Underground	4,782	-25.3%
Surface	3,242	-37.8%
Preparation Plant	1,148	-24.3%
Office	384	-17.1%

In 2012, coal mines in Eastern Kentucky on average employed 9,556 workers full-time. The majority of direct coal mine employment in Eastern Kentucky was concentrated at underground mine sites. Compared with 2011, average coal mine employment in the Eastern Coalfield decreased by 29.7%, a reduction of 4,038 full-time jobs.

During 2012, mines operating in Pike County represented the largest concentration of coal mine employment in Kentucky, averaging 2,316 on-site employees. Pike County also represented approximately 25 percent of coal mine employment in the Eastern Coalfield.

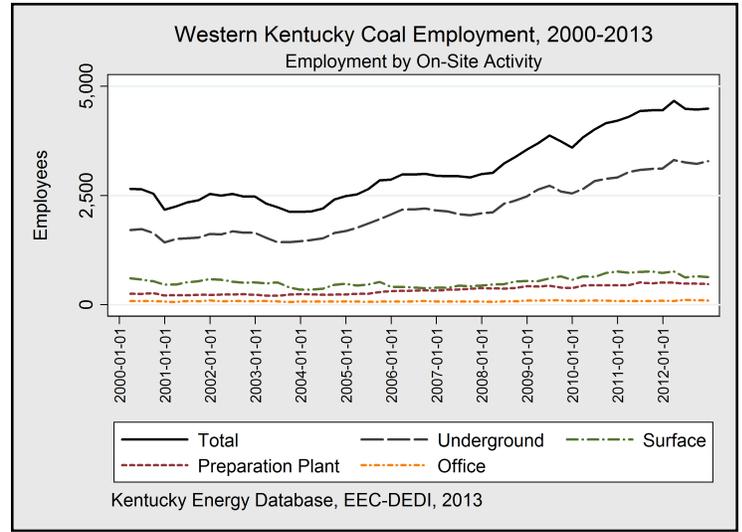
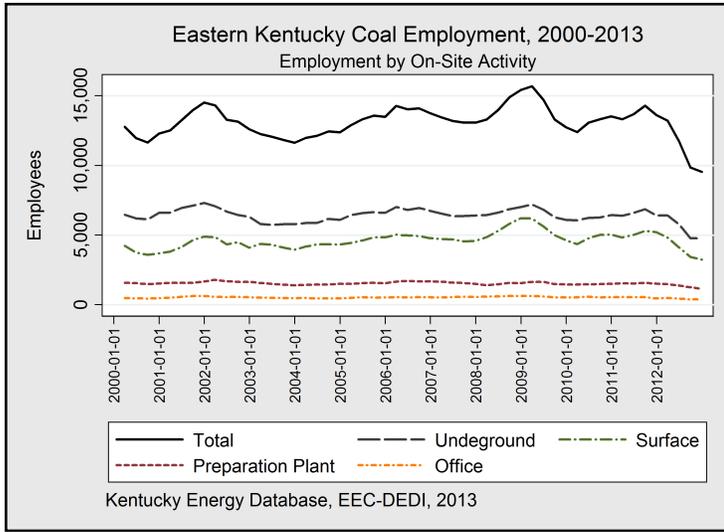


Western Kentucky Coal Mine Employment, 2012		
Mine Type	Employees	1 Year Change
Total	4,543	~0%
Underground	3,286	5.3%
Surface	634	-13.0%
Preparation Plant	524	-7.3%
Office	99	6.5%

Coal mines in Western Kentucky on average employed 4,543 full-time workers in 2012. The majority of direct coal mine employment in Western Kentucky was concentrated at underground mine sites during the year. Compared with 2011, average coal mine employment in the Western Coalfield increased marginally, with a gain of 35 full-time jobs.

Mines operating in Union County during 2012 represented the largest source of coal mine employment in the Western Coalfield of Kentucky, averaging 1,292 on-site employees.

Coal Mine Employment, 2012



EKY Counties	Employment	2012 Change
All	9,540	-29.9%
Pike	2,316	-28.0%
Perry	1,530	-27.9%
Harlan	1,367	-37.1%
Martin	721	-30.2%
Leslie	605	-29.5%
Letcher	583	-34.2%
Floyd	530	-24.1%
Bell	448	-23.7%
Knott	330	-63.2%
Magoffin	186	-47.9%
Knox	112	-24.8%
Boyd	78	+4%
Lawrence	76	+171.4%
Johnson	67	-8.2%
Clay	66	+34.7%
Breathitt	62	-68.4%
McCreary	35	+400%
Whitley	31	-81.5%
Wolfe	20	+100%
Laurel	14	+250%

WKY Counties	Employment	2012 Change
All	4,543	~0.0%
Union	1,292	-0.5%
Hopkins	997	+11.1%
Ohio	710	+28.6%
Webster	671	-6.8%
Muhlenberg	576	-4.6%
Henderson	108	-60.7%
Livingston	52	-8.8%
Marshall	50	-3.8%
Daviess	43	+4.9%
McLean	8	-27.3%

Description	Employment	2012 Change
State Total	14,083	-4,028 -22.2%
Underground	7,959	-1,470 -15.4%
Surface	3,786	-2,160 -34.8%
Preparation Plant	1,666	-415 -20.0%
Office	482	-74 -13.3%

Coal mine layoffs in Kentucky during 2012 were concentrated in Eastern Kentucky, where on-site employment decreased by 29.9 percent from 13,608 in 2011 to only 9,540 in 2012, a loss of 4,028 employees. The decrease in direct employment at surface mine operations in Eastern Kentucky alone represented more than half of the statewide decline in mining employment between 2011 and 2012.

In Western Kentucky there were 4,543 persons employed at coal mines during 2012, approximately the same number as were employed in 2011.

Overall, employment at Kentucky coal mines fell by over 22 percent from 18,111 in December, 2011, to an average of 14,083 in December, 2012, a loss of 4,028 employees. However, the statewide decrease in mining employment during 2012 was entirely linked to decreased mining employment in the coal mining counties of Eastern Kentucky.

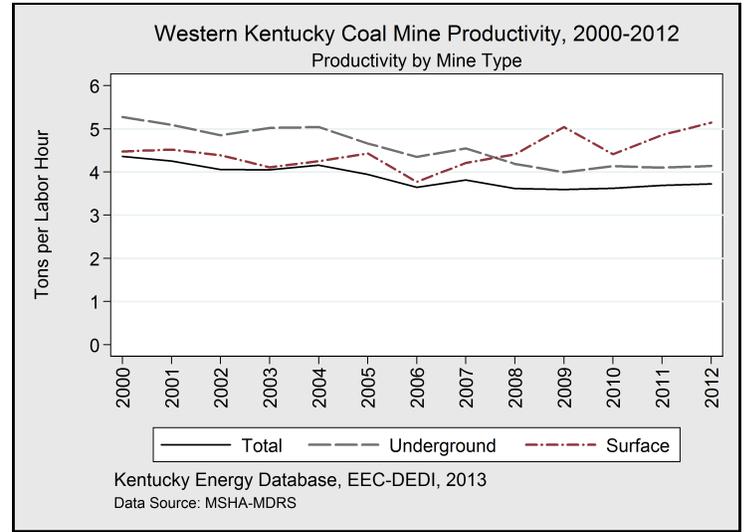
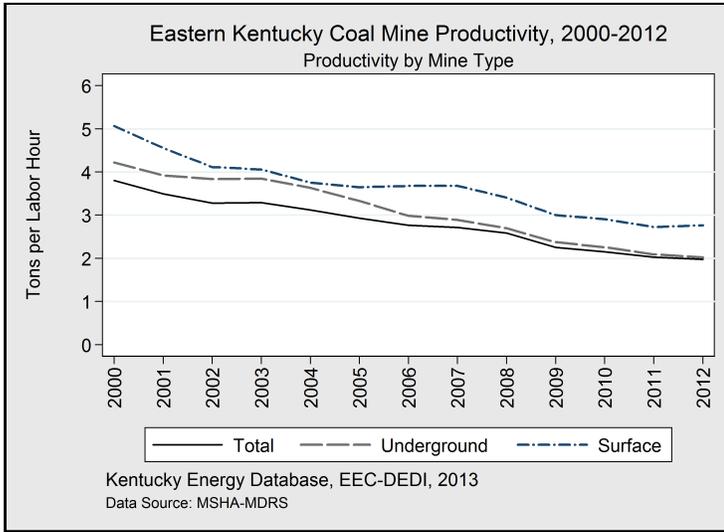
Coal Mine Employment, 2012

Region & County	Direct Employment at Coal Mines	Underground Miners	Surface Miners	Preparation Plant Workers	Mine Office Staff	Percent of Total Employment [†]
Kentucky	14,083	7,959	3,786	1,666	482	0.8%
Eastern Kentucky	9,540	4,772	3,240	1,191	385	5.3%
Pike	2,366	1,201	778	282	105	9.9%
Perry	1,530	712	540	185	93	11.6%
Harlan	1,425	933	381	76	35	17.8%
Martin	721	422	122	161	16	23.7%
Leslie	658	370	232	53	3	31.2%
Letcher	605	410	150	25	20	11.2%
Floyd	533	250	185	81	17	4.6%
Bell	448	164	102	114	68	4.9%
Knott	330	181	120	27	2	11.4%
Knox	224	68	148	4	4	2.9%
Magoffin	186	1	185	-	-	9.2%
Whitley	91	18	34	37	2	0.7%
Boyd	78	-	-	68	10	0.3%
Lawrence	76	32	44	-	-	2.2%
Johnson	68	-	68	-	-	1.1%
Clay	66	-	45	18	3	1.6%
Breathitt	62	10	46	5	1	2.0%
McCreary	35	-	30	1	4	1.2%
Wolfe	20	-	20	-	-	1.6%
Laurel	14	-	10	4	-	0.1%
Western Kentucky	4,543	3,286	634	474	97	3.7%
Union	1,292	1,115	43	117	17	22.2%
Hopkins	997	871	21	81	24	5.5%
Ohio	710	264	327	110	9	8.9%
Webster	707	587	41	52	27	24.1%
Muhlenberg	576	435	79	51	11	6.6%
Henderson	108	14	84	9	1	0.5%
Livingston	52	-	-	50	2	1.8%
Marshall	50	-	-	44	6	0.5%
Daviess	43	-	39	2	2	0.1%
McLean	8	-	-	8	-	0.4%

[†]Sources: MSHA Mine Data Retrieval System (MSHA-MDRS) & Bureau of Labor Statistics (BLS) *Quarterly Census of Employment and Wages [June 2012 County Estimates]*.

Note: The direct mining employment classification includes persons employed at a Kentucky coal mine and/or registered MSHA permitted mine site, but does not include direct employment involving coal transportation by trucks, trains, or barges nor the administrative or professional employees of coal companies located in Kentucky metropolitan areas such as Lexington and Louisville. These employment figures also do not include the many private services or indirect employment induced by the economic activity of coal extraction, preparation, and sales.

Coal Mine Productivity



Region	Mine Type	Tons/Hour
Eastern Kentucky	All*	1.97
	Underground	2.02
	Surface	2.76

Region	Mine Type	Tons/Hour
Western Kentucky	All*	3.73
	Underground	4.13
	Surface	5.14

Total Labor Hours*	Underground	Surface
24,854,616	11,960,237	9,022,405

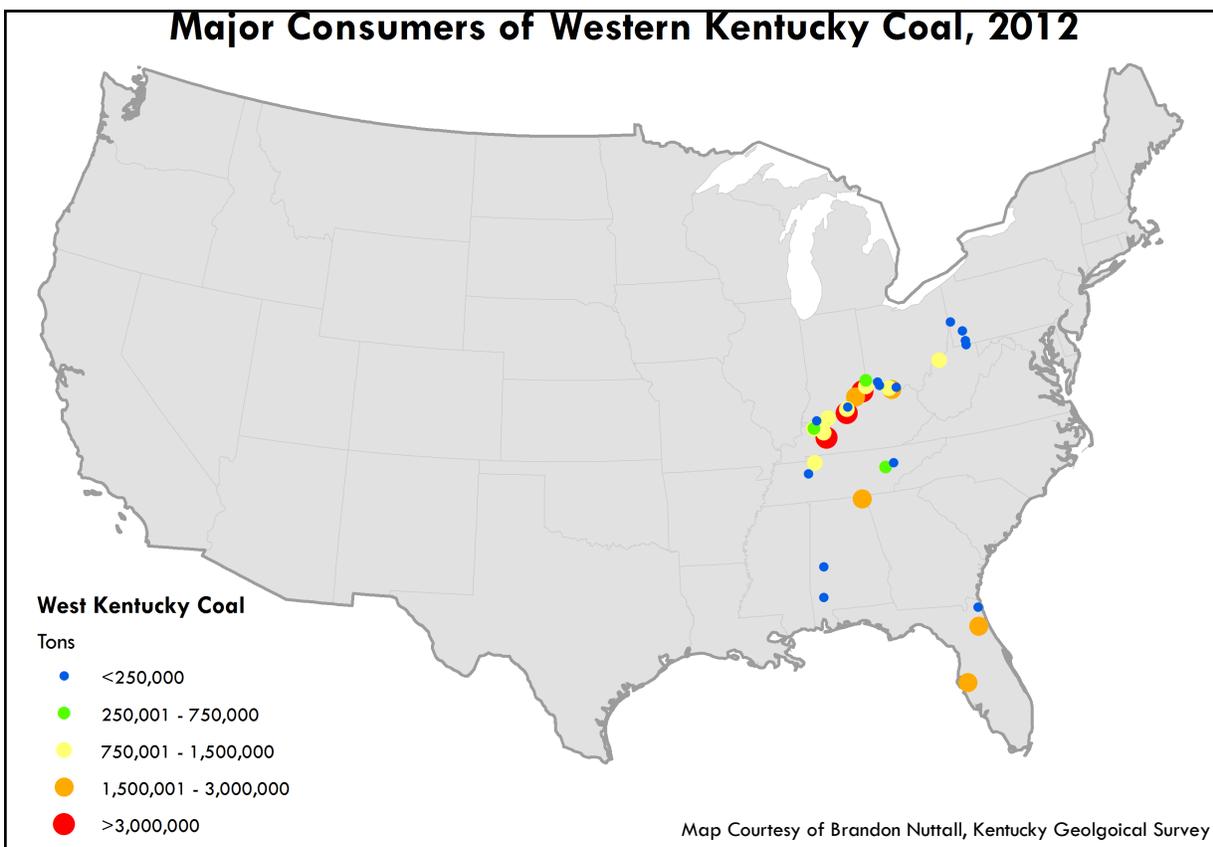
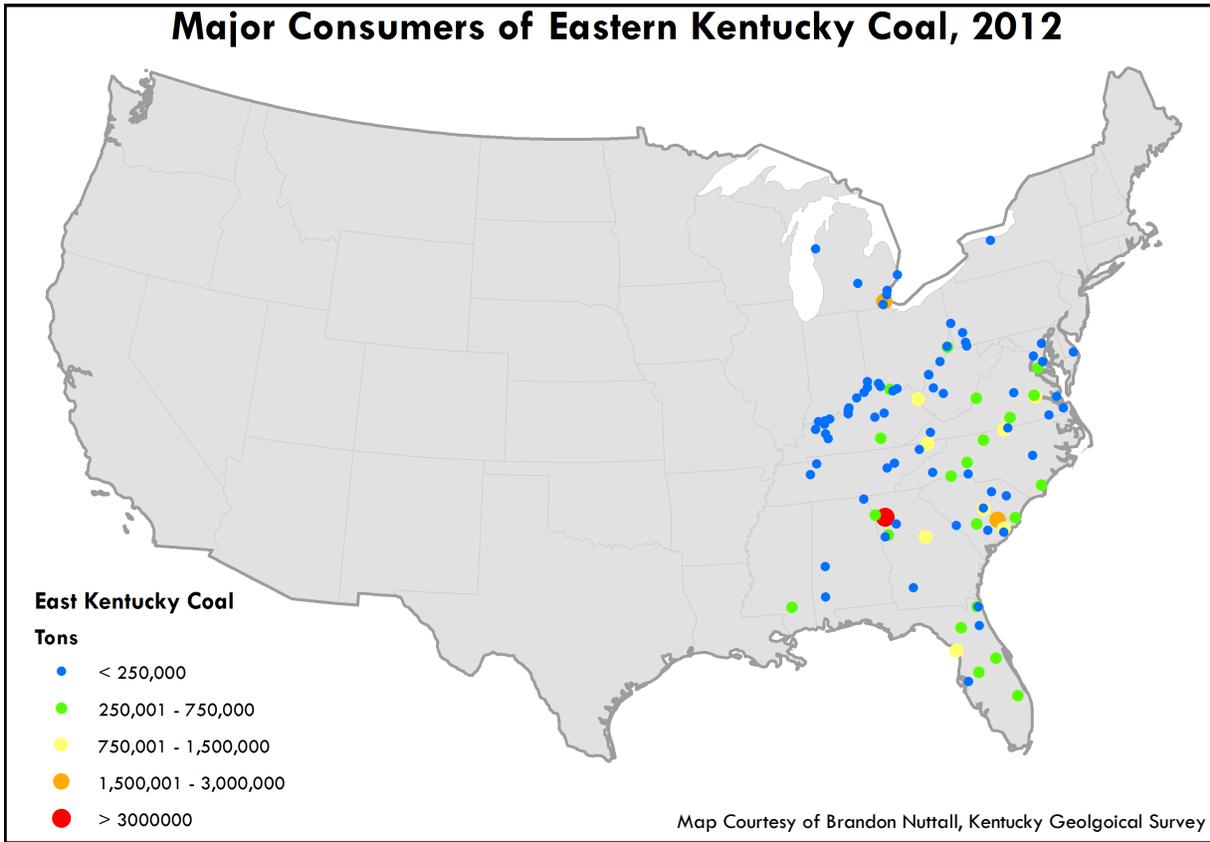
Total Labor Hours	Underground	Surface
11,284,377	8,236,953	1,546,744

Source: U.S. Department of Labor, Mine Safety and Health Administration, "Quarterly Mine Employment and Coal Production Report" (MSHA Form 7000-02). *Coal mine productivity is defined as total coal production (tons) divided by total employee labor hours. Total labor hours include the combination by mine site of direct miner hours, preparation plant hours, and on-site office employee hours. Productivity values in the tables above represent the summation of production divided by the summation of labor hours, separated by region and by mine type. As of publication, processed data for productivity as displayed above was only available for the years 2000-2012. Historical and current reporting on mine productivity statewide and nationwide indicates a trend of declining productivity across all Coalfields in the United States since the year 2000, further illustrated by Eastern Kentucky and Western Kentucky.

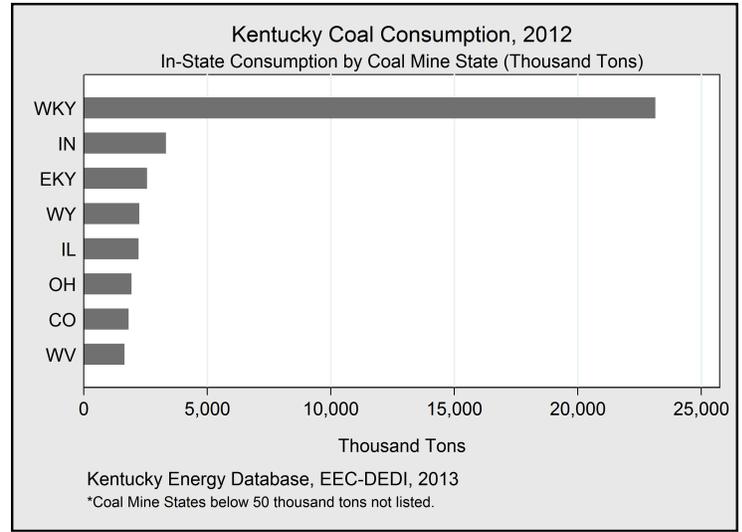
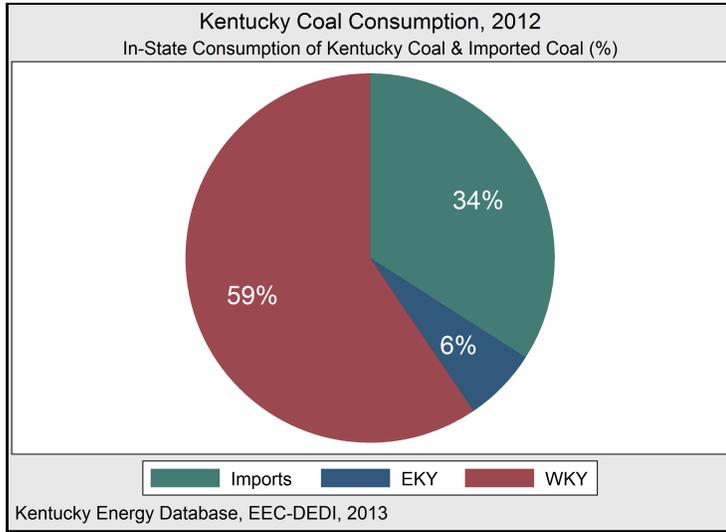
Coal mining productivity in both Coalfields of Kentucky has been falling over the last decade. Yet, the decline in Eastern Kentucky productivity during this time has been substantial. At an average of 1.97 tons per labor hour in 2012, productivity in the Eastern Coalfield is down 48 percent from the year 2000. Moreover, productivity for both surface mines and underground mines in Eastern Kentucky has been falling consistently over the last twelve years. However, surface mines in Eastern Kentucky remained the most efficient form of coal mining in the region, approximately 36 percent more productive than underground mines in 2012.

At 3.73 tons per labor hour in 2012, average coal mining productivity in Western Kentucky was 89 percent higher than Eastern Kentucky. Interestingly, while surface mine productivity was 5.14 tons per hour in 2012, surface mine production accounted for only 19 percent of regional production; meaning, Western Kentucky productivity was most influenced by underground operations. Additionally, though overall coal mine productivity in Western Kentucky has fallen by 15 percent since 2000, productivity in the Coalfield has held relatively stable over the past 5 years.

Kentucky Coal Consumers, 2012

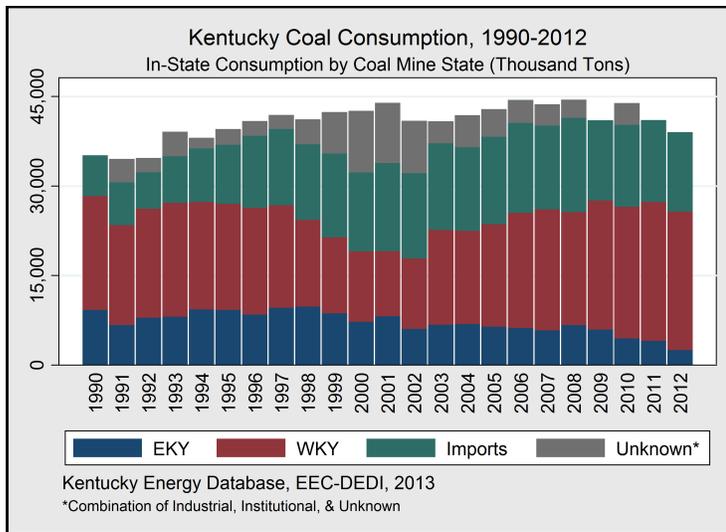


Kentucky In-State Coal Consumption



Origin of Coal	Thousand Tons	Percentage
Total	38,993	100%
Western Kentucky	23,195	59%
Imports	13,284	34%
Eastern Kentucky	2,514	6%

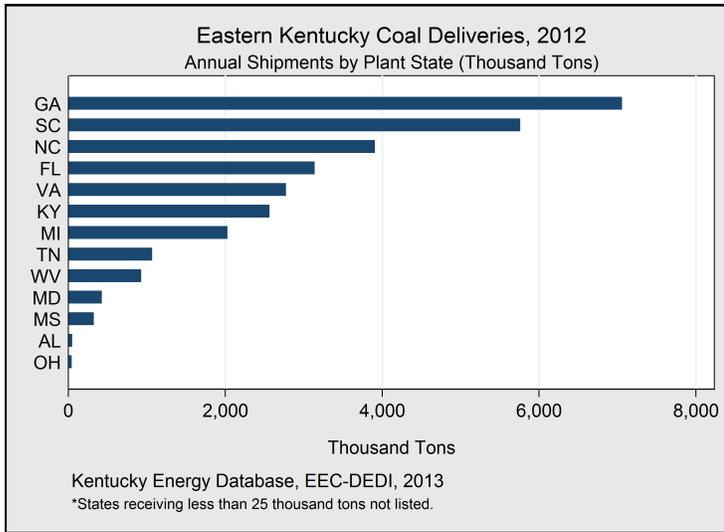
Imported Coal	Thousand Tons	Percentage
Total Imports	13,284	100%
Indiana	3,334	25.1%
Wyoming	2,251	16.9%
Illinois	2,224	16.7%
Ohio	1,937	14.6%
Colorado	1,816	13.7%
West Virginia	1,654	12.5%
Utah	37	0.3%
Alabama	31	0.2%
Tennessee	0.7	<0.1%



Coal consumption in Kentucky decreased by 5 percent in 2012 to 38.9 million tons. Coal mined in Western Kentucky was by far the largest source of coal used within the Commonwealth, representing 59 percent of coal consumption. Conversely, coal from Eastern Kentucky represented 6 percent of the coal consumed in Kentucky in 2012. Coal was also imported from nine different states and used within Kentucky during 2012, and combined represented 13.2 million tons and 34 percent of consumption.

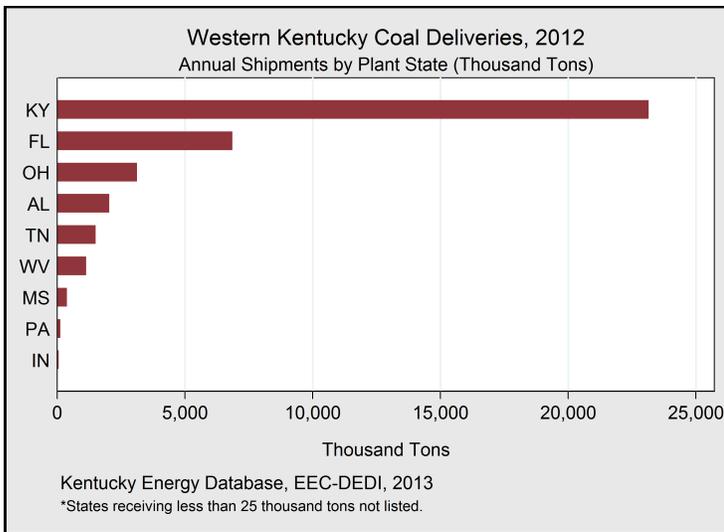
The market variables affecting the use of imported coal in Kentucky primarily involve price, heat content of a particular coal, and the sulfur content of a particular coal. For electrical power generation, electric utilities must balance the financial and environmental costs of these factors when purchasing coal. As a result, electric utilities, municipalities, and power producers blend coal from in-state and out-of-state sources so as to maintain a diversified fuel resource while complying with environmental regulations. Since 1990, electric utilities in Kentucky have increasingly used higher sulfur coal, a trend accelerated through the installation of sulfur dioxide scrubbers on many coal-fired generators throughout the state. (Nationally, many other electric utilities have elected to install similar environmental control systems, thereby altering traditional coal sourcing requirements). The net result of these decisions in Kentucky, specifically, has been an increasing reliance on Western Kentucky coal supplies, and a diminishing demand for Eastern Kentucky coal. Additionally, the relatively low price of coal from several western states has also increased imports for electric power generation.

Kentucky Coal Deliveries



Known shipments of steam coal from Eastern Kentucky to power plants within the United States decreased by 39 percent in 2012 to 30.1 million tons. The largest markets for Eastern Kentucky coal are traditionally located in the Southeast, and were led by Georgia, South Carolina, and North Carolina during the year. Overall, coal mined in Eastern Kentucky was shipped to 16 different states in 2012.

Eastern Kentucky Coal Deliveries, 2012		
Destination	Thousand Tons	Percentage
Total	30,104	100.0%
Georgia	7,058	23.4%
South Carolina	5,761	19.1%
North Carolina	3,908	13.0%
Florida	3,141	10.4%
Virginia	2,775	9.2%
Kentucky	2,514	8.4%
Michigan	2,028	6.7%
Tennessee	1,056	3.5%
West Virginia	933	3.1%
Maryland	426	1.4%
Mississippi	326	1.1%
Ohio	89	0.3%
Alabama	45	0.1%
Delaware	22	0.1%
Indiana	15	<0.1%
New York	7	<0.1%



Known shipments of steam coal from Western Kentucky to power plants within the United States decreased by 0.4 percent in 2012 to 38.4 million tons. The largest market for Western Kentucky coal is consistently Kentucky, which represented 60.3 percent of Western Kentucky coal deliveries during the year. Overall, coal mined in Western Kentucky was shipped to 9 different states in 2012.

Western Kentucky Coal Deliveries, 2012		
Destination	Thousand Tons	Percentage
Total	38,458	100.0%
Kentucky	23,195	60.3%
Florida	6,852	17.8%
Ohio	3,079	8.0%
Alabama	2,039	5.3%
Tennessee	1,517	3.9%
West Virginia	1,214	3.2%
Mississippi	380	1.0%
Pennsylvania	123	0.3%
Indiana	59	0.2%

Kentucky Coal Deliveries, 2012		
Origin	Thousand Tons	1 Year Change
Total	68,562	-22%
WKY	38,458	-0.4%
EKY	30,104	-39%

For the first time since records began in 1990, annual shipments of steam coal from Western Kentucky were greater than shipments from Eastern Kentucky.

Eastern Kentucky Coal Deliveries

Eastern Kentucky Coal Deliveries to Electric Power Plants, 2012 [†]				
Rank	Plant ID	Power Plant Name	State	Annual Deliveries (Tons)
1	703	Bowen	GA	4,498,881
2	1733	Monroe	MI	1,705,989
3	130	Cross	SC	1,529,466
4	2712	Roxboro	NC	1,438,520
5	709	Harlee Branch	GA	1,397,226
6	3297	Wateree	SC	1,318,819
7	628	Crystal River	FL	1,229,283
8	3298	Williams	SC	1,154,451
9	1353	Big Sandy	KY	954,905
10	3797	Chesterfield	VA	916,608
11	50481	Tennessee Eastman Operations	TN	866,427
12	2727	Marshall	NC	730,040
13	7210	Cope	SC	672,100
14	1384	Cooper	KY	638,019
15	7213	Clover	VA	613,925
16	8042	Belews Creek	NC	558,474
17	6249	Winyah	SC	553,388
18	564	Stanton Energy Center	FL	537,808
19	2713	L V Sutton	NC	455,021
20	10672	Cedar Bay Generating Company LP	FL	436,839
21	50900	Covington Facility	VA	433,715
22	1573	Morgantown Generating Plant	MD	402,447
23	708	Hammond	GA	385,189
24	676	C D McIntosh Jr	FL	327,655
25	6061	R D Morrow	MS	326,053
26	50976	Indiantown Cogeneration LP	FL	321,688
27	728	Yates	GA	317,702
28	3948	Mitchell	WV	289,313
29	54081	Spruance Genco LLC	VA	283,207
30	663	Deerhaven Generating Station	FL	282,507
31	2721	Cliffside	NC	261,652
32	6041	H L Spurlock	KY	251,159
33	3809	Yorktown	VA	240,442
34	3935	John E Amos	WV	237,557
35	6264	Mountaineer	WV	224,474
36	7737	Cogen South	SC	219,184
37	6250	Mayo	NC	179,432
38	56808	Virginia City Hybrid Energy Center	VA	176,317
39	6018	East Bend	KY	174,613
40	50398	International Paper Savanna Mill	GA	167,714
41	1374	Elmer Smith	KY	138,943
42	2718	G G Allen	NC	137,955
43	1740	River Rouge	MI	128,057
44	2706	Asheville	NC	124,461

[†] Known shipments to electric power plants within the United States.

Eastern Kentucky Coal Deliveries

Eastern Kentucky Coal Deliveries to Electric Power Plants, 2012†				
Rank	Plant ID	Power Plant Name	State	Annual Deliveries (Tons)
45	1356	Ghent	KY	122,862
46	1745	Trenton Channel	MI	122,525
47	6052	Wansley	GA	121,540
48	3280	Canadys Steam	SC	109,867
49	8848	Ceredo	WV	105,998
50	52151	International Paper Eastover Facility	SC	102,242
51	3396	Bull Run	TN	100,699
52	1385	Dale	KY	95,056
53	6639	R D Green	KY	88,596
54	54101	Georgia Pacific Cedar Springs	GA	84,558
55	50806	Florence Mill	SC	76,635
56	3796	Bremo Bluff	VA	71,613
57	3399	Cumberland	TN	66,045
58	2830	Walter C Beckjord	OH	61,994
59	1743	St Clair	MI	61,360
60	56	Charles R Lowman	AL	44,940
61	1381	Kenneth C Coleman	KY	39,661
62	3938	Philip Sporn	WV	39,035
63	54004	Dublin Mill	GA	31,840
64	3947	Kammer	WV	26,357
65	602	Brandon Shores	MD	22,881
66	3405	John Sevier	TN	22,614
67	2709	HF Lee Plant	NC	22,542
68	594	Indian River Generating Station	DE	21,955
69	727	Mitchell	GA	21,931
70	3788	Potomac River	VA	20,319
71	6031	Killen Station	OH	18,810
72	6166	Rockport	IN	15,395
73	710	Jack McDonough	GA	12,963
74	3251	H B Robinson	SC	12,555
75	3295	Urquhart	SC	12,259
76	10361	Savannah River Mill	GA	10,445
77	3803	Chesapeake	VA	10,372
78	1355	E W Brown	KY	10,324
79	3936	Kanawha River	WV	10,208
80	2832	Miami Fort	OH	8,568
81	10774	Southampton Power Station	VA	7,998
82	54358	International Paper Augusta Mill	GA	7,973
83	10025	Kodak Park Site	NY	7,437
84	10328	T B Simon Power Plant	MI	5,892
85	8827	IMT Transfer	FL	4,883
86	50835	TES Filer City Station	MI	3,641
87	1571	Chalk Point LLC	MD	1,101
88	1723	J R Whiting	MI	473

† Known shipments to electric power plants within the United States.

Western Kentucky Coal Deliveries

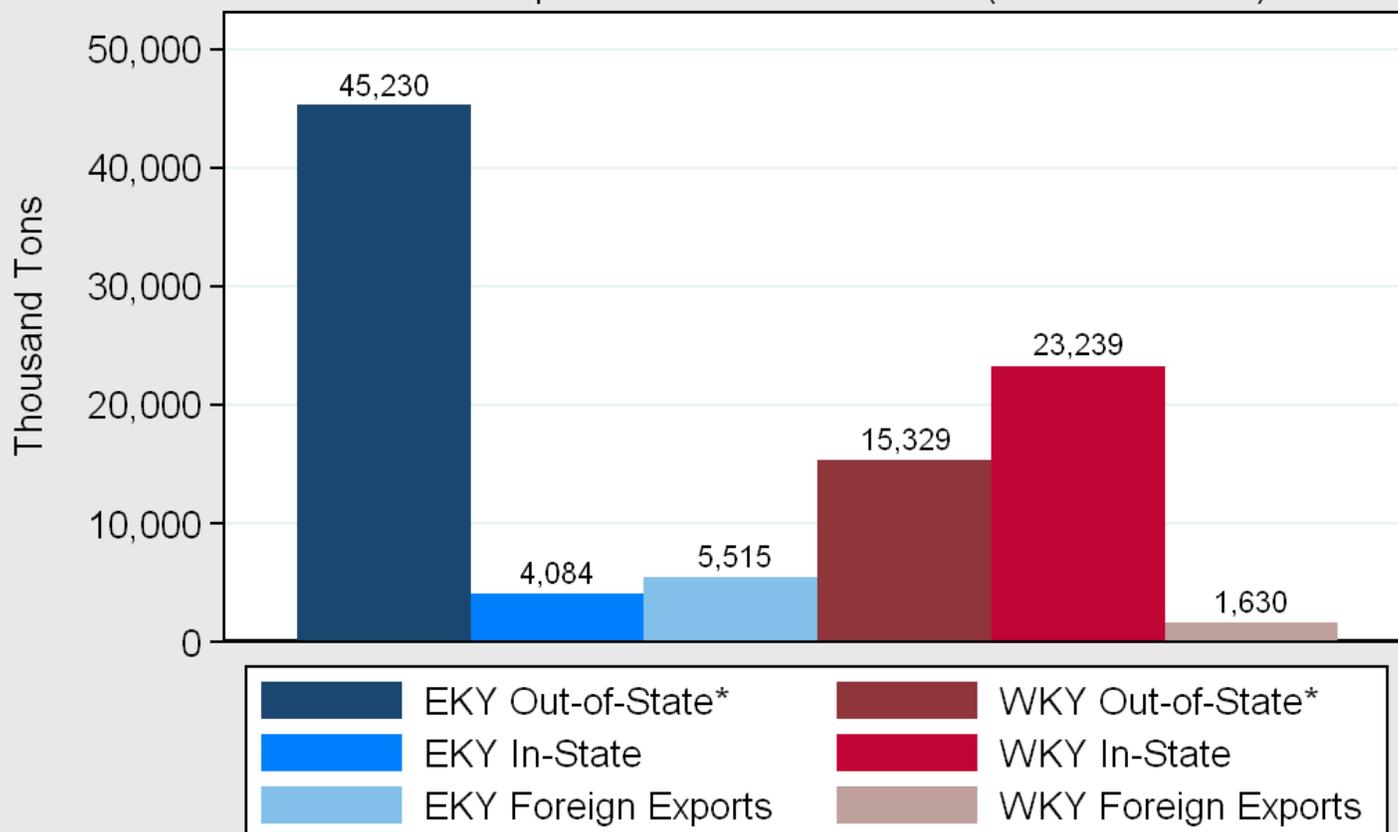
Western Kentucky Coal Deliveries to Electric Power Plants, 2012†				
Rank	Plant ID	Power Plant Name	State	Annual Deliveries (Tons)
1	1378	Paradise	KY	5,124,939
2	1356	Ghent	KY	3,854,869
3	1364	Mill Creek	KY	3,383,070
4	136	Seminole	FL	2,598,144
5	6071	Trimble County	KY	2,552,287
6	645	Big Bend	FL	2,221,957
7	50	Widows Creek	AL	2,002,956
8	2850	J M Stuart	OH	1,981,161
9	1381	Kenneth C Coleman	KY	1,400,181
10	1363	Cane Run	KY	1,284,840
11	8816	Davant Transfer	FL	1,196,755
12	6041	H L Spurlock	KY	1,140,877
13	6823	D B Wilson	KY	1,117,847
14	1374	Elmer Smith	KY	1,039,732
15	6018	East Bend	KY	911,676
16	3399	Cumberland	TN	857,919
17	6004	FirstEnergy Pleasants Power Station	WV	817,246
18	1382	HMP&L Station Two Henderson	KY	784,457
19	8827	IMT Transfer	FL	700,824
20	6639	R D Green	KY	599,893
21	3407	Kingston	TN	561,887
22	2832	Miami Fort	OH	487,448
23	8851	Associated Terminals	MS	380,428
24	6031	Killen Station	OH	248,092
25	3943	FirstEnergy Fort Martin Power Station	WV	208,160
26	6019	W H Zimmer	OH	201,187
27	8848	Ceredo	WV	188,106
28	2830	Walter C Beckjord	OH	161,145
29	8829	US United Bulk Terminal	FL	103,929
30	3179	Hatfields Ferry Power Station	PA	82,299
31	3396	Bull Run	TN	55,542
32	3406	Johnsonville	TN	41,660
33	1008	R Gallagher	IN	40,692
34	6094	FirstEnergy Bruce Mansfield	PA	38,521
35	667	Northside Generating Station	FL	30,000
36	10	Greene County	AL	23,704
37	6705	Warrick	IN	17,990
38	56	Charles R Lowman	AL	12,506
39	3181	FirstEnergy Mitchell Power Station	PA	2,132

† Known shipments to electric power plants within the United States.

Kentucky Coal Distribution, 2011

Kentucky Coal Distribution, 2011

Annual Exports & In-State Deliveries (Thousand Tons)



Kentucky Energy Database, EEC-DEDI, 2012

Coal Distribution by Destination, 2011

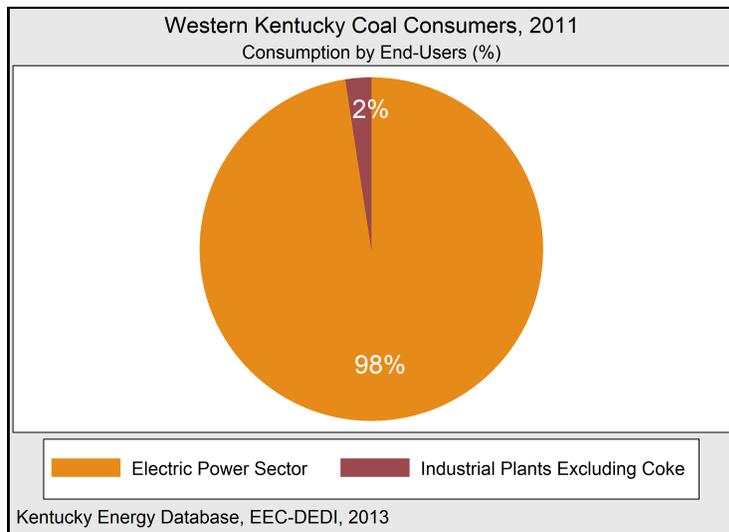
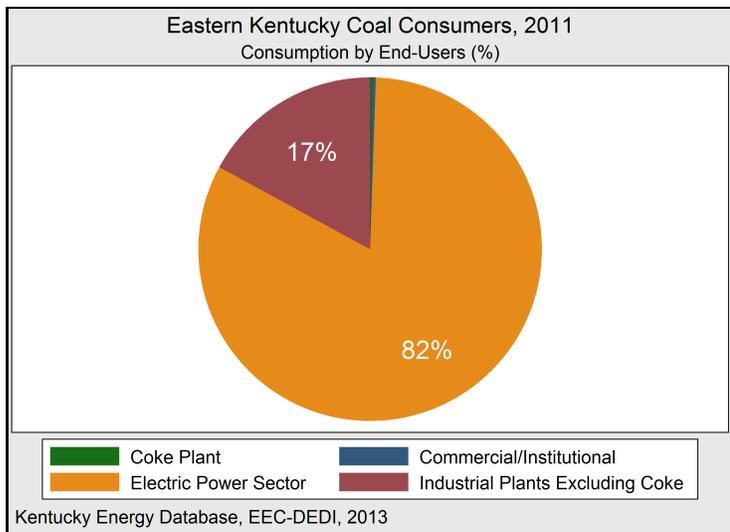
Coal & Destination	Thousand Tons	Percentage
Total Distribution	95,027	100%
EKY Out-of-State*	45,230	48%
WKY In-State	23,239	24%
WKY Out-of-State*	15,329	16%
EKY Foreign Exports	5,515	6%
EKY In-State	4,084	4%
WKY Foreign Exports	1,630	2%

*Totals labeled "Out-of-State" represent shipments of coal to consumers within the United States, and may also be considered domestic exports. A difference of approximately 11.2 million tons exists between total production and total distribution in the table above. This gap can be explained by coal stockpiling, lags in data reporting, calendar year parameters, comparison of statistics across multiple data sources, and reporting errors.

The annual distribution of coal mined in Kentucky is a combination of in-state consumers, out-of-state power plants and factories, and foreign exports. Demand from out-of-state consumers has consistently been the largest component of Kentucky coal deliveries since 1990.

In 2011, the largest portion (43%) of Kentucky coal deliveries were domestic exports of Eastern Kentucky coal, involving customers outside of the Commonwealth but within the United States. The next most common destination of Kentucky coal in 2011 was in-state deliveries of coal from Western Kentucky, followed by domestic exports of Western Kentucky coal. Foreign exports of Kentucky coal represent a small percentage of total production, and combined accounted for approximately 8 percent of coal shipments in 2011. In-state consumption of Eastern Kentucky coal was the smallest portion of Kentucky coal deliveries during the year.

Kentucky Coal Distribution, 2011

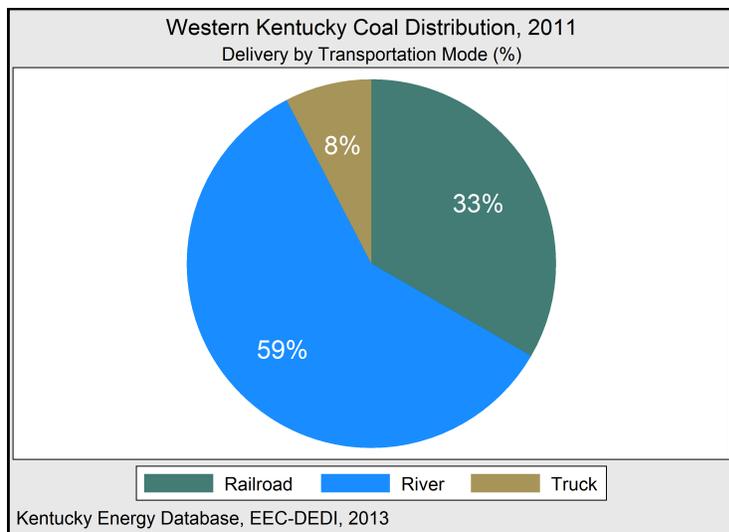
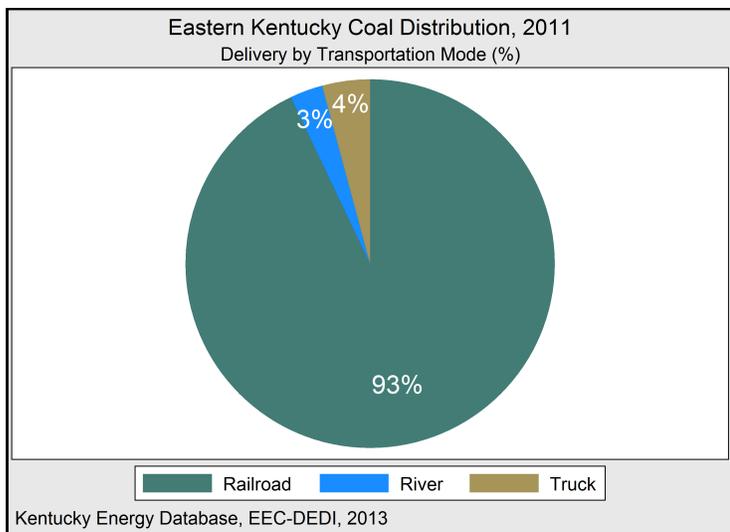


End-User	Tons	Percentage
Electric Power	49,044,344	82%
Industrial	6,239,811	17%
Coke	869,855	<1%
Commercial	394,851	<1%

Source: EIA "Annual Coal Distribution Report" (2012).

End-User	Tons	Percentage
Electric Power	38,137,812	98%
Industrial	1,320,903	2%
Coke	101,421	<1%
Commercial	39,942	<1%

Source: EIA "Annual Coal Distribution Report" (2012).



The vast majority of coal shipped from Eastern Kentucky in 2011 was loaded onto rail cars and delivered to electric power plants in the United States. Industrial facilities were the next largest consumer of Eastern Kentucky coal, and represented 17 percent of demand for the commodity. Coke plant deliveries and demand from commercial/institutional consumers accounted for around one percent of Eastern Kentucky coal distribution during the year.

Due to geography and the accessibility of river ports, the majority of Western Kentucky coal was loaded onto barges and delivered to electric utilities in the United States in 2011. Nearly a third of Western Kentucky coal was transported by rail during the same year, while eight percent was delivered by truck. In 2011, electric power plants represented 98 percent of the demand for Western Kentucky coal.

Induced and Indirect Effects

Direct Benefits

The Kentucky coal industry provides direct benefits in terms of coal severance revenue, jobs, and wages to miners. These direct benefits are as follows:

- Employed 18,850 miners in 2009, with 3,703 in Western Kentucky and 15,147 in Eastern Kentucky.
- Paid wages of \$1.473 billion in 2009, resulting in an average weekly wage of \$1,214 per miner.
- Produced over 107 million tons of coal with an approximate value of \$6.3 billion dollars.
- Severance taxes on FY 2009-2010 coal production were \$241 million with a total of \$270 million being collected (includes some previous year assessments).
- \$97.3 million in coal severance tax receipts were returned to coal-producing counties for infrastructure improvements and economic development projects.
- \$16.9 million in unmined mineral taxes were collected in FY 2009-2010.

Source: Dr. Christopher Jepsen, Associate Director and Dr. Anna Stewart, Economic Analyst, University of Kentucky Gatton College of Business and Economics, Center for Business and Economic Research.

Indirect Benefits

The coal industry provides many benefits to Kentucky in addition to the direct benefits mentioned above. Indirect benefits include new income flowing into the coal industry that is then re-spent creating a multiplier effect. Economic impact models trace the flow of these dollars for new spending in the economy. Economic impact models are not designed to calculate the impact for an existing industry. We can, however, gauge the industries that will receive the greatest impact for any new investment. Below are the top five types of industries that receive the greatest percentage of an indirect impact.

- 20percent of indirect spending would be spent in industries defined as mining coal and support activities for mining. This is essentially intra-industry trade that does show up as new revenue.
- 15 percent would be spent in the transportation industry by rail or truck.
- 14 percent would be spent in professional services industries. These are typically industries such as architectural and industrial engineering, management companies, legal services, financial institutions and other industries that provide services that might not be offered in house.
- 9 percent would be spent in the petroleum industry, natural gas and electric power transmission.
- 9 percent would be spent in industries that sell or maintain commercial equipment and structures used to support the coal industry.

Source: Dr. Christopher Jepsen, Associate Director and Dr. Anna Stewart, Economic Analyst, University of Kentucky Gatton College of Business and Economics, Center for Business and Economic Research.

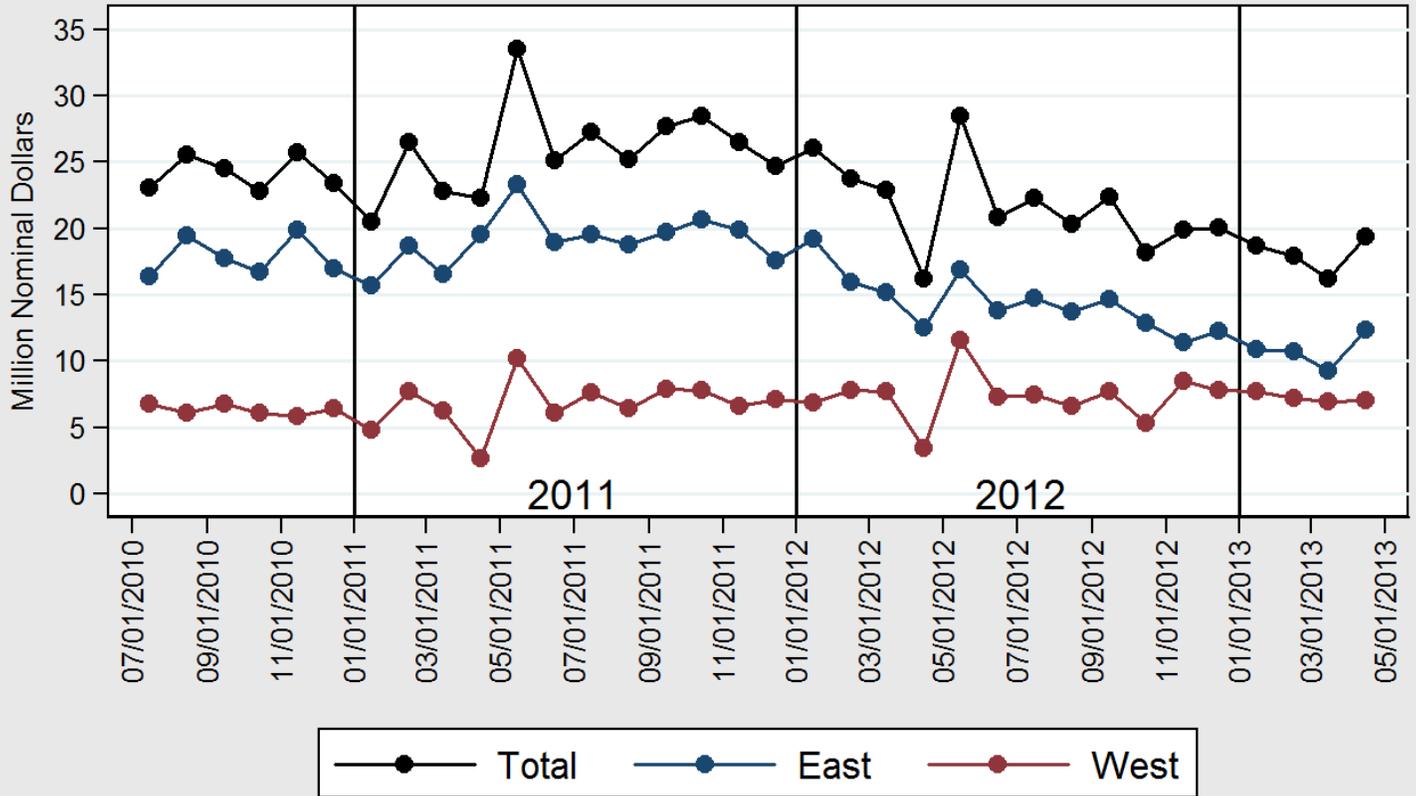
Induced Effects

In addition to indirect effects, induced effects also contribute to the economic impact of new spending in the coal industry in Kentucky. Induced effects occur when money that is received as income by employees and/or owners either at the direct or indirect level is spent on personal expenditures such as household goods and services.

Source: Dr. Christopher Jepsen, Associate Director and Dr. Anna Stewart, Economic Analyst, University of Kentucky Gatton College of Business and Economics, Center for Business and Economic Research.

Kentucky Coal Severance Receipts

Kentucky Coal Severance Tax Revenue by Coalfield and Month
July 1, 2010 to April 30, 2013



Kentucky Energy Database, EEC-DEDI, May 6, 2013
Data Source: Kentucky Department of Revenue

Region	CY 2012 Receipts	1 Year Change
Total	\$261,423,391	-15.81%
Eastern Kentucky	\$173,252,878	-24.34%
Western Kentucky	\$88,157,279	+8.13%

COAL SEVERANCE TAX CALCULATION

A tax of 4.5 percent is levied on the sale price of every ton of coal mined in Kentucky. For example, if a ton of coal mined in Kentucky sells for \$50, then the coal severance tax revenue for the Commonwealth from this sale will be \$2.25.

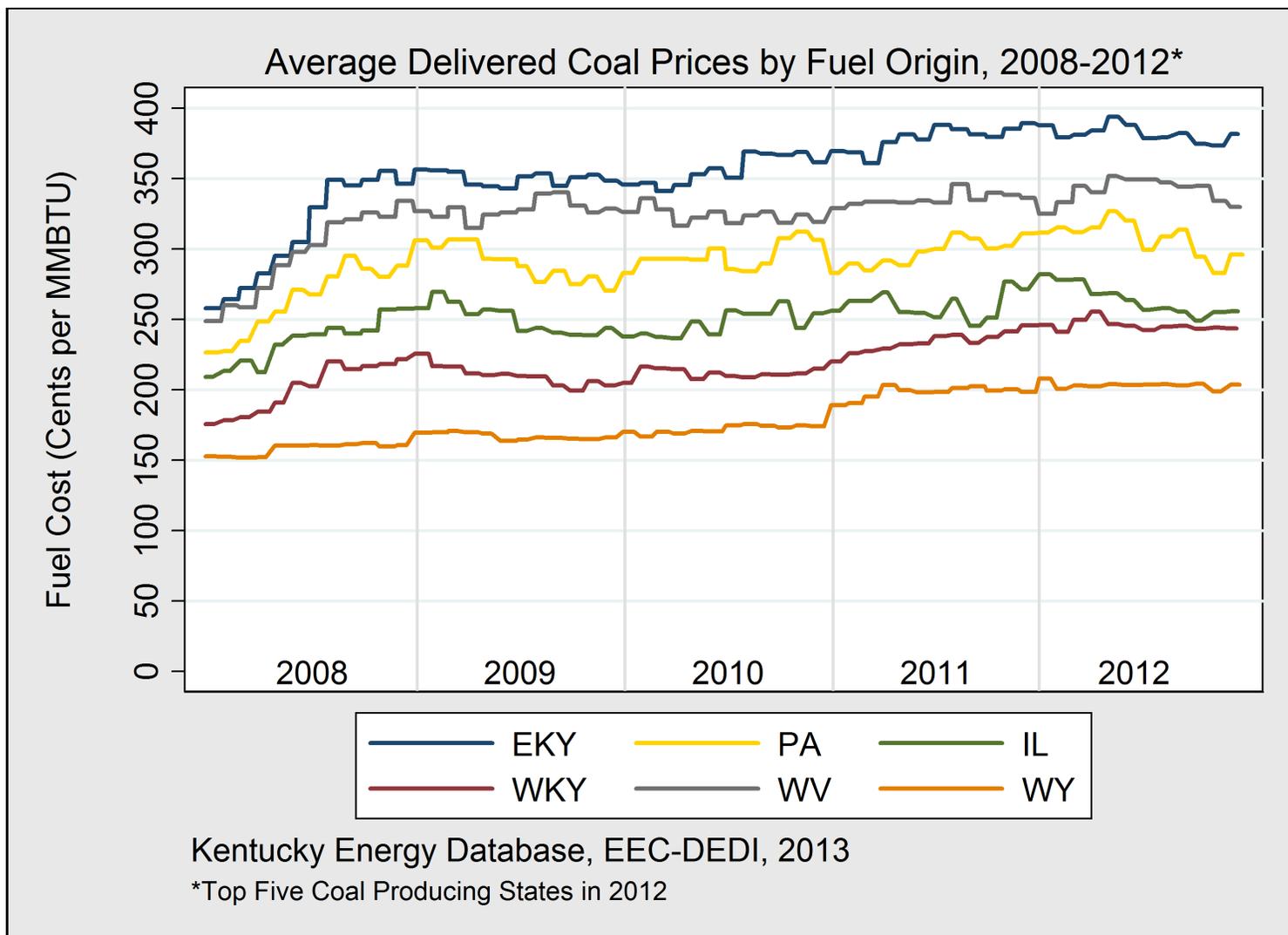
$$(1 \text{ Ton} \times \$50 \times 0.045 = \$2.25).$$

Kentucky coal severance tax revenue varies from month to month depending upon the amount of coal produced and the value of that coal, as illustrated in the graphic above. Slowing coal production in Eastern Kentucky drove down total Kentucky receipts by 15.8 percent from 310.5 million in 2011 to 261.4 million in 2012. Eastern Kentucky coal severance tax receipts decreased by 24 percent while Western Kentucky receipts increased by 8.1 percent.

COAL SEVERANCE TAX PROGRAMS & OUTLAYS

Severance tax revenue generated through the production of coal is distributed to several state budgetary programs including the Kentucky General Fund, the Local Government Economic Assistance Fund (LGEAF), and the Local Government Economic Development Fund (LGEDF).

Delivered Price of Coal by Origin



Origin	\$ per MMBtu (2012)	Since 2008
Eastern Kentucky	3.82	+ 22%
West Virginia	3.40	+ 14%
Pennsylvania	3.06	+ 16%
Illinois	2.64	+ 12%
Western Kentucky	2.46	+ 22%
Wyoming	2.03	+ 28%

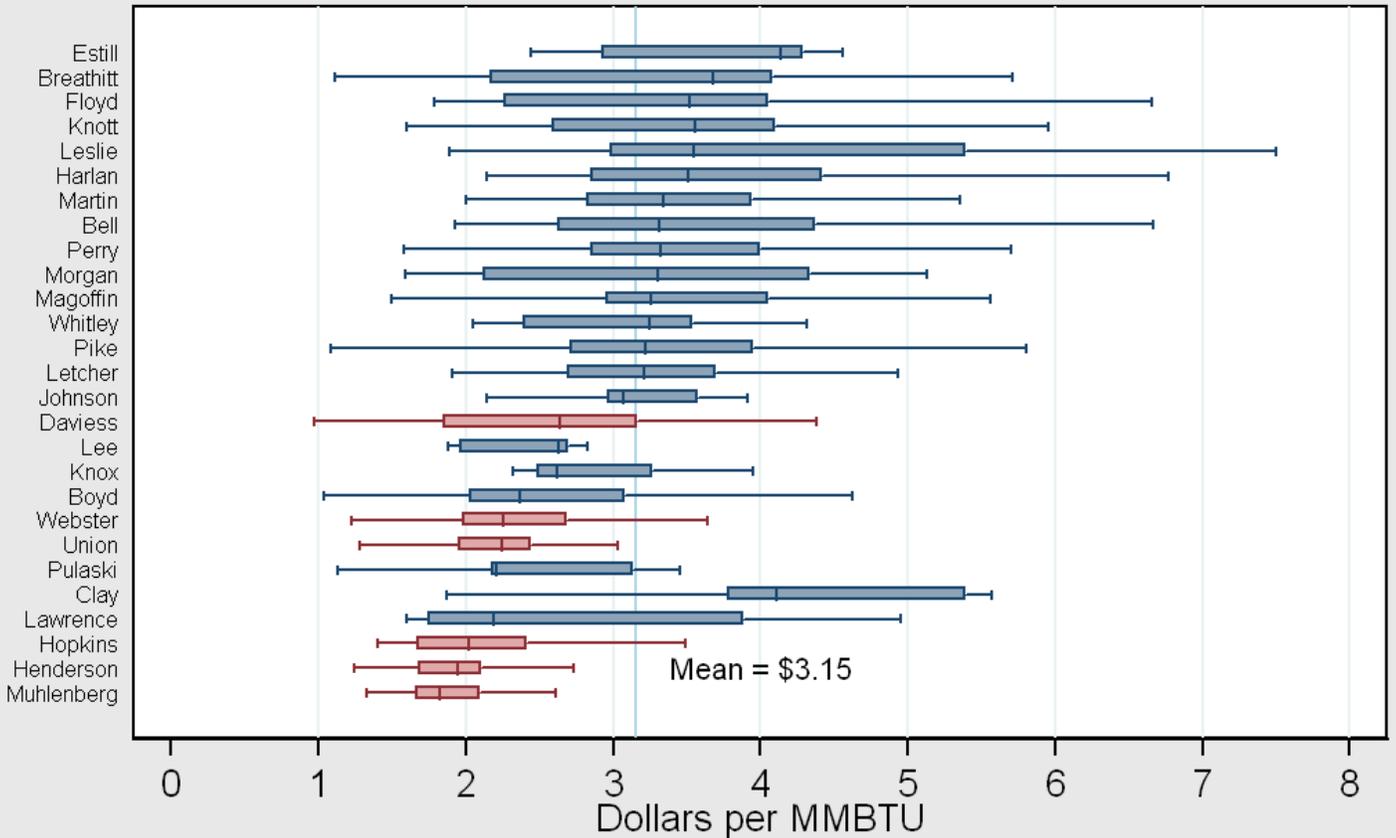
In 2012, Wyoming, West Virginia, Kentucky, Pennsylvania, and Illinois represented 71 percent of coal production in the United States. A group of 20 states accounted for the remaining 29 percent of coal production; yet, no state within this group represented more than 4 percent of national production, individually.

Of the five largest coal-producing states in 2012, coal mined in Eastern Kentucky was on average the most expensive coal delivered to electric utilities in the United States. West Virginia and Pennsylvania, which also produce bituminous coal from the Central Appalachian Basin, supplied the second and third most expensive coal to electric power facilities. Wyoming, which was the nation's largest producer of coal in 2012 and mines sub-bituminous coal in the Powder River Basin, offered the least expensive coal on average to power plants during the year.

Variables such as market demand, coal mine productivity, heat content, sulfur content, spot pricing, and transportation costs all combine to affect the ultimate, delivered cost of any shipment of coal.

Price of Coal by Kentucky County

Delivered Price of Kentucky Coal, 2008-2011
Deliveries to Electric Generating Plants by Coal Mine County



Kentucky Energy Database, EEC-DEDI, 2012 (EIA & MSHA)

Eastern Kentucky Coal Prices, 2011

Range	County	Median (Dollars per MMBtu)
Max	Leslie	5.99
Average	All	3.78
Min	Johnson	3.00

Western Kentucky Coal Prices, 2011

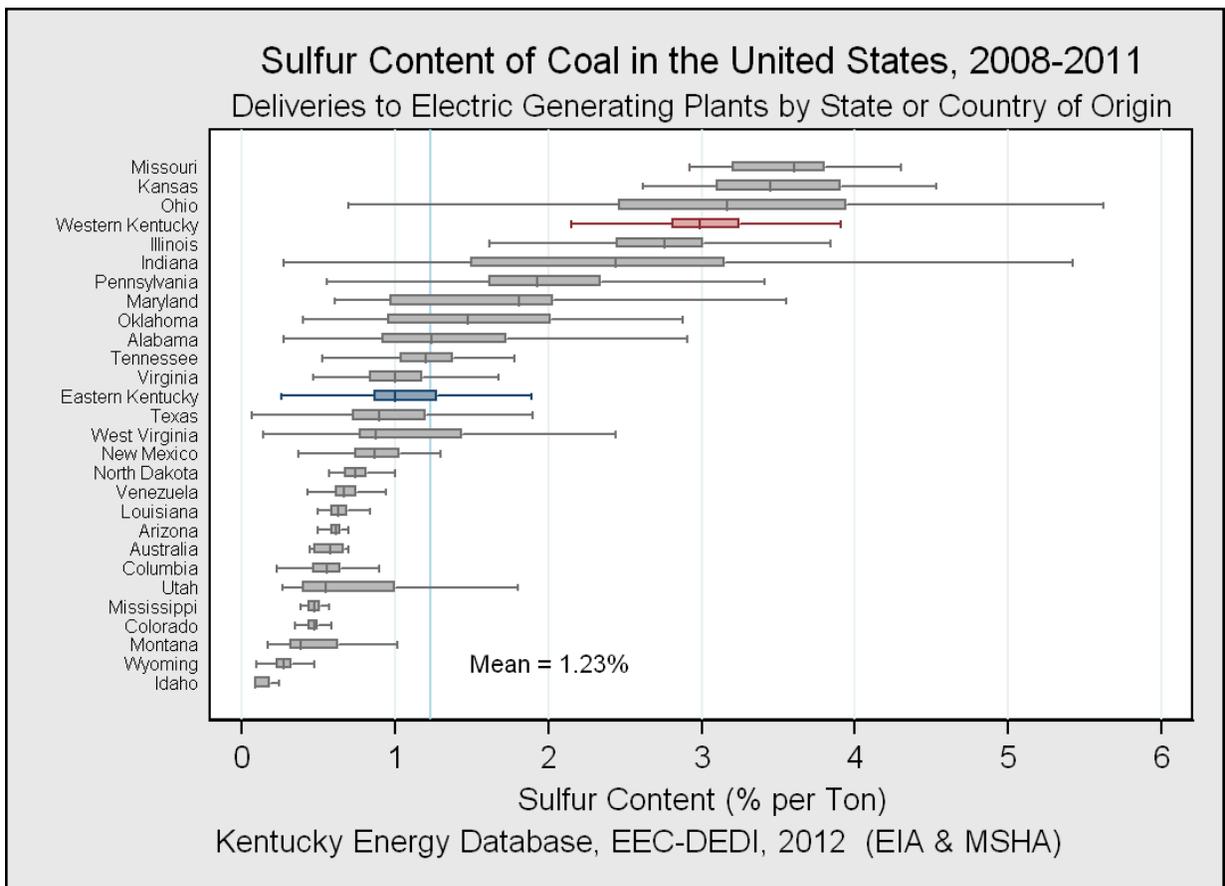
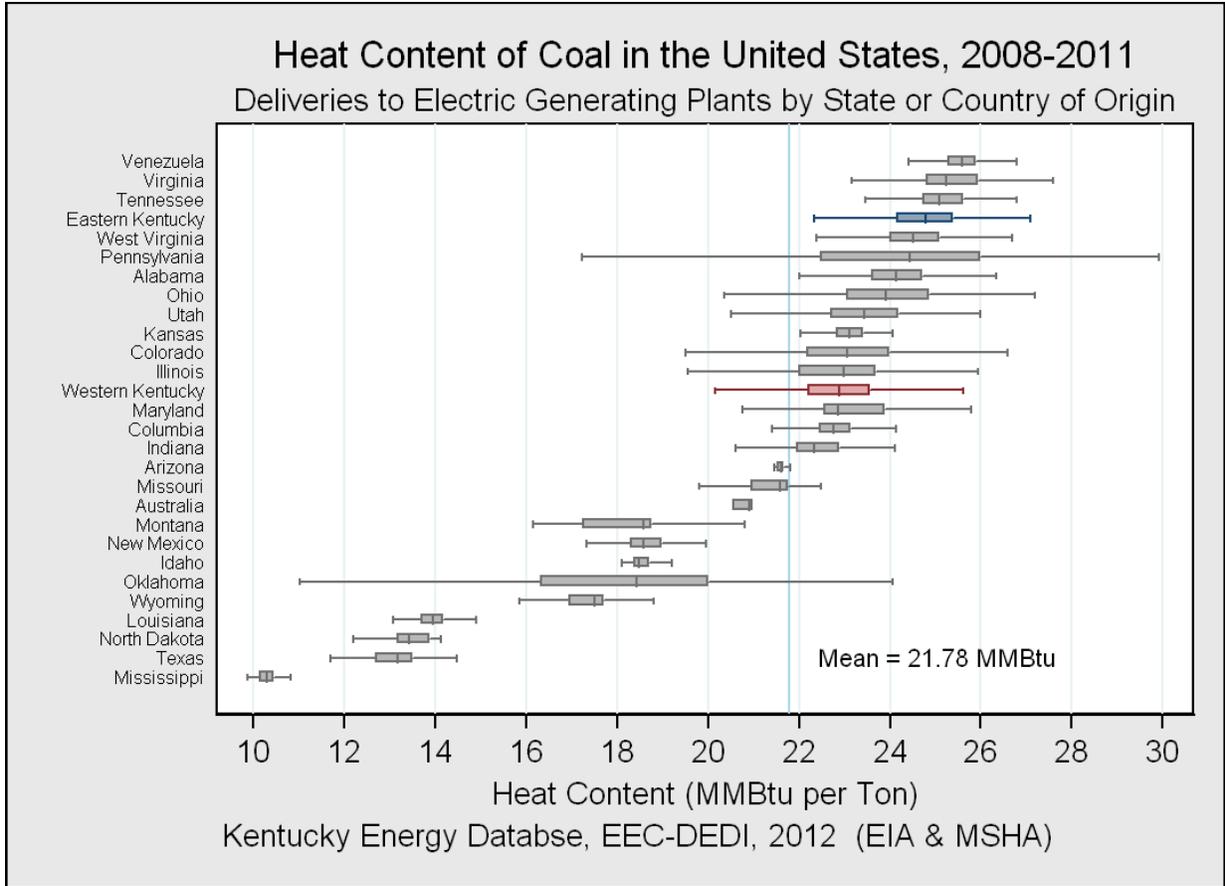
Range	County	Median (Dollars per MMBtu)
Max	Daviess	2.97
Average	All	2.34
Min	Muhlenberg	2.05

The above graphic provides data on the delivery price of coal, after processing, for coal-mining counties in Kentucky for the years 2008 through 2011. However, the table represents median price delivery data for only the year 2011.

Typically, the median delivery price of coal mined in Eastern Kentucky counties is higher than that of coal mined in Western Kentucky counties. The range of prices within a county as well as the difference in prices between counties are a function of several variables such as mine productivity, coal sulfur content, coal heat content (Btu content), coal ash content, terms of a delivery contract, and the transportation costs connected to delivery. Ultimately, the interaction of all these major variables affects the delivery price of any coal available on the market.

The above chart summarizes the range of delivered prices for coal by coal mining county. The whiskers (horizontal lines) on each plot denote the minimum and maximum prices for each county, while the box component represents the 25th percentile through the 75th percentile of price values (or 50percent of the data). The vertical line within the box component marks the median delivered price.

U.S. Market Steam Coal Properties



U.S. Market Steam Coal Properties

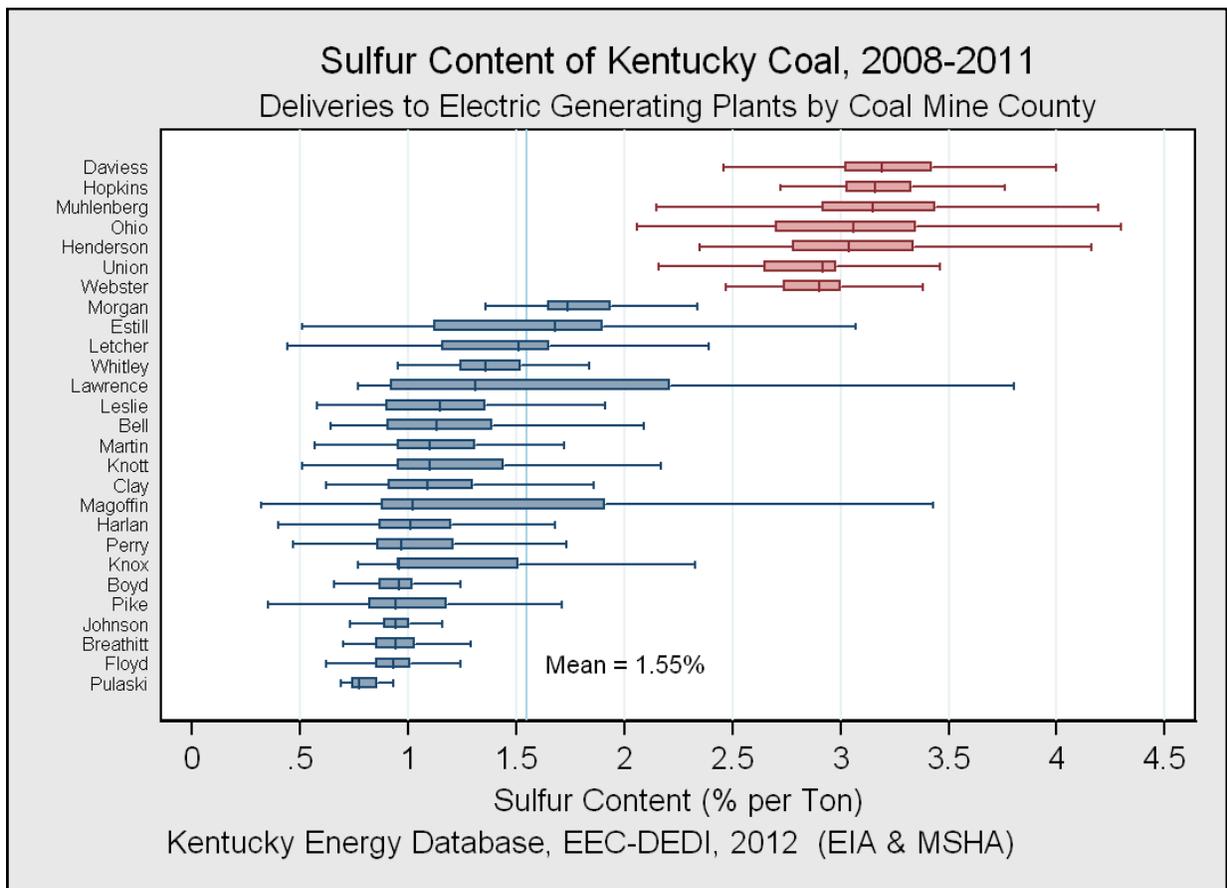
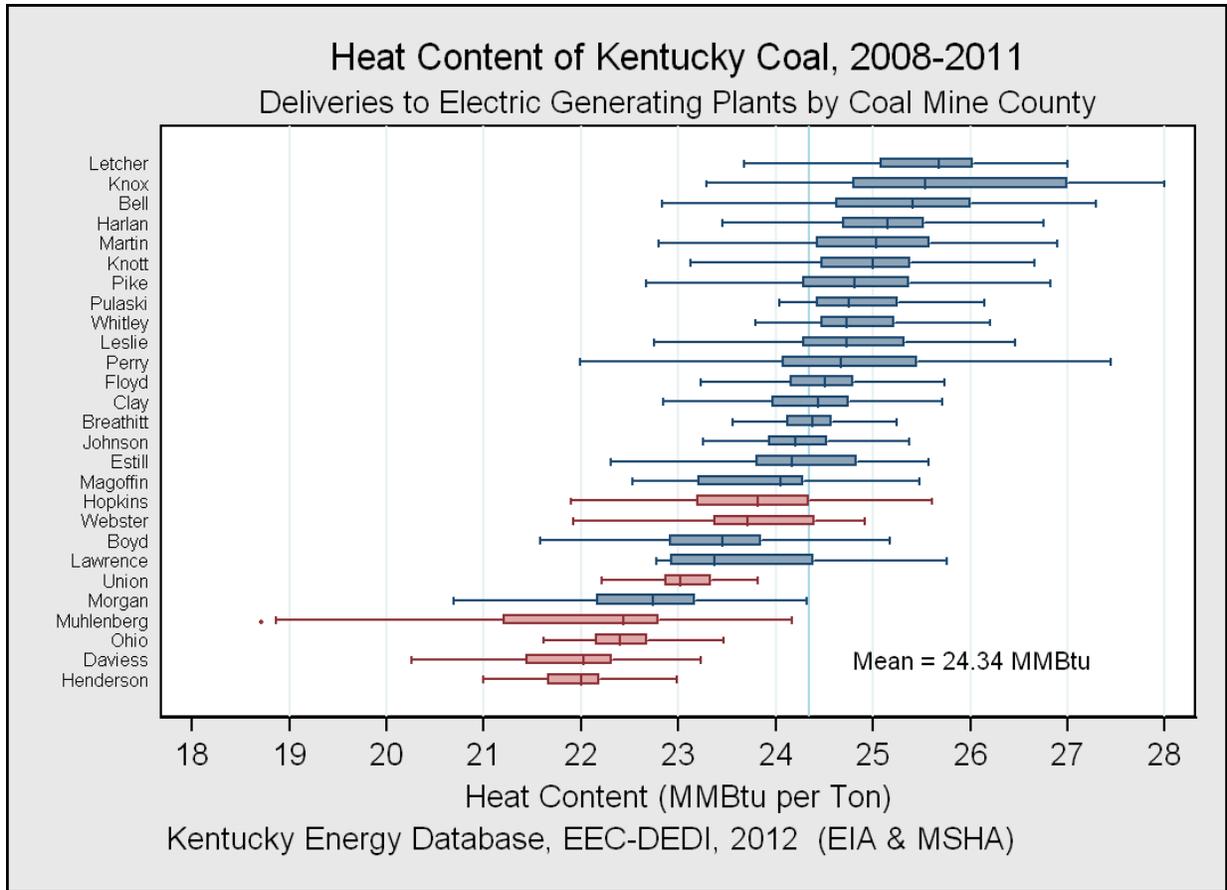
State	Mean Heat Content (MMBtu per Ton)	Mean Sulfur Content (%)	Mean Ash Content (%)	2011 Mean Delivered Price (Dollars per MMBtu)
Alabama	24.3059	1.3526	12.4016	3.66
Australia	20.8786	0.5686	7.8	-
Arizona	21.5979	0.6171	10.4104	1.95
Columbia	22.8909	0.5932	7.6304	4.39
Colorado	22.7348	0.5073	9.7723	3.06
Eastern Kentucky	24.7124	1.1104	10.4017	3.78
Illinois	22.5416	2.6846	9.4876	2.60
Indiana	22.3027	2.3304	8.9045	2.55
Louisiana	13.955	0.6542	13.3711	2.43
Maryland	22.8947	1.6848	18.1235	2.13
Missouri	21.0031	3.3553	14.246	2.44
Mississippi	10.3128	0.4749	14.7936	-
Montana	18.1025	0.458	6.4733	2.08
North Dakota	13.4139	0.756	8.7244	1.26
New Mexico	18.6442	0.8601	17.1949	2.20
Ohio	23.8547	3.1455	11.0324	2.09
Oklahoma	18.006	1.8058	33.8205	3.44
Pennsylvania	22.8561	1.9294	15.93	2.96
Tennessee	24.7791	1.2266	9.2231	3.37
Texas	12.9268	1.1036	17.653	2.24
Utah	23.1769	0.6878	11.6671	2.05
Virginia	25.3091	1.0486	10.6178	3.58
Venezuela	25.4137	0.6942	7.2103	3.12
Western Kentucky	22.877	3.0186	10.1130	2.34
West Virginia	24.3351	1.3135	12.2911	3.35
Wyoming	17.3653	0.2941	5.1349	1.98

Steam Coal Properties

Coals from different states and Coalfields across the country have distinct characteristics. For example, Eastern Kentucky coal has one of the highest average heat contents in the United States. This table and previous graphics show the average chemical and cost properties for Kentucky coal, separated by region, relative to all other major sources of coal consumed in the United States. The average (simple arithmetic mean) properties were derived by analyzing federal fuel shipment receipts as reported by electric utilities across the United States in EIA Form 923 and FERC Form 423.

The preceding box and whisker plots summarize the range of heat content or sulfur content of coal by coal mine state or country. The whiskers (horizontal lines) on each plot denote the minimum and maximum values for each state or country, while the box component represents the 25th percentile through the 75th percentile of values (or 50percent of the data). The vertical line within the box component marks the median value.

Kentucky Steam Coal Properties



Kentucky Steam Coal Properties

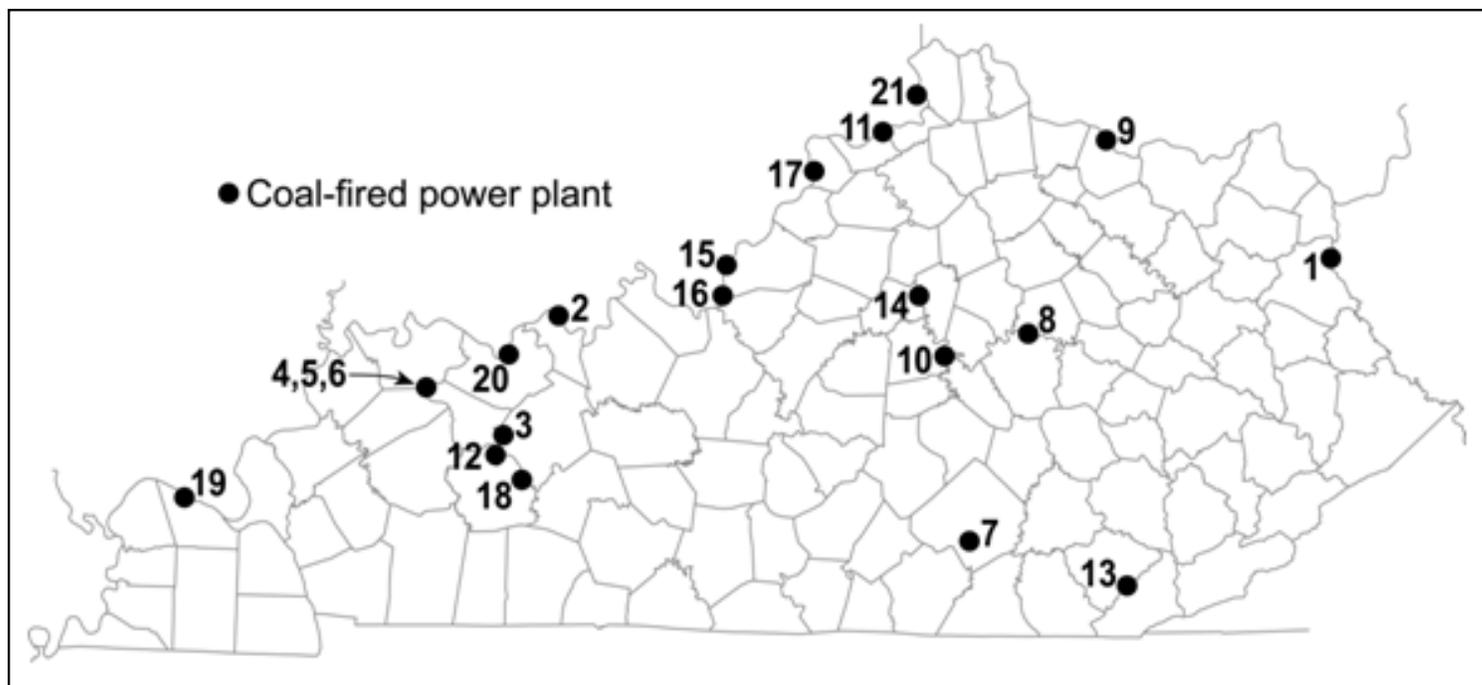
Region	Mean Heat Content (MMBtu per Ton)	Mean Sulfur Content (%)	Mean Ash Content (%)	2011 Mean Delivered Price (Dollars per MMBtu)
Kentucky	24.3037	1.5474	10.3356	3.32
Eastern Kentucky	24.7124	1.1104	10.4017	3.78
Bell	25.1871	1.3658	9.4795	3.62
Boyd	23.5447	1.1745	12.3378	2.92
Breathitt	24.2176	1.1079	10.9979	3.79
Clay	24.3283	1.1964	11.7361	4.42
Estill	24.1900	1.6440	11.0400	3.83
Floyd	24.5063	0.9395	10.4118	3.68
Harlan	25.1087	1.1091	9.9704	4.34
Johnson	24.1035	0.9441	9.8148	2.96
Knott	24.9953	1.3000	10.1368	3.81
Knox	24.4871	2.1109	10.5727	3.54
Lawrence	24.0800	2.8200	12.9167	Insufficient Data
Leslie	24.8295	1.1603	10.3333	5.06
Letcher	25.5353	1.5734	8.7143	3.46
Magoffin	24.1275	1.0703	10.1070	2.88
Martin	24.8589	1.1632	9.1256	3.66
Perry	24.7278	1.1207	10.3056	3.94
Pike	24.8386	1.0760	10.3810	3.57
Whitley	24.9693	1.2037	10.3947	3.76
Western Kentucky	22.8877	3.0186	10.1130	2.34
Daviess	21.9493	3.2818	10.9297	2.69
Henderson	22.1445	3.0388	9.8159	2.08
Hopkins	23.7770	3.1621	9.8794	2.68
Marshall	22.3875	1.1950	8.2429	3.59
Muhlenberg	22.0557	3.1021	12.0279	2.12
Ohio	22.4310	3.0359	10.0066	2.07
Union	23.2165	2.8577	8.7395	2.44
Webster	23.7710	2.7788	9.4972	2.53

Kentucky Steam Coal Chemical Properties

In Kentucky, coal mining is divided between two distinct geologic basins: The Central Appalachian Basin of Eastern Kentucky, and the Illinois Basin of Western Kentucky. This table and previous graphics display the average (simple arithmetic mean) chemical and cost properties for Kentucky steam coal by county as reported by electric generating stations across the United States. Relative to Western Kentucky, coal mined in Eastern Kentucky between 2008 and 2011 had an 8 percent higher heat content per ton, 63 percent less sulfur, and in 2011, nominal delivered costs that were 61 percent higher per MMBtu. Since the Clean Air Act Amendments of 1990, demand for Eastern Kentucky coal has been, in part, driven by demand for lower sulfur coal that reduces the emission of sulfur dioxides. However, in order to comply with increasingly stringent sulfur dioxide limits, many coal-fired power plants have elected to install desulfurization equipment that enables them to burn higher sulfur and lower cost coal such as is mined in Western Kentucky.

The preceding box and whisker plots summarize the range of heat or sulfur content of coal by county. The whiskers denote the minimum and maximum values for each county, while the box component represents the 25th percentile through the 75th percentile of values (or 50 percent of the data). The vertical line within the box component marks the median value.

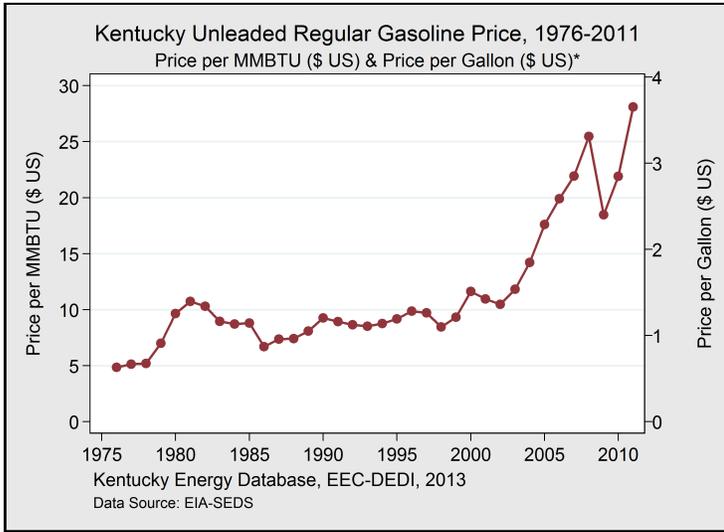
Coal Power Plants in Kentucky



Map ID	Power Plant	Electric Utility/Operator	County	Phone
1	Big Sandy†	Kentucky Power Company (AEP)	Lawrence	(606) 686-1403
2	Coleman	Big Rivers Electric Corp.	Hancock	(270) 844-6153
3	Wilson	Big Rivers Electric Corp.	Ohio	(270) 844-6154
4	Green	Big Rivers Electric Corp.	Webster	(270) 844-6155
5	Henderson	HMPL	Webster	(270) 844-6156
6	Reid	Big Rivers Electric Corp.	Webster	(270) 844-6157
7	Cooper	East Kentucky Power Co-op	Pulaski	(859) 745-9450
8	Dale	East Kentucky Power Co-op	Clark	(859) 745-9451
9	Spurlock	East Kentucky Power Co-op	Mason	(859) 745-9452
10	Brown	Kentucky Utilities Company	Mercer	(859) 367-1105
11	Ghent	Kentucky Utilities Company	Carroll	(859) 367-1106
12	Green River	Kentucky Utilities Company	Muhlenberg	(859) 367-1107
13	Pineville†	Kentucky Utilities Company	Bell	(859) 367-1108
14	Tyrone†	Kentucky Utilities Company	Woodford	(859) 367-1109
15	Cane Run†	Louisville Gas & Electric Co.	Jefferson	(502) 627-2713
16	Mill Creek	Louisville Gas & Electric Co.	Jefferson	(502) 627-2714
17	Trimble County	Louisville Gas & Electric Co.	Trimble	(502) 627-2715
18	Paradise	Tennessee Valley Authority	Muhlenberg	(270) 476-3301
19	Shawnee	Tennessee Valley Authority	McCracken	(270) 575-8162
20	Smith	Owensboro Municipal	Henderson	(270) 926-3200
21	East Bend	Duke Energy	Boone	(513) 467-4830

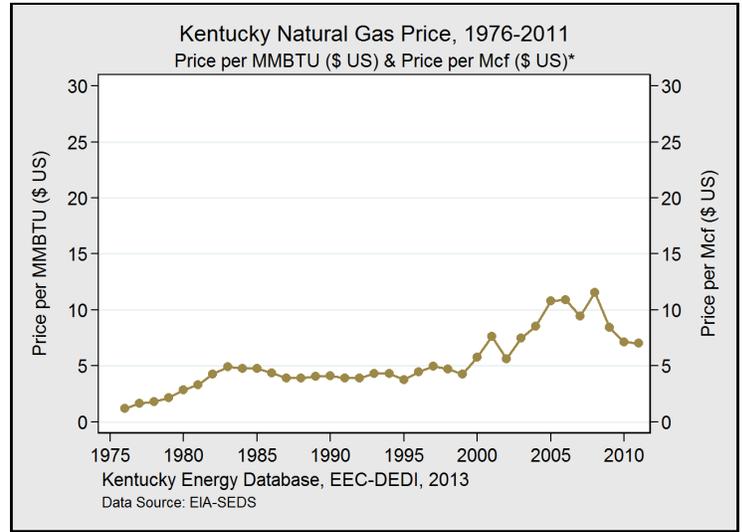
† Facility has been retired or is in the process of retirement or conversion.

Why Kentucky Uses Coal



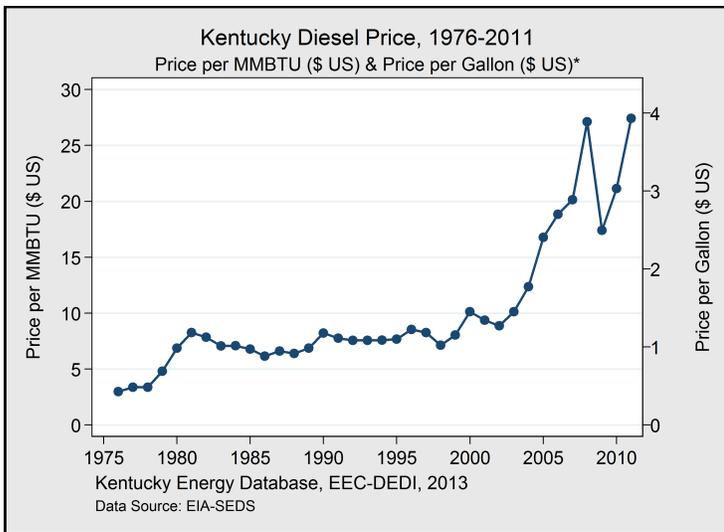
Fuel Type	(\$US)/MMBtu	(\$US)/Gallon
Gasoline	22.19	2.75

For comparison, the average price of gasoline in Kentucky in 2011 was \$28.1 per MMBtu, an 22 percent increase from 2010. Gasoline, like other petroleum products, has been subject to higher historical price volatility compared to coal.



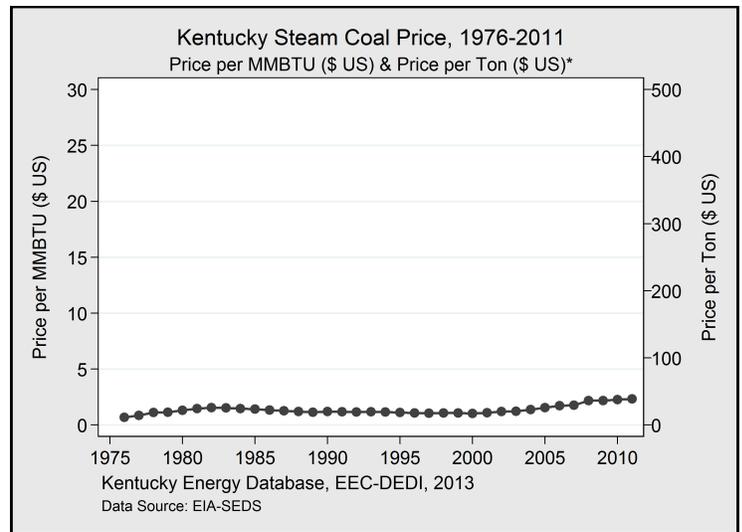
Fuel Type	(\$US)/MMBtu	(\$US)/Mcf
Natural Gas	5.77	5.77

The average price of natural gas in Kentucky in 2011 was \$7.04 per thousand MMBtu, a 1.3 percent decrease from 2010. Natural gas is currently at record low prices; however, remains more expensive than coal on a per unit of heat basis.



Fuel Type	(\$US)/MMBtu	(\$US)/Gallon
Diesel	21.68	2.99

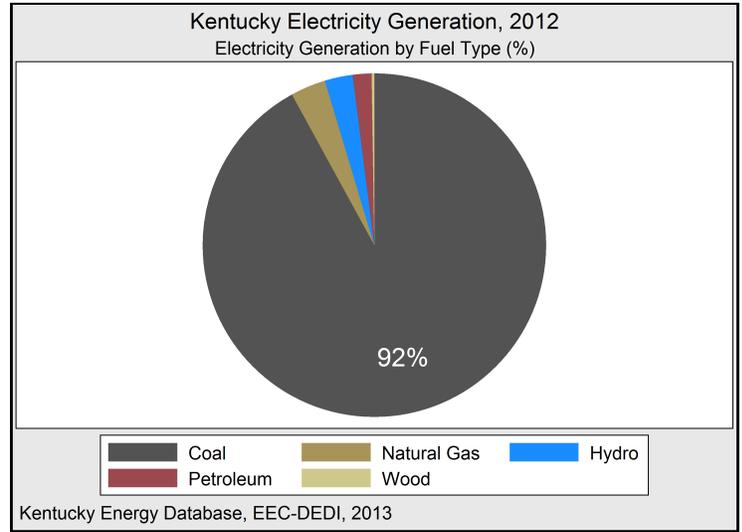
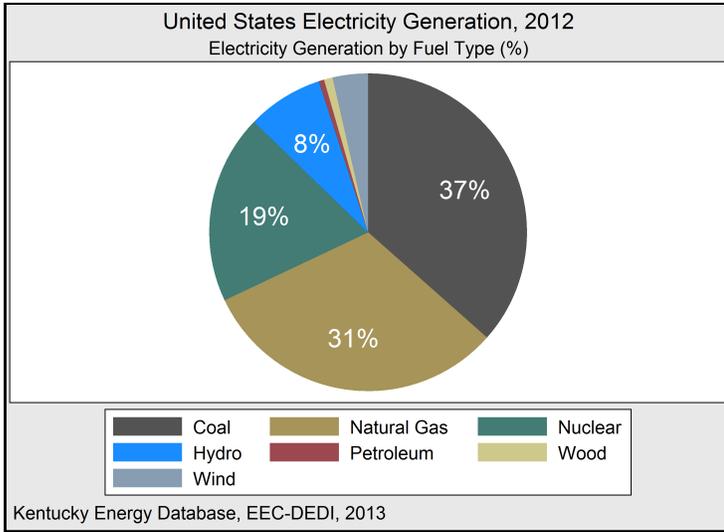
The average price of diesel in Kentucky in 2011 was \$27.41 per MMBtu, a 23 percent increase from 2010. Petroleum generators are used in Kentucky primarily for peak-load generation, because they have rapid start up times compared to coal; however, they are substantially more expensive than coal to operate.



Fuel Type	(\$US)/MMBtu	(\$US)/Ton
Coal	2.26	51.67

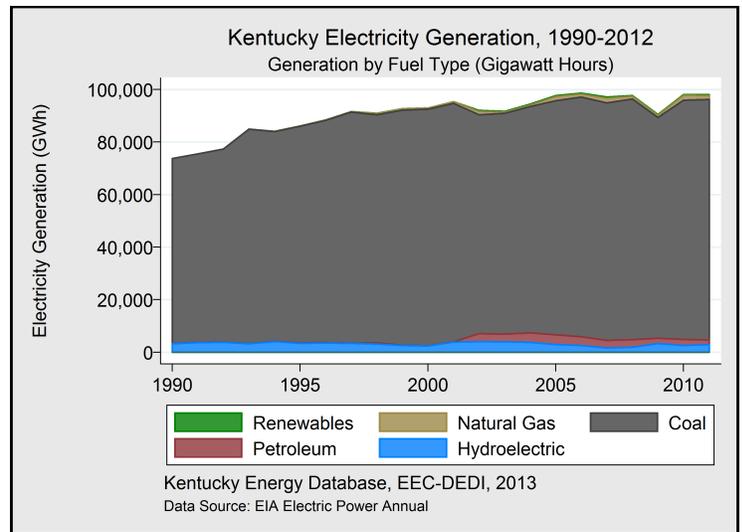
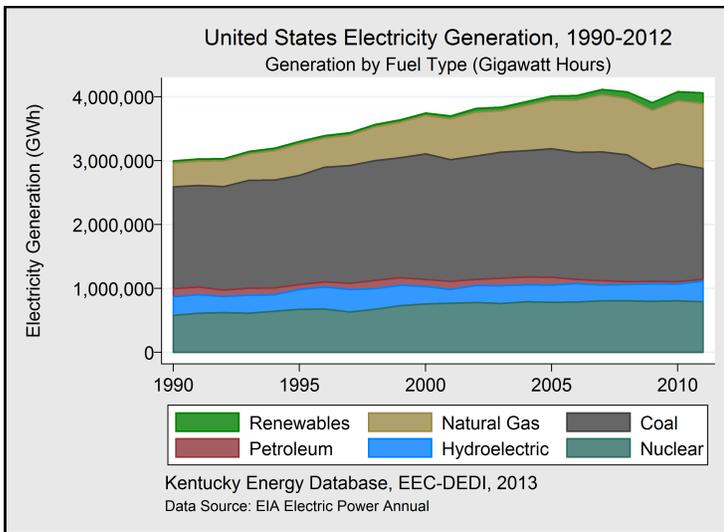
Kentucky uses coal to generate electricity because it is low-cost, abundant, and reliable. The average price of steam coal in Kentucky in 2011 was \$2.34 per MMBtu, a 4 percent increase from 2010. Coal is also the only commodity produced here in Kentucky in sufficient quantities to meet our electricity demands.

Electricity Generation



Fuel Type	Gigawatt Hours	Percentage
Total*	4,054,485	100%
Coal	1,517,203	37%
Natural Gas	1,230,708	31%
Nuclear	769,331	19%
Hydro	276,535	8%
Wind	140,089	3%

Fuel Type	Gigawatt Hours	Percentage
Total*	89,819	100%
Coal	82,566	92%
Natural Gas	2,972	3%
Hydro	2,376	3%
Petroleum	1,567	2%
Wood & Biomass	329	<1%

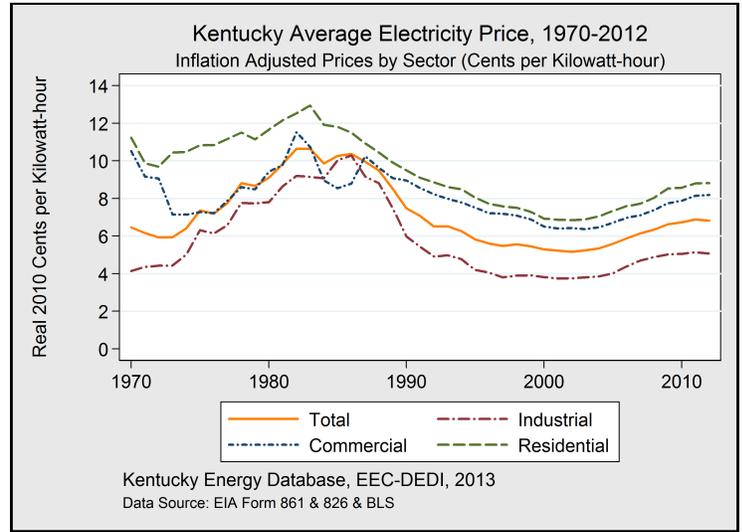
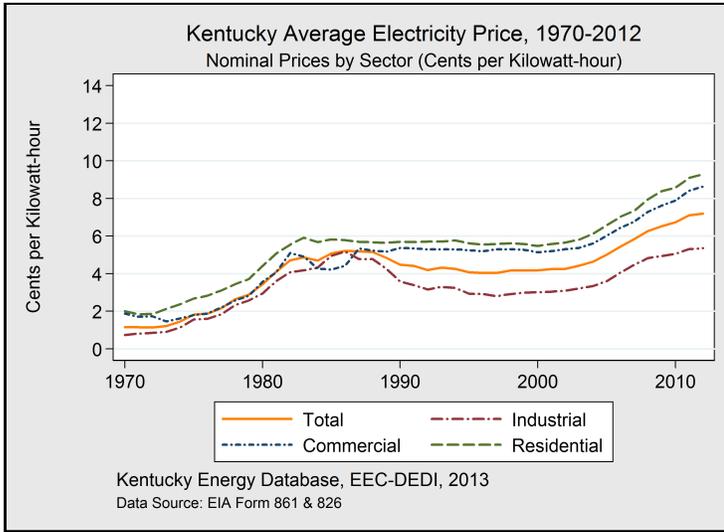


Despite substantial increases in natural gas generation and installed capacity, low natural gas prices, and a moderate winter, coal remained the largest fuel source for electricity in the United States in 2012. Following coal, natural gas and nuclear power plants were the next largest producers of electricity during the year. Since 2007, wind resources and natural gas facilities have been the fastest growing sources of electricity generation in the Country.

*Only the top five primary fuels or generating technologies are listed.

In 2012, electric power plants in Kentucky generated 89,819 Gigawatt-hours of electricity. Of this amount, 92 percent of the electricity generated in Kentucky was derived through the combustion of coal. Natural gas facilities were the next largest source of electricity, supplying approximately 3 percent of total generation, followed by hydroelectric and petroleum units. Due to the availability of coal resources and existing power plant infrastructure, Kentucky has consistently used coal to meet the vast majority of electricity demand within the Commonwealth on an annual basis.

Kentucky Electricity Prices



Sector	Cents/kWh	Since 2000
Average	7.19 ¢	+ 72%
Residential	9.29 ¢	+ 70%
Commercial	8.63 ¢	+ 68%
Industrial	5.35 ¢	+ 70%

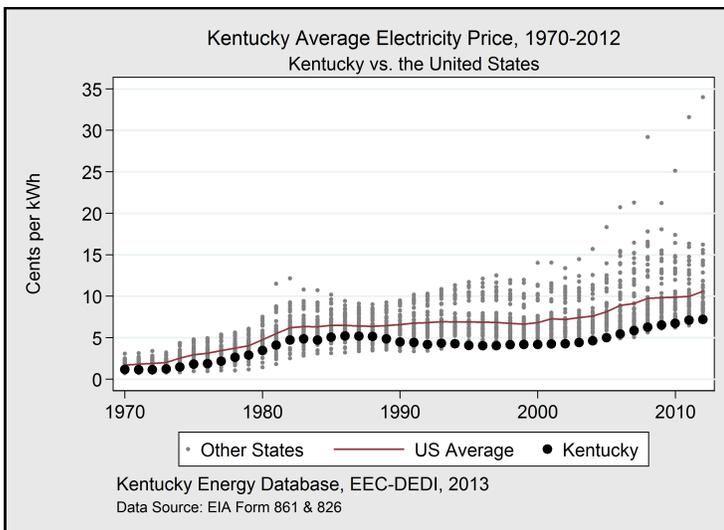
Nominal \$US

Sector	Real Cents/kWh	Since 2000
Average	6.82 ¢	+ 30%
Residential	8.81 ¢	+ 27%
Commercial	8.18 ¢	+ 25%
Industrial	5.07 ¢	+ 35%

Real \$US 2010

In 2012, the average price of electricity across economic sectors in Kentucky was 7.19¢ per kilowatt-hour. This average price ranked Kentucky the fifth lowest in the country. The Residential Sector paid the highest price for electricity at 9.29¢ per kilowatt-hour, followed by the Commercial Sector at 8.63¢ per-kilowatt hour, and the Industrial Sector at 5.35¢ per kilowatt-hour. Since 2000, the average price of electricity in Kentucky has risen by 72%.

Adjusting for inflation, the trend(s) of electricity prices in Kentucky between 1970 and 2012 is notably different from the adjacent, nominal graphic. In inflation-adjusted 2010 dollars, the price of electricity in Kentucky actually decreased from 1980 through 2002. Yet, since 2002 the real price of electricity in Kentucky in inflation-adjusted dollars has been increasing. This period of nine consecutive years of real price increases is contrary to the trend of the previous 20 years. A major factor driving real electricity prices in Kentucky up since 2002 has been the rising price of steam coal used by electric utilities.

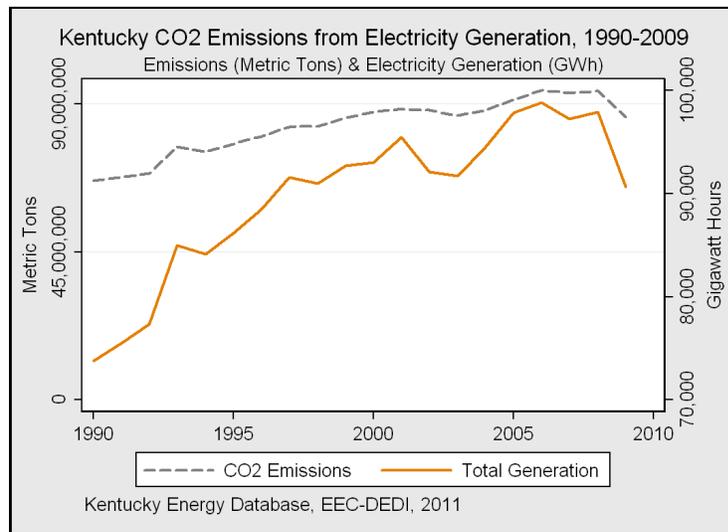
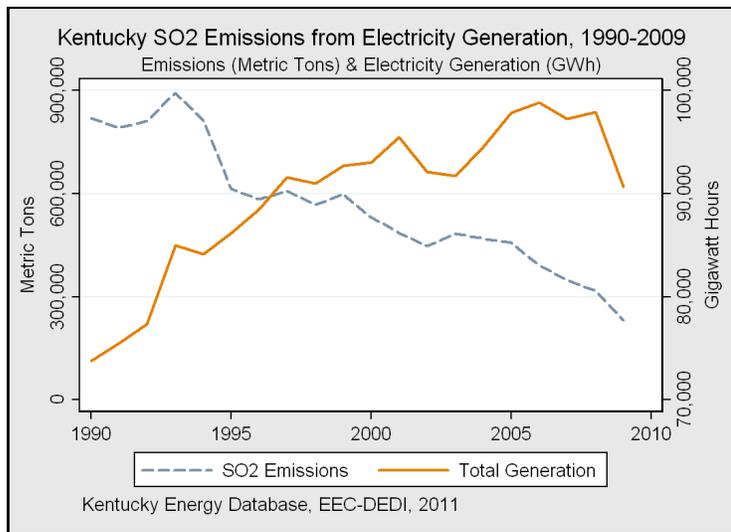


Since 1990, the average price of electricity in Kentucky has been one of the lowest in the United States and well below the national average. Though the state with the lowest average price of electricity fluctuates year to year, states with very large coal generation portfolios or large hydroelectric portfolios have traditionally maintained the lowest prices of electricity in the United States.

Price of Electricity by State, 2012

Rank	State	Primary Generation Source	Percentage Coal	Electricity Price (Cents per kWh)	1 Year Change
1	Idaho	Hydroelectric	0.47%	6.891	+6.35%
2	Louisiana	Natural Gas	20.65%	6.905	-10.79%
3	Washington	Hydroelectric	3.24%	6.930	+2.22%
4	Wyoming	Coal	87.62%	7.180	+9.04%
5	Kentucky	Coal	91.92%	7.191	+1.17%
6	Oklahoma	Natural Gas	37.41%	7.472	-4.60%
7	Arkansas	Coal	43.48%	7.569	+1.41%
8	Iowa	Coal	62.48%	7.731	+1.89%
9	Utah	Coal	77.66%	7.848	+10.06%
10	North Dakota	Coal	78.04%	7.854	+4.88%
11	West Virginia	Coal	95.87%	8.128	+3.15%
12	Indiana	Coal	80.73%	8.229	+2.32%
13	Oregon	Hydroelectric	4.36%	8.254	+2.13%
14	Montana	Coal	51.24%	8.264	+0.45%
15	Nebraska	Coal	72.48%	8.331	+6.3%
16	South Dakota	Hydroelectric	24.41%	8.429	+4.22%
17	Missouri	Coal	79.22%	8.463	+1.32%
18	Illinois	Nuclear	40.88%	8.499	-5.64%
19	Mississippi	Natural Gas	13.31%	8.552	-2.63%
20	Texas	Natural Gas	32.04%	8.634	-5.95%
21	New Mexico	Coal	68.35%	8.819	+1.26%
22	Minnesota	Coal	43.87%	8.922	+2.83%
23	Nevada	Natural Gas	11.47%	8.943	-0.14%
24	South Carolina	Nuclear	29.52%	9.017	+1.79%
25	Ohio	Coal	66.53%	9.077	+0.27%
26	North Carolina	Coal	43.96%	9.088	+4.44%
27	Virginia	Nuclear	20.22%	9.106	+2.65%
28	Alabama	Natural Gas	29.93%	9.137	-0.83%
29	Kansas	Coal	62.49%	9.221	+3.69%
30	Tennessee	Coal	45.95%	9.255	+1.24%
31	Georgia	Natural Gas	33.17%	9.260	-4.08%
32	Colorado	Coal	64.64%	9.346	-0.47%
33	Arizona	Coal	36.32%	9.799	+0.75%
34	Pennsylvania	Coal	39.17%	9.911	-5.54%
35	Wisconsin	Coal	50.80%	10.343	+1.12%
	United States Average	Coal	37.42%	10.354	+3.68%
36	Florida	Natural Gas	20.10%	10.548	-2.08%
27	Michigan	Coal	49.06%	11.038	+6.43%
38	Delaware	Natural Gas	16.59%	11.056	-4.10%
39	Maryland	Coal	42.66%	11.336	-5.69%
40	Maine	Natural Gas	0.30%	11.835	-5.95%
	District of Columbia	Natural Gas	0.00%	11.841	-7.61%
41	Rhode Island	Natural Gas	0.00%	12.857	-2.25%
42	New Jersey	Nuclear	2.96%	13.728	-4.16%
43	California	Natural Gas	0.79%	13.750	-0.33%
44	Massachusetts	Natural Gas	5.93%	13.948	-2.17%
45	New Hampshire	Nuclear	6.58%	14.208	-3.69%
46	Vermont	Nuclear	0.00%	14.307	+3.74%
47	New York	Natural Gas	3.32%	15.195	-4.66%
48	Connecticut	Nuclear	0.27%	15.572	-4.67%
49	Alaska	Natural Gas	9.12%	16.223	+1.67%
50	Hawaii	Petroleum	15.18%	33.986	+7.58%

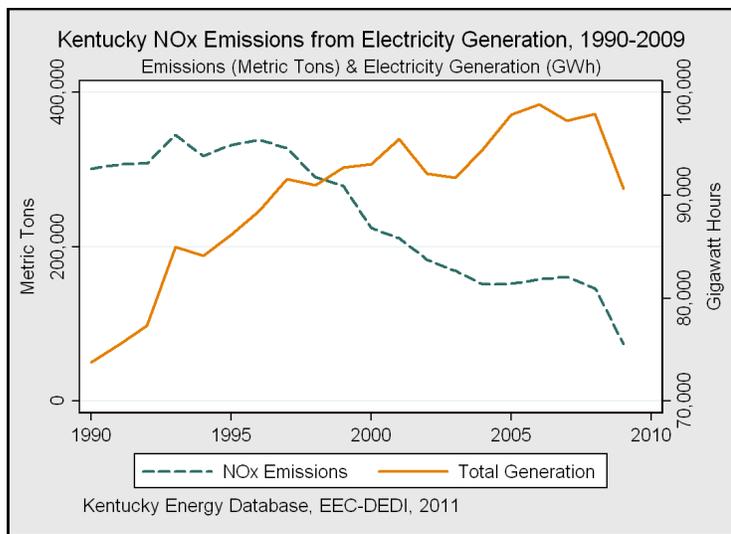
Kentucky Electric Power Emissions



Emission	Metric Tons	Since 1990*
Carbon Dioxide	86,155,120	29%
Sulfur Dioxide	232,401	- 72%
Nitrogen Oxides	73,900	- 75%

Sulfur dioxide and nitrogen oxides are considered criteria pollutants, and their release is restricted by National Ambient Air Quality Standards set forth by the Environmental Protection Agency.

Sulfur dioxide is a highly reactive gas and major pollutant that is monitored and regulated at the State and Federal level. In 2009, the Electric Power Sector of Kentucky emitted 232,401 metric tons of sulfur dioxide, representing a 27 percent decrease from 2008. Overall, the electric power sector of Kentucky has reduced sulfur dioxide emissions by 72 percent since 1990.

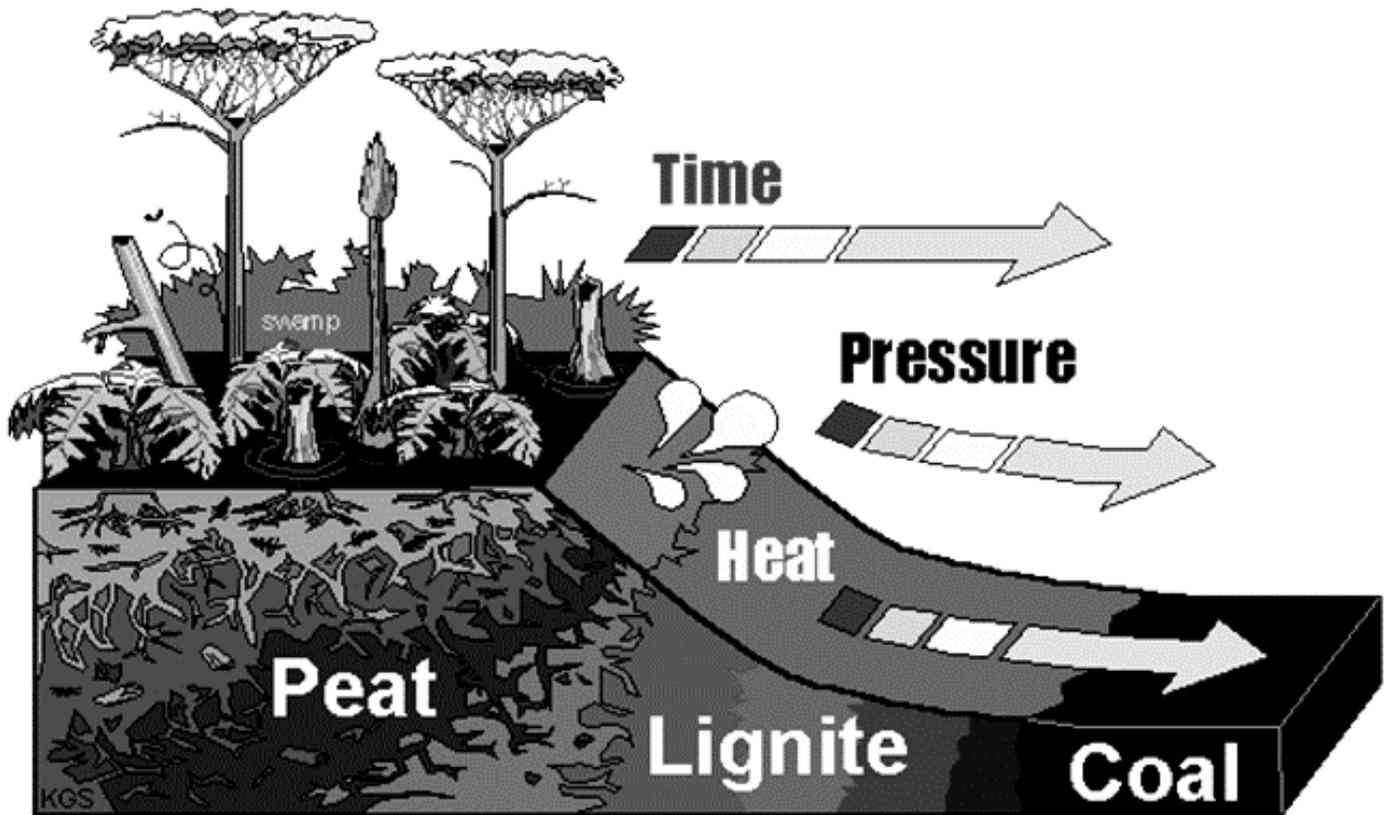


Nitrogen oxides are a group of highly reactive, regulated pollutants. In 2009, the electric power sector of Kentucky emitted 73,900 metric tons of nitrogen oxides, representing a 49 percent decrease from 2008. Overall, the electric power sector of Kentucky has decreased nitrogen oxides emissions by 75 percent since 1990.

Carbon Dioxide emissions from fossil fuel power plants are monitored at the State and Federal level. In 2009, the electric power sector of Kentucky emitted 86,155,120 metric tons of carbon dioxide, a decrease of 8 percent compared with 2008. Overall, power plants in Kentucky have increased carbon dioxide emissions by 29 percent since 1990.

* The dual display of electricity generation and regulated emissions indicates that over time, though electricity demand and generation have increased, the release of targeted pollutants has actually decreased. Therefore, both the aggregate emissions as well as intensity of emissions per gigawatt-hour of criteria pollutants, such as sulfur dioxide (SO₂) and nitrogen oxides (NO_x), have been decreasing in the Commonwealth since 1990. These reductions have been made through a combination of burning low sulfur coal, and the installation of SO₂ Scrubbers and Select Catalytic Reduction (SCR) systems at coal-fired power plants in Kentucky.

Coal Formation & Properties



Formation of Coal

Coal forms from peat that is buried and subsequently altered by a combination of time, pressure and heat. This metamorphic process is termed coalification. Peat is formed and preserved in mires, a collective term that includes all peat-forming ecosystems. Bogs, swamps, and marshes are all specific types of mires. All of the economically-important coal beds in Kentucky are Pennsylvanian in age, forming between 280 to 320 million years ago.

Coal Rank and Grade

Coal is generally classified in terms of Rank and Grade. Rank refers to the level of metamorphism, or alteration, the organic material in the original peat was subjected to after burial. As rank increases, moisture and volatile matter content decrease — fixed carbon content and calorific value increase. Very low rank coal is called lignite. Higher rank coals are classified as either sub-bituminous, bituminous, or anthracite, depending on their calorific value and (in higher rank coal) fixed carbon and volatile matter contents. All of the mineable coal in Kentucky is bituminous in rank. Grade refers to the amount and type of impurities in coal, specifically ash and sulfur. Most of the coal mined in Kentucky contains <15 percent ash. Eastern Kentucky coal is typically lower in sulfur (<2%), than Western Kentucky coal (>2%).

Steam Coal and Metallurgical Coal

“Steam” coal refers to coal that is used by electric utilities to burn in large furnaces. The heat produced by the combustion of the coal is used to produce very high temperature/high pressure steam that drives turbines with generators to produce electricity. Most of the coal mined in Kentucky is sold as steam coal.

“Metallurgical” coal is used by the steel industry to produce “coke”, a principle component of steel production. Coke is a carbon-rich material produced by heating coal to very high temperatures in an oxygen deprived furnace. In this process, volatile components of the coal are driven off, concentrating the carbon portion of the coal. Metallurgical coal must contain very low amounts of both ash (<10%) and sulfur (<1%), and have acceptable amounts of both “reactive” and “inert” organic components. Some Eastern Kentucky coal is sold as a metallurgical coal blending ingredient.

History of Coal in Kentucky

- 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.
- 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.
- 1850** Lexington and Big Sandy Railroad proposed.
Kentucky Geological Survey established.
- 1860** Pre-Civil War Kentucky production record of 285,760 tons.
- 1866** Surface mining begins near Danville, Illinois.
- 1870** Post-Civil War Kentucky production declines 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.
- 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.
- 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.
Kentucky Water Contamination Legislation.

Source: Kentucky Coal Association

History of Coal in Kentucky

- 1947** Kentucky Coal Association founded.
- 1956** Fish and Wildlife Coordination Act
Railroads begin converting from coal to diesel fuel.
Roof bolting introduced in underground mines.
- 1960** Railroads begin using unit coal trains.
First longwall mining with powered roof supports.
Kentucky Surface Mining Legislation.
- 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** 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.
- 1990** Federal Clean Air Act Amendments of 1990.
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) established.
Workers' Comp Reform Laws are passed in Kentucky.
- 1997** The Kentucky Fish and Wildlife Commission votes to reintroduce elk into 14 Eastern Kentucky counties on post-mined lands, citing mountaintop mining areas and old mine benches as good elk habitat.
Kentucky has the only large free-ranging elk herd in the eastern United States.
- 1998** Federal synthetic fuel tax credit for use of coal fines begins.
- 2005** East Kentucky Power Cooperative's Gilbert coal-fueled fluidized-bed power plant begins operation.
Energy Policy Act of 2005 signed by President Bush; includes major Clean Coal Technology programs.
EPA adopts Clean Air Mercury Rule to reduce power plant HG emissions to 15 tons by 2018.
- 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.

Source: Kentucky Coal Association

History of Coal in Kentucky

- 2007** First year with no underground coal mining fatalities in Kentucky since records began.
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.
- 2012** Coal production in Kentucky falls to 91.4 million tons, the lowest level since 1965.

Source: Kentucky Coal Association

Mine Safety & Training

Basic Regulations & Overview

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 prior to being issued any new certification.

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 retraining annually.

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 (inexperienced) underground miner must receive eight hours of mine site-specific training prior to working in an underground mine, for an experienced miner the mine-site specific training is as needed.

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 at the face of an active working section of a coal mine. An Assistant Mine Foreman Certification requires three years practical experience.

Underground Miner Classifications & Training	
Experience Required	Mining Position
5 Years	Electrical Inspector* Mine Inspector/Mine Safety Analyst* Mine Foreman* Electrical Instructor*
3 Years	Asst. Mine Foreman* Instructor
1 Year	Electrical Worker* Hoisting Engineer* Solid Blasting
45 days	Shot Firer* Certified Miners
Special Training	
MET	Mine Emergency Technician
EMT	Emergency Medical Technician

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

NOTE: More than 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 14,083 miners.

*Tests are required in addition to years of experience.

Mines & Licensing

Number of Kentucky Mine Licenses, 1985-2012

Mine Type Year	Underground		Surface		State Total
	EKY	WKY	EKY	WKY	
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
2007	239	15	282	14	550
2008	263	11	338	14	626
2009	233	12	329	18	592
2010	207	12	281	13	513
2011	200	14	305	11	530
2012	184	14	268	10	476

Source: Kentucky Division of Mines & Minerals, Annual Reports, 1960-2002; Kentucky Department of Natural Resources, Office of Mine Safety & Licensing, Annual Reports, 2003-2012. (The number of actual mines is smaller than the final number of mine licenses issued each year. For example, a new license is required when a company name or ownership changes.)

Number of Kentucky Coal Mines, 1985-2012

Mine Type Year	Underground		Surface		State Total
	EKY	WKY	EKY	WKY	
1985	897	24	836	101	1,858
1990	601	26	301	59	987
1995	339	22	201	36	598
2000	234	12	148	14	408
2001	253	11	187	16	467
2002	219	14	180	14	427
2003	201	12	174	13	400
2004	212	11	185	11	419
2005	211	13	193	15	432
2006	214	13	202	13	442
2007	191	10	203	13	417
2008	205	11	241	12	469
2009	186	12	239	12	449
2010	161	13	214	15	403
2011	153	13	218	13	397

Source: U.S. DOE-Energy Information Administration, Coal Production, 1984-1992; U.S. DOE-Energy Information Administration Coal Industry Annual, 1993-2009; U.S. Department of Labor, Mine Safety and Health Administration, "Quarterly Mine Employment and Coal Production Report" (MSHA Form 7000-02), 2010-2011.

Mines & Licensing

Kentucky Coal Production & Mine Licenses by County and Mine Type, 2012						
Location Area/County	Underground		Surface		Total	
	Licenses	Production	Licenses	Production	Licenses	Production
Statewide	198	58,278,720	278	33,128,590	476	91,407,310
EKY	184	24,187,310	268	25,187,310	452	49,363,960
Pike	57	6,168,138	59	6,793,421	116	12,931,200
Perry	8	3,017,404	21	6,214,074	29	9,231,478
Harlan	39	5,064,137	21	2,037,731	60	7,034,754
Martin	6	2,621,887	11	965,589	17	3,587,476
Leslie	6	1,347,599	11	1,734,133	17	3,008,930
Letcher	21	1,992,935	18	1,006,074	39	2,979,510
Knott	12	1,452,284	12	1,188,716	24	2,641,000
Floyd	17	1,226,638	25	1,154,573	42	2,382,712
Magoffin	2	66,558	8	1,948,750	10	2,015,308
Bell	7	738,880	22	431,587	29	1,161,442
Knox	5	63,970	14	579,907	19	565,092
Johnson	1	-	8	327,683	9	327,683
Clay	1	-	12	293,829	13	293,829
Breathitt	1	256,287	3	31,496	4	287,783
Whitley	-	99,970	11	180,582	11	263,881
Lawrence	1	70,620	4	164,008	5	234,628
Wolfe	-	-	1	46,154	1	39,315
McCreary	-	-	1	31,744	1	31,744
Owsley	-	-	3	26,647	3	26,647
Laurel	-	-	2	12,627	2	12,627
Rockcastle	-	-	1	4,930	-	4,930
Elliott	-	-	1	2,396	-	2,396
WKY	14	34,091,410	10	7,951,938	24	42,043,350
Union	3	13,474,909	-	-	3	13,474,900
Hopkins	4	8,945,605	-	-	4	8,945,605
Webster	2	5,506,878	1	43,549	3	7,231,326
Ohio	2	1,849,717	3	5,381,609	5	5,550,427
Muhlenberg	2	3,809,603	3	1,078,381	5	4,887,921
Henderson	1	504,708	1	1,053,298	2	1,558,006
Daviess	-	-	2	395,164	2	395,164

Source: Kentucky Department of Natural Resources, Office of Mine Safety & Licensing, Database Retrieval (July 2011); U.S. Department of Labor, Mine Safety and Health Administration, "Quarterly Mine Employment and Coal Production Report" (MSHA Form 7000-02).

The majority of active coal mines in Eastern Kentucky in 2012 were broadly defined as surface operations. However, the combined annual production of surface mines was only slightly higher than underground production: 25.1 million tons compared to 24.1 million tons. During 2012, there were 22 counties in the Eastern Coalfield that had active mine sites and licenses.

Though there were more active underground mines than surface mines in Western Kentucky in 2012, underground operations accounted for 81 percent of regional production. During the year, seven counties in the region registered coal production with Union County as the leading producer. In total, Western Kentucky coal-mining counties represented 46 percent of statewide production in 2012.

Reclamation

Kentucky Mine Reclamation Status & Primacy Bond Releases, 1990-2011									
Status	Phase I			Phase II			Phase III		
Year	Releases	Acres	Bond Amount	Releases	Acres	Bond Amount	Releases	Acres	Bond Amount
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
2007	276	11,578	\$ 15,743,391	213	5,920	\$ 27,299,927	298	8,875	\$ 10,958,667
2008	286	11,015	\$ 18,958,373	155	6,620	\$ 5,512,376	316	9,139	\$ 11,283,135
2009	249	9,685	\$ 16,916,494	167	12,462	\$ 9,730,824	292	8,151	\$ 9,795,266
2010	365	12,325	\$ 20,912,926	225	11,538	\$ 13,797,106	306	10,449	\$ 8,559,124
2011	425	9,991	\$ 18,364,773	189	7,180	\$ 8,219,910	222	8,645	\$ 6,886,853
Total	8,971	294,032	\$512,129,052	5,581	195,963	\$ 223,562,559	9,026	296,780	\$ 284,307,360

In accordance with the federal Surface Mining Control and Reclamation Act of 1977 (SMCRA), mined land must be returned to its approximate original contour, with the exception of mountaintop mining operations. 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 2009 have paid \$1.05 billion 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. As of September, 2010, the Kentucky mining industry had a total of 10,039 outstanding bonds valued at \$839.9 million. The bonds assure timely and successful reclamation.

Mining reclamation bonds are released in the following phases:

Kentucky Mine Reclamation Phases & Criteria			
Bond Release	Reclamation Release Type	Percent Released	Time/Phase Requirements
Phase I	Grading, Drainage, Seeding	60%	Complete Landscaping
Phase II	Vegetation	25%	Two Years of Successful Reclamation
Phase III	Final	15%	Five Consecutive Years of Successful Reclamation

Reclamation

Abandoned Mine Land Reclamation Fund (millions), 1985—2010				
Year	Kentucky Collection	Kentucky State Share*	AML Grant Disbursement	State Share Balance**
1985	\$36.91	\$17.30	\$32.30	\$31.40
1990	38.40	19.41	6.40	43.30
1995	35.49	17.61	15.50	77.10
1996	33.98	16.90	16.00	83.60
1997	34.66	17.24	16.10	90.10
1998	35.04	17.45	15.70	97.40
1999	32.38	16.15	16.50	103.40
2000	30.49	15.19	17.00	108.00
2001	29.42	14.71	18.80	111.90
2002	30.16	15.03	16.70	116.90
2003	26.71	13.35	16.40	120.50
2004	26.38	13.19	16.00	124.40
2005	26.00	13.00	15.00	124.40
2006	26.20	13.10	13.80	128.80
2007	27.68	13.84	13.80	134.80
2008	26.00	13.00	30.80	136.60
2009	24.60	12.30	31.10	117.10
2010	23.00	11.50	37.50	97.60
Total***	821.18	408.54	493.80	2,227.80

*Includes reclamation fees, interest, and audit adjustment. **Column may not balance due to external adjustments.

*** Summation across all years including those not displayed (1985-2010)

Abandoned Mine Land (AML) Reclamation

The federal Surface Mining Control and Reclamation Act of 1977 (SMCRA) established authority for the AML Fund. Production fees of \$0.325 per ton for surface-mined coal and \$0.125 per ton for underground-mined coal are collected from coal producers at all active coal mining operations. These funds reclaim pre-SMCRA sites left abandoned, un-reclaimed, or insufficiently reclaimed, as well as certain sites under interim programs (1977-1982).

The Kentucky coal industry (through FY 2009) has contributed \$1.05 billion to the Abandoned Mine Land (AML) Reclamation Fund since 1978. Nationally, over \$9 billion (through FY 2009) has been paid by active coal operators across the United States. Fifty percent (50%) of the total Kentucky AML fees go directly to the state share account. However, \$97.6 million (September, 2010) is unallocated due to the federal appropriation process (see Kentucky State Share Balance column in table above). In 2006 Congress passed amendments to SMCRA that provided for mandatory distribution of all unappropriated state share balances over a seven year period and increased grant funding to states like Kentucky with many high priority AML problems remaining on inventory. The result has been an increase in the Kentucky AML Grant over the past three years. The increasing trend is expected to continue for the next several years.

Abandoned Mine Land Reclamation Accomplishments (through 2010)

113 water line projects (\$95.65 million)	2,186 mine portal closures
Over 35,568 feet of high wall eliminated	210 vertical shafts sealed
Over 261 hazardous structures removed	47.1 miles of stream restoration
Over 2,299 acres landslide projects stabilized	289.7 acres of mine fires controlled
\$497 million in expenditures	74,833 acres reclaimed (GPRA Acres)

Post-Mining Land Use

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
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

Post-mining land use changes are a strategy for economic development in Kentucky, especially in many parts of Eastern Kentucky where level to gently rolling land for development is a valued asset.

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

Free-ranging elk were re-introduced 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.

Source: Kentucky Coal Association.

Post-Mining Land Use

Industrial / Commercial

Electrical Construction Office and Shop	Hopkins
Electric Utility Operations Center	Hopkins
Industrial Scrubber Sludge Disposal	Ohio, Daviess, Webster
Explosive Manufacturing	Muhlenberg
Apparel Manufacturing	Perry, Boyd
Mine Shops / Welding / Machine / Equip.	Johnson, Hopkins, Knox, Muhlenberg, Ohio, Union
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
Clay-Leslie Regional Industrial Park	Clay, Leslie
Coalfields Regional Industrial Park	Breathitt, Harlan, Leslie, Perry
Corbin Tri-County Industrial Park	Knox
East Park 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
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

Source: Kentucky Coal Association.

Post-Mining Land Use

Sports & Recreational Facilities

Baseball Fields	Boyd
Coal Hollow Park	Floyd
Elkhorn Educational Recreation Park	Floyd
Golf Courses	Clay, Laurel, Letcher, Floyd, McLean,
Recreational Area	Lee, Greenup
Red Fox Resort	Knott
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	Hopkins
Hunting Reserve	Webster

Structural Building Sites

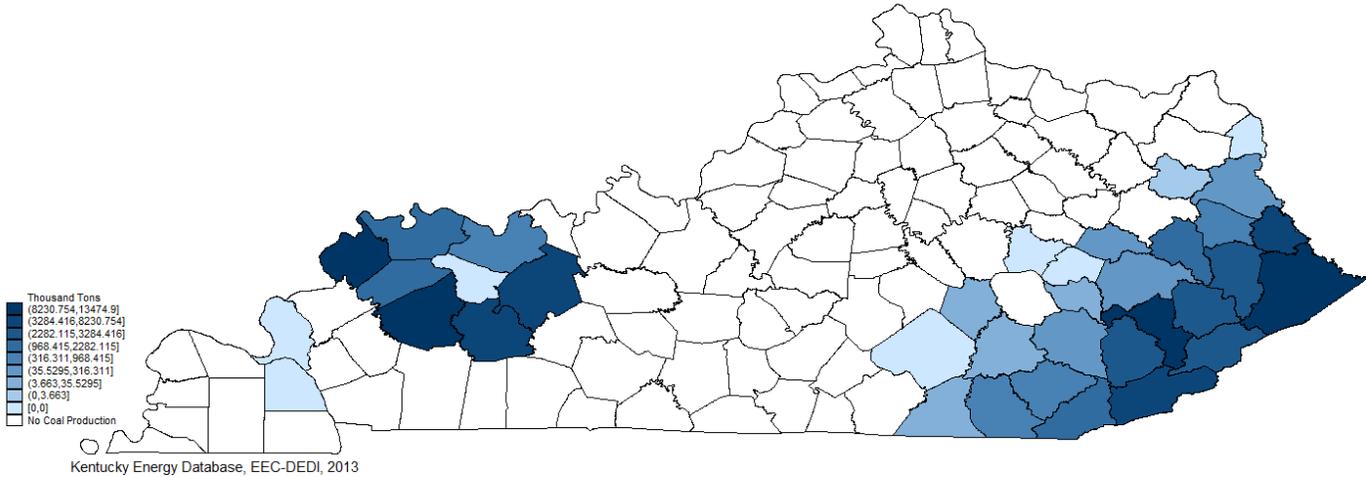
High Schools	Pike
Elementary School	Boyd
Flea Market	Perry
Athletic Complexes	Letcher, Pike
Appalachian Regional Hospital	Perry
Housing Developments	Bell, Boyd, Clay, Floyd, Greenup, Harlan, Johnson, Martin
Church, Daycare	Laurel, Perry
Mobile Home Sales	Laurel
Shopping Centers	Breathitt, Clay, Knox,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

Source: Kentucky Coal Association.

In addition to the listed developments, several old coal haul rails have been removed to make walking trails in Hopkins, Muhlenberg, Union, and Webster counties. These efforts are also known as “Rails-to-Trails”.

Coal Producing Counties, 2012

Kentucky Coal Production, 2012



Western Kentucky Coal Producing Counties, 2012			
Rank	County	Production (Tons)	1 Year Change
1	Union	13,474,902	9.3%
4	Hopkins	8,945,605	1.8%
5	Ohio	7,231,326	30.5%
7	Webster	5,550,427	-3.1%
8	Muhlenberg	4,887,921	-14.9%
15	Henderson	1,558,006	-36.9%
18	Daviess	395,164	-2.5%

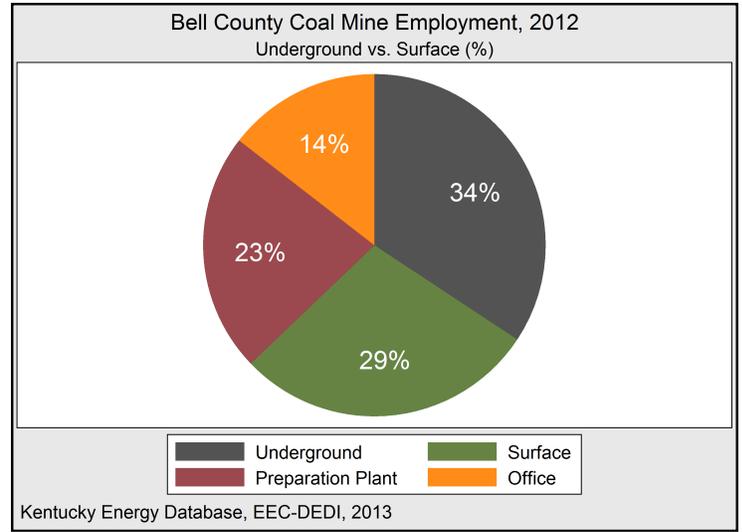
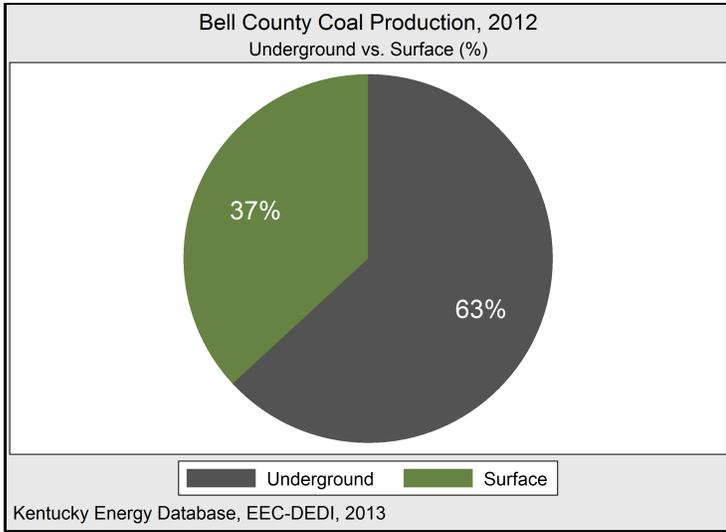
Eastern Kentucky Coal Producing Counties, 2012			
Rank	County	Production (Tons)	1 Year Change
2	Pike	12,931,197	-17.9%
3	Perry	9,231,478	-30.1%
6	Harlan	7,034,754	-28.1%
9	Martin	3,587,476	-36.0%
10	Leslie	3,008,930	-30.7%
11	Letcher	2,979,510	-36.1%
12	Knott	2,641,000	-45.1%
13	Floyd	2,382,712	-18.1%
14	Magoffin	2,015,308	-31.9%
16	Bell	1,161,442	-26.0%
17	Knox	643,887	65.7%
19	Johnson	327,683	41.2%
20	Clay	293,829	-23.0%
21	Breathitt	287,783	-65.5%
22	Whitley	263,881	-50.2%
23	Lawrence	234,628	189.6%
24	Wolfe	39,315	+ ∞ %
25	McCreary	31,744	+ ∞ percent
26	Owsley	26,647	-61.3%
27	Laurel	12,627	+ ∞ %
28	Rockcastle	4,930	-91.9%
29	Elliott	2,396	-94.9%

During 2012, there were 29 counties in Kentucky that registered coal production — seven in the Western Coalfield and twenty-two in the Eastern Coalfield — an increase of five counties compared with 2011. The five counties that initiated or resumed production in 2012 were all located in Eastern Kentucky.

Up to 44 individual counties have at some time registered coal mining activity in Kentucky since 1960, though over the past five years no more than 29 counties have produced coal.

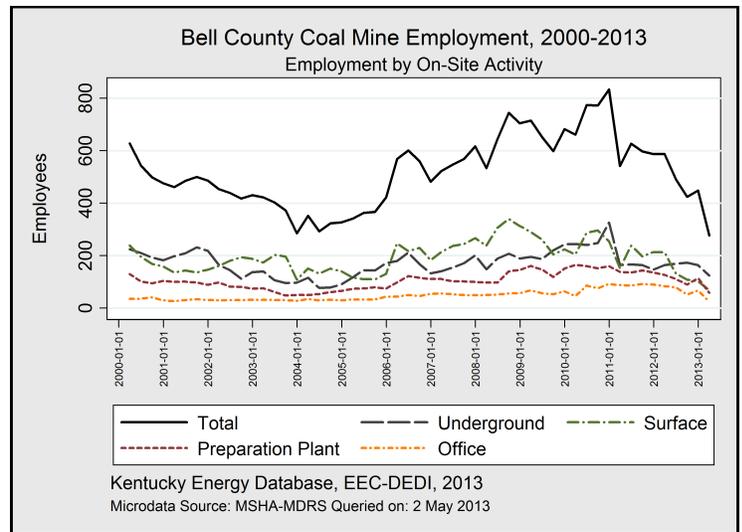
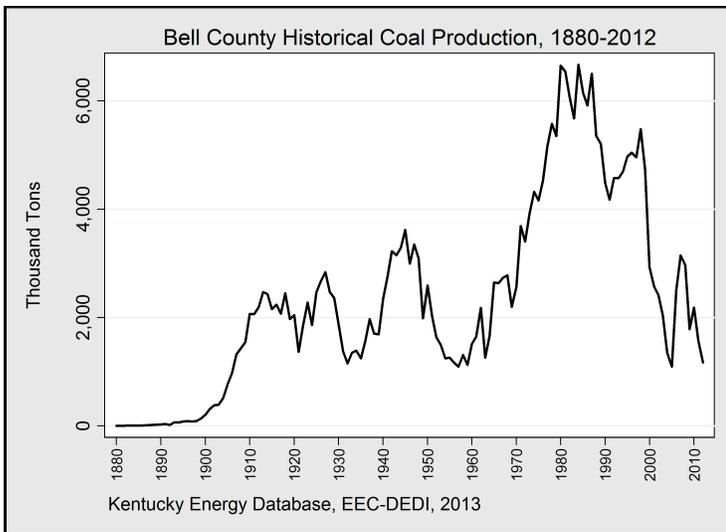
Additionally, though 29 counties registered coal production in Kentucky in 2012, a total of 34 counties had active MSHA-permitted operations relating to coal production, processing, and/or transportation during the year. The following counties recorded coal-related labor hours in 2012, but produced no coal: Livingston, McLean, Boyd, Marshall, and Estill.

Bell County



Production Method	Mines	Production	Percentage
Total	29	1,170,467	100%
Underground	7	738,880	63%
Surface	22	431,587	37%

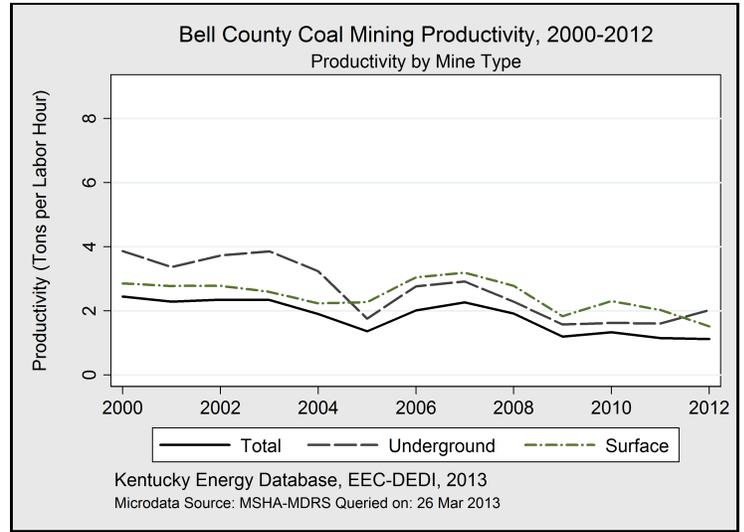
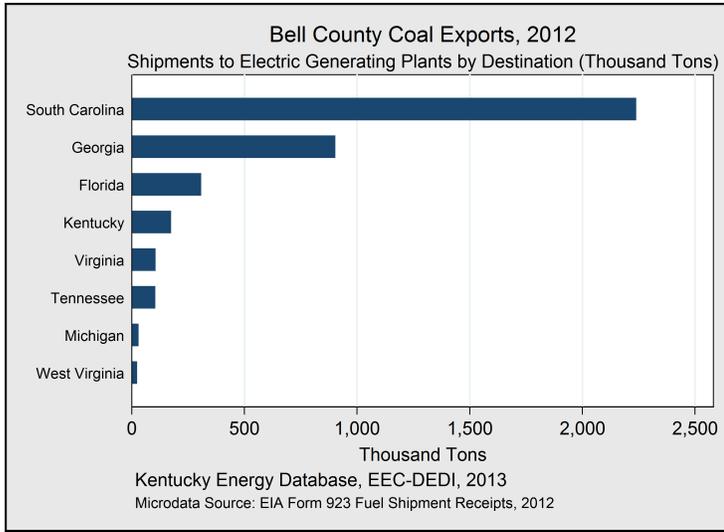
On-Site Activity	Employment	Percentage
Total	489	100%
Underground	167	34%
Surface	140	29%
Preparation Plant	111	23%
Office	71	14%



In 2012, the 29 relatively small coal mines in Bell County produced nearly 1.2 million tons of coal, which accounted for 1.3 percent of annual coal production in Kentucky. Approximately two-thirds of the coal mined in Bell County, more than 738 thousand tons, was produced in underground mining operations. The remaining 431 thousand tons were extracted from surface mines. Total coal production in Bell County decreased by 25.4 percent from 2011.

Coal mines and preparations plants in Bell County employed an average of 489 full-time employees in 2012, a decrease of 17 percent from 2011. The largest portion of these jobs were held by 167 underground miners, followed by 140 surface miners, and 111 prep plant operators. An additional 71 individuals worked full-time in mine site offices in Bell County.

Bell County



State & Power Plant	Deliveries (Tons)	Percentage
Total	3,890,271	100%
South Carolina	2,239,222	57.6%
Cross	1,529,466	39.3%
Winyah	307,982	7.9%
Cogen South	147,457	3.8%
Cope	127,652	3.3%
Williams	101,461	2.6%
Wateree	12,649	<1%
H B Robinson	12,555	<1%
Georgia	903,428	23.2%
Bowen	874,826	22.5%
G.P. Cedar Springs	28,602	<1%
Florida	308,255	7.9%
Cedar Bay	308,255	7.9%
Kentucky	174,450	4.5%
Cooper	174,450	4.5%
Virginia	105,544	2.7%
Chesterfield	105,544	2.7%
Tennessee	104,512	2.7%
Eastman Operations	104,512	2.7%
Michigan	31,000	<1%
Monroe	31,000	<1%
West Virginia	23,860	<1%
Ceredo	23,860	<1%

Bell County Coal Market

The largest market for Bell County steam coal during 2012 was South Carolina, where 7 power plants received a total of 2.2 million tons. The Cross Power Plant of South Carolina itself accounted for approximately 40 percent of all steam coal shipments of Bell County coal during the year. Power plants in Georgia were the next largest consumers of Bell County coal, followed by Florida, Kentucky, Virginia, Tennessee, Michigan, and West Virginia.

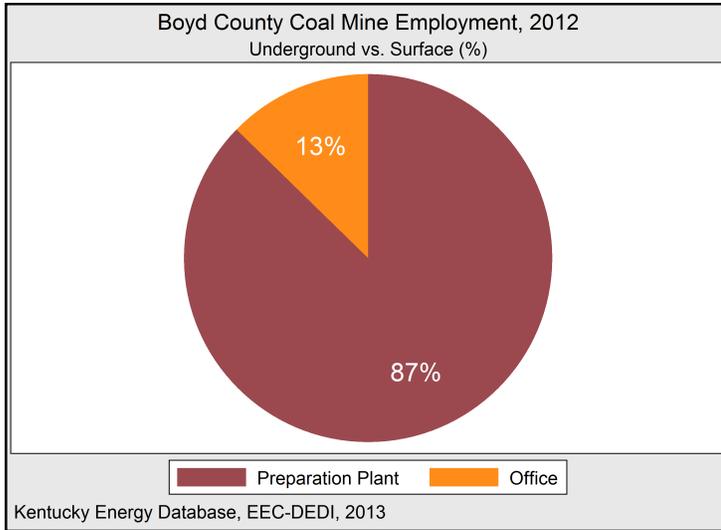
Bell County Coal Mining Productivity

2012 productivity in Bell County was the second lowest of any Kentucky county at 1.11 tons per labor hour, only marginally higher than neighboring Whitley County. While underground mine productivity increased to 2.07 ton per labor hour, surface mines in Bell County averaged 1.52 tons per labor hour for the year.

Chemical Composition and Cost

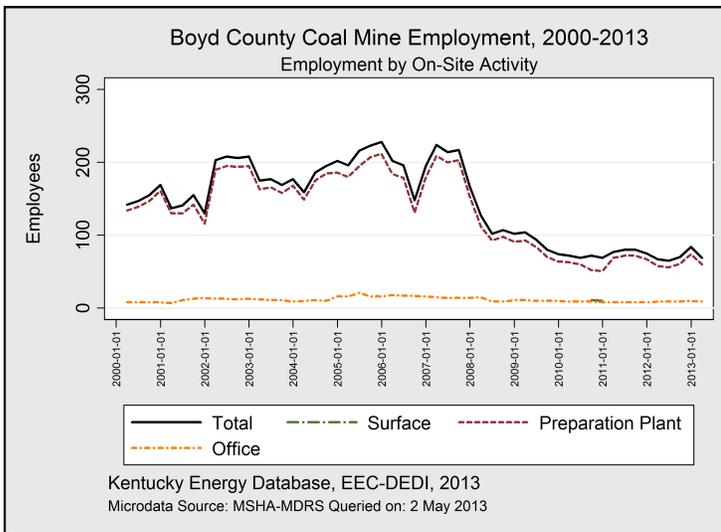
On average, coal mined in Bell County in 2012 had a mean sulfur content of 1.3%, a mean ash content of 10.6%, and a mean heat content of 24.62 MMBtu per ton. The average delivered price per ton for Bell County coal in 2012 was \$86.44, and ranged from \$65.26 to \$139.71.

Boyd County



On-Site Activity	Employment	Percentage
Total	71	100%
Preparation Plant	62	87%
Office	9	13%

Since 2000, preparation plants and terminals have been the largest source of direct coal mining employment in Boyd County.

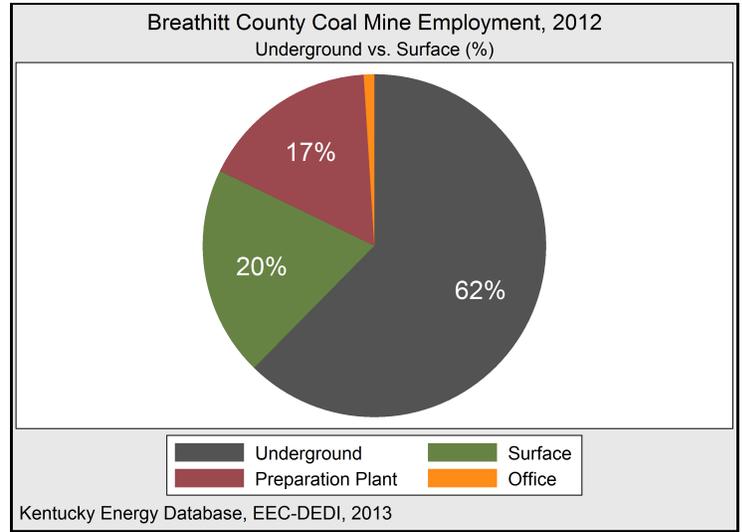
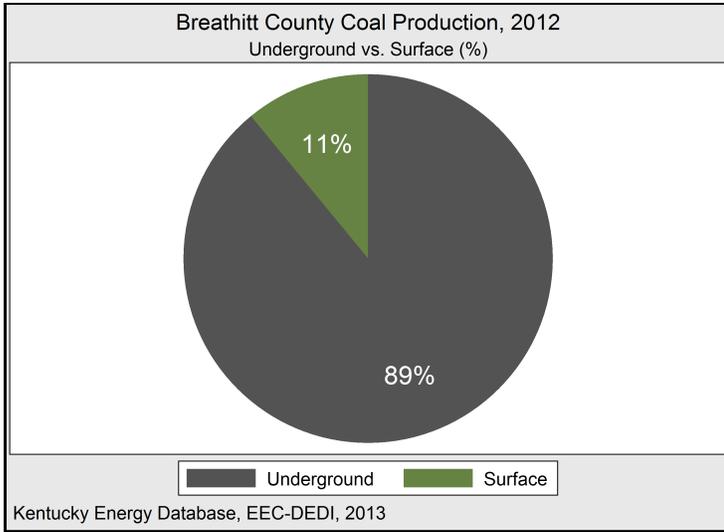


Boyd County registered no coal production in 2012. However, several coal transportation terminals were active in the county during the year. In 2012, coal mining companies in Boyd County employed 71 individuals full-time, with 62 of these employees operating coal preparation plants. An additional 9 people were employed in office positions connected to the active coal preparation plants.

State & Power Plant	Deliveries (Tons)	Percentage
Total	118,320	100%
Ohio	78,582	66.4%
Walter C Beckjord	61,994	52.4%
Miami Fort	8,568	7.2%
Killen Station	8,020	6.8%
Kentucky	39,738	33.6%
Big Sandy	39,738	33.6%

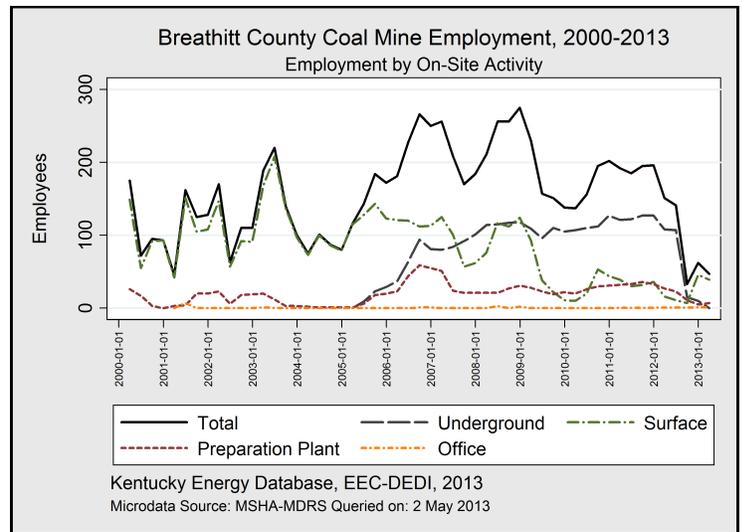
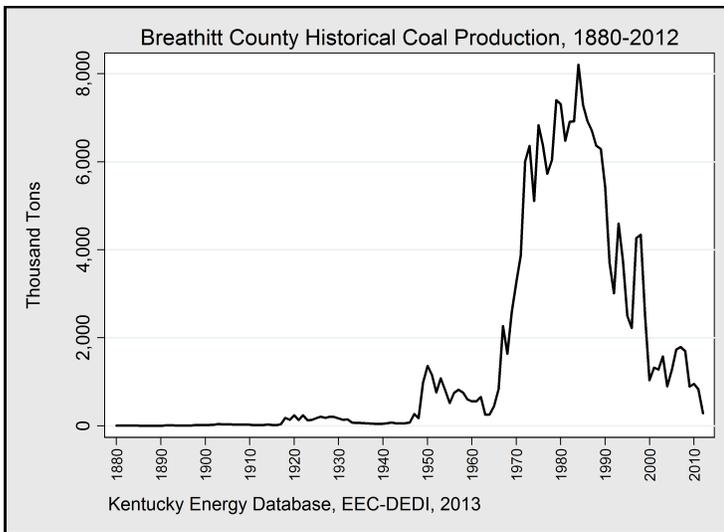
Though Boyd County did not directly produce coal in 2012, it did prepare and ship coal from surrounding counties to customers outside of Kentucky. Of the more than 118 thousand tons of coal shipped from Boyd County during 2012, more than two thirds was delivered to three power plants in Ohio. Within Ohio, the Walter C. Beckjord Power Plant was the single largest recipient of Boyd County shipments at more than 62 thousand tons. Also, the Big Sandy Power Plant in Louisa, KY, received 39 thousand tons shipped from preparation plants and terminals in Boyd County.

Breathitt County



Production Method	Mines	Production	Percentage
Total	4	287,783	100%
Underground	1	256,287	89%
Surface	3	31,496	11%

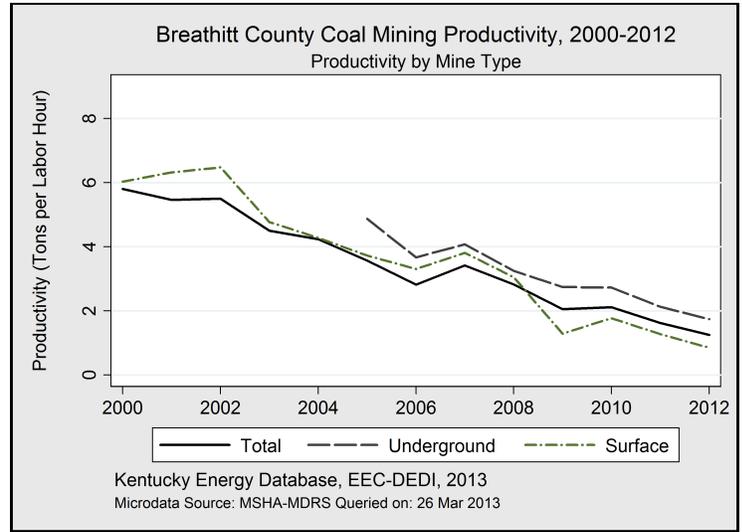
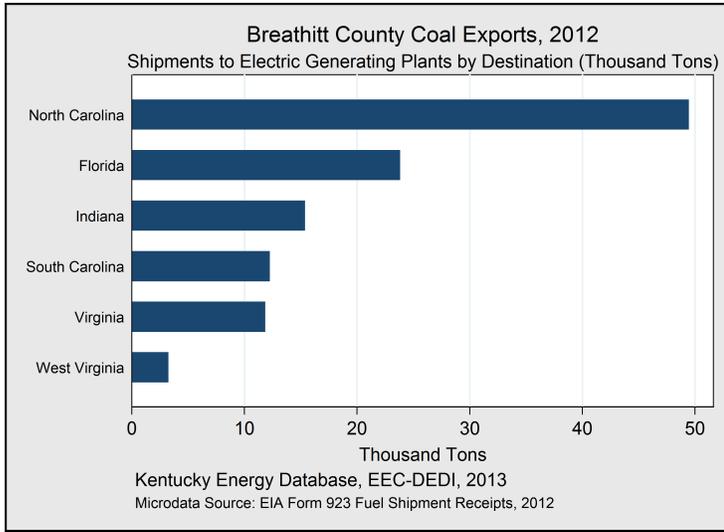
On-Site Activity	Employment	Percentage
Total	100	100%
Underground	62	62%
Surface	20	20%
Preparation Plant	17	17%
Office	1	<1%



In 2012, three small surface mines and one large underground mine in Breathitt County produced more than 287 thousand tons of coal, which accounted for 0.3 percent of annual coal production in Kentucky. The majority of coal mined in Breathitt County, 256 thousand tons, was extracted from underground mining. The remaining 31 thousand tons were extracted from surface mines. Total coal production in Breathitt County decreased by 65.5 percent from 2011.

Breathitt County coal mines and preparation plants employed an average of 100 on-site employees in 2012, a decrease of 51 percent from 2011. The majority of these jobs were held by 62 underground miners, followed by surface miners, preparation plant operators, and office staff. Coal mining employment in Breathitt County recently peaked in 2008 at 273 full-time jobs.

Breathitt County



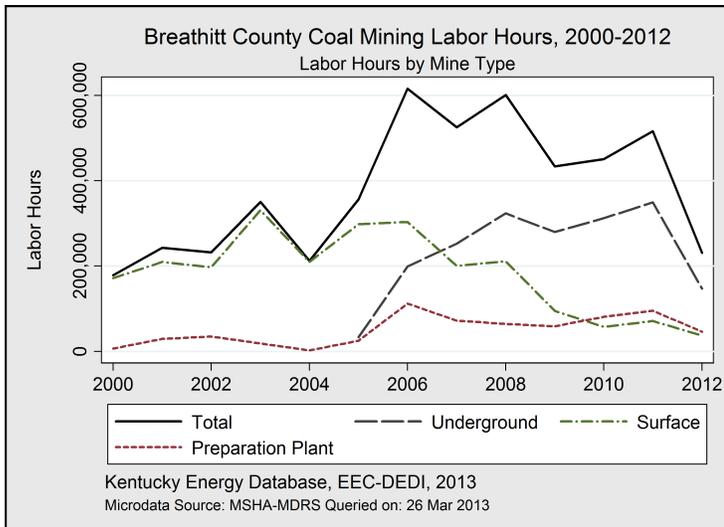
State & Power Plant	Deliveries (Tons)	Percentage
Total	116,064	100%
North Carolina	49,466	42.6%
L V Sutton	37,798	32.6%
Cliffside	11,668	10.1%
Florida	23,833	20.5%
Stanton Energy Center	23,833	20.5%
Indiana	15,395	13.3%
Rockport	15,395	13.3%
South Carolina	12,259	10.6%
Urquhart	12,259	10.6%
Virginia	11,845	10.2%
Chesterfield	11,845	10.2%
West Virginia	3,266	2.8%
John E Amos	3,266	2.8%

Breathitt County Coal Market

In 2012, no utility-scale power plants in Kentucky received coal mined in Breathitt County. Instead, approximately 116 thousand tons were shipped to seven different power plants in six different states, led by power plants located in North Carolina.

Breathitt County Coal Mining Productivity

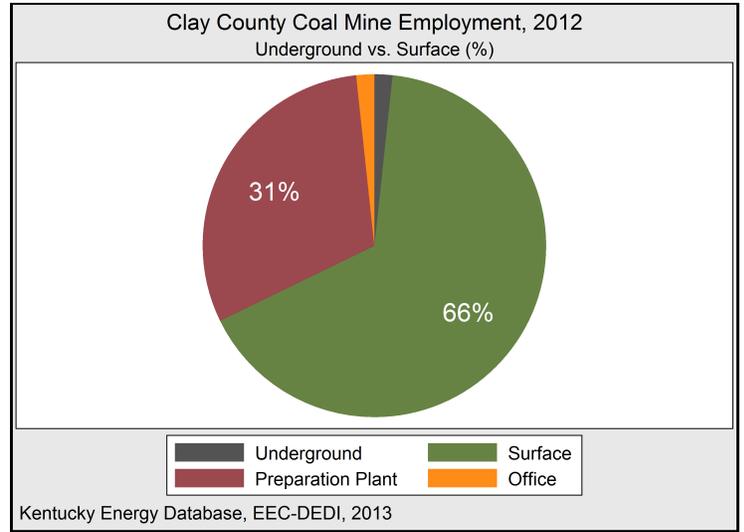
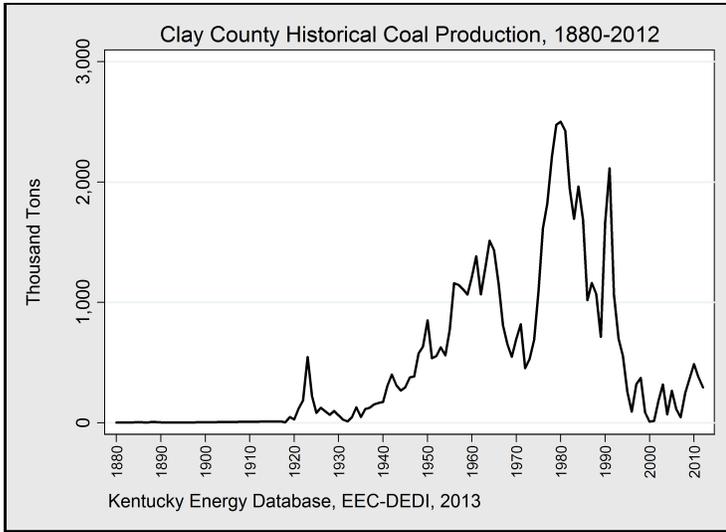
Breathitt County's productivity in 2012, including labor hours at the county's 4 preparation plants, was 1.25 tons per labor hour, a decrease of more than 71 percent from the year 2000. The county's only underground mine produced 1.74 tons per labor hour, while the county's 4 surface mines averaged 0.84 tons per labor hour.



Chemical Composition and Cost

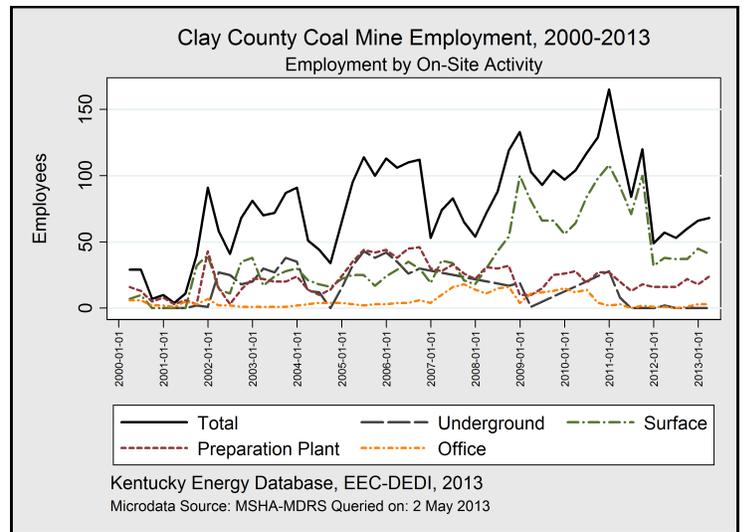
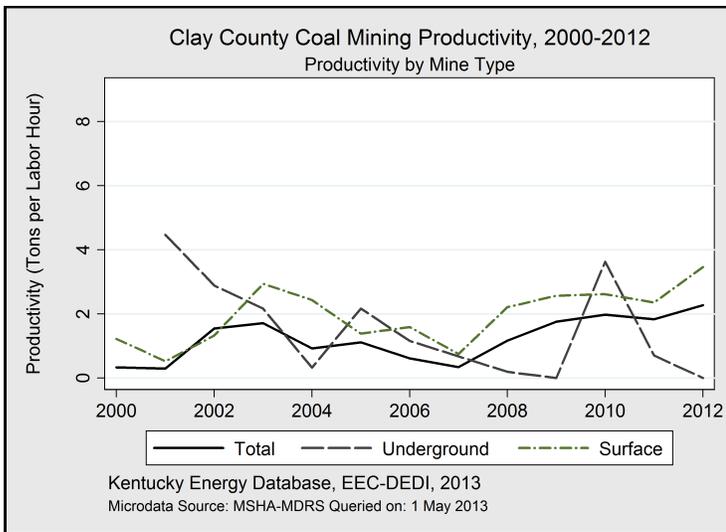
Coal from Breathitt County on average contained 1.1 percent sulfur, 11.1 percent ash, and 24.56 MMBtu per ton in 2012. The combination of these factors resulted in an average delivery price of \$100.01 per ton, though actual shipment prices ranged from \$76.74 to \$125.79 during the calendar year.

Clay County



Production Method	Mines	Production	Percentage
Total	12	293,829	100%
Surface	12	293,829	100%

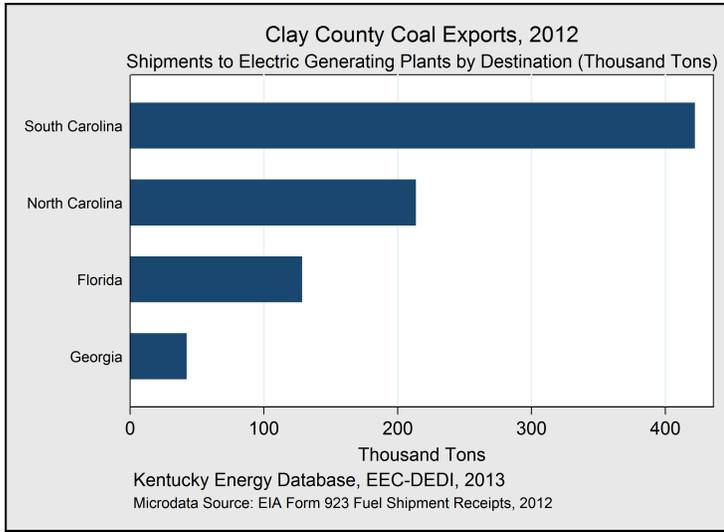
On-Site Activity	Employment	Percentage
Total	59	100%
Surface	39	66%
Preparation Plant	18	31%
Underground	1	<1%
Office	1	<1%



The 12 relatively small coal mines operating in Clay County produced more than 293 thousand tons of coal, which accounted for 0.3 percent of annual coal production in Kentucky. Almost all of the coal mined in Clay County since 2006 has come from surface mining operations. Total coal production in Clay County decreased by 29.9 percent from 2010, and is down by 72 percent since 1992.

Clay County coal mines employed an average of 59 on-site employees in 2012, which was a decrease of 39 percent from 2011. The majority of these jobs were held by 39 miners working on the surface. Eighteen employees worked full-time in coal preparation plants in Clay County during 2012.

Clay County



State & Power Plant	Deliveries (Tons)	Percentage
Total	806,706	100%
South Carolina	422,225	52.3%
Cope	280,270	34.7%
Wateree	90,502	11.2%
Williams	51,453	6.4%
North Carolina	213,612	26.5%
Cliffside	213,612	26.5%
Florida	128,584	15.9%
Cedar Bay	128,584	15.9%
Georgia	42,285	5.2%
Dublin Mill	31,840	3.9%
Savannah River Mill	10,445	1.3%

Clay County Coal Market

Of the 806,706 tons of steam coal exported from Clay County in 2012, more than 50percent of this production was delivered to power plants in South Carolina. The Cope Generating Station in Orangeburg County, South Carolina, was the single largest customer for Clay County coal, receiving 280,270 tons during the year. The States of North Carolina and Florida were also significant consumers of Clay County coal in 2012. No utility-scale power plants in Kentucky received coal mined in Clay County during the year.

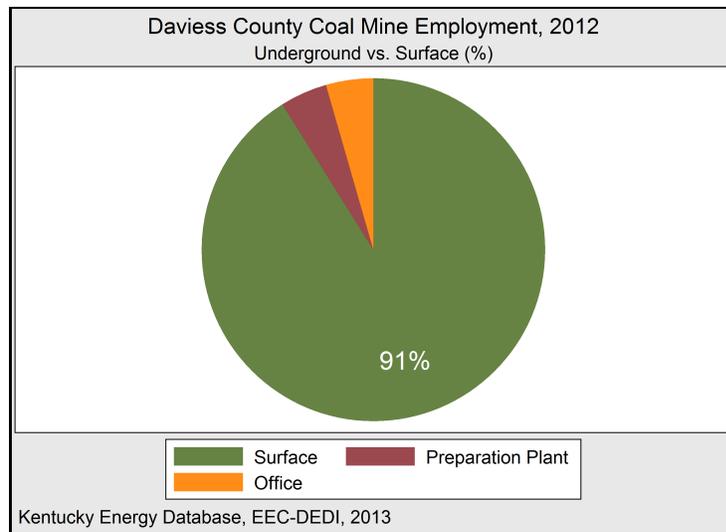
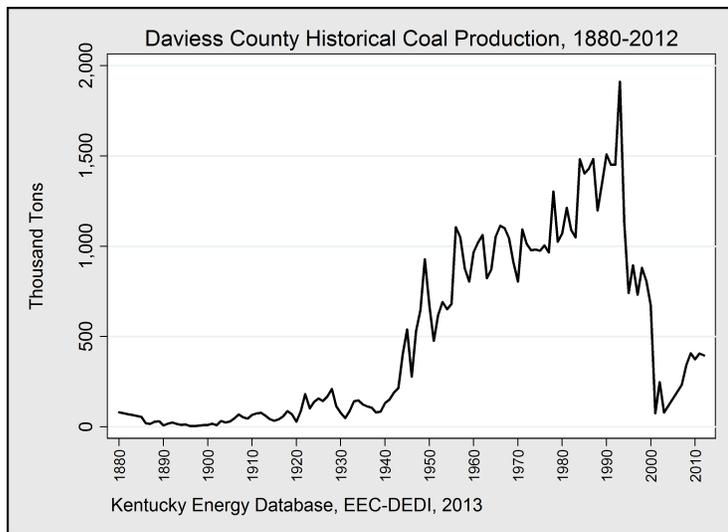
Clay County Coal Mining Productivity

Clay County's overall coal mining productivity in 2012 was 2.27 tons per labor hour, which is higher than the historical average of 1.23. Clay County surface mines generally yielded 3.46 tons per labor.

Chemical Composition and Cost

On average, coal mined in Clay County in 2012 had a mean sulfur content of 1.13%, a mean ash content of 11.9%, and a mean heat content of 24.32 MMBtu per ton. The average delivered price per ton for Clay County coal in 2012 was \$80.14, and ranged from \$76.97 to \$115.15.

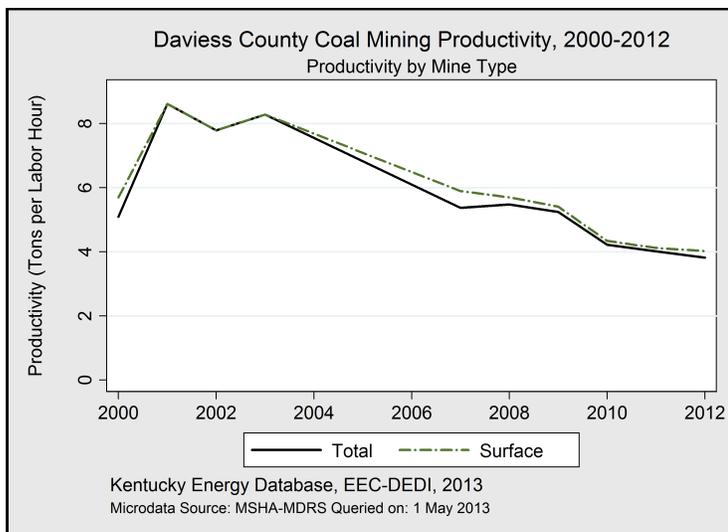
Daviess County



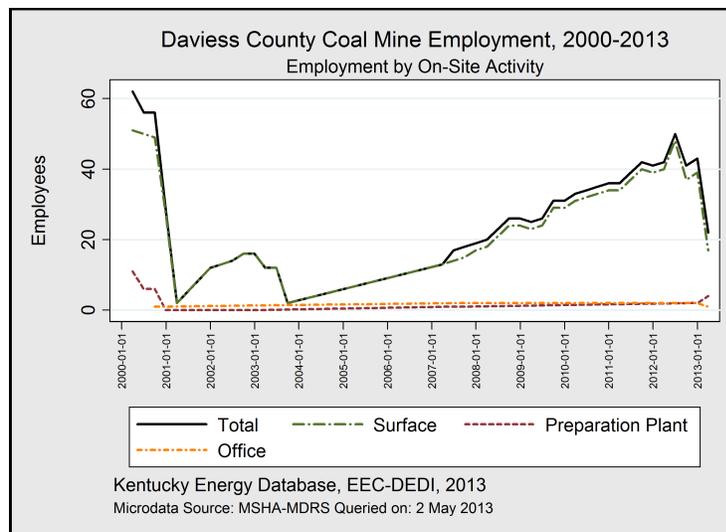
Production Method	Mines	Production	Percentage
Total	2	395,164	100%
Surface	2	395,164	100%

Between 1990 and 2012, coal production in Daviess County peaked in 1993 at 1.9 million tons. Since 1993, annual production is down substantially, though production has been increasing subtly over the past seven years.

On-Site Activity	Employment	Percentage
Total	44	100%
Surface	41	91%
Office	2	4%
Preparation Plant	2	4%

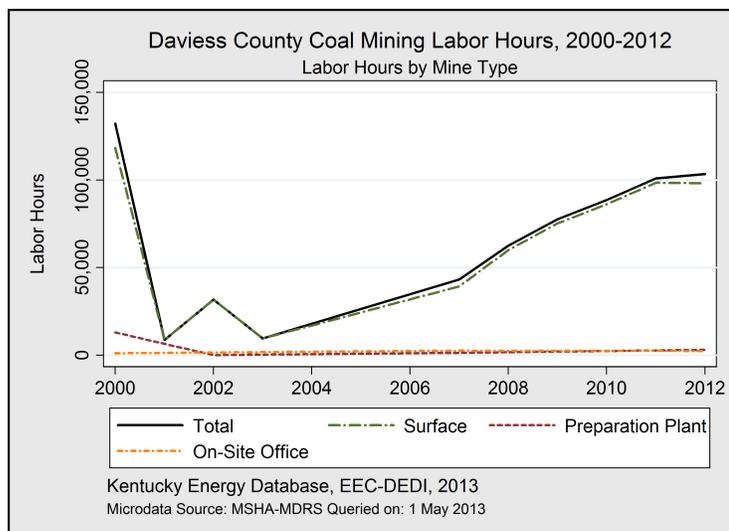


In 2012, Daviess County produced more than 395 thousand tons of coal, which accounted for 0.4 percent of annual coal production in Kentucky. All of the coal mined in Daviess County in recent decades has come from surface mining operations. Total coal production in Daviess County decreased by 2.5 percent from 2011.



Daviess County coal mines employed an average of 44 on-site employees in 2012, which was effectively the same as 2011. The vast majority of these jobs were held by miners working on the surface. Historically, surface mine labor hours have been the largest source of coal mine employment in Daviess County on an annual basis.

Daviess County



State & Power Plant	Deliveries (Tons)	Percentage
Total	1,564,405	100%
Kentucky	1,564,405	100%
Mill Creek	630,563	40.3%
Elmer Smith	346,382	22.1%
Ghent	311,351	19.9%
Trimble County	205,098	13.1%
D B Wilson	37,750	2.4%
R D Green	33,261	2.1%

Daviess County Coal Market

The customer-base for Daviess County steam coal was located entirely in Kentucky in 2012. The Mill Creek Power Plant, operated by Louisville Gas & Electric, was the largest consumer of Daviess County coal, followed by the Elmer Smith (Owensboro Municipal Utilities) and Ghent Generating Stations. In all, six different power plants in Kentucky received a total of 1.5 million tons of steam coal mined in Daviess County during 2012.

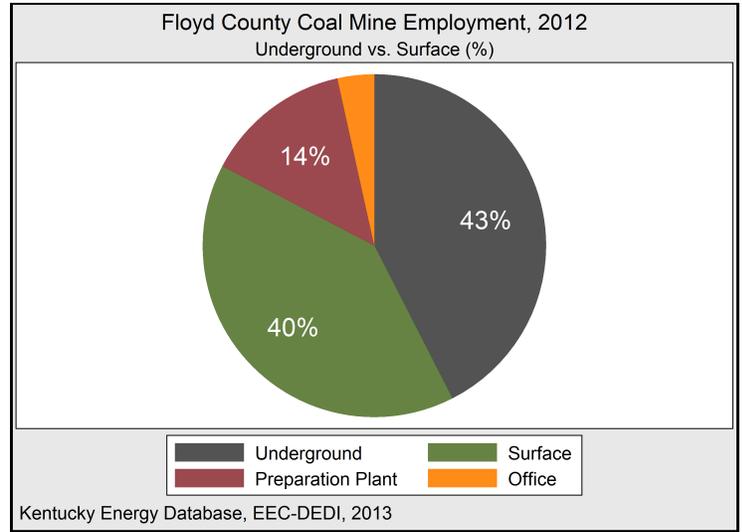
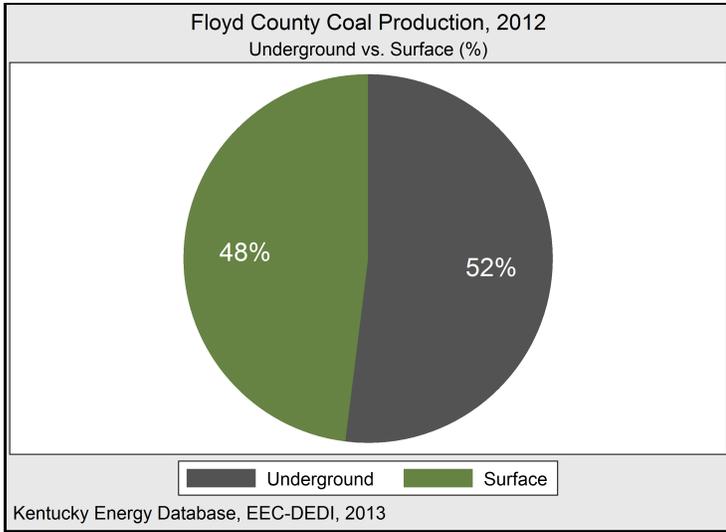
Chemical Composition and Cost

With an average sulfur content of 3.4 percent and average heat content of 22.6 MMBtu, the mean delivery price for coal from Daviess County in 2012 was \$50.69 per ton. The average ash content for coal shipped from Daviess County was 11.3 percent during the year.

Daviess County Coal Mining Productivity

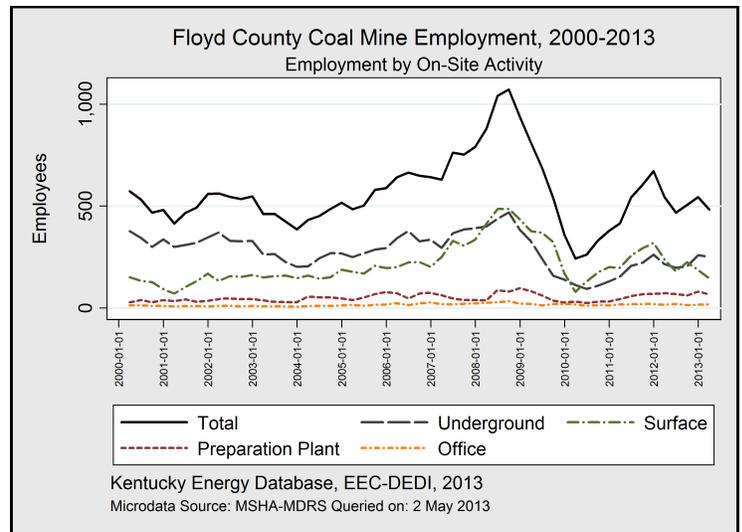
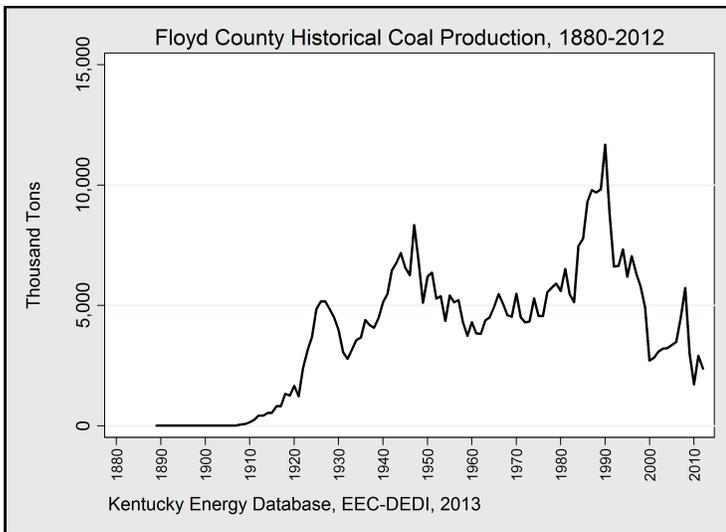
Although Daviess County in Western Kentucky had the fourth highest mine productivity in the Commonwealth in 2012, just slightly less than its neighboring counties, productivity has fallen by 53 percent from its peak in 2001. Overall productivity was 3.81 tons per labor hour, while surface productivity averaged 4.02 tons per labor hour.

Floyd County



Production Method	Mines	Production	Percentage
Total	42	2,381,211	100%
Underground	17	1,226,638	52%
Surface	25	1,154,573	48%

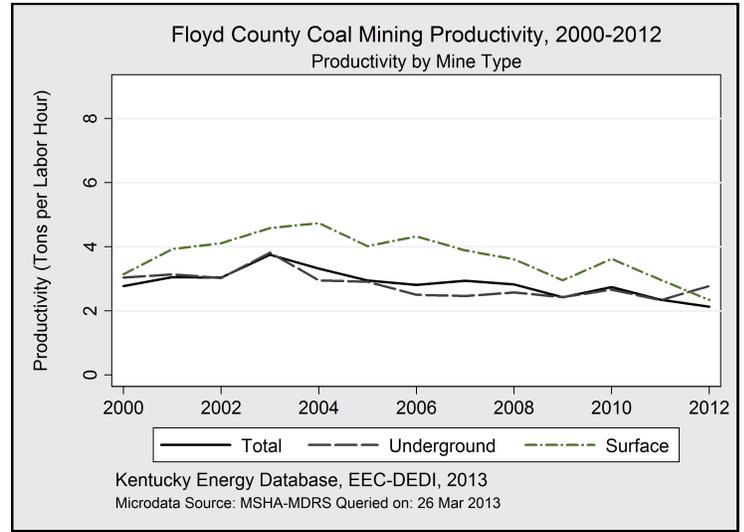
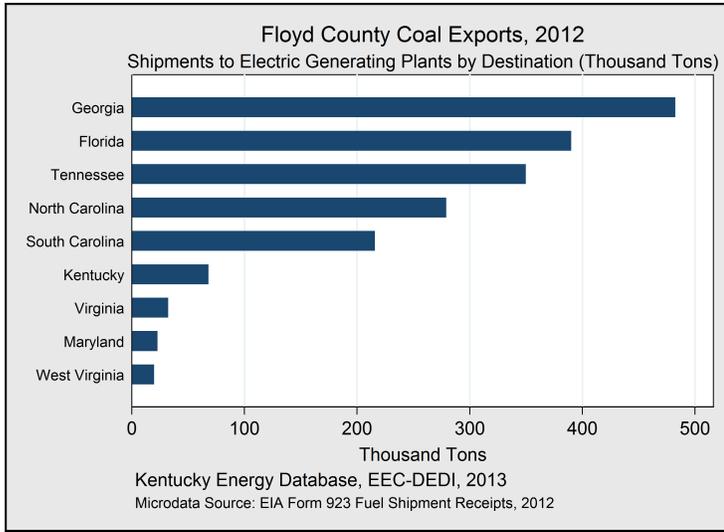
On-Site Activity	Employment	Percentage
Total	520	100%
Underground	221	43%
Surface	209	40%
Preparation Plant	72	14%
Office	18	3%



The 42 active coal mines in Floyd County during 2012 produced more than 2.3 million tons of coal, which accounted for 2.6 percent of annual coal production in Kentucky. Fifty-two percent of the coal mined in Floyd County in 2012 came from underground mines. Floyd County production decreased by 18.1 percent from 2011, and has fallen by 63 percent from 1994 when the county produced more than 7 million tons.

Coal mines and preparation plants in Floyd County employed approximately 519 persons on-site in 2012, which was a decrease of 81 full-time jobs, or 8%, from 2011. Underground mines were the largest source of direct coal mine employment in 2012, followed by surface mines and coal preparations plants.

Floyd County



State & Power Plant	Deliveries (Tons)	Percentage
Total	1,860,767	100%
Georgia	482,418	25.9%
Harllee Branch	418,499	22.5%
Bowen	63,919	3.4%
Florida	390,012	21%
Crystal River	248,535	13.4%
Deerhaven	110,830	6%
C D McIntosh Jr	21,225	1.1%
Stanton	9,422	<1%
Tennessee	349,767	18.8%
Eastman Operations	349,767	18.8%
North Carolina	279,162	15%
Roxboro	254,661	13.7%
Mayo	12,814	<1%
HF Lee Plant	11,687	<1%
South Carolina	215,918	11.6%
Wateree	104,609	5.6%
Cope	61,296	3.3%
Canadys Steam	32,342	1.7%
Florence Mill	17,671	<1%
Kentucky	68,184	3.7%
H L Spurlock	68,184	3.7%
Virginia	32,445	1.7%
Spruance Genco LLC	32,445	1.7%
Maryland	22,881	1.2%
Brandon Shores	22,881	1.2%
West Virginia	19,980	1.1%
John E Amos	19,980	1.1%

Floyd County Coal Market

Of the 1.86 million tons of steam coal exported from Floyd County in 2012, nearly a quarter of this total was consumed by the Harllee Branch and Bowen Power Plants located in Georgia. Florida was the next largest market for Floyd County coal, where four different facilities received deliveries during the year. Coal was also shipped to an additional seven states during 2012, including 68 thousand tons to the H.L. Spurlock plant located in northEastern Kentucky.

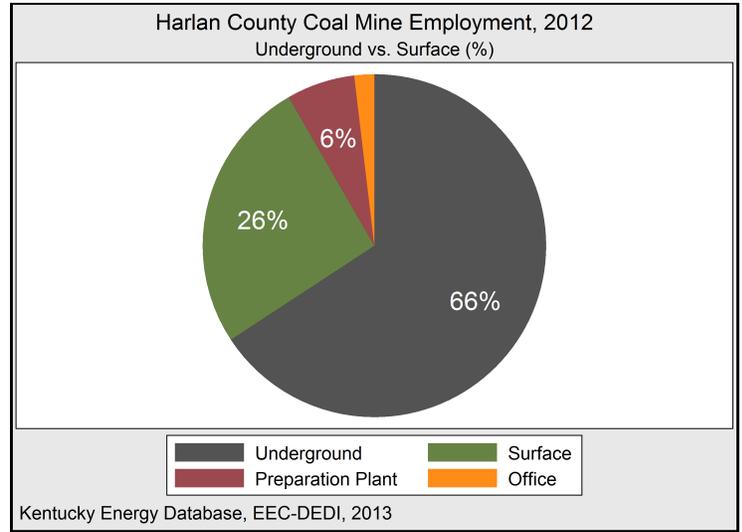
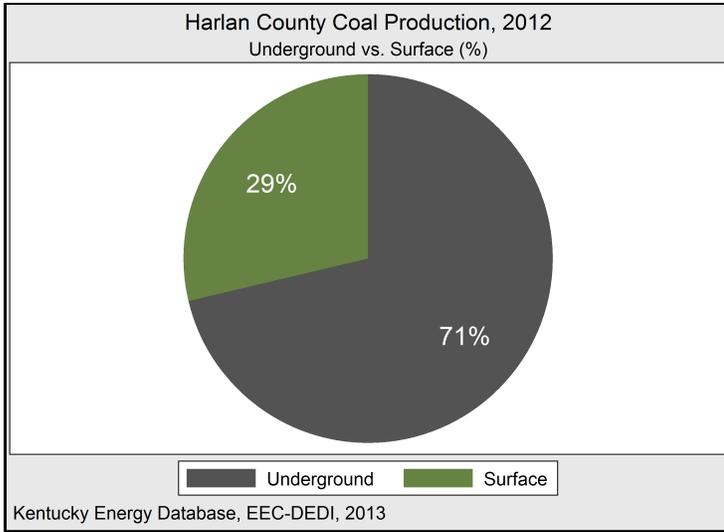
Chemical Composition and Cost

Coal from Floyd County on average contained 1.17 percent sulfur, 9.14 percent ash, and 25.15 MMBtu per ton in 2012. The combination of these factors resulted in an average delivery price of \$79.88 per ton, though actual shipment prices ranged from \$43.71 to \$173.35 during the calendar year.

Floyd County Coal Mining Productivity

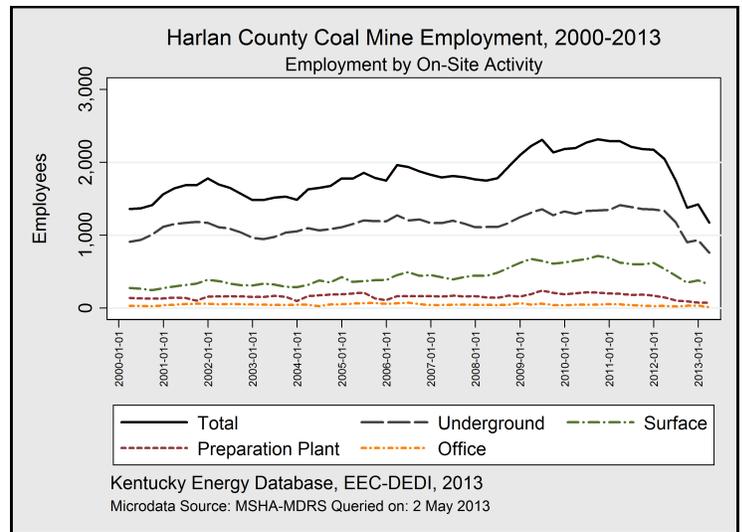
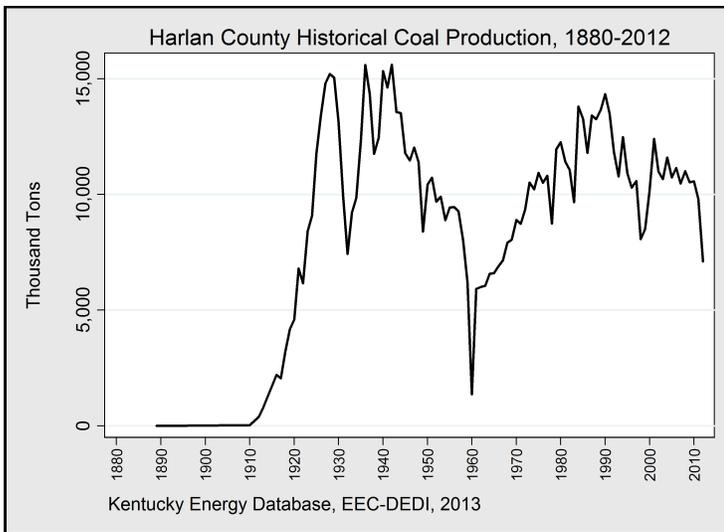
Floyd County's mining productivity decreased to 2.12 tons per labor hour in 2012. While underground operations averaged 2.76 tons per labor hour, surface operations produced 2.33 tons per labor hour.

Harlan County



Production Method	Mines	Production	Percentage
Total	60	7,101,868	100%
Underground	39	5,064,137	71%
Surface	21	2,037,731	29%

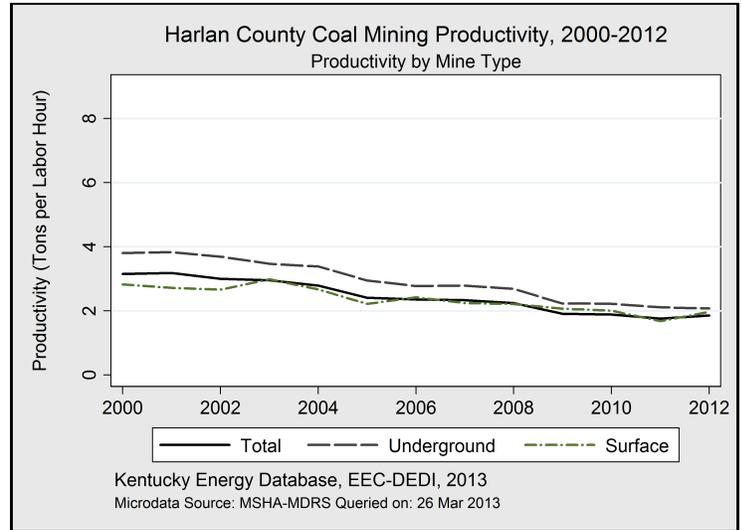
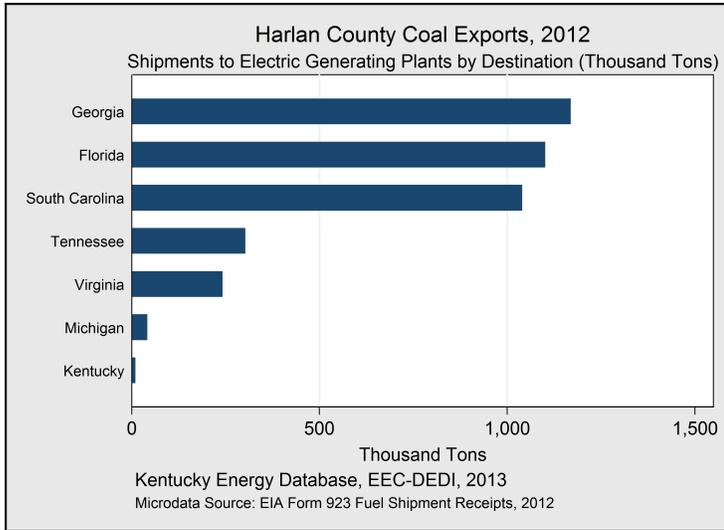
On-Site Activity	Employment	Percentage
Total	1,650	100%
Underground	1,085	66%
Surface	428	26%
Preparation Plant	106	6%
Office	31	2%



Harlan County produced 7.1 million tons of coal in 2012, which was 7.7 percent of total production in the Commonwealth. Yet, production decreased by 27.4 percent from 2011. Seventy-one percent of the coal produced in 2012 in Harlan County came from underground mining operations, while only 29 percent from surface mines. Between 2001 to 2010, Harlan County's production averaged 10 million tons annually.

Direct coal mine employment in Harlan County was the third highest in the Commonwealth in 2012, though mining employment decreased by 26 percent compared with 2011. During 2012, coal mines in Harlan County employed on average 1,649 individuals full-time. Underground mines were the largest source of mining employment, followed by surface operations. Approximately 100 individuals worked in coal preparations plants, while 31 worked at on-site offices.

Harlan County



State & Power Plant	Deliveries (Tons)	Percentage
Total	3,905,721	100%
Georgia	1,168,815	29.9%
Bowen	813,625	20.8%
Harllee Branch	292,517	7.5%
G.P. Cedar Springs	49,710	1.3%
Jack McDonough	12,963	<1%
Florida	1,101,116	28.2%
Indiantown	321,688	8.2%
Stanton Energy Center	270,850	6.9%
C D McIntosh Jr	214,436	5.5%
Crystal River	184,287	4.7%
Deerhaven	109,855	2.8%
South Carolina	1,039,837	26.6%
Wateree	609,283	15.6%
Williams	166,198	4.3%
I.P. Eastover	102,242	2.6%
Canadys Steam	77,525	2%
Florence Mill	58,964	1.5%
Cope	25,625	<1%
Tennessee	302,362	7.7%
Eastman Operations	211,194	5.4%
Bull Run	68,554	1.8%
John Sevier	22,614	<1%
Virginia	241,882	6.2%
Spruance Genco LLC	208,825	5.3%
Virginia City	33,057	<1%
Michigan	41,396	1.1%
Monroe	41,396	1.1%
Kentucky	10,313	<1%
Dale	10,313	<1%

Harlan County Coal Market

The States of Georgia, Florida, and South Carolina represented more than 85 percent of the demand for Harlan County steam coal in 2012. The Bowen Power Plant of Bartow County, Georgia, by itself received approximately one-fifth of all tons shipped during reporting year 2012. Less than one percent of the coal shipped from Harlan County during the year was consumed in Kentucky.

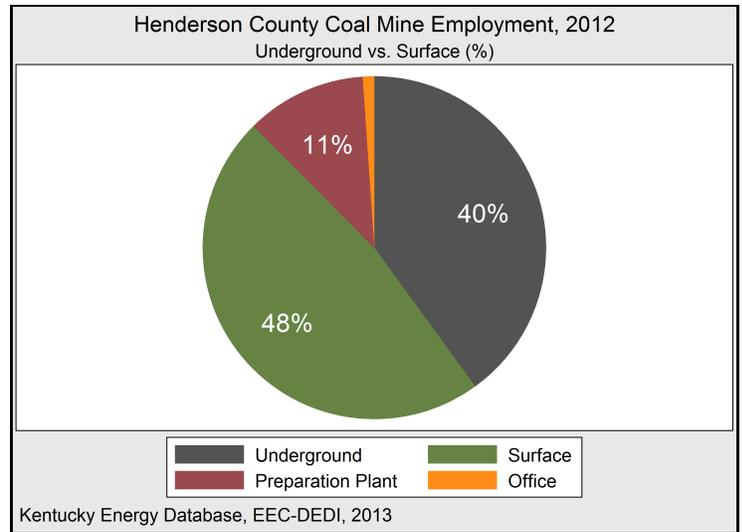
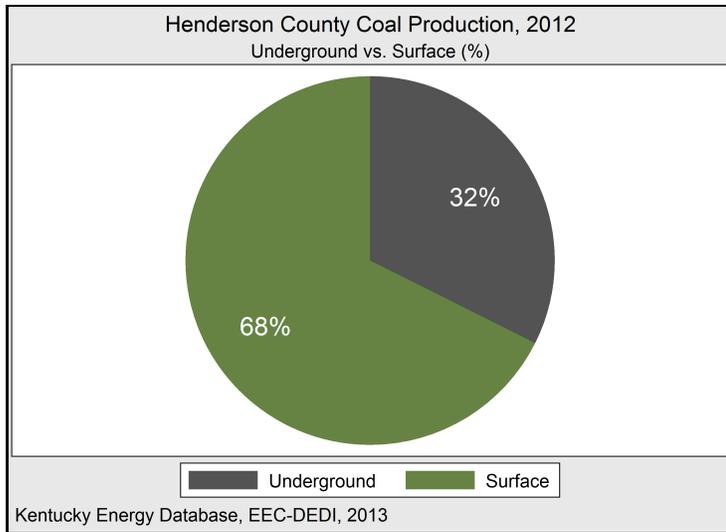
Harlan County Coal Mining Productivity

Harlan County's productivity in 2012 was 1.85 tons per labor hour, a decrease of almost 43 percent since the year 2000. Surface mines in Harlan County, both in 2012 and historically, have not been as productive as the county's underground mines. Underground mines on average yielded 2.07 tons per labor hour while surface mines yielded 1.96 per labor hour.

Chemical Composition and Cost

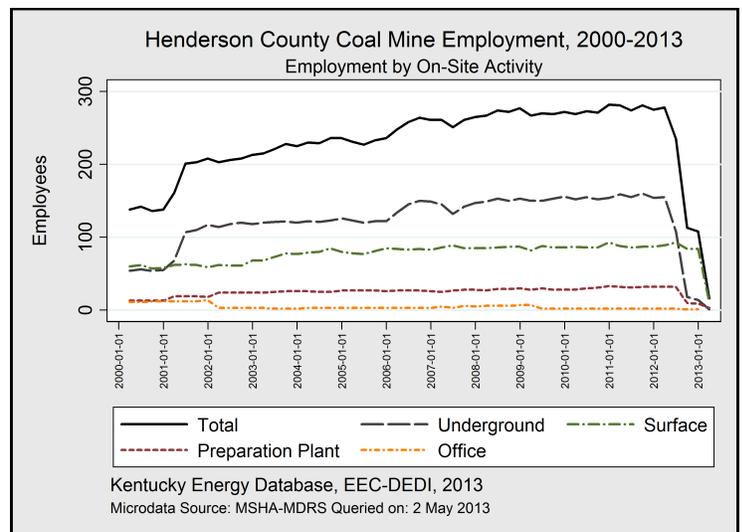
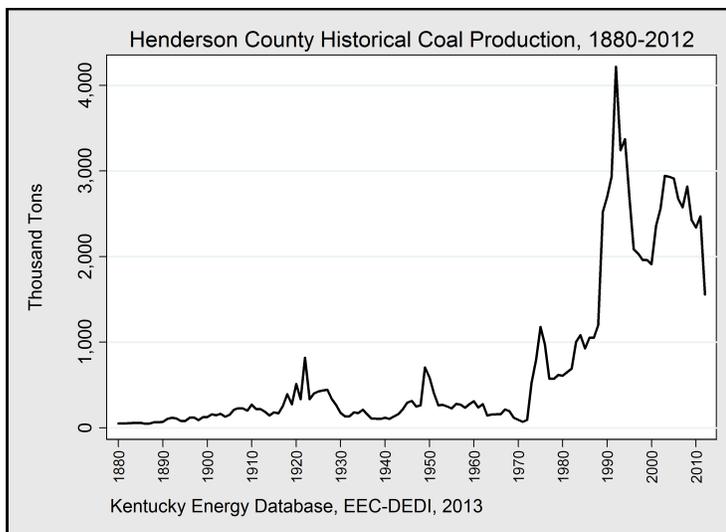
The average delivery price of coal from Harlan County was \$81.89 in 2012, and ranged in price from \$36.09 to \$168.19 a ton. Additionally, a typical ton of coal from Harlan County had an ash content of 9.87%, sulfur content of 1.1%, and a heat content of 25.11 MMBtu.

Henderson County



Production Method	Mines	Production	Percentage
Total	2	1,558,006	100%
Surface	1	1,053,298	68%
Underground	1	504,708	32%

On-Site Activity	Employment	Percentage
Total	185	100%
Surface	88	48%
Underground	74	40%
Preparation Plant	21	11%
Office	2	1%



Three coal mines and one preparation plant in Henderson County produced 1.55 million tons of coal in 2012, which was 1.7 percent of total production across the Commonwealth. Henderson County production decreased by 36.9 percent from 2011. Since production spiked at over 4 million tons in 1992, output from coal mines in Henderson County has decreased gradually over the past 20 years.

Coal mines in Henderson County employed on average a total of 185 persons full-time in 2012. Total mining employment in the county decreased by 34 percent compared with 2011. During 2012, surface mines were the largest source of coal mine employment in Henderson County. However, through 2012 direct employment at underground mines decreased drastically.

Henderson County

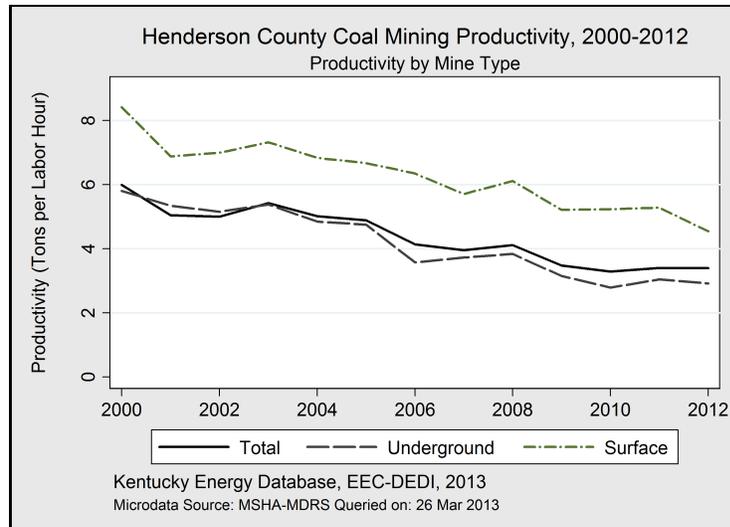
State & Power Plant	Deliveries (Tons)	Percentage
Total	1,795,573	100%
Kentucky	1,795,573	100%
Ghent	507,430	28.3%
Kenneth C Coleman	493,275	27.5%
Elmer Smith	333,295	18.6%
Trimble County	257,366	14.3%
R D Green	102,817	5.7%
H L Spurlock	72,143	4%
D B Wilson	27,700	1.5%
Mill Creek	1,547	<1%

Henderson County Coal Market

The customer-base for Henderson County steam coal was located entirely in Kentucky in 2012. During the year a total of 1.79 million tons of coal were shipped from Henderson County to eight different power plants within the Commonwealth. The Ghent Power Plant, operated by Kentucky Utilities, was the largest recipient of Henderson County coal at 507 thousand tons in 2012.

Chemical Composition and Cost

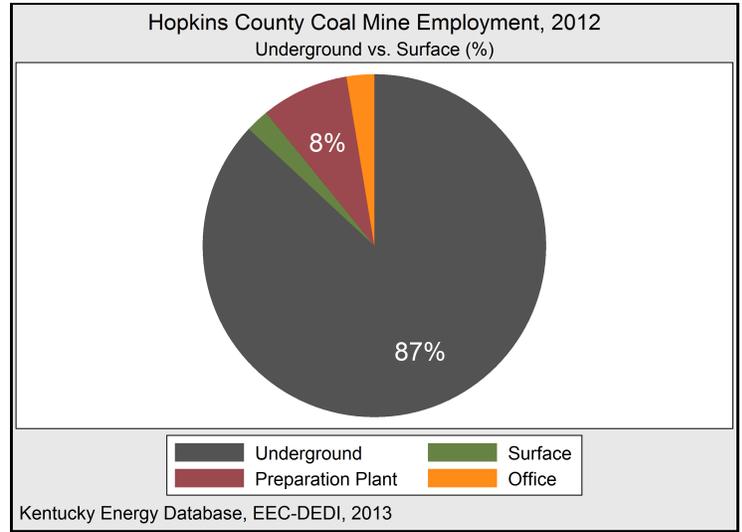
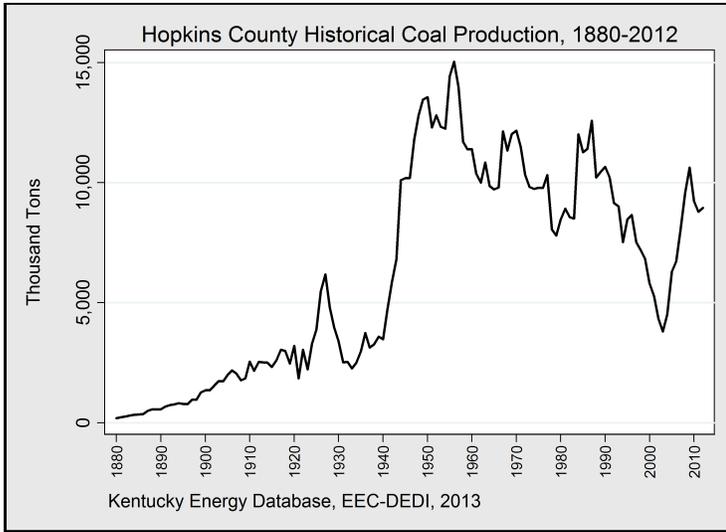
The average delivery price of coal from Henderson County was the third lowest in Kentucky at \$51.08 in 2012, and ranged in price from \$35.94 to \$81.42 a ton. Additionally, a typical ton of coal from Henderson County had an ash content of 9.25%, sulfur content of 3.17%, and a heat content of 22.43 MMBtu.



Henderson County Coal Mining Productivity

Mining productivity in Henderson County averaged 3.39 tons per labor hour in 2012, a decrease of almost 48 percent from the year 2000. Surface mines in Henderson County were, as expected, generally more productive than underground mines, yielding 4.5 tons per labor hour. Underground mines yielded instead 2.9 tons per labor hour. However, productivity metrics for both types of mining are notably high in Henderson County relative to other Kentucky coal mining counties.

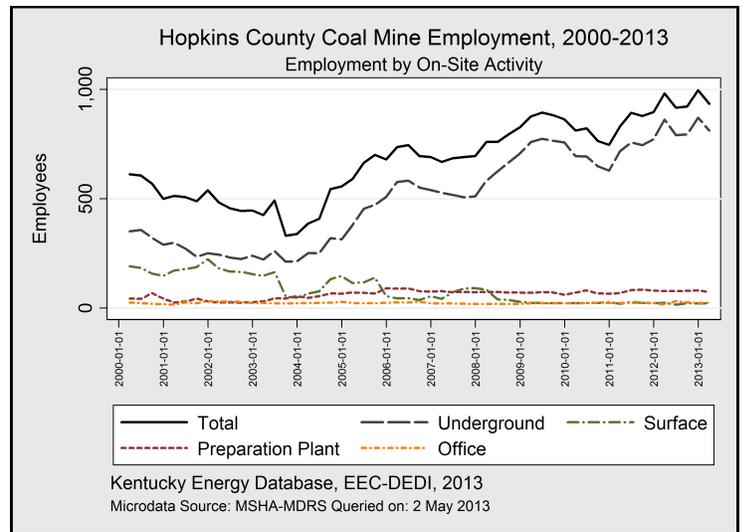
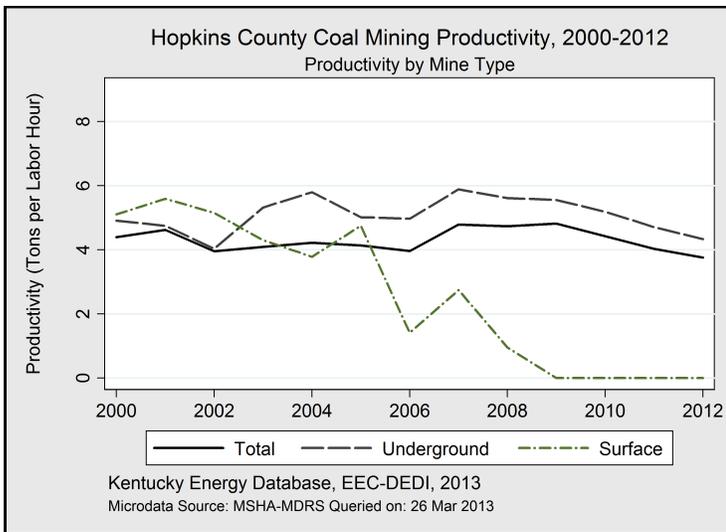
Hopkins County



Production Method	Mines	Production	Percentage
Total	4	8,945,605	100%
Underground	4	8,945,605	100%

On-Site Activity	Employment	Percentage
Total	957	100%
Underground	832	87%
Preparation Plant	79	8%
Office	25	3%
Surface	21	2%

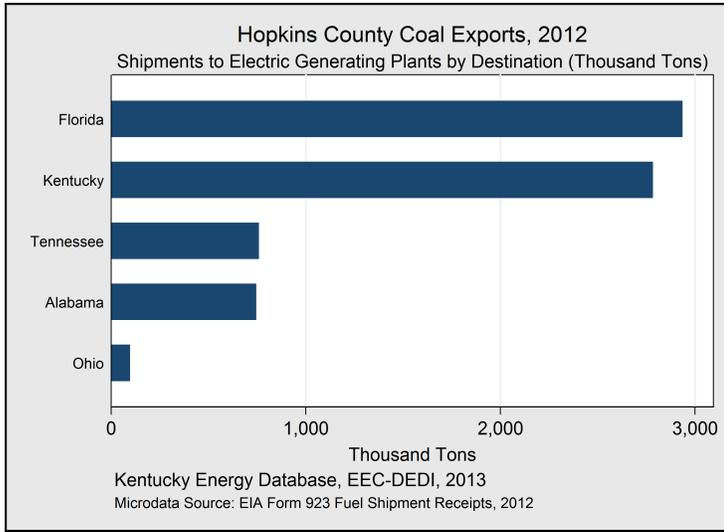
Since the year 2002, underground operations have been the primary source of coal mine employment in Hopkins County, located in Western Kentucky.



The four active underground coal mines and one preparation plant in Hopkins County produced more than 8.9 million tons of coal in 2012, which was 9.8 percent of total production across the Commonwealth. Compared with 2011, coal production in Hopkins County increased by 1.8 percent in 2012. The one strip and auger mine in Hopkins County has not registered coal production since 2007.

Around 957 people on average were employed full-time in the 4 coal mines and 1 preparation plant of Hopkins County in 2012. Compared with 2011, direct coal mine employment increased by 9 percent in Hopkins County, a net gain 60 full-time mining jobs. During the past ten years, underground mines have been the largest source of coal mining employment in Hopkins County.

Hopkins County



Hopkins County Coal Market

Florida was the largest single market for Hopkins County steam coal in 2012, followed by Kentucky. The Big Bend Power Plant located outside of Tampa, FL, itself received approximately 25 percent of 7.3 million tons shipped from Hopkins County during 2012. Combined, Florida and Kentucky represented 78 percent of coal shipments from the county during the year. Coal from Hopkins County was also delivered to power plants in Tennessee, Alabama, and Ohio in 2012.

Hopkins County Coal Mining Productivity

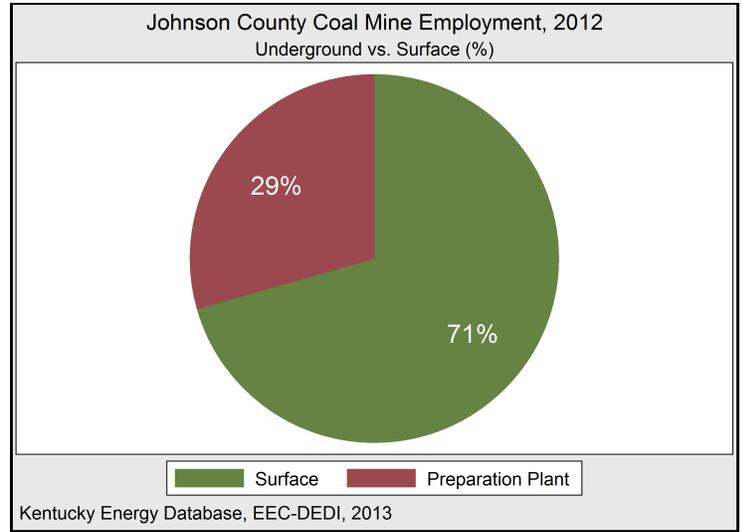
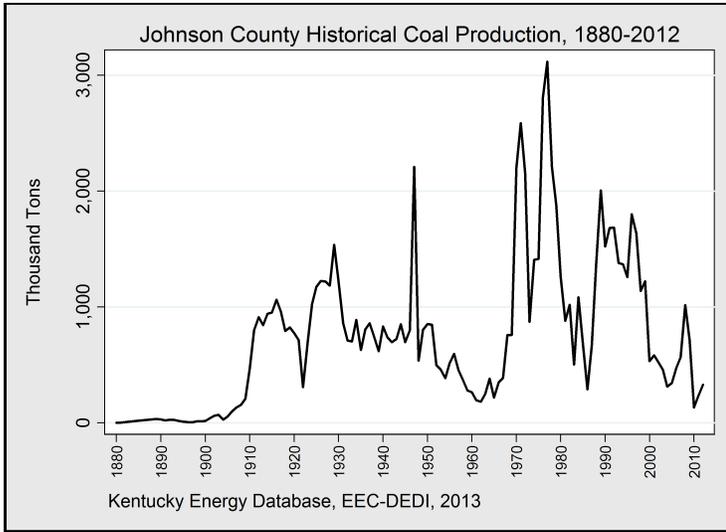
At 3.75 tons per labor hour, Hopkins County in Western Kentucky had the second highest average mine productivity in the Commonwealth in 2012. Over the past eleven years productivity in the county has remained fairly stable, and is down only 15 percent compared with the year 2000.

Chemical Composition and Cost

On average, coal mined in Hopkins County in 2012 had a mean sulfur content of 3.07%, a mean ash content of 9.68%, and a mean heat content of 23.77 MMBtu per ton. The average delivered price per ton for Hopkins County coal in 2012 was \$68.91, and ranged from \$35.08 to \$93.32.

State & Power Plant	Deliveries (Tons)	Percentage
Total	7,324,580	100%
Florida	2,936,391	40.1%
Big Bend	1,821,484	24.9%
Seminole	1,114,907	15.2%
Kentucky	2,783,446	38%
Paradise	1,252,720	17.1%
HMP&L Station Two	637,224	8.7%
Mill Creek	437,945	6%
Cane Run	249,008	3.4%
R D Green	206,549	2.8%
Tennessee	759,238	10.4%
Kingston	483,180	6.6%
Cumberland	267,200	3.6%
Johnsonville	8,858	<1%
Alabama	745,477	10.2%
Widows Creek	745,477	10.2%
Ohio	100,028	1.4%
J M Stuart	64,809	<1%
Walter C Beckjord	12,780	<1%
W H Zimmer	12,634	<1%
Miami Fort	9,805	<1%

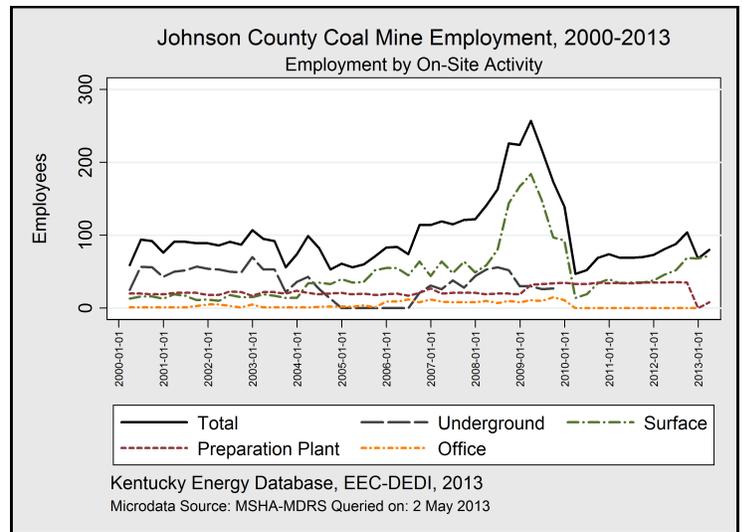
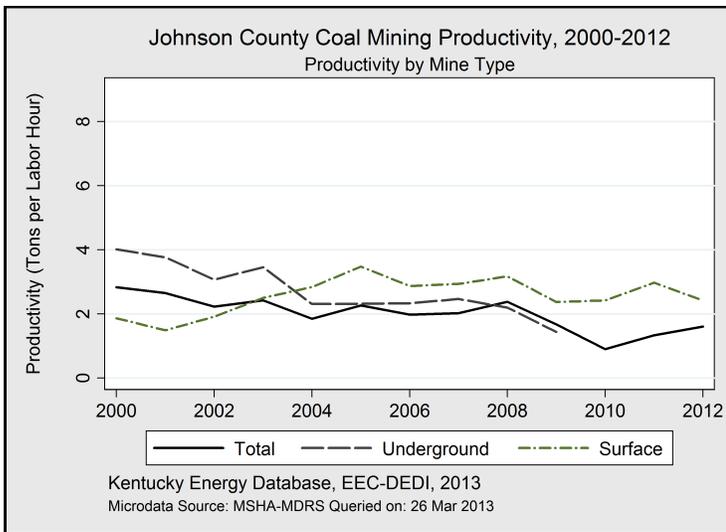
Johnson County



Production Method	Mines	Production	Percentage
Total	8	327,683	100%
Surface	8	327,683	100%

On-Site Activity	Employment	Percentage
Total	85	100%
Surface	60	71%
Preparation Plant	25	29%

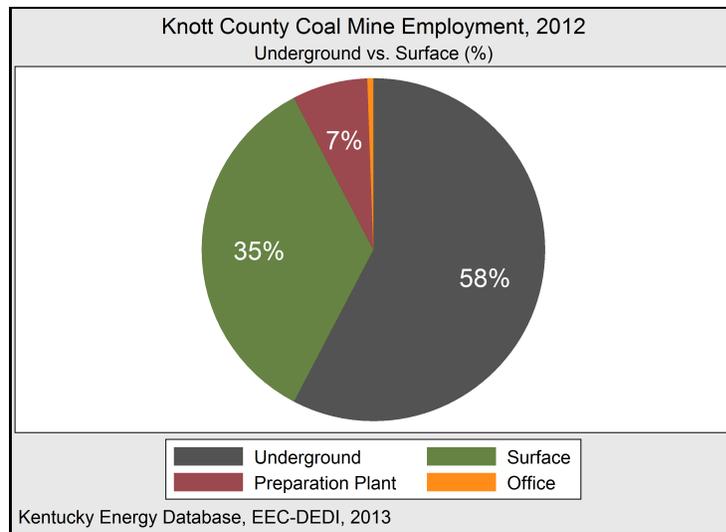
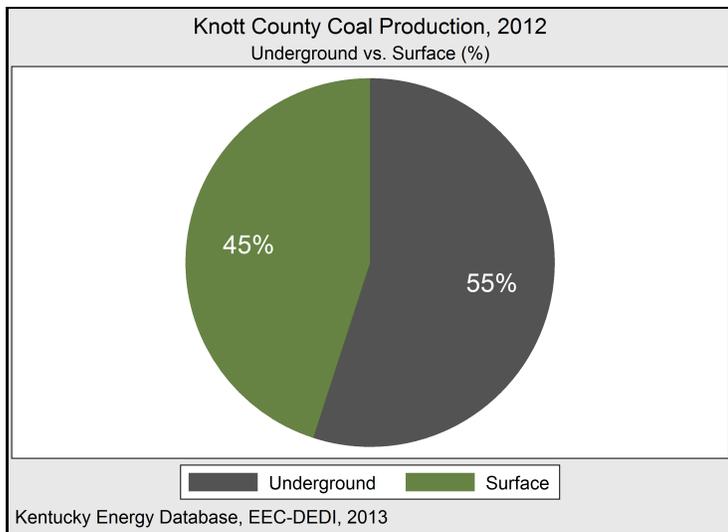
In 2012, the Big Sandy Power Plant in Louisa, KY, was the predominant consumer of coal mined in Johnson County.



The 8 active surface mines in Johnson County produced more than 327 thousand tons of coal in 2012. Although this reflected an increase of 41 percent from 2011, production was only a quarter of the county's 20-year average. Gradually, coal production from underground mines in Johnson County has been replaced by surface mining operations, which accounted for 100 percent of production in 2012.

Johnson County's 8 coal mines and 1 preparation plant employed 85 people full-time in 2012, a marginal increase from 2011. Surface mine sites were the largest source of mining employment in the county during 2012. Employment at Johnson County coal mines has fallen by 66 percent from a 2008 peak of 161 jobs.

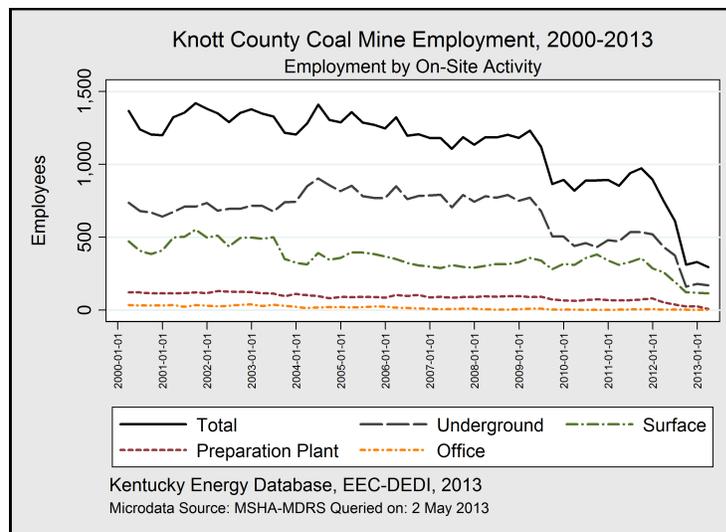
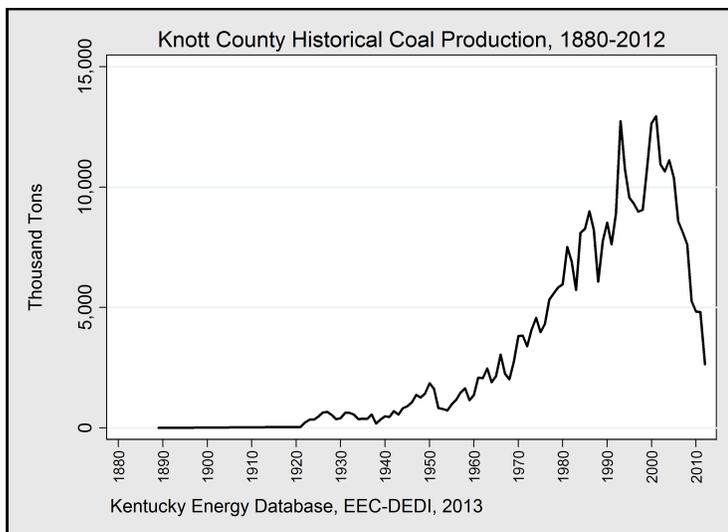
Knott County



Production Method	Mines	Production	Percentage
Total	24	2,641,000	100%
Underground	12	1,452,284	55%
Surface	12	1,188,716	45%

On-Site Activity	Employment	Percentage
Total	522	100%
Underground	301	58%
Surface	181	35%
Preparation Plant	37	7%
Office	3	<1%

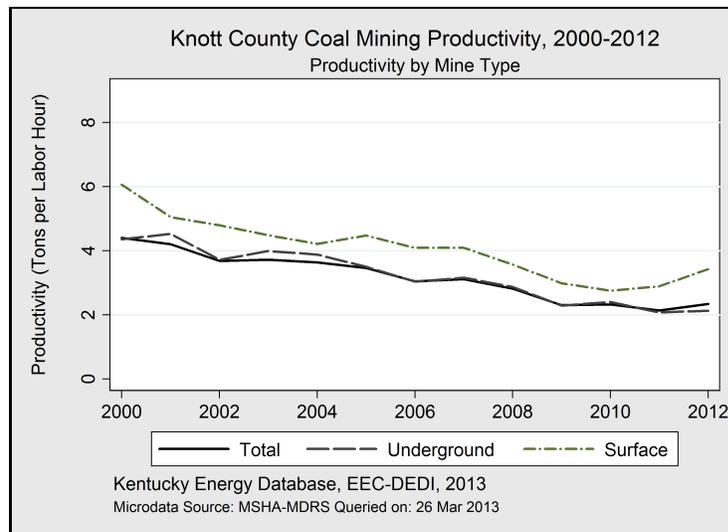
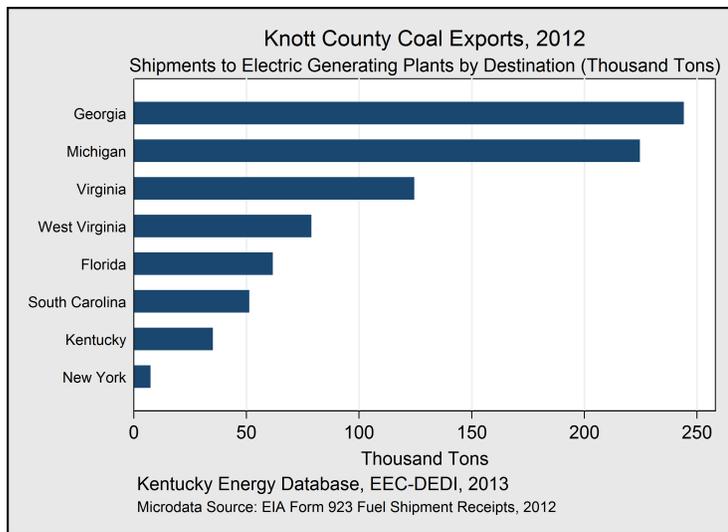
Between 1992 and 2011, coal production in Knott County was highest at 14.4 million tons, achieved in 1993.



The 24 active coal mines and 3 preparation plants in Knott County produced more than 2.6 million tons of coal in 2012, which was 2.9 percent of total production in Kentucky. All but three Knott County coal mines today are relatively small, averaging under 140 thousand tons annually. Production in Knott County decreased by 45 percent in 2012, and remained less than a third of historical peaks and less than half the 20-year average of 10 million tons annually.

The 24 coal mines and 5 preparation plants operating in Knott County employed on average a total of 522 persons full-time in 2012. Compared with 2011, direct coal mine employment in Knott County decreased by 43%, a loss of 452 mining jobs. During 2012, underground mines provided the largest concentration of mining employment in Knott County.

Knott County



State & Power Plant	Deliveries (Tons)	Percentage
Total	827,809	100%
Georgia	244,169	29.5%
Bowen	174,070	21%
Harllee Branch	51,306	6.2%
Mitchell	10,820	1.3%
I.P. Augusta Mill	7,973	1%
Michigan	224,670	27.1%
Monroe	224,670	27.1%
Virginia	124,573	15%
Chesterfield	82,636	10%
Spruance Genco LLC	41,937	5.1%
West Virginia	78,879	9.5%
Mountaineer	43,687	5.3%
Mitchell	30,667	3.7%
Kammer	4,525	<1%
Florida	61,704	7.5%
Stanton Energy Center	50,587	6.1%
Crystal River	11,117	1.3%
South Carolina	51,257	6.2%
Wateree	51,257	6.2%
Kentucky	35,120	4.2%
Big Sandy	35,120	4.2%
New York	7,437	<1%
Kodak Park Site	7,437	<1%

Knott County Coal Market

Power plants in Georgia represented the largest demand for Knott County steam coal in 2012. The Bowen Power Plant of Bartow County, Georgia, by itself received approximately one-fifth of all tons shipped during reporting year 2012. Michigan and Virginia were the next largest markets for Knott County coal, though deliveries were also made to power plants in West Virginia, Florida, South Carolina, Kentucky, and New York. In total, 827 thousand tons of steam coal were shipped to eight different states from Knott County during 2012.

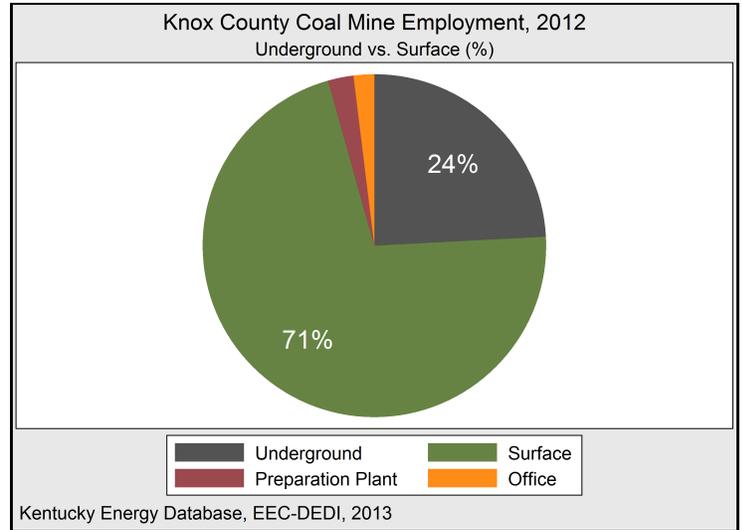
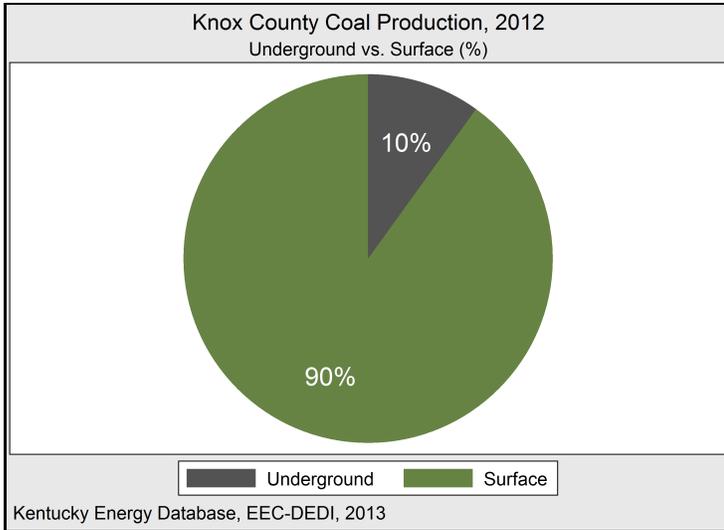
Knott County Coal Mining Productivity

Knott County's productivity in 2012 was 2.33 tons per labor hour, a decrease of more than 50 percent from the year 2000. Surface mines in Knott County were, as expected, generally more productive than underground mines, yielding 3.42 tons per labor hour. Underground mines yielded only 2.13 tons labor hour.

Chemical Composition and Cost

Coal from Knott County on average contained 1.28 percent sulfur, 9.39 percent ash, and 25.05 MMBtu per ton in 2012. The combination of these factors resulted in an average delivery price of \$91.08 per ton, though actual shipment prices ranged from \$59.78 to \$119.58 during the calendar year.

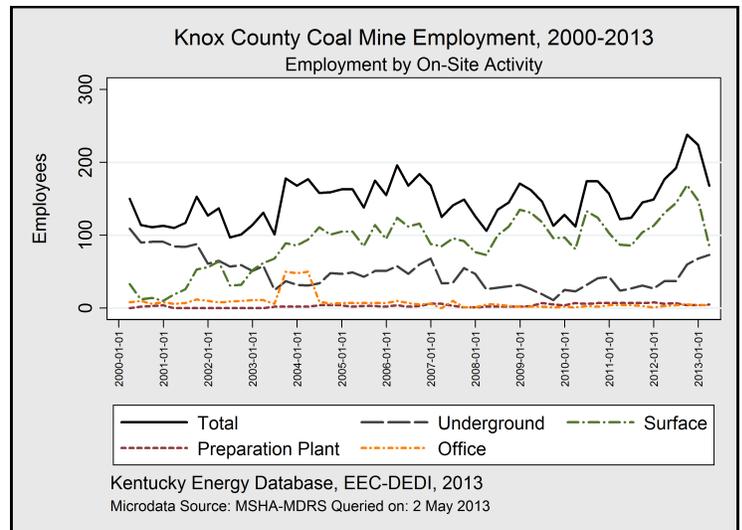
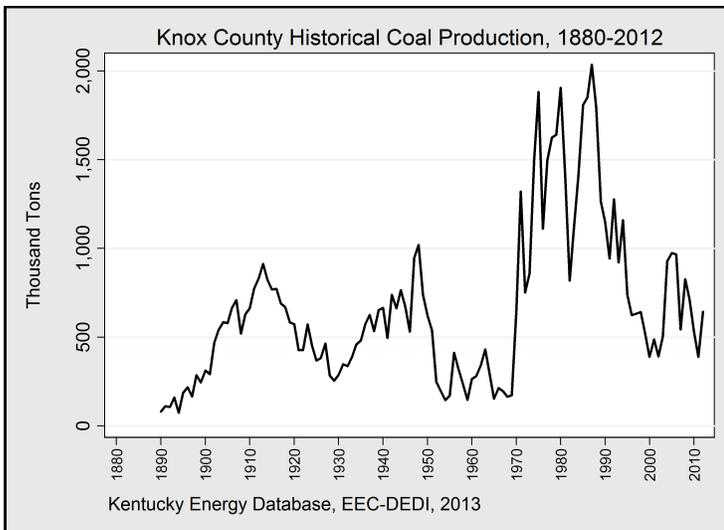
Knox County



Production Method	Mines	Production	Percentage
Total	19	643,877	100%
Surface	14	579,907	90%
Underground	5	63,970	10%

On-Site Activity	Employment	Percentage
Total	207	100%
Surface	148	72%
Underground	50	24%
Preparation Plant	5	2%
Office	4	2%

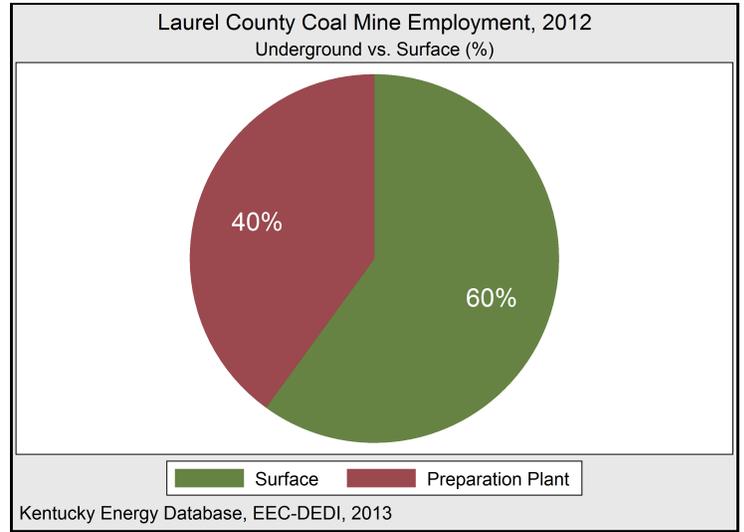
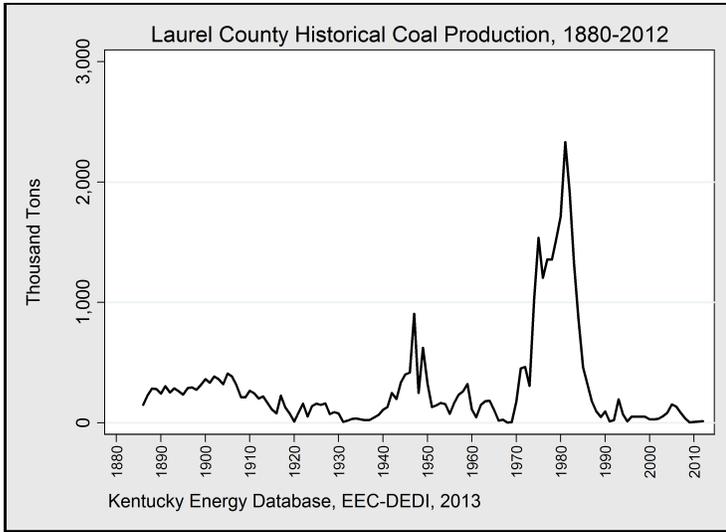
The EKPC Cooper Power Plant located in southEastern Kentucky was the predominant consumer of coal mined in Knox County during 2012.



Only 19 small coal mines and 1 preparation plant remain in Knox County, which produced a total of 643 thousand tons in 2012, or 0.7 percent of the Commonwealth's total production. Coal production in Knox County increased by 65.7 percent in 2012. In 1992, the county's 30 underground mines, 4 surface mines, and 3 preparation plants produced more than a million tons. Additionally, surface mining techniques have become the predominant extraction method since 2003.

Knox County coal mines employed 207 people in 2012, an increase of 54 percent from 2011, and only 7 percent below the 10-year average. Approximately 70 percent of mining employment in Knox County was represented by surface mine sites in 2012. At least temporarily, workforce reductions have been mitigated by declining productivity.

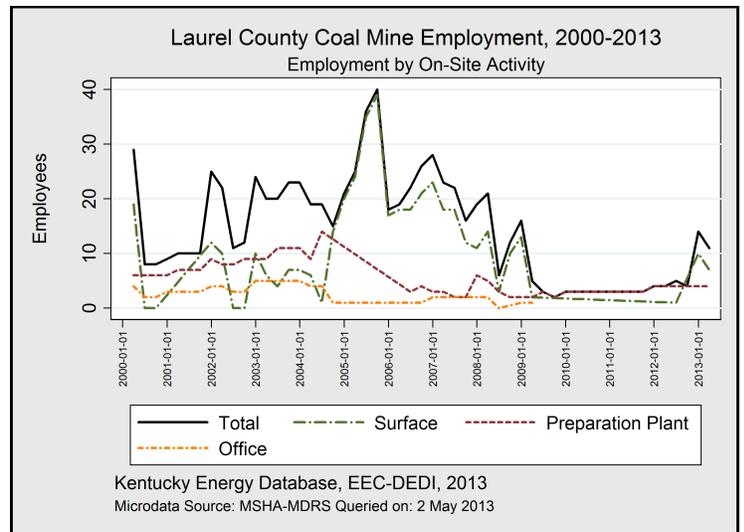
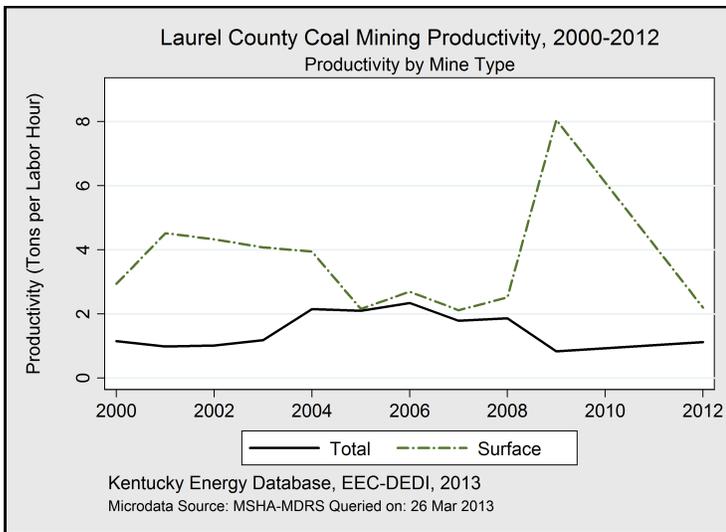
Laurel County



Production Method	Mines	Production	Percentage
Total	2	12,627	100%
Surface	2	12,627	100%

On-Site Activity	Employment	Percentage
Total	14	100%
Surface	10	60%
Preparation Plant	4	40%

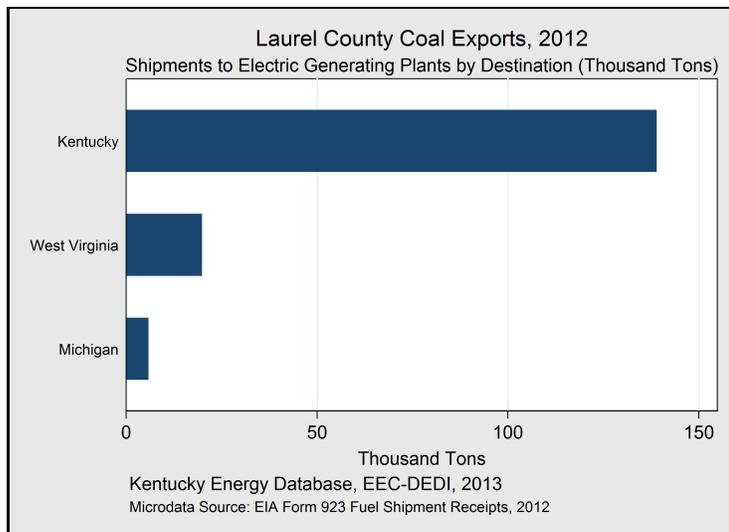
Laurel County in Eastern Kentucky did not register coal production in 2011. Additionally, coal production peaked in Laurel County at nearly 2.5 million tons in 1981.



Two small surface mines in Laurel County registered 12 thousand tons of coal production in 2012. This total represented less than one percent of Kentucky coal production during the year. Since 1990, coal production in Laurel County has been minimal year-to-year.

Direct coal mine employment in Laurel County during 2012 averaged 14 full-time workers. Two small surface mines represented most of the coal mining employment during the year, while 4 individuals operated a coal preparation plant within the county.

Laurel County



Laurel County Coal Market

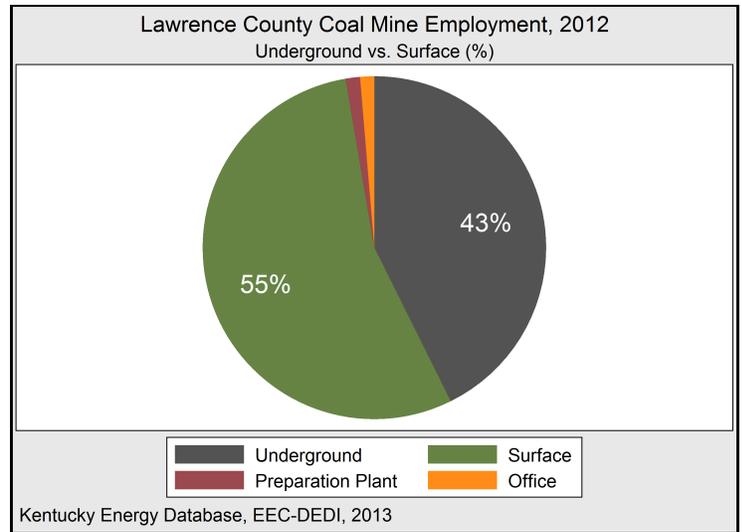
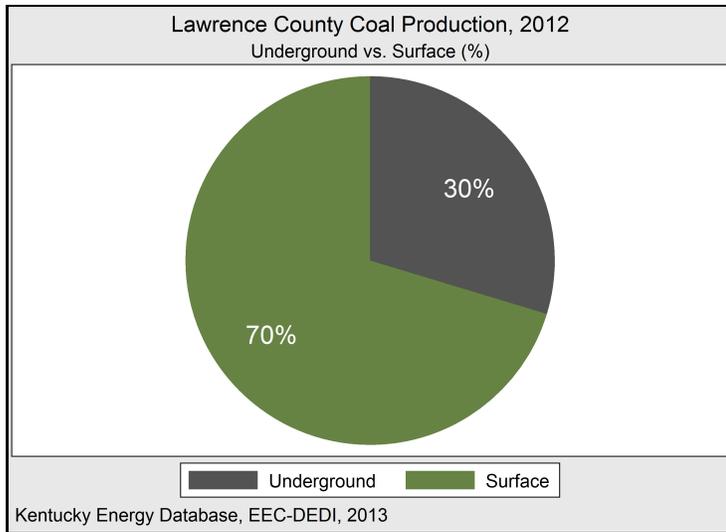
The Elmer Smith Power Plant operated by Owensboro Municipal Utilities was the largest consumer of Laurel County steam coal, receiving 84 percent of county shipments during 2012. Coal from Knott County was also shipped to the Amos Power Plant of West Virginia, and the Simon Power Plant located in Michigan. In total, 164 thousand tons of coal were shipped from Laurel County to power plants in 2012.

Chemical Composition and Cost

The average delivery price of coal from Laurel County was \$49.30 in 2012, and ranged in price from \$41.34 to \$79.72 a ton. Additionally, a typical ton of coal from Laurel County had an ash content of 10.65%, sulfur content of 2.24%, and a heat content of 22.21 MMBtu.

State & Power Plant	Deliveries (Tons)	Percentage
Total	164,738	100%
Kentucky	138,943	84.3%
Elmer Smith	138,943	84.3%
West Virginia	19,903	12.1%
John E Amos	19,903	12.1%
Michigan	5,892	3.6%
Simon Power Plant	5,892	3.6%

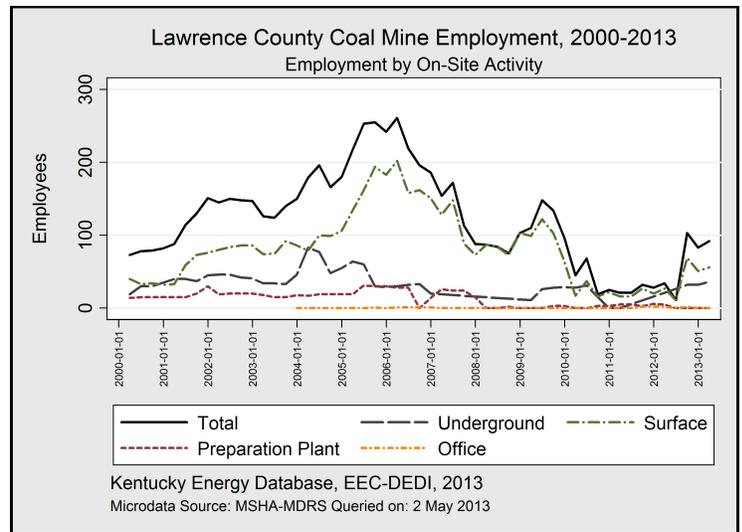
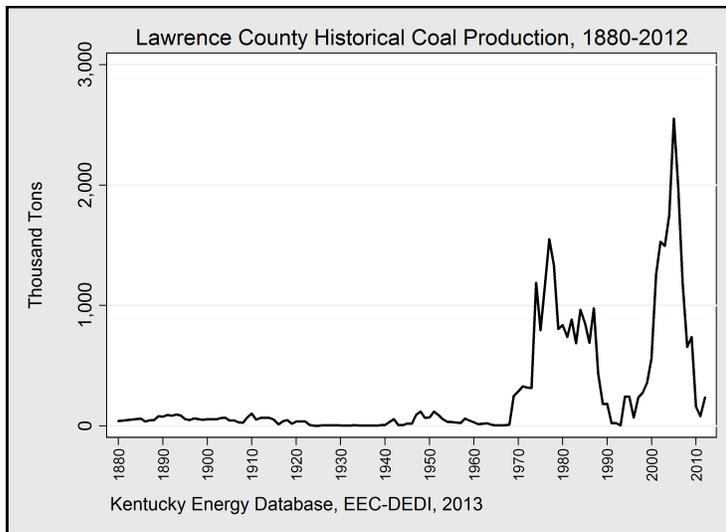
Lawrence County



Production Method	Mines	Production	Percentage
Total	5	234,628	100%
Surface	4	164,008	70%
Underground	1	70,620	30%

On-Site Activity	Employment	Percentage
Total	76	100%
Surface	42	55%
Underground	32	43%
Preparation Plant	1	1%
Office	1	1%

Between 1992 and 2012, coal production in Lawrence County peaked in 2004 at 4.4 million tons. Since 2004, coal production in the county has declined rapidly.

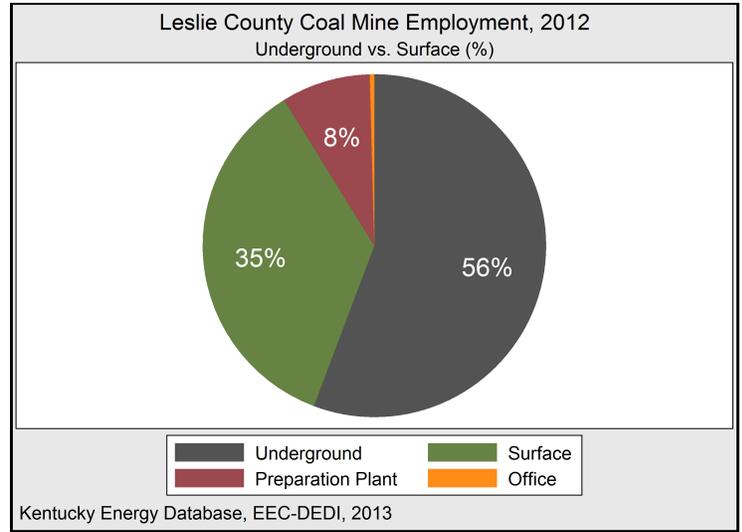
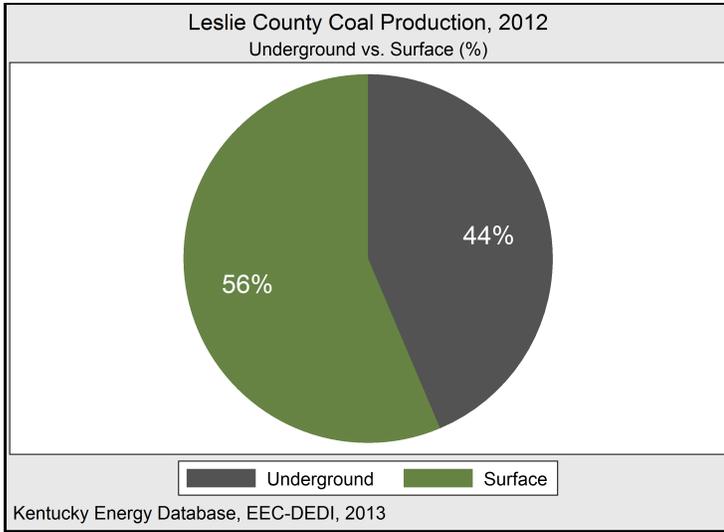


In 2012, the 5 small coal mines and 1 preparation plant located in Lawrence County produced a total of 234 thousand tons. Coal production in Lawrence County increased by 189.6 percent compared with 2011, and represented 0.3 percent of Kentucky coal production in 2012. Surface mining operations represented 70 percent of coal production in Lawrence County during the year.

Coal mine employment in Lawrence County increased from 28 full-time workers in 2011 to 76 full-time workers in 2012. On average, surface mines within Lawrence County provided the largest source of mining employment, followed by underground operations. However, mining employment in the county remains down from a recent peak of 242 full-time jobs in 2005.

All of the steam coal shipped from Lawrence County in 2012 was delivered to the Crystal River Power plant in Florida.

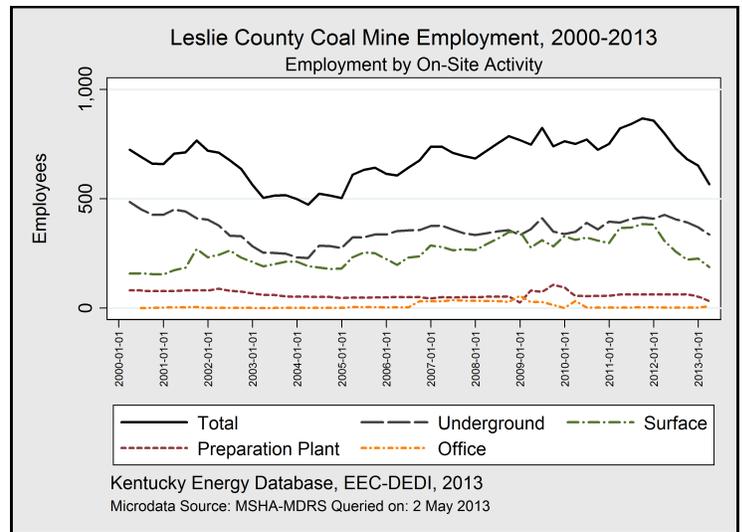
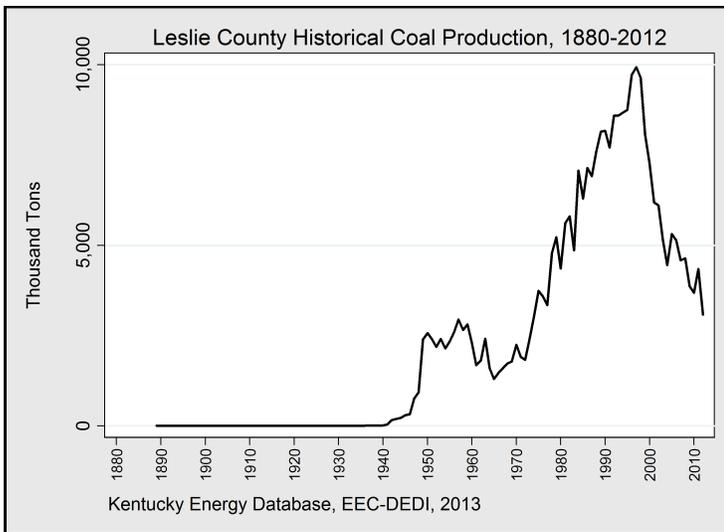
Leslie County



Production Method	Mines	Production	Percentage
Total	17	3,081,732	100%
Surface	11	1,734,133	56%
Underground	6	1,347,599	44%

On-Site Activity	Employment	Percentage
Total	716	100%
Underground	399	56%
Surface	254	35%
Preparation Plant	60	8%
Office	3	1%

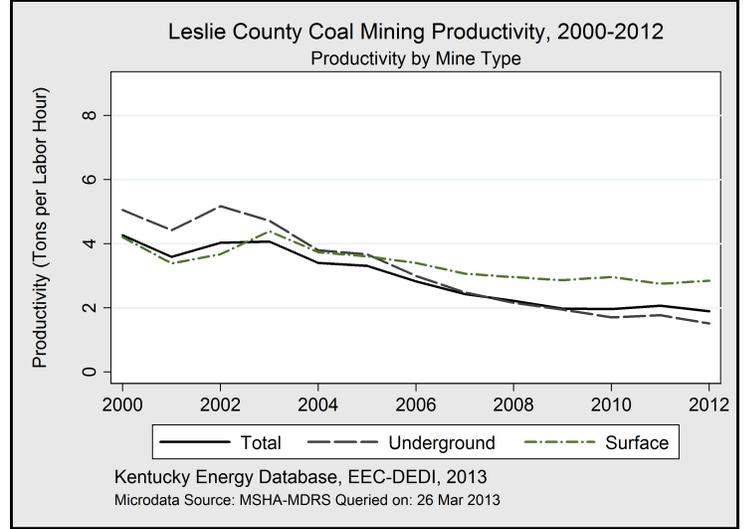
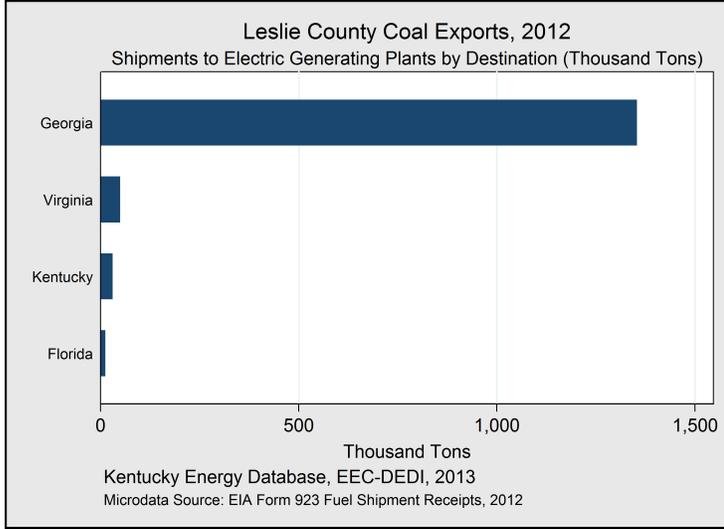
Underground coal production began to decline in Leslie County during 1996.



During 2012, Leslie County had 17 active mine sites which produced more than 3 million tons of coal. Production in the county was led slightly by surface operations, which represented 56 percent coal mining in 2012. Overall, Leslie County represented 3.3 percent of statewide coal production in 2012, though production decreased by 29 percent compared to 2011.

Direct coal mining employment in Leslie County has risen by 31 percent since 2004, in part due to decreasing productivity at active surface and underground mines. In 2012, coal mining companies in Leslie County maintained around 700 full-time employees with the majority of workers stationed at surface and underground operations. Direct coal mine employment in Leslie County during 2012 decreased by 15 percent compared with 2011.

Leslie County



State & Power Plant	Deliveries (Tons)	Percentage
Total	1,446,486	100%
Georgia	1,353,473	93.6%
Bowen	847,340	58.6%
Harllee Branch	495,022	34.2%
Mitchell	11,111	<1%
Virginia	49,522	3.4%
Virginia City Hybrid	49,522	3.4%
Kentucky	30,802	2.1%
H L Spurlock	20,669	1.4%
Cooper	10,133	<1%
Florida	12,689	<1%
C D McIntosh Jr	12,689	<1%

Leslie County Coal Market

During 2012, three power plants in Georgia represented approximately 94 percent of the demand for Leslie County steam coal. The Bowen Power Plant of Bartow County, GA, itself was the recipient of 58.6 percent of the coal shipped from Leslie County during the year. Overall, 1.44 million tons of coal mined in Leslie County was delivered to four different states in 2012.

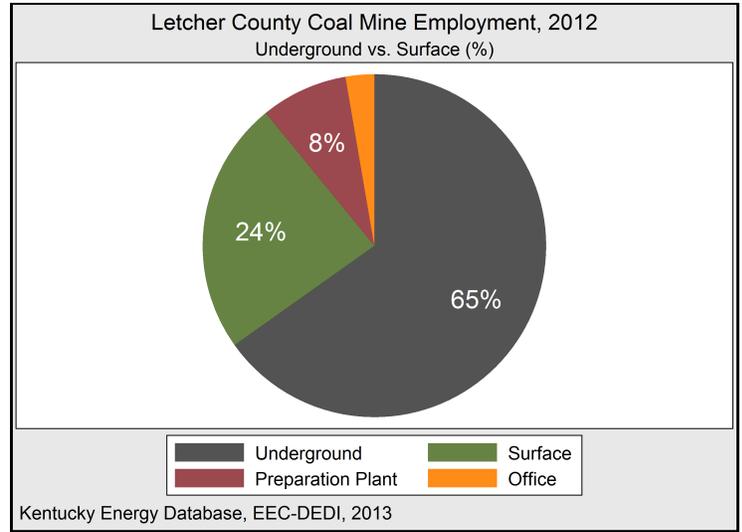
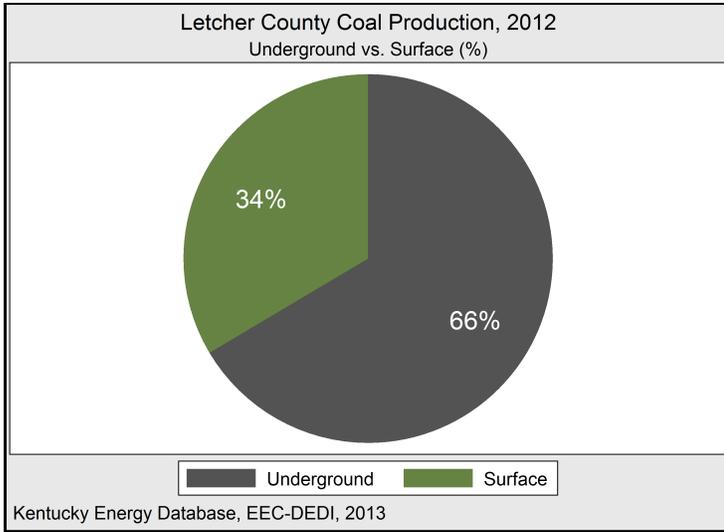
Leslie County Coal Mining Productivity

Average mine productivity in Leslie County was 1.88 tons per labor hour in 2012. Overall, county-level productivity was buffeted by surface operations, which accounted for 56 percent of annual production. In 2012, surface coal mines were typically 88 percent more productive than underground mines.

Chemical Composition and Cost

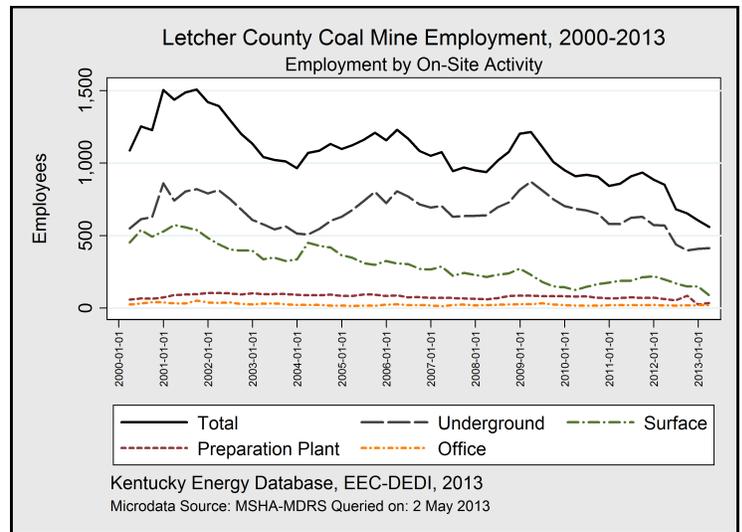
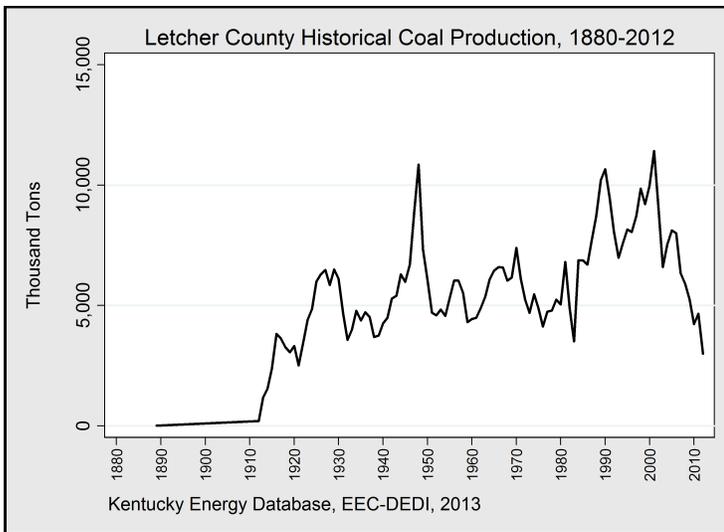
The average delivery price of coal from Leslie County was the highest in Kentucky at \$102.78 in 2012, and ranged in price from \$37.14 to \$160.43 a ton. Additionally, a typical ton of coal from Leslie County had an ash content of 10.81%, sulfur content of 1.04%, and a heat content of 24.50 MMBtu.

Letcher County



Production Method	Mines	Production	Percentage
Total	39	2,999,009	100%
Underground	21	1,992,935	66%
Surface	18	1,006,074	34%

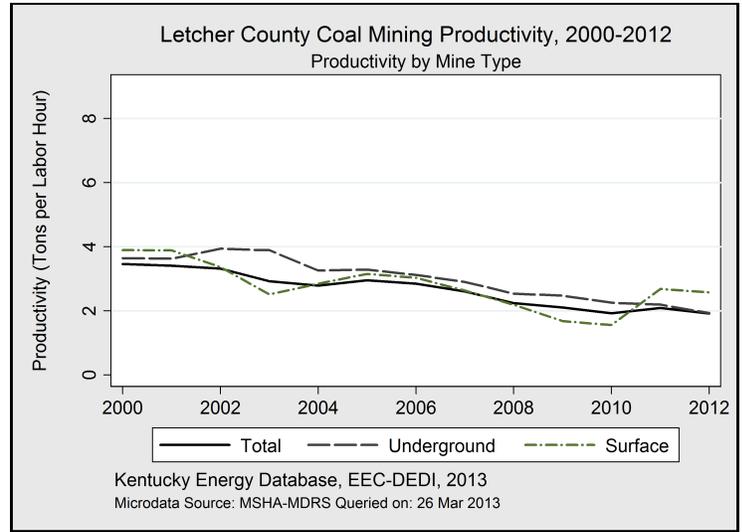
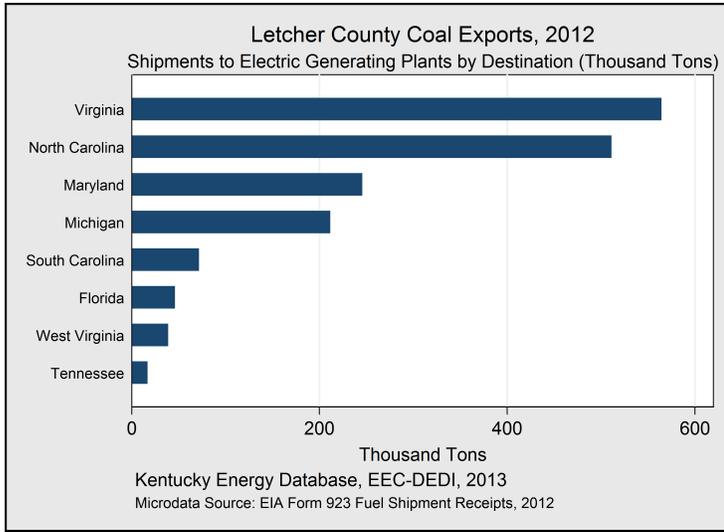
On-Site Activity	Employment	Percentage
Total	706	100%
Underground	460	65%
Surface	169	24%
Preparation Plant	58	8%
Office	19	3%



With 39 active mine sites in 2012, Letcher County produced 2.9 million tons of coal (or 3.3 percent of statewide production). Interestingly, Letcher County was home to many small mines, with 26 sites producing less than 100,000 tons during the year. Overall, coal production was led by underground operations which accounted for 71 percent of annual production. Coal production in Letcher County decreased by 35.6 percent compared with 2011.

Coal mine operations in Letcher County employed 706 people full-time during 2012, a net loss of 200 full-time miners compared with 2011. Approximately two thirds of coal mining employment involved underground labor hours, followed by surface sites which represented a quarter of full-time jobs. In addition, 58 individuals operated preparation plants within the county, while 19 people worked in offices directly supporting mine operations.

Letcher County



State & Power Plant	Deliveries (Tons)	Percentage
Total	1,705,914	100%
Virginia	564,320	33.1%
Covington Facility	433,715	25.4%
Chesterfield	117,930	6.9%
Yorktown	12,675	<1%
North Carolina	510,920	29.9%
Marshall	400,510	23.5%
L V Sutton	86,807	5.1%
Cliffside	23,603	1.4%
Maryland	245,705	14.4%
Morgantown	245,022	14.4%
Chalk Point LLC	683	<1%
Michigan	211,388	12.4%
Monroe	184,390	10.8%
Trenton Channel	13,525	<1%
River Rouge	13,000	<1%
J R Whiting	473	<1%
South Carolina	71,727	4.2%
Cogen South	71,727	4.2%
Florida	45,984	2.7%
Crystal River	45,984	2.7%
West Virginia	38,857	2.3%
Kammer	21,832	1.3%
John E Amos	17,025	1%
Tennessee	17,013	1%
Eastman Operations	17,013	1%

Letcher County Coal Market

Approximately 1.7 million tons of coal mined in Letcher County was shipped to power plants in eight different states during 2012. Virginia and North Carolina were the two largest markets for Letcher County coal in 2012, followed by Maryland, Michigan, South Carolina, Florida, West Virginia, and Tennessee. No utility-scale power plants in Kentucky received shipments of steam coal from Letcher County during 2012.

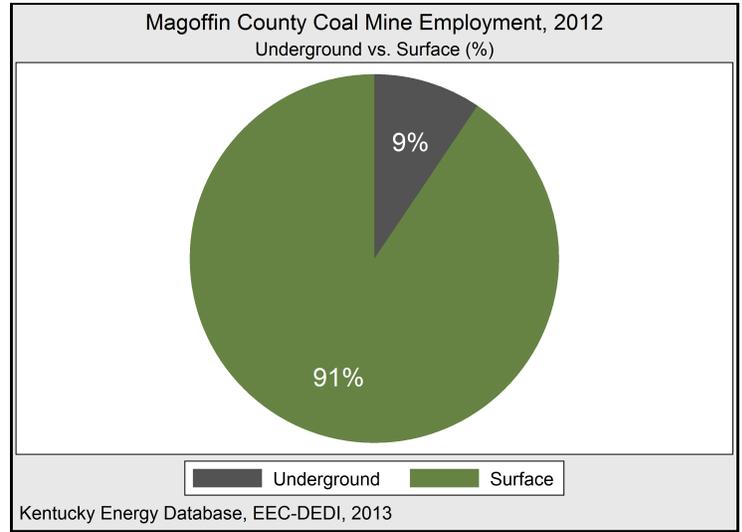
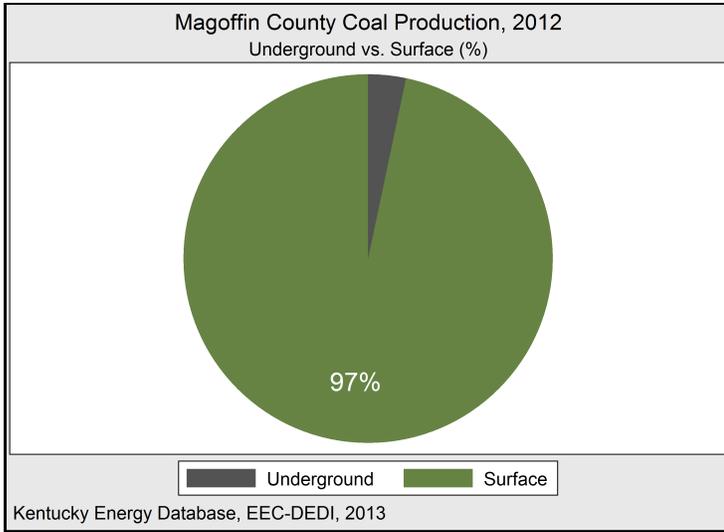
Letcher County Coal Mining Productivity

Average coal mine productivity in Letcher County was 1.91 tons per hour in 2012. While underground operations had productivity of 1.92 tons per hour and represented 66 percent of county production, surface operations were 34 percent more efficient at 2.57 tons per hour. Since 2000, Letcher County productivity has fallen by 40 percent.

Chemical Composition and Cost

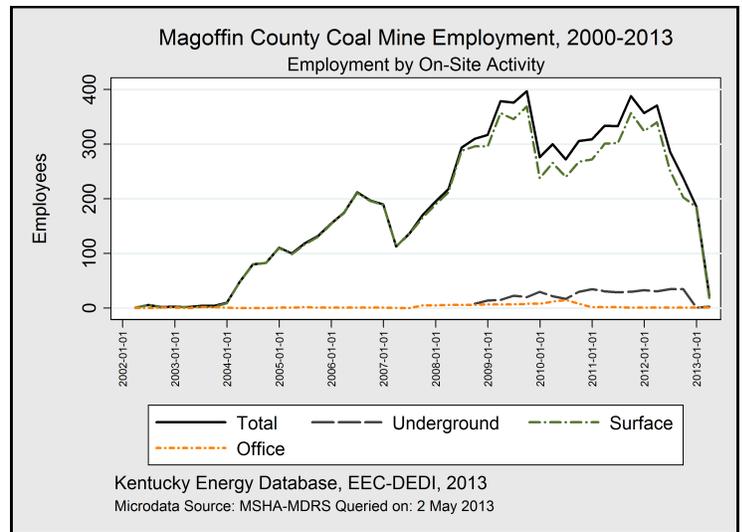
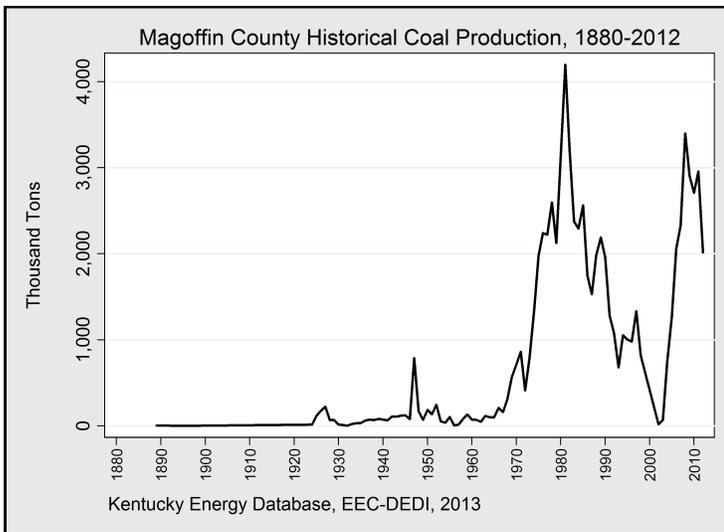
On average, coal mined in Letcher County in 2012 had a mean sulfur content of 1.6 percent, a mean ash content of 9.21 percent, and a mean heat content of 25.27 MMBtu per ton. The average delivered price per ton for Letcher County coal in 2012 was \$99.93, and ranged from \$56.88 to \$124.70.

Magoffin County



Production Method	Mines	Production	Percentage
Total	10	2,015,308	100%
Surface	8	1,948,750	97%
Underground	2	66,558	3%

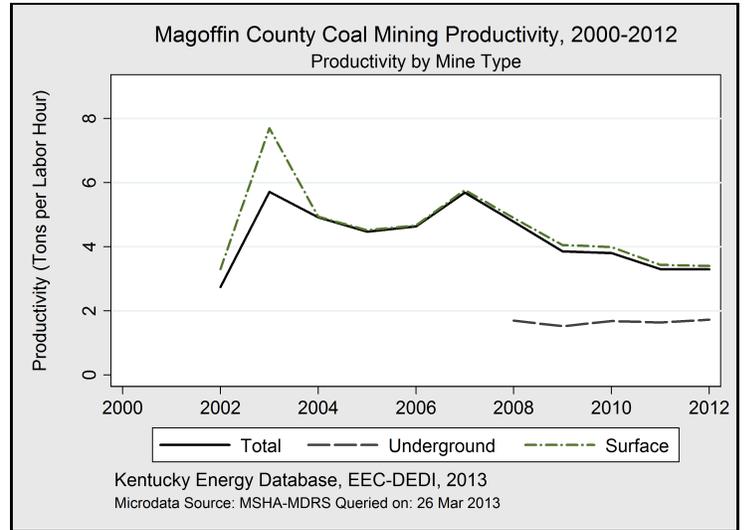
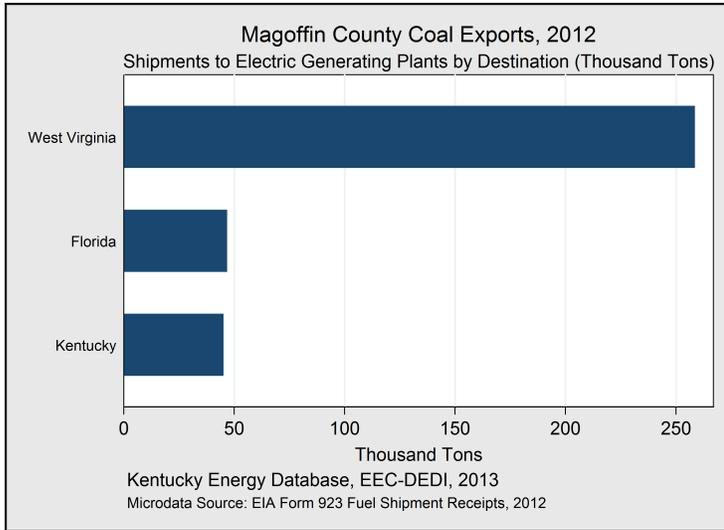
On-Site Activity	Employment	Percentage
Total	265	100%
Surface	240	91%
Underground	25	9%



Since 1992, coal production in Magoffin County has fluctuated substantially and has been driven almost entirely by surface mine operations. From 1992 to 2002, coal production decreased from more than one million tons to nearly zero. However, between 2003 and 2008, coal production rebounded and peaked at 3.4 million tons. In 2012, coal production in Magoffin County was approximately 2 million tons, a one year decrease of 31.8%.

Recently, many areas of Magoffin County were considered mined-out, and no longer supported productive mine operations. However, with a substantial increase in the market price of coal starting in 2002 the economics of mining in Magoffin County changed, and new surface and underground mine sites were developed. During 2012, coal mining in the county supported around 265 full-time employees—a one year decrease of 25%—with the majority of these miners stationed at surface mine operations.

Magoffin County



State & Power Plant	Deliveries (Tons)	Percentage
Total	350,612	100%
West Virginia	258,646	73.8%
Mitchell	258,646	73.8%
Florida	46,823	13.4%
C D McIntosh Jr	46,823	13.4%
Kentucky	45,143	12.9%
Cooper	32,480	9.3%
Ghent	12,663	3.6%

Magoffin County Coal Market

The Mitchell Power Plant of Moundsville, WV, was the largest recipient of steam coal shipped from Magoffin County during 2012. Of the 350 thousand tons shipped from the county in 2012, the Mitchell plant received 258 thousand tons. Coal from Magoffin County was also shipped to the McIntosh Power Plant of Florida, and the Cooper and Ghent power plants located in Kentucky.

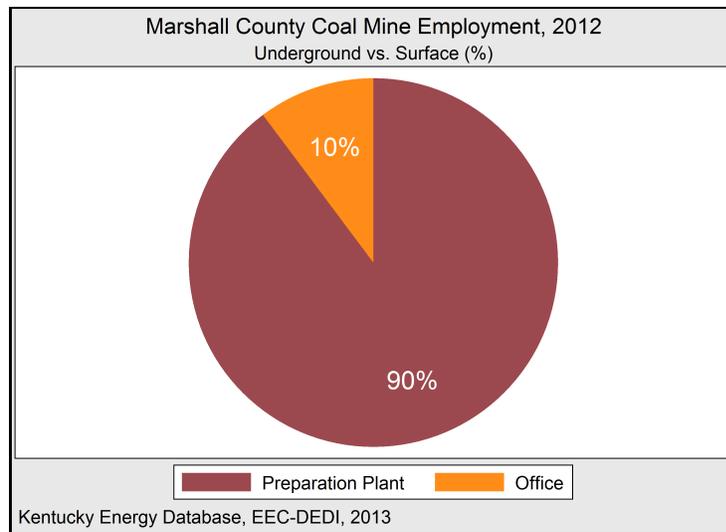
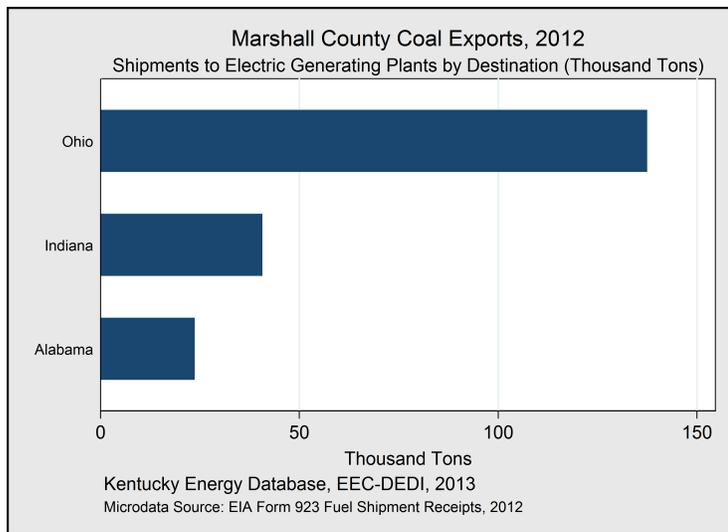
Magoffin County Coal Mining Productivity

At 3.29 tons per labor hour, average coal mine productivity in Magoffin County was the seventh highest in Kentucky and the highest of any county in the Eastern Coalfield in 2012. This level of productivity was influenced almost entirely by surface mine operations, which represented 97 percent of coal production in Magoffin County in 2012.

Chemical Composition and Cost

Coal from Magoffin County on average contained 1.2 percent sulfur, 9.94 percent ash, and 24.07 MMBtu per ton in 2012. The combination of these factors resulted in an average delivery price of \$89.27 per ton, though actual shipment prices ranged from \$54.11 to \$119.55 during the calendar year.

Marshall County



State & Power Plant	Deliveries (Tons)	Percentage
Total	201,869	100%
Ohio	137,473	68.1%
J M Stuart	137,473	68.1%
Indiana	40,692	20.2%
R Gallagher	40,692	20.2%
Alabama	23,704	11.7%
Greene County	23,704	11.7%

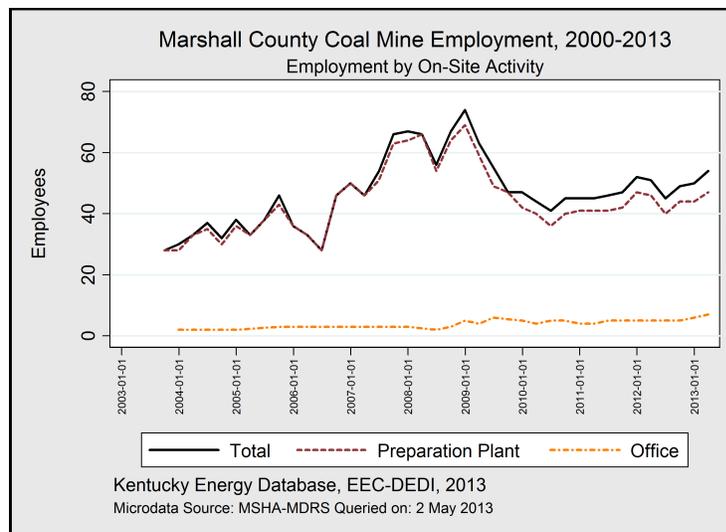
On-Site Activity	Employment	Percentage
Total	49	100%
Preparation Plant	44	90%
Office	5	10%

Marshall County Coal Shipments

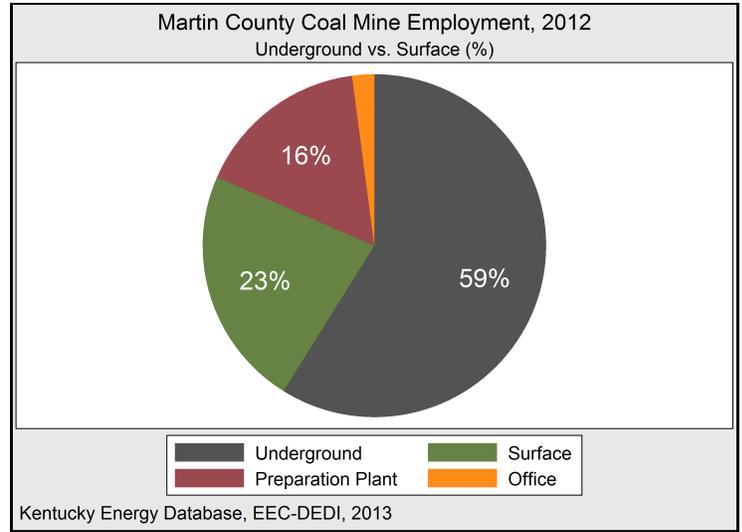
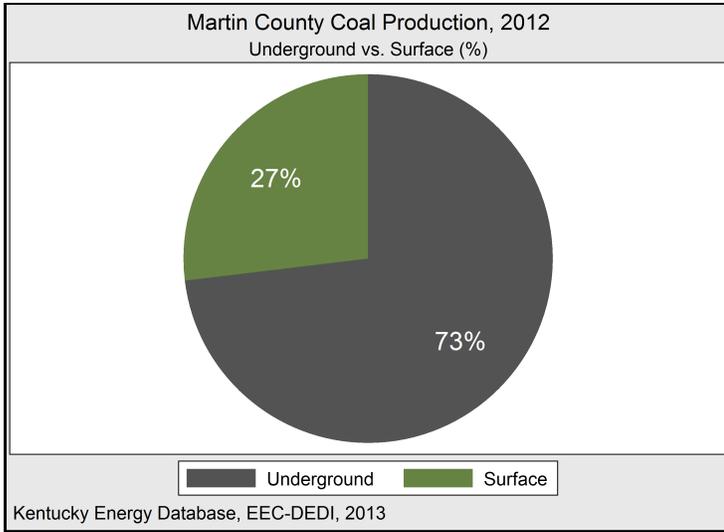
Marshall County in Western Kentucky registered no coal production in 2012, and geologic surveys reaching back to 1978 do not list any coal resources within the county. However, coal mining operations in Marshall County did prepare and ship coal from neighboring coal-producing counties. In 2012, more than 201 thousand tons of coal were shipped from Marshall County facilities and delivered to power plants in Ohio, Indiana, and Alabama.

Marshall County Coal Mining Employment

During 2012, coal preparation and transportation facilities in Marshall County supported 44 full-time employees. Forty-one of these individuals operated coal preparation plants, cleaning and loading coal for delivery to electric utilities. Around five people were employed in office capacities, in direct support of preparation plants.

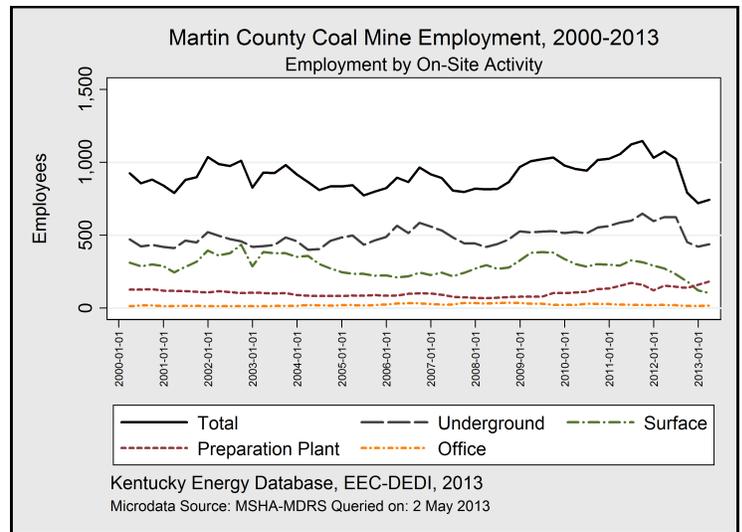
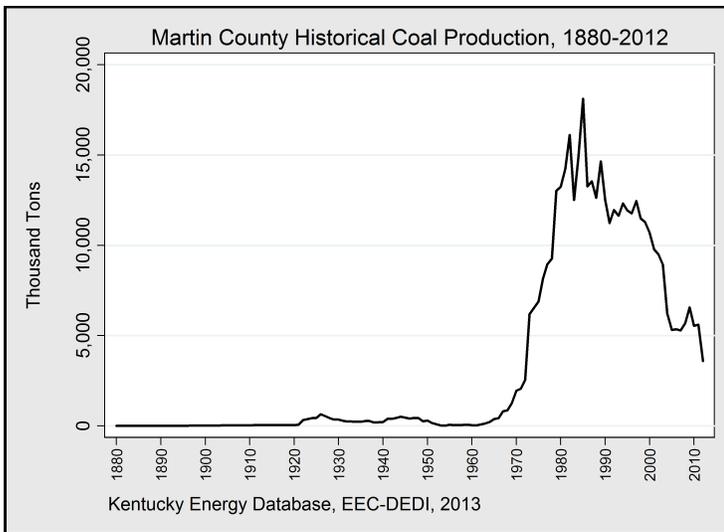


Martin County



Production Method	Mines	Production	Percentage
Total	17	3,587,476	100%
Underground	6	2,621,887	73%
Surface	11	965,589	27%

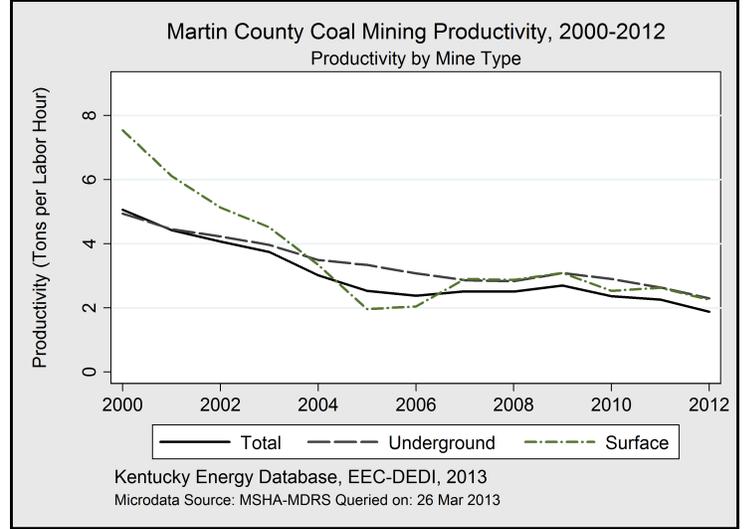
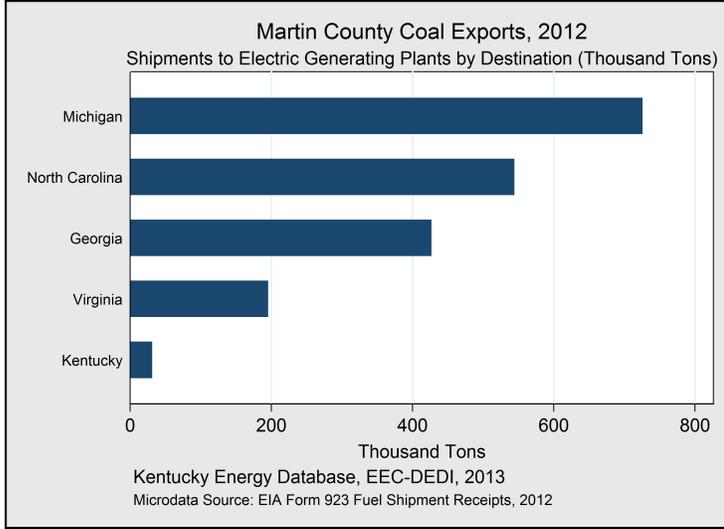
On-Site Activity	Employment	Percentage
Total	917	100%
Underground	540	59%
Surface	208	23%
Preparation Plant	150	16%
Office	19	2%



Six underground mines and eleven surface mines produced 3.5 million tons of coal in Martin County in 2012. Annual production from Martin County decreased by 36 percent but represented 3.9 percent of statewide coal production. Yet, coal production in the county has been on a steady decline since a high of 11.7 million tons in 1996.

Coal companies in Martin County directly employed approximately 900 people full-time during 2012, a net loss of 200 full-time jobs compared with 2011. The majority of coal miners in Martin County were employed in underground operations, followed by surface mine sites. Additionally, 150 people worked in coal preparation plants while 19 individuals supported mine operations in office capacities.

Martin County



State & Power Plant	Deliveries (Tons)	Percentage
Total	1,923,982	100%
Michigan	725,877	37.8%
Monroe	616,877	32.1%
Trenton Channel	109,000	5.7%
North Carolina	544,339	28.3%
Roxboro	253,022	13.2%
Belews Creek	214,463	11.1%
Mayo	76,854	4%
Georgia	426,741	22.2%
Yates	256,154	13.3%
Hammond	145,966	7.6%
Wansley	24,621	1.3%
Virginia	195,692	10.2%
Clover	195,692	10.2%
Kentucky	31,333	1.6%
Ghent	31,333	1.6%

Martin County Coal Market

Power plants in Michigan, North Carolina, Georgia, and Virginia accounted for more than 98 percent of the steam coal shipped from Martin County during 2012. In total, 1.9 million tons of coal mined in Martin County was shipped to power plants in 2012. The Ghent Generating Station in northern Kentucky received 1.6 percent of Martin County coal shipments during the year.

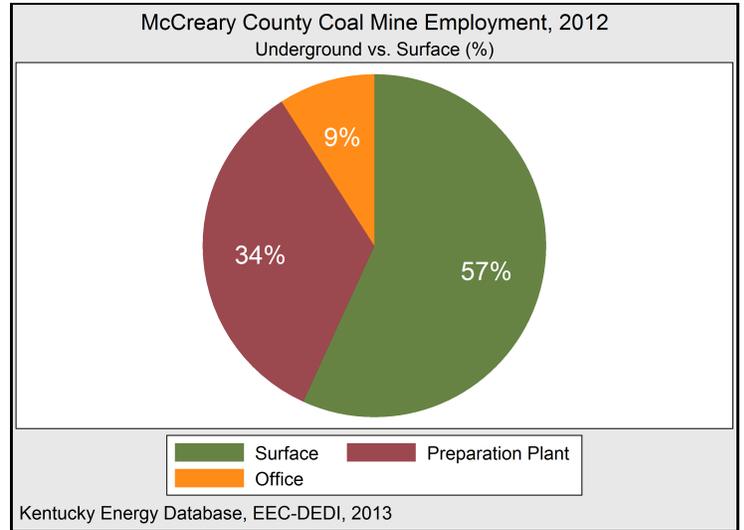
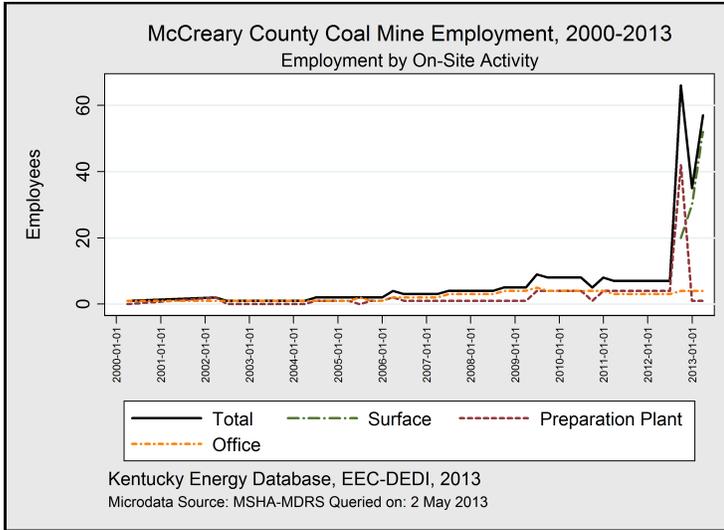
Martin County Coal Mining Productivity

Martin County's productivity in 2012 was 1.87 tons per labor hour, a decrease of greater than 58 percent from the year 2000. Interestingly, in 2012 underground mines in Martin County were actually more productive than surface mines: 2.29 tons per hour compared to 2.25 tons per hour. However, the productivity of surface mines in Martin County has fluctuated substantially, compared to the relative stability of underground operations over time.

Chemical Composition and Cost

With an average sulfur content of 1.29 percent and average heat content of 25.04 MMBtu, the mean delivery price for coal from Martin County in 2012 was \$96.61 per ton. The average ash content for coal shipped from Martin County was 9.05 percent during the year.

McCreary County



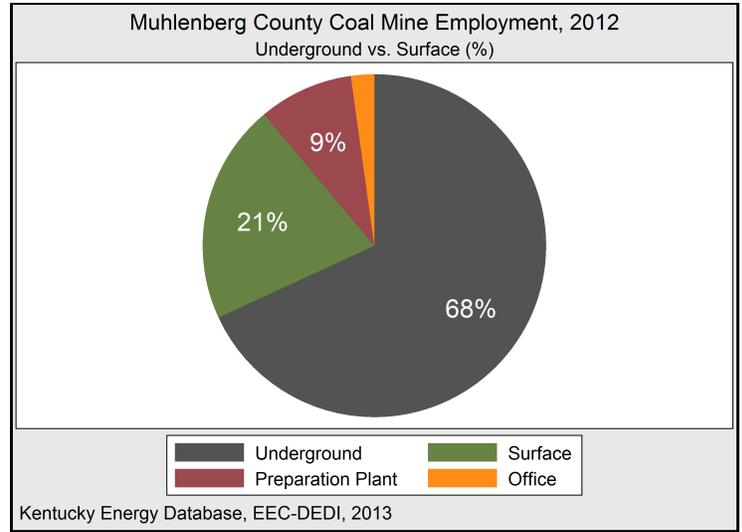
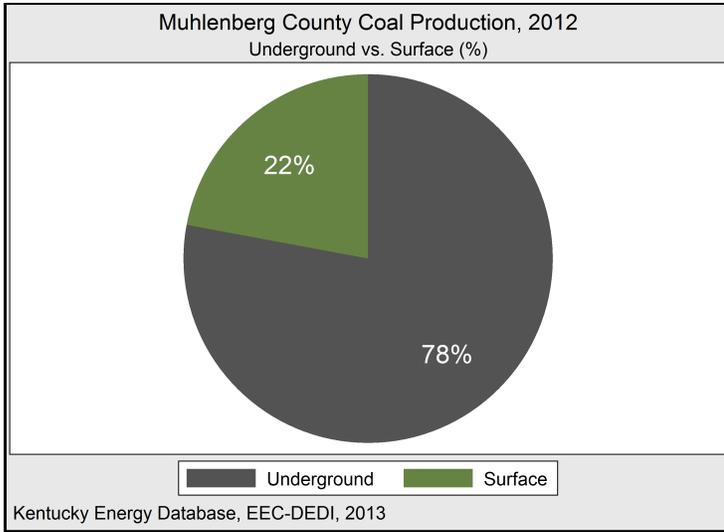
Production Method	Mines	Production	Percentage
Total	1	31,744	100%
Surface	1	31,744	100%

On-Site Activity	Employment	Percentage
Total	44	100%
Surface	25	57%
Preparation Plant	15	34%
Office	4	9%

Over the past 20 years, production in the county has been intermittent. Between 1994 and 2011, McCreary County produced no coal. In 2012, a surface mine site began operations and produced 37 thousand tons of coal. Coal production from McCreary County in 2012 represented less than one percent of total Kentucky coal production.

Active mining in McCreary County directly supported 44 full-time jobs in 2012. These mining jobs were divided between 25 surface miners, 15 preparation plant operators, and 4 office staff workers.

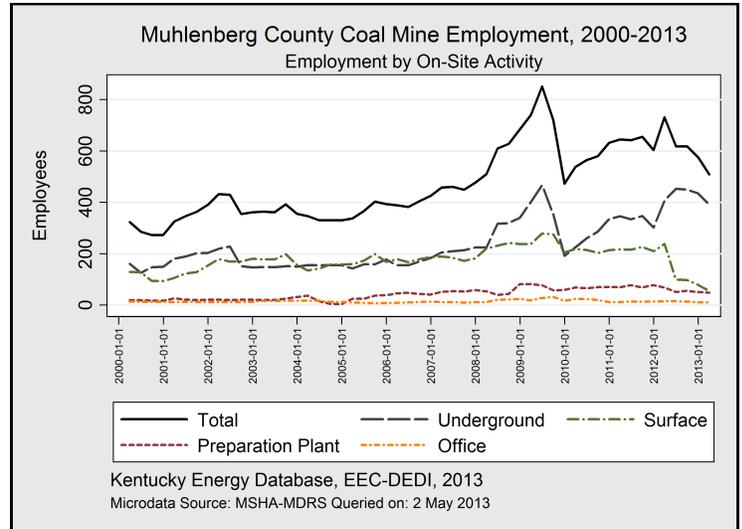
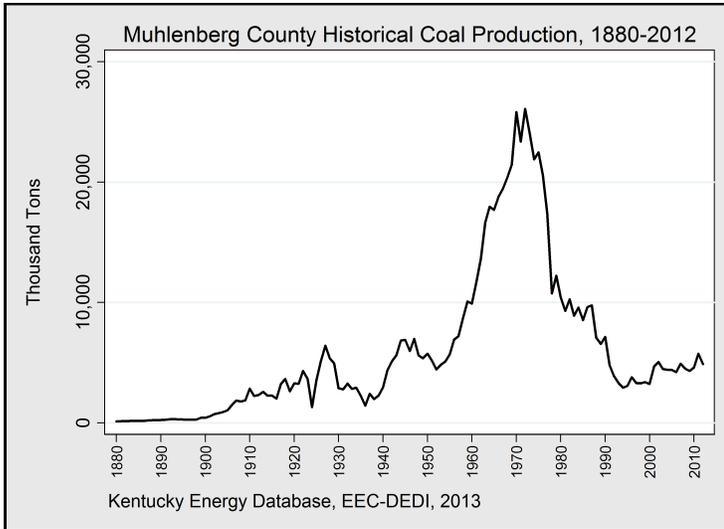
Muhlenberg County



Production Method	Mines	Production	Percentage
Total	5	4,887,921	100%
Surface	3	3,809,603	78%
Underground	2	1,078,318	22%

On-Site Activity	Employment	Percentage
Total	640	100%
Underground	436	68%
Surface	133	21%
Preparation Plant	57	9%
Office	14	2%

Coal production in Muhlenberg County peaked prominently in the mid-1970s when the county was the largest producer of coal in Kentucky.

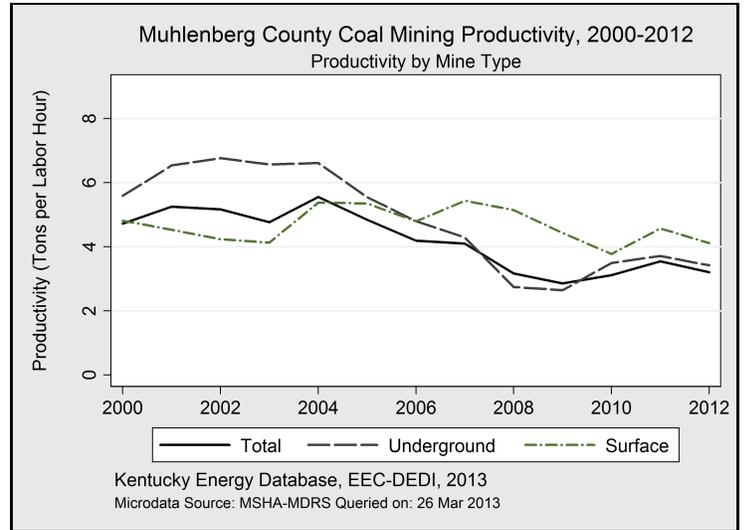


There were 5 active mines sites that produced a total of 4.8 million tons of coal in Muhlenberg County in 2012. County production was led by the three surface operations, which produced 3.8 million tons of coal; underground mining accounted for 1 million tons. Overall, coal production from Muhlenberg County decreased by 15 percent and represented 5.3 percent of statewide production in 2012.

Approximately 640 people were employed full-time at coal mine sites in Muhlenberg County in 2012, a marginal increase over 2011. During the year, 68 percent of direct coal mining employment was tied to underground sites, while a fifth of employees worked at surface mine sites. Coal preparations plants and office positions also provided around 70 full-time jobs in Muhlenberg County through 2012.

Muhlenberg County

State & Power Plant	Deliveries (Tons)	Percentage
Total	5,679,009	100%
Kentucky	5,407,786	95.2%
Paradise	1,617,500	28.5%
D B Wilson	1,045,772	18.4%
Ghent	1,022,610	18%
Mill Creek	909,725	16%
H L Spurlock	584,658	10.3%
East Bend	118,080	2.1%
HMP&L Station Two	65,975	1.2%
R D Green	23,154	<1%
Kenneth C Coleman	20,312	<1%
Florida	271,223	4.8%
Davant Transfer	271,223	4.8%



Muhlenberg County Coal Market

Power plants in Kentucky represented 95 percent of the demand for coal shipped from Muhlenberg County in 2012. The Davant Transfer Station in Florida received 5 percent of Muhlenberg County coal shipments. Overall, approximately 5.68 million tons of coal mined in Muhlenberg County were delivered to ten different power plants during 2012.

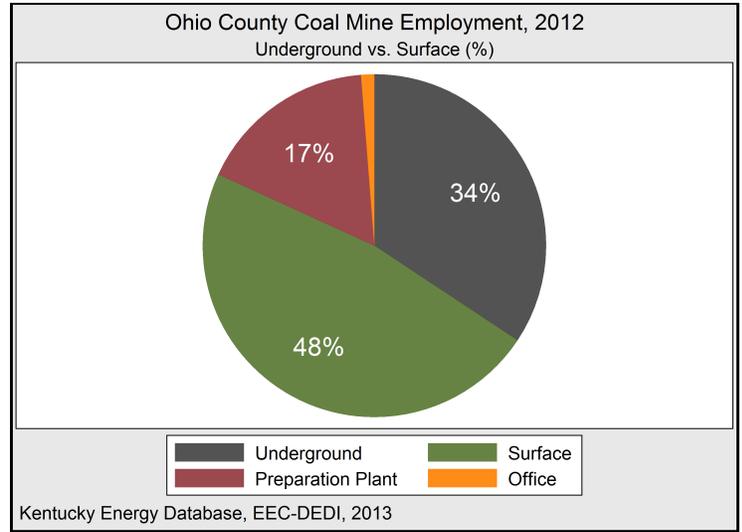
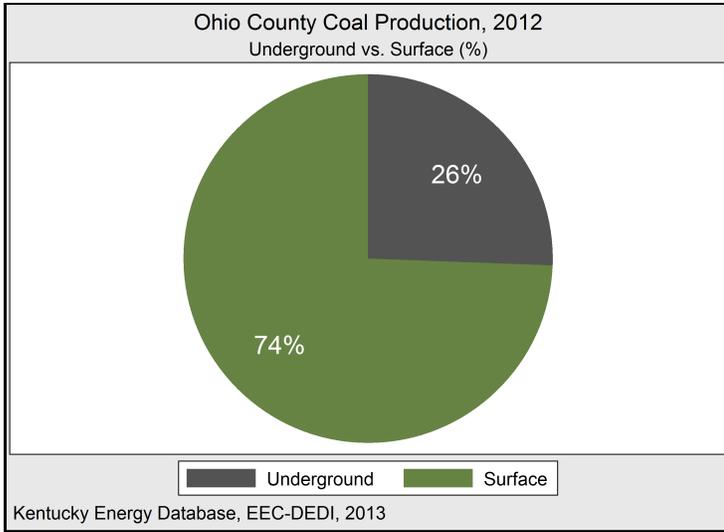
Muhlenberg County Coal Mining Productivity

While average productivity at underground mines in Muhlenberg County was 3.42 tons per hour in 2012, productivity at surface mines was closer to 4.11 tons per hour (or 20 percent higher). Overall productivity for coal mine operations in Muhlenberg County during 2012 was 3.2 tons per labor hour.

Chemical Composition and Cost

On average, coal mined in Muhlenberg County in 2012 had a mean sulfur content of 3.1%, a mean ash content of 10.5%, and a mean heat content of 22.97 MMBtu per ton. The average delivered price per ton for Muhlenberg County coal in 2012 was \$53.42, and ranged from \$35.42 to \$80.32.

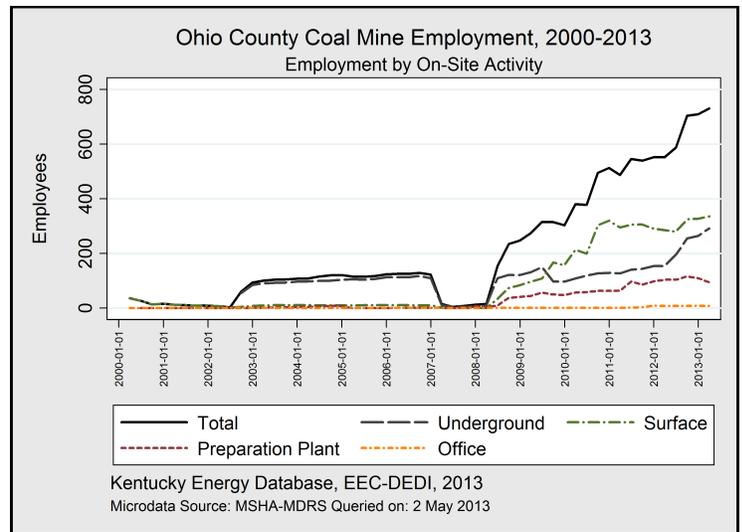
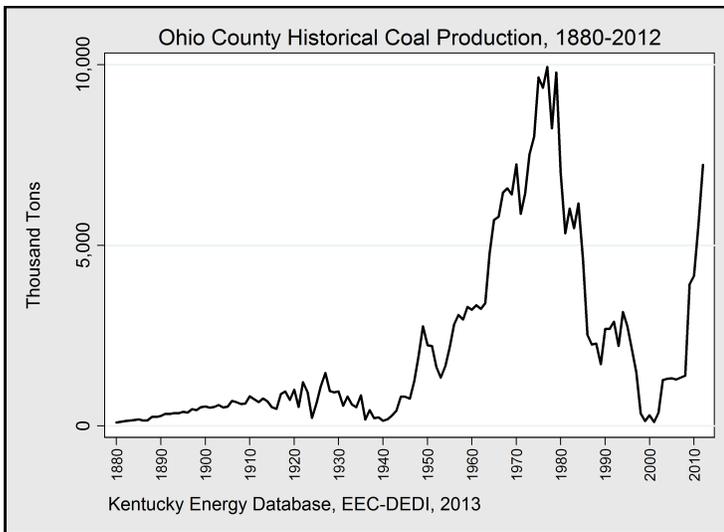
Ohio County



Production Method	Mines	Production	Percentage
Total	5	7,231,326	100%
Surface	3	5,381,609	74%
Underground	2	1,849,717	26%

On-Site Activity	Employment	Percentage
Total	644	100%
Surface	306	48%
Underground	221	34%
Preparation Plant	109	17%
Office	8	1%

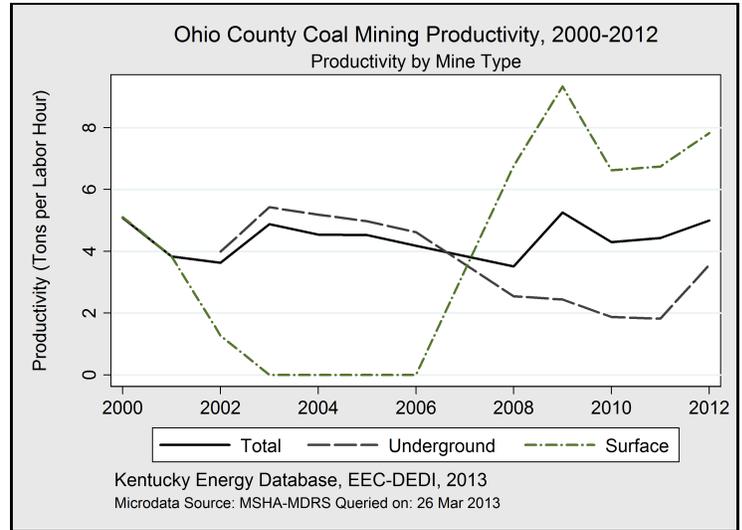
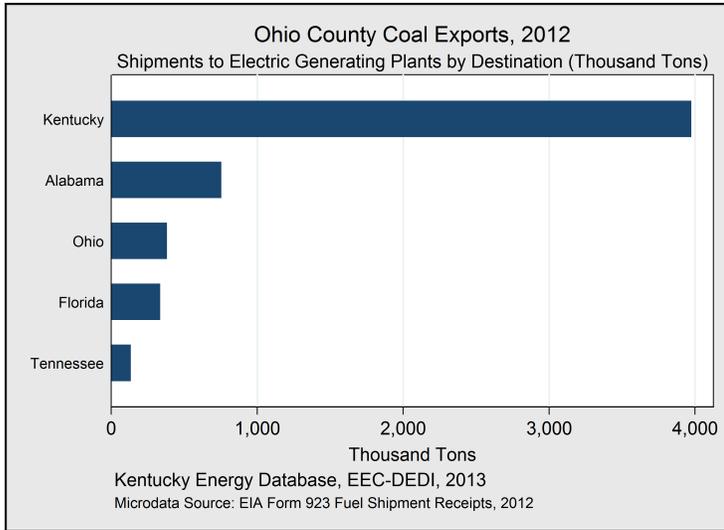
Since a temporary stoppage in 2007, coal production in Ohio County has increased during the past four years, led by the development of surface mine sites.



Between 2008 and 2011, coal production in Ohio County increased by 304%. Bolstered by production from three active surface mines (and two smaller underground sites), Ohio County produced more than 7.2 million tons of coal during 2012. Overall, Ohio County accounted for approximately 7.9 percent of statewide production during the year.

Since 2007, direct employment by coal companies in Ohio County has been steadily increasing. In 2012, coal companies operating in Ohio County on average employed 644 people in a variety of capacities. Surface mine sites employed around 300 miners full-time during the year, while underground mines employed 221 miners. Coal preparation plants and mine offices in Ohio County were staffed by slightly more than one hundred employees.

Ohio County



State & Power Plant	Deliveries (Tons)	Percentage
Total	5,581,379	100
Kentucky	3,974,857	71.2%
Cane Run	1,035,832	18.6%
Ghent	864,486	15.5%
Trimble County	817,457	14.6%
Mill Creek	711,051	12.7%
Elmer Smith	360,055	6.5%
H L Spurlock	87,210	1.6%
Paradise	86,502	1.5%
D B Wilson	6,625	<1%
R D Green	5,639	<1%
Alabama	754,456	13.5%
Widows Creek	754,456	13.5%
Ohio	381,488	6.8%
J M Stuart	381,488	6.8%
Florida	336,329	6%
Davant Transfer	306,329	5.5%
Northside Station	30,000	<1%
Tennessee	134,249	2.4%
Kingston	78,707	1.4%
Bull Run	55,542	1%

Ohio County Coal Market

Kentucky represented 71 percent of the market for Ohio County coal in 2012, and coal from the county was delivered to nine different power plants across the state. Other markets for Ohio County coal in 2012 were Alabama, Ohio, Florida, and Tennessee. More than 5.5 million tons of Ohio County coal were delivered to power plants in 2012.

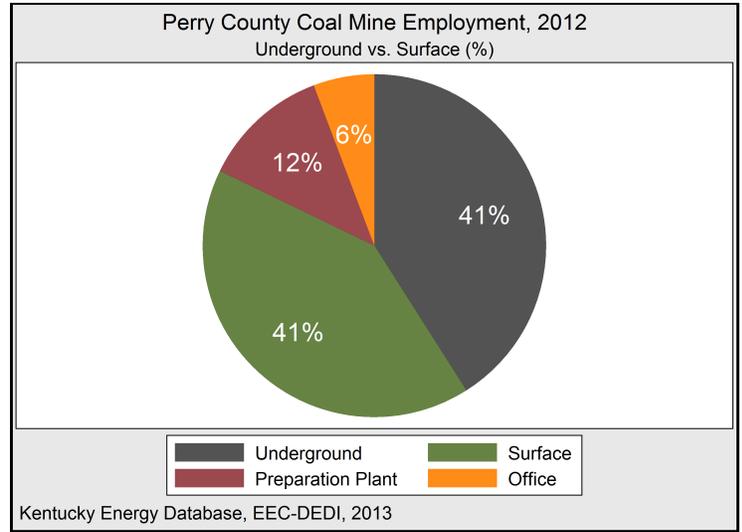
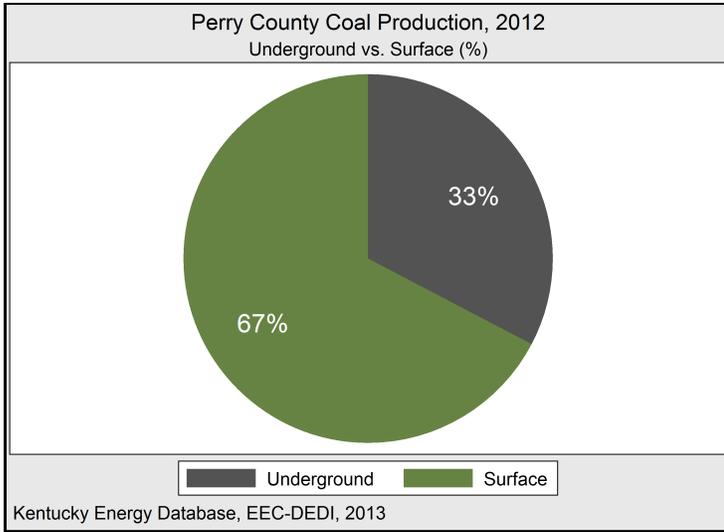
Ohio County Coal Mining Productivity

Of all coal mining counties in Kentucky in 2012, Ohio County in Western Kentucky had the highest average productivity at 4.99 tons per labor hour. Surface operations, which represented 74 percent of annual production, achieved a statewide high of 7.8 tons per labor hour. Underground operations had an average productivity of 3.55 tons per hour and accounted for 26 percent of county production in 2012.

Chemical Composition and Cost

The average delivery price of coal from Ohio County was the lowest in Kentucky at \$53.87 in 2012, and ranged in price from \$34.96 to \$89.27 a ton. Additionally, a typical ton of coal from Ohio County had an ash content of 10.3 percent, sulfur content of 2.89 percent, and a heat content of 22.71 MMBtu.

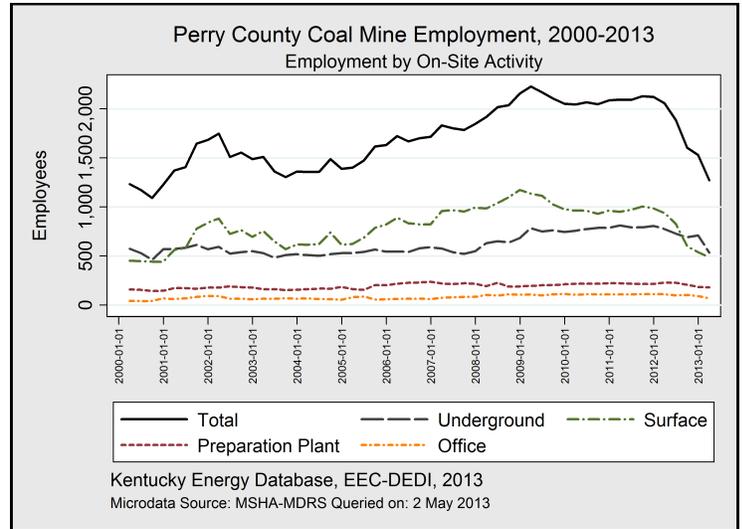
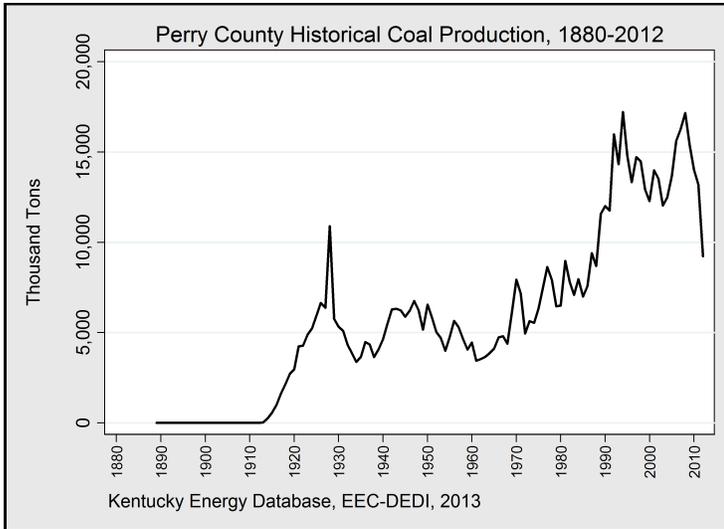
Perry County



Production Method	Mines	Production	Percentage
Total	29	9,231,478	100%
Surface	21	6,214,074	67%
Underground	8	3,017,404	33%

On-Site Activity	Employment	Percentage
Total	1,775	100%
Surface	731	41%
Underground	728	41%
Preparation Plant	214	12%
Office	102	6%

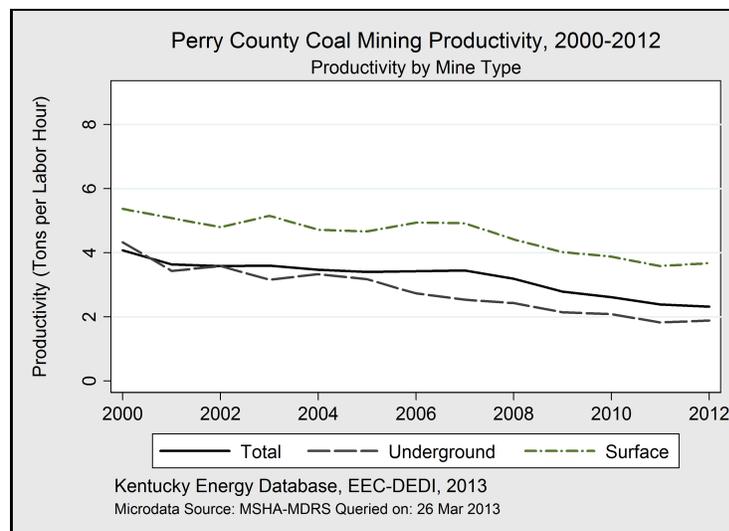
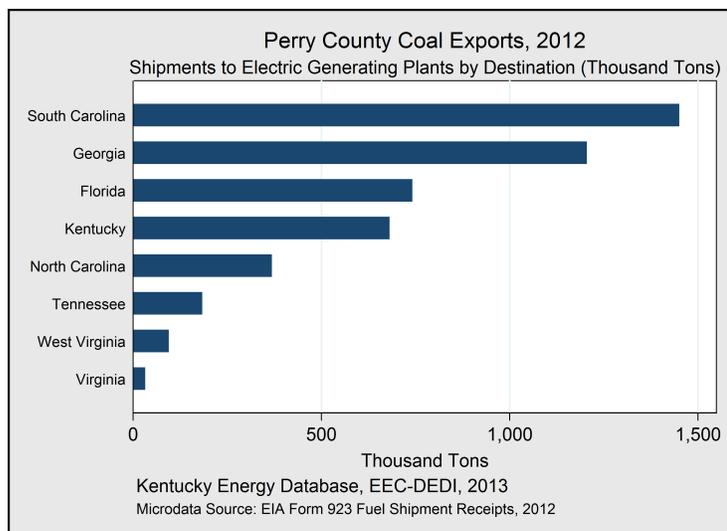
With the exception of 1999, surface mining has been the largest source of coal production in Perry county over the past 19 years.



Perry County, located in Eastern Kentucky, was the third largest coal producing county in Kentucky with more than 9.2 million tons in 2012. Surface mine sites accounted for 67 percent of this total, and have consistently led coal production in the county in recent years. Overall, Perry County represented 10 percent of statewide production in 2012, though production decreased by 30 percent and remains down from a 2008 high of more than 17 million tons.

Direct coal mining employment in Perry County in 2012 was the second highest in the state, with an average of 1,775 individuals employed full-time during the year. Through 2012, surface operations and underground operations both provided approximately 730 jobs. Coal preparation plants and mine offices were also a substantial concentration of employment, accounting for 316 jobs. However, average coal mine employment in Perry County decreased by 16 percent compared with 2011.

Perry County



State & Power Plant	Deliveries (Tons)	Percentage
Total	4,746,363	100%
South Carolina	1,450,274	30.6%
Williams	835,339	17.6%
Wateree	437,678	9.2%
Cope	177,257	3.7%
Georgia	1,204,834	25.4%
Bowen	1,086,833	22.9%
Harllee Branch	101,862	2.1%
I.P. Savanna Mill	16,139	<1%
Florida	741,976	15.6%
Crystal River	717,712	15.1%
Stanton Energy Center	24,264	<1%
Kentucky	681,209	14.4%
Cooper	332,663	7%
East Bend	174,613	3.7%
Dale	84,743	1.8%
Ghent	78,866	1.7%
E W Brown	10,324	<1%
North Carolina	368,770	7.8%
L V Sutton	330,416	7%
Marshall	25,585	<1%
Cliffside	12,769	<1%
Tennessee	183,941	3.9%
Eastman Operations	183,941	3.9%
West Virginia	82,724	1.7%
John E Amos	82,724	1.7%
Virginia	32,635	<1%
Virginia City	24,637	<1%
Southampton	7,998	<1%

Perry County Coal Market

Steam coal from Perry County was delivered to power plants in eight different states during 2012, and the largest markets for Perry County coal were South Carolina and Georgia. While South Carolina was the largest state destination for Perry County coal, the Bowen Power Plant of Georgia by itself represented 23 percent of Perry County coal deliveries. Total shipments of Perry County steam coal surpassed 4.74 million tons in 2012.

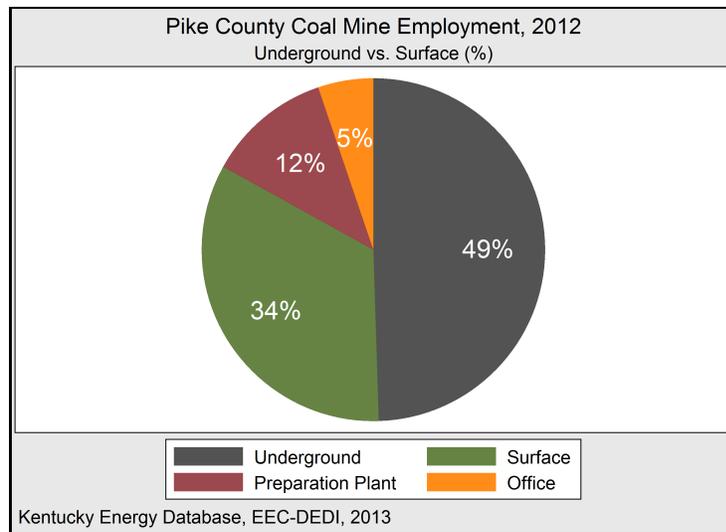
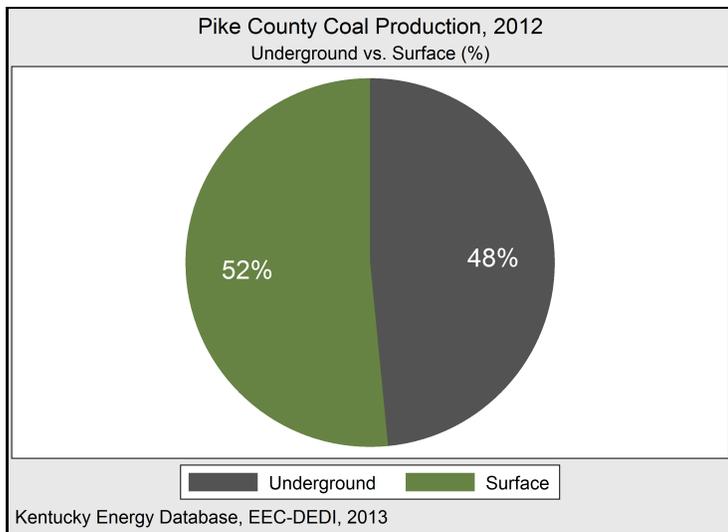
Perry County Coal Mining Productivity

With an average productivity of 2.31 tons per labor hour, Perry County had the third highest productivity for counties of the Eastern Coalfield in 2012. In continuing with trends since 2000, surface coal mines in Perry County were more productive than underground coal mines (3.67 compared to 1.88). However, average coal mine productivity in Perry County has decreased by 45 percent during the last 12 years.

Chemical Composition and Cost

The average delivery price of coal from Perry County was the third highest in Kentucky at \$99.69 in 2012, and ranged in price from \$36 to \$166.25 a ton. Additionally, a typical ton of coal from Perry County had an ash content of 9.67%, sulfur content of 1.12%, and a heat content of 24.86 MMBtu.

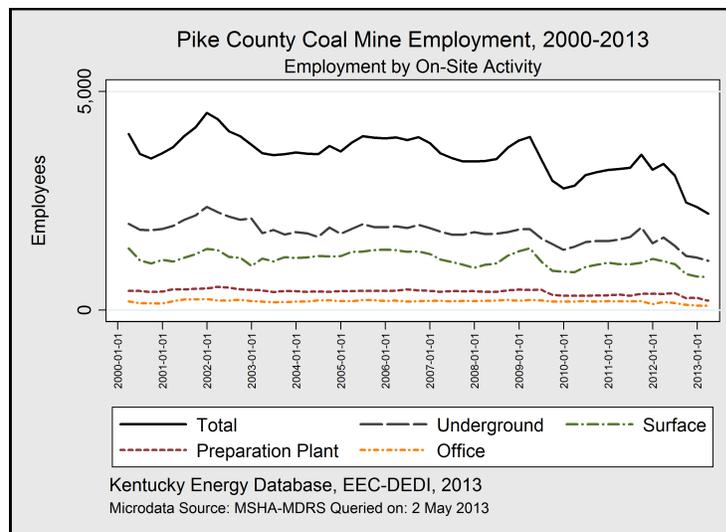
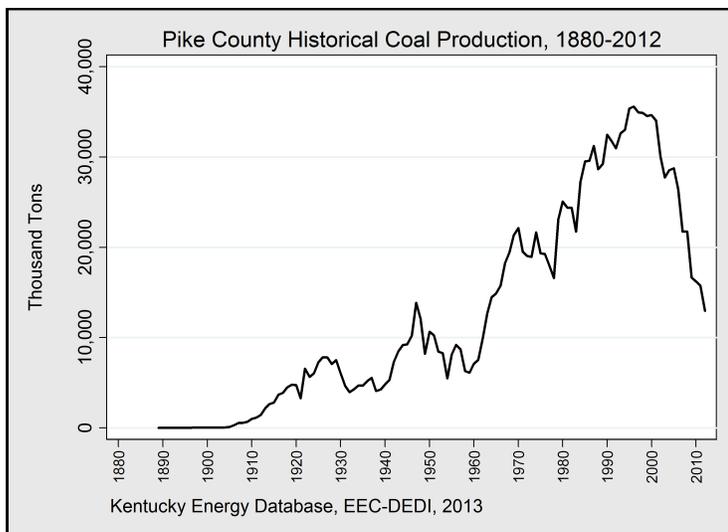
Pike County



Production Method	Mines	Production	Percentage
Total	116	12,961,559	100%
Surface	59	6,793,421	52%
Underground	57	6,168,138	48%

On-Site Activity	Employment	Percentage
Total	2,863	100%
Underground	1,417	49%
Surface	961	34%
Preparation Plant	336	12%
Office	149	5%

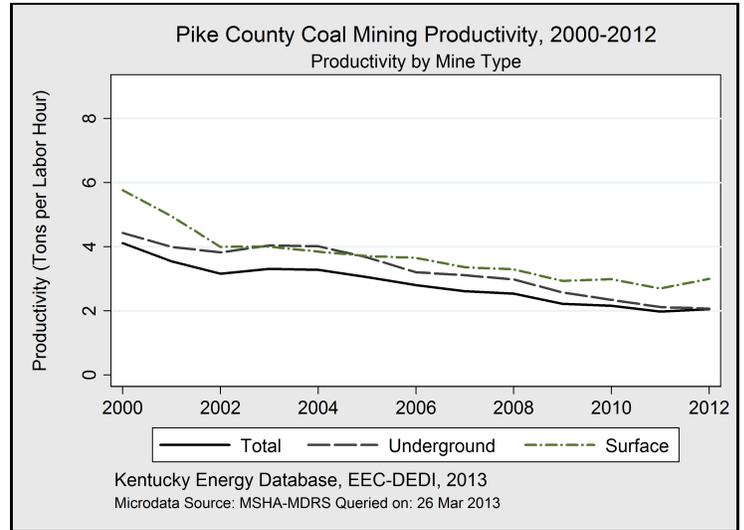
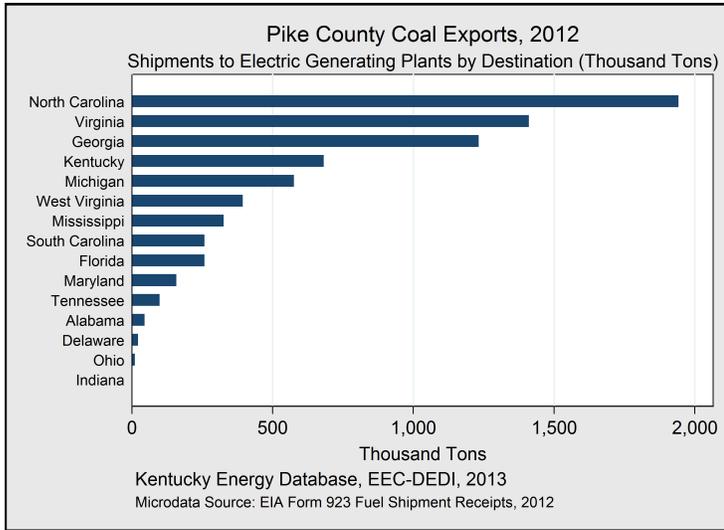
Since the mid 1990s, coal production in Pike County has been in decline. Production is down more than 60percent compared with a 20-year peak in 1996.



In recent memory, Pike County of Eastern Kentucky has been the largest coal producing county in Kentucky. However, in 2012 Pike County was overtaken by Union County of Western Kentucky as the largest producer. Mines in Pike County produced 12.9 million tons of coal in 2012, and represented 14 percent of all coal produced in Kentucky. Additionally, with 116 producing mine sites, Pike County had the most coal mining operations of any county in Kentucky in 2012.

Though the second largest coal producer in 2012, Pike County had on average the highest level of direct coal mining employment in Kentucky. With more than 2,800 miners employed full-time during the year, Pike County accounted for more mining employment than any county in the Commonwealth. Forty-nine percent of these miners worked underground in 2012, while 34 percent worked at surface mine sites. Coal preparation plants and mine offices also provided significant employment during 2012.

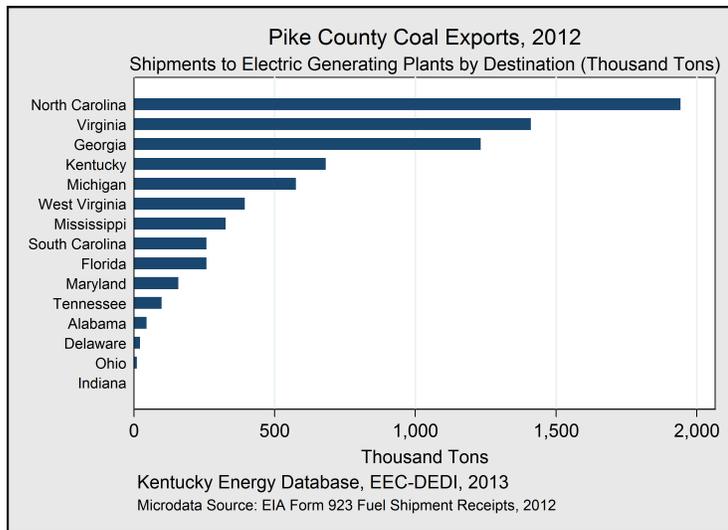
Pike County



State & Power Plant	Deliveries (Tons)	Percentage
Total	7,431,440	100%
North Carolina	1,941,828	26.1%
Roxboro	930,837	12.5%
Belews Creek	344,011	4.6%
Marshall	303,945	4.1%
G G Allen	137,955	1.9%
Asheville	124,461	1.7%
Mayo	89,764	1.2%
HF Lee Plant	10,855	<1%
Virginia	1,416,058	19.1%
Chesterfield	598,653	8.1%
Clover	418,233	5.6%
Yorktown	227,767	3.1%
Bremo Bluff	71,613	1%
Virginia City	69,101	<1%
Potomac River	20,319	<1%
Chesapeake	10,372	<1%
Georgia	1,231,799	16.6%
Bowen	638,268	8.6%
Hammond	239,223	3.2%
I.P. Savanna Mill	151,575	2%
Wansley	96,919	1.3%
Yates	61,548	<1%
Harlee Branch	38,020	<1%
G.P. Cedar Springs	6,246	<1%
Kentucky	681,728	9.2%
Big Sandy	391,165	5.3%
H L Spurlock	162,306	2.2%
R D Green	88,596	1.2%

State & Power Plant	Deliveries (Tons)	Percentage
Kentucky (Continued)		
Kenneth C Coleman	39,661	<1%
Michigan	575,547	7.7%
Monroe	409,713	5.5%
River Rouge	100,833	1.4%
St Clair	61,360	<1%
TES Filer City Station	3,641	<1%
West Virginia	406,827	5.5%
Mountaineer	180,787	2.4%
John E Amos	94,659	1.3%
Ceredo	82,138	1.1%
Philip Sporn	39,035	<1%
Kanawha River	10,208	<1%
Mississippi	326,053	4.4%
R D Morrow	326,053	4.4%
South Carolina	258,247	3.5%
Winyah	245,406	3.3%
Wateree	12,841	<1%
Florida	258,039	3.5%
Stanton Energy Center	158,852	2.1%
Deerhaven	61,822	<1%
C D McIntosh Jr	32,482	<1%
IMT Transfer	4,883	<1%
Maryland	157,843	2.1%
Morgantown	157,425	2.1%
Chalk Point LLC	418	<1%
Tennessee	98,190	1.3%
Cumberland	66,045	<1%
Bull Run	32,145	<1%

Pike County



McCoy Elkhorn Coal Corporation, Mine #15, Pike County, KY.

(Photo provided courtesy of the James River Coal Company).

State & Power Plant	Deliveries (Tons)	Percentage
Alabama	44,940	<1%
Charles R Lowman	44,940	<1%
Delaware	21,955	<1%
Indian River	21,955	<1%
Ohio	10,790	<1%
Killen Station	10,790	<1%
Indiana	1,596	<1%
Warrick	1,596	<1%

Pike County Coal Market

North Carolina, Virginia, and Georgia represented the largest markets for Pike County steam coal in 2012. A total of 7.42 million tons of coal mined in Pike County was shipped to power plants in 15 different states during the year. Of this amount, 681 thousand tons were shipped to four power plants in Kentucky—led by Big Sandy, located in Louisa.

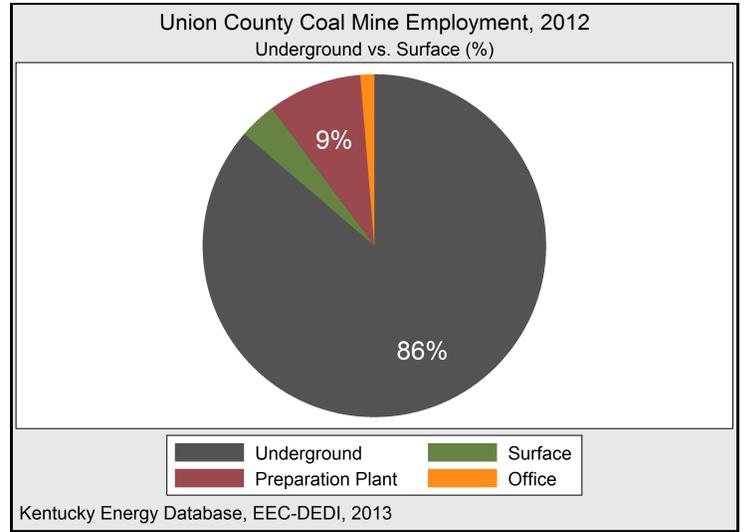
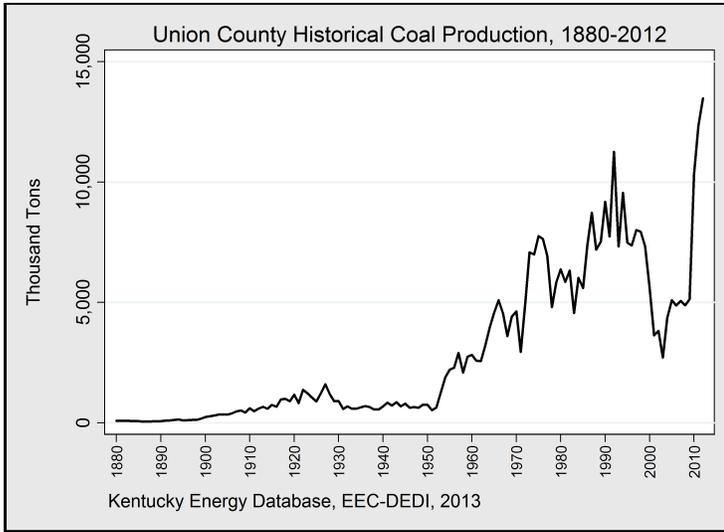
Pike County Coal Mining Productivity

In 2012, average coal mine productivity in Pike County was 2.05 tons per labor hour, down approximately 50 percent since the year 2000. Surface mines in the county were more productive at 2.99 tons per hour, while underground operations averaged 2.06 tons per hour. However, compared with 2011, coal mining productivity improved slightly.

Chemical Composition and Cost

On average, coal mined in Pike County in 2012 had a mean sulfur content of 1.3 percent, a mean ash content of 10.2 percent, and a mean heat content of 24.74 MMBtu per ton. The average delivered price per ton for Pike County coal in 2012 was \$88.45, and ranged from \$32.02 to \$165.16.

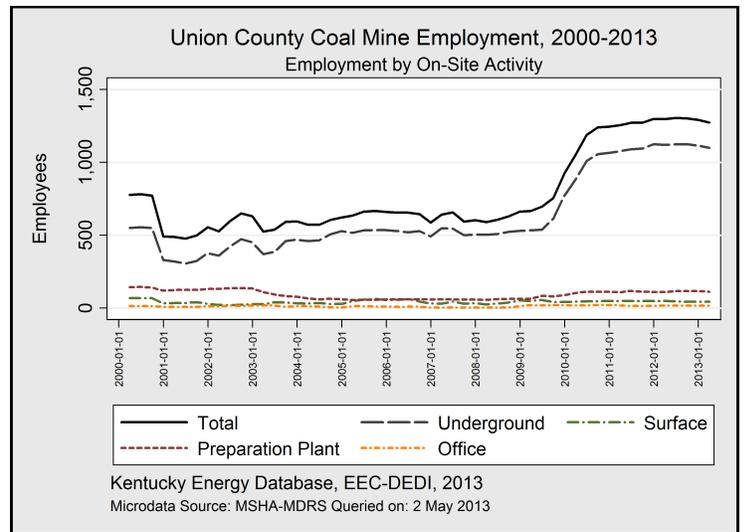
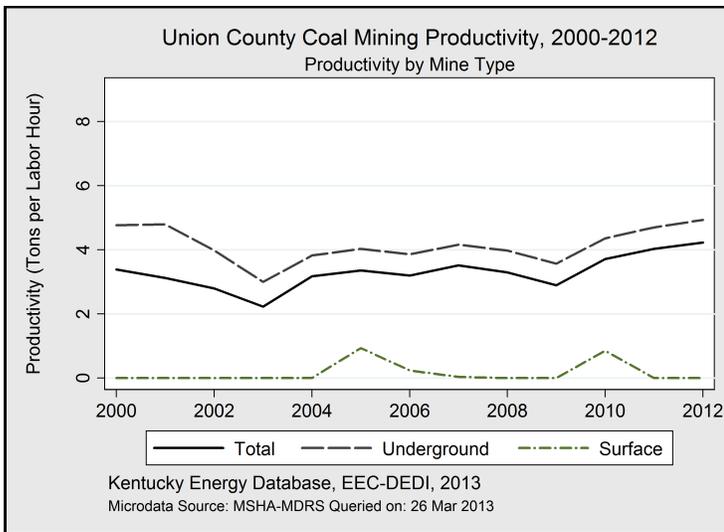
Union County



Production Method	Mines	Production	Percentage
Total	3	13,474,909	100%
Underground	3	13,474,909	100%

On-Site Activity	Employment	Percentage
Total	1,299	100%
Underground	1,121	86%
Preparation Plant	115	9%
Surface	46	4%
Office	17	1%

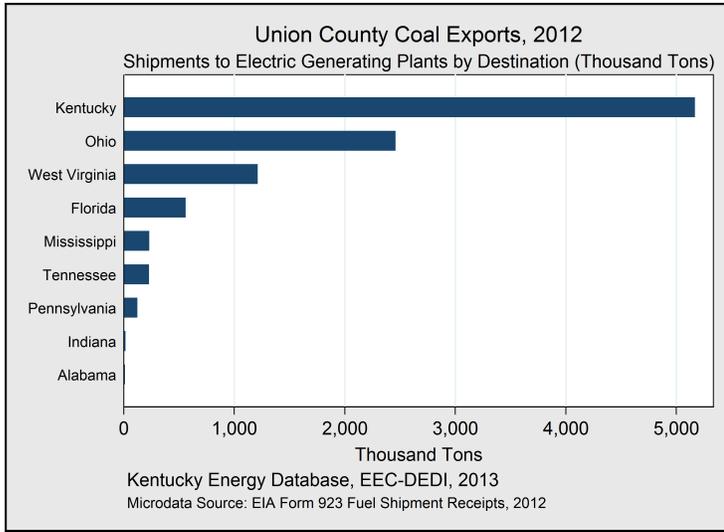
Unlike most coal-producing counties in Kentucky, mine productivity in Union County has been stable since 2004 and has actually increased over the past three years.



During 2012, Union County of Western Kentucky produced 13.4 million tons of coal and became the largest coal-producing county in Kentucky. This amount represented 14.7 percent of total coal production in Kentucky, and a one year increase of 9.3%. A major factor in the direction of Union County's coal production has been the development of the River View Mine, which now holds the record in Kentucky for the most production by one mine in a year.

Coal mines in Union County on average employed 1,299 workers full-time in 2012. As a result, Union County had the fourth-highest level of direct coal mining employment in Kentucky during the year. The vast majority of direct mining jobs offered in Union County were related to underground mine operations, and represented 86 percent of mining employment. In addition, approximately 170 individuals were employed full-time at preparation plants, surface mines, and on-site offices during 2012.

Union County



River View Coal Mine, Union County, 2012.
Photo courtesy of River View Coal, LLC.

State & Power Plant	Deliveries (Tons)	Percentage
Total	10,013,567	100%
Kentucky	5,169,439	51.6%
Trimble County	1,272,366	12.7%
Ghent	1,148,992	11.5%
Paradise	922,167	9.2%
Kenneth C Coleman	628,617	6.3%
East Bend	469,765	4.7%
H L Spurlock	396,866	4%
Mill Creek	236,890	2.4%
R D Green	93,776	<1%
Ohio	2,460,044	24.6%
J M Stuart	1,397,391	14%
Miami Fort	477,643	4.8%
Killen Station	248,092	2.5%
W H Zimmer	188,553	1.9%
Walter C Beckjord	148,365	1.5%
West Virginia	1,213,512	12.1%
Pleasants	817,246	8.2%
Fort Martin	208,160	2.1%
Ceredo	188,106	1.9%
Florida	560,596	5.6%
IMT Transfer	264,409	2.6%
Davant Transfer	196,623	2%
United Bulk Terminal	99,564	1%
Mississippi	230,240	2.3%
Associated Terminals	230,240	2.3%
Tennessee	227,884	2.3%
Cumberland	227,884	2.3%

State & Power Plant	Deliveries (Tons)	Percentage
Total	10,013,567	100%
Pennsylvania	122,952	1.2%
Hatfields Ferry	82,299	<1%
Bruce Mansfield	38,521	<1%
Mitchell Power Station	2,132	<1%
Indiana	16,394	<1%
Warrick	16,394	<1%
Alabama	12,506	<1%
Charles R Lowman	12,506	<1%

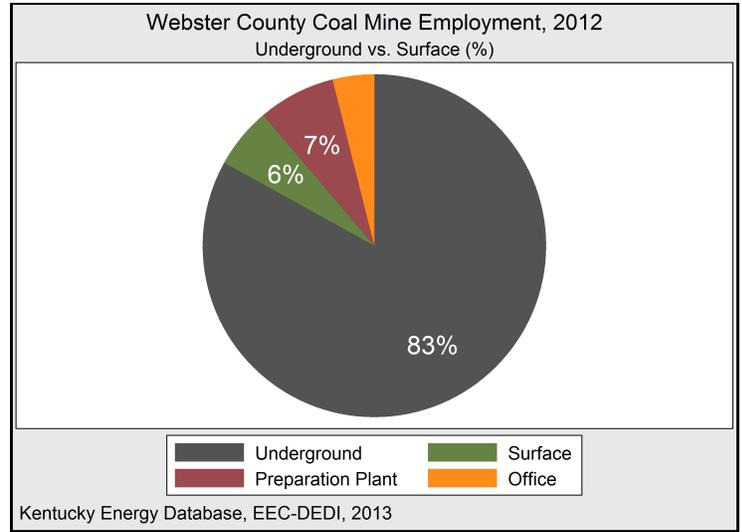
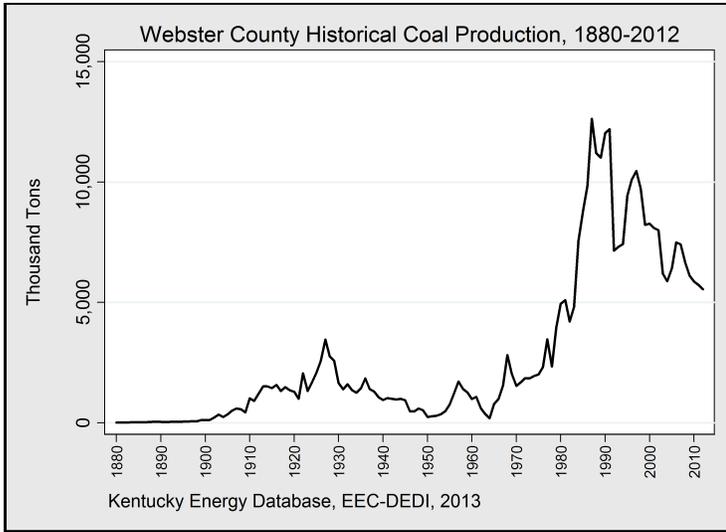
Union County Coal Market

More coal was shipped from Union County in Western Kentucky to power plants in the United States than any other county in Kentucky during 2012. During the year, more than 5.1 million tons of coal mined in Union County were delivered to nine different states. Power plants in Kentucky accounted for more than half of Union County coal deliveries in 2012.

Chemical Composition and Cost

The average delivery price of coal from Union County was the second lowest in Kentucky at \$47.78 in 2012, and ranged in price from \$35.03 to \$85.53 a ton. Additionally, a typical ton of coal from Union County had an ash content of 9.02 percent, sulfur content of 2.96 percent, and a heat content of 23.03 MMBtu.

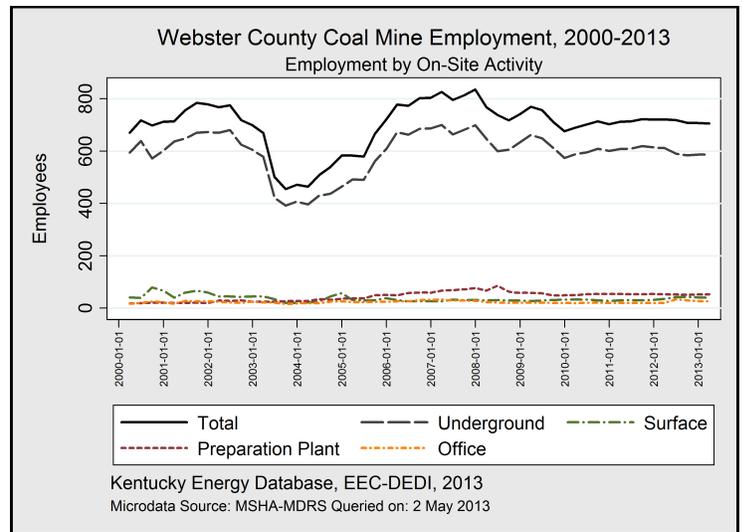
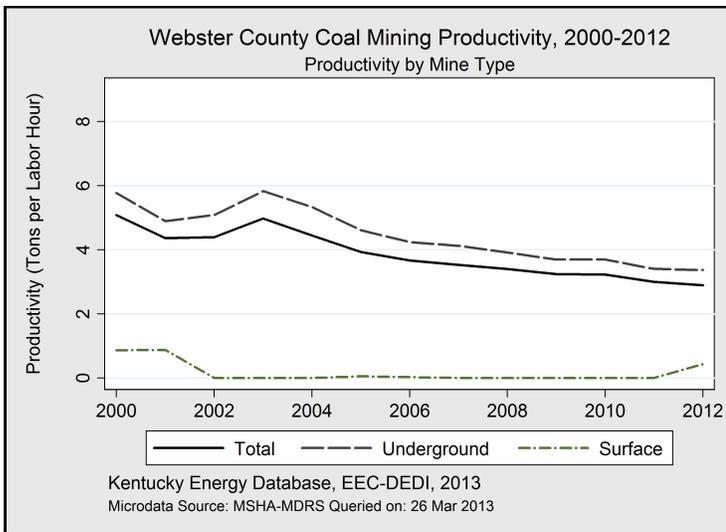
Webster County



Production Method	Mines	Production	Percentage
Total	3	5,550,427	100%
Underground	1	5,506,878	99%
Surface	2	43,549	<1%

On-Site Activity	Employment	Percentage
Total	714	100%
Underground	593	83%
Preparation Plant	52	7%
Surface	41	6%
Office	28	4%

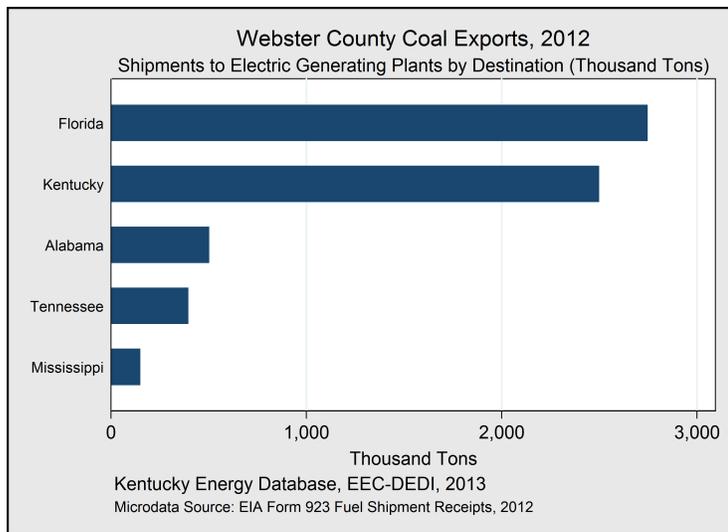
Relative to many other coal-producing counties in Kentucky, mine productivity in Webster County has been stable since 2005.



Coal production in Webster County came predominantly from underground operations during 2012. Webster County produced nearly 6 million tons of coal which represented 6.1 percent of the Commonwealth's total annual production. Interestingly, since 2006 coal production levels in the county have fluctuated dramatically depending on the year. However, Webster County annual production remains notably down from a recent peak of 10.6 million tons in 1997.

Coal mines in Webster County directly employed 714 people full-time during 2012. Underground mine sites by far represented the largest concentration of direct coal mining jobs, employing 593 miners through the year. Coal preparation plants provided 52 full-time jobs, surface operations employed 41 miners, and mine offices were staffed by 28 individuals. Unsurprisingly, underground mine employment has fluctuated directly with underground coal production during the last five years.

Webster County



State & Power Plant	Deliveries (Tons)	Percentage
Total	6,295,080	100%
Florida	2,747,070	43.6%
Seminole	1,483,237	23.6%
IMT Transfer	436,415	6.9%
Davant Transfer	422,580	6.7%
Big Bend	400,473	6.4%
US United Bulk Terminal	4,365	<1%
Kentucky	2,499,162	39.7%
Paradise	1,246,050	19.8%
Mill Creek	455,349	7.2%
East Bend	323,831	5.1%
Coleman	257,977	4.1%
R D Green	134,697	2.1%
HMP&L Station Two	81,258	1.3%
Alabama	503,023	8%
Widows Creek	503,023	8%
Tennessee	395,637	6.3%
Cumberland	362,835	5.8%
Johnsonville	32,802	<1%
Mississippi	150,188	2.4%
Associated Terminals	150,188	2.4%

Webster County Coal Market

The Seminole Power Plant, located near Palatka, FL, was the largest single consumer of coal shipped from Webster County in 2012, and helped make Florida the largest market for Webster County coal. Kentucky represented the second largest market for Webster County coal in 2012, with coal delivered to six different power plants across the Commonwealth. Alabama, Tennessee, and Mississippi also received shipments of Webster County coal during the year.

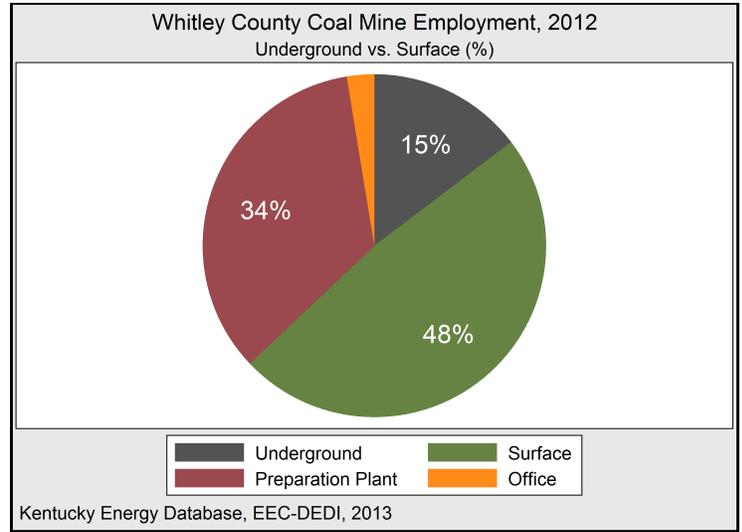
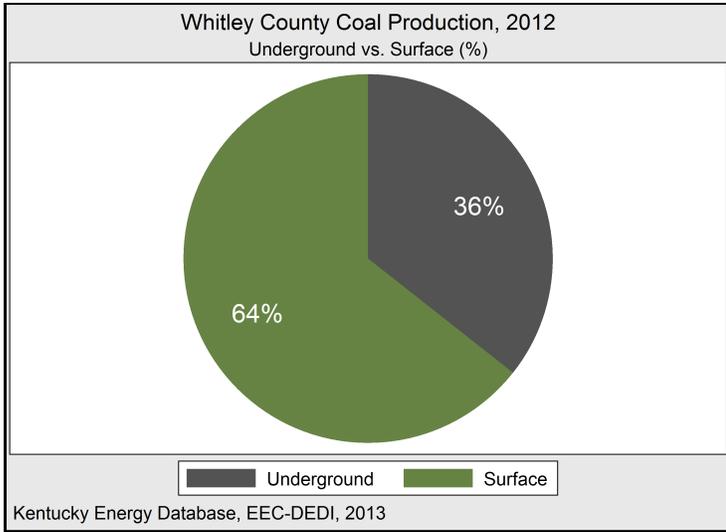
Webster County Coal Mining Productivity

Coal mine productivity in Webster County was 2.89 tons per labor hour during 2012. As all coal production in the county came from underground operations in 2012, this level of productivity including miner hours, prep plant hours, and office hours was the fourth highest in Kentucky.

Chemical Composition and Cost

Coal from Webster County on average contained 3.08 percent sulfur, 9.58 percent ash, and 23.64 MMBtu per ton in 2012. The combination of these factors resulted in an average delivery price of \$62.98 per ton, though actual shipment prices ranged from \$36.09 to \$86.81 during the calendar year.

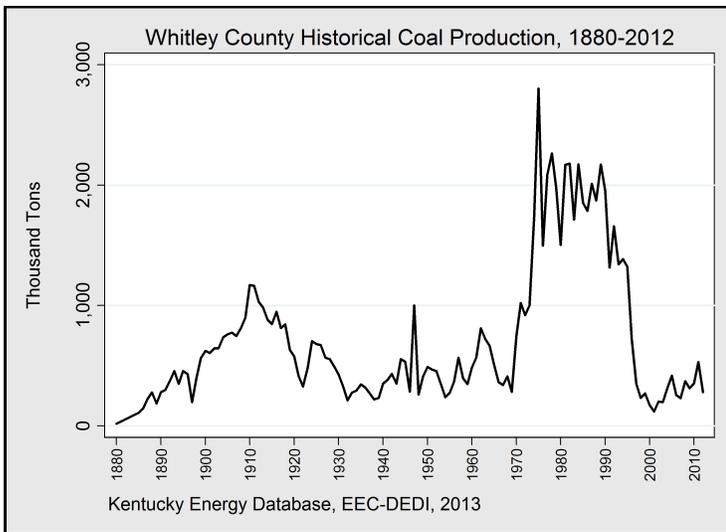
Whitley County



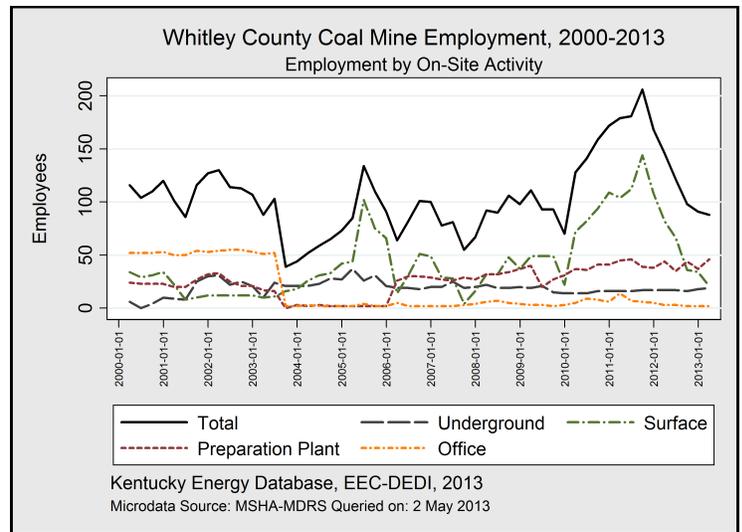
Production Method	Mines	Production	Percentage
Total	12	280,552	100%
Surface	11	180,582	64%
Underground	1	99,970	36%

Production in Whitley County remains down substantially from a high of 1.6 million tons achieved in 1992.

On-Site Activity	Employment	Percentage
Total	116	100%
Surface	56	48%
Preparation Plant	40	34%
Underground	17	15%
Office	3	3%



The twelve active mines in Whitley County in 2012 produced 280 thousand tons of coal, a one year decrease of 47 percent. Sixty-four percent of production came from surface mine operations. A small underground mine in Whitley County supplied 36 percent of the county's production, with approximately 99 thousand tons. Since 2008, surface mines have represented a larger share of county coal production each year. During 2012, there were zero receipts of steam coal shipments from Whitley County to electric power plants



Direct coal mining employment in Whitley County was led by surface mine sites in 2012, which provided 56 full-time jobs. Coal preparation plants, underground mining, and office positions combined employed 60 people during the year. Overall, coal companies in Whitley County on average employed 116 full-time miners in 2012, a one year decrease of 45 percent. However, within 2012 total employment decreased significantly to 31 full-time employees by the end of December 2012.

Contact Information

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Division of Mine Reclamation and Enforcement	Phone: 502-564-2340
#2 Hudson Hollow Road, Frankfort, KY 40601	FAX: 502-564-5848
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Mine Safety Review Commission	Phone: 502-573-0316
132 Brighton Park Boulevard, Frankfort, KY 40601	FAX: 502-573-0344
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Division of Minerals Taxation and GIS Services, Severance Tax Unit, 501 High Street, Frankfort, KY 40601	FAX: 502-564-5977
Office of Property Valuation	Phone: 502-564-8338
501 High Street, Frankfort, KY 40601	FAX: 502-564-8368
Transportation Cabinet	Phone: 502-564-7183
Division of Planning, Coal Haul Section 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
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Kentucky Coal Academy Kentucky Community & Technical College System Gary Whisman, Executive Director	859-246-0041 Fax 606-589-3117 (http://coalacademy.kctcs.edu)
Kentucky NEED Project Box 176055, Covington, KY 41017 Karen Reagor, Coordinator	866/-736-8941 (www.need.org/states/kentucky) kreagor@need.org

Data Sources

Kentucky Energy and Environment Cabinet

Department for Energy Development and Independence (DEDI)

Department for Natural Resources (DNR)

Department for Environmental Protection (DEP)

Kentucky Geological Survey

United States Department of Energy (DOE)

Energy Information Administration (EIA)

Federal Energy Regulatory Commission (FERC)

United States Department of Commerce (DOC)

Bureau of Economic Analysis (BEA)

Bureau of Labor Statistics (BLS)

U.S. Census Bureau

United States Department of the Interior (DOI)

Environmental Protection Agency (EPA)

United States Department of Labor (DOL)

Mine Safety and Health Administration (MSHA)

Bureau of Labor Statistics (BLS)

Additional Reference and Educational Materials (Not Used in this Document)

U. S. Department of Energy

(www.fossil.energy.gov/education/)

American Coal Foundation

(www.teachcoal.org)

UK Center for Applied Energy Research

(www.caer.uky.edu)

Coal In Kentucky

University of Kentucky, documentary (2010)

(www.coalinkentucky.com)

In order to provide the public with timely access to these data, this report uses the best-available estimate for each factor at the time of publication. However, as a result of data revisions, confidentiality, rounding, and reporting errors, the table values may not precisely equal the sum of the included components and certain indicators may be subject to change. Please direct all data-related inquiries to the Kentucky Department for Energy Development and Independence at 502-564-7192.

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Lori Detwiler, Kentucky Department of Revenue

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