U.S. Coal Supply and Demand: 2004 Review

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Overview

Coal production in the United States increased in 2004 by 39.7 million short tons to end the year at 1,111.5 million short tons (3.7 percent higher than the 2003 level of 1,071.8 million short tons), according to preliminary data from the Energy Information Administration (Table 1). (Note: All percentage change calculations are done at the short-tons level.) Although total U.S. coal consumption rose in 2004, not all coal-consuming sectors had increased consumption for the year. Coal consumption increased in the electric power sector by 1.0 percent and declined slightly in the other industrial sector, while coking coal consumption dropped by 2.4 percent. U.S. coal exports rose for the second consecutive year in 2004, while coal imports again increased to record levels. Total coal stocks declined during the year, as electric generators used their stockpiles to help meet increased demands and missed shipments, while coal producers used their stockpiles to supplement their production levels in 2004.

The rebounding economy in 2004 helped to drive up the demand for coal during the year. Although preliminary data show that total generation in the electric power sector (electric utilities and independent power producers) in the United States increased by 1.9 percent in 2004, coal's share of generation decreased by 1.8 percent, resulting in only a 10.0 million short ton increase in coal consumed in the electric power sector. Coal use in the non-electric power sector declined slightly by 0.7 percent to a level of 89.1 million short tons.

In the international markets in 2004, both U.S. coal exports and imports increased for a second consecutive year. U.S. coal exports rose to 48.0 million short tons, an increase of 5.0 million short tons in 2004. U.S. coal imports reached another record level in 2004, ending the year at 27.3 million short tons, 2.2 million short tons higher than in 2003.

The average delivered price of coal increased in all markets in 2004. However, the increases in the domestic markets were not as dramatic as in the international markets. The U.S. electric utility price-per-short-ton increase was 6.1 percent, while the increase was 3.7 percent for independent power producers. Coking coal prices had the largest increase for any domestic sector, increasing by 21.5 percent, while the price for the other industrial sector increased by 13.3 percent in 2004. In the international markets, the average price per short ton of export coal, measured in free alongside ship (f.a.s.) value, increased dramatically by 50.4 percent in 2004, while the price of coal imported into the United States rose by 19.3 percent.

Coal synfuels continued to be a major component of the coal industry in the United States due to the continuing tax credits accruing to its producers. According to preliminary data, coal processed by coal synfuel plants increased in 2004 by 9.1 percent even as a new legal issue surrounded this relatively recent addition to the coal market.

Production

U.S. coal production increased in 2004 by 3.7 percent to a total of 1,111.5 million short tons (Figure 1 and Table 1), a production level still below the 2001 record level of 1,127.7 million short tons. Both the Appalachian and Western Regions had increased coal production in 2004 while the Interior region remained almost steady, declining by 0.1 percent. Exclusive of refuse production, the increase in coal production in the Appalachian Region accounted for about one third of the total increase in U.S. coal production (Figure 2 and Table 2), while the Western Region was responsible for the rest of the increase.

Recurring problems in the coal industry had varying impacts on coal production in 2004. At issue in 2004 were transportation of coal from mines to consumers; weather; environmental concerns; legal challenges; and global economics. Transportation of coal from the mine to the consumer continues to be an issue for the industry. The majority of coal in the U.S. is moved by railroads exclusively or in tandem with another method of transportation. In 2004, major railroads experienced record levels of commodities moving around the Nation and as a result, bottlenecks were experienced across the country causing delays in coal deliveries to several utilities throughout the year. Flooding on the major waterways, along with river lock repairs and sunken barges also contributed to the transportation problems. Four hurricanes hit the United States in 2004 causing numerous problems for the coal industry including flooding, disruptions in deliveries, off-line power plants, and the ability of employees to get to the mines in southeastern coal-producing States. Several of the legal challenges concerning mining permits and the levels of environmental review needed to obtain them still have not been settled. The wide-ranging economic expansion experienced in

Table 1. U.S. Coal Supply, Disposition, and Prices, 2001 – 2004
(Million Short Tons and Nominal Dollars per Short Ton)

Item	2001	2002	2003	2004
Production By Region				
Appalachia	431.2	396.2	376.0	389.3
Interior	146.9	146.6	146.0	145.8
Western	547.9	550.4	548.7	575.2
Refuse Recovery	1.8	1.0	1.1	1.1
Total	**1,127.7**	**1,094.3**	**1,071.8**	**1,111.5**
Consumption By Sector				
Electric Power	964.4	977.5	1,005.1	1,015.1
Coke Plants	26.1	23.7	24.2	23.7
Other Industrial Plants	65.3	60.7	61.3	61.2
Combined Heat and Power (CHP)	25.8	26.2	24.8	28.0
Non – CHP	39.5	34.5	36.4	33.2
Residential/Commercial Users	4.4	4.4	4.2	4.2
Residential	0.5	0.5	0.5	0.5
Commercial	3.9	4.0	3.8	3.8
Total	**1,060.1**	**1,066.4**	**1,094.9**	**1,104.3**
Year-End Coal Stocks				
Electric Power	138.5	141.7	121.6	106.7
Coke Plants	1.5	1.4	0.9	1.3
Other Industrial Plants	6.0	5.8	4.7	4.8
Producers/Distributors	35.9	43.3	38.3	34.4
Total	**181.9**	**192.1**	**165.5**	**147.2**
U.S. Coal Trade				
Exports	48.7	39.6	43.0	48.0
Steam Coal	23.3	18.1	20.9	21.2
Metallurgical Coal	25.4	21.5	22.1	26.8
Imports	19.8	16.9	25.0	27.3
Net Exports	28.9	22.7	18.0	20.7
Average Delivered Price				
Electric Utilities (1)	24.68	24.74	25.72	27.28
Independent Power Producers (1)	NA	27.96	26.21	27.18
Coke Plants	46.42	50.67	50.63	61.50
Other Industrial Plants	32.26	35.49	34.70	39.30
Average Free Alongside Ship (f.a.s.) Price				
Exports	36.97	40.44	35.98	54.11
Steam Coal	31.88	34.51	26.94	42.03
Metallurgical Coal	41.63	45.41	44.55	63.63
Imports	34.00	35.51	31.45	37.52

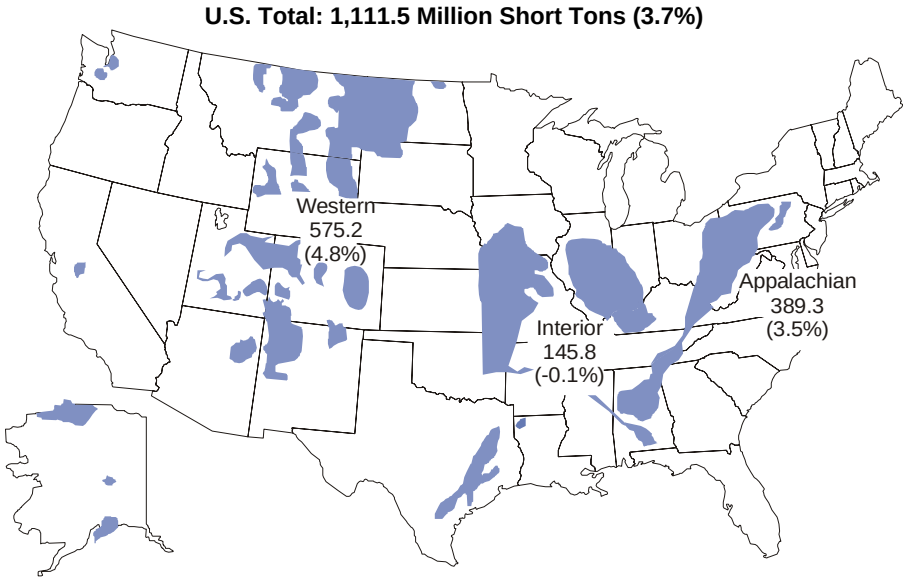
(1) Average delivered price is through November 2004.
NA - Data not available.
Notes: Totals may not equal sum of components due to independent rounding. Sum of net exports, stock changes, and consumption may not equal production, primarily because the supply and disposition data are obtained from different surveys. Electric power sector data are preliminary.
Sources: Production, consumption, stocks, and prices: Energy Information Administration, *Quarterly Coal Report,* October-December 2004, DOE/EIA-0121(2004/Q4) (Washington, DC, March 2005*); Coal Industry Annual 2000,* DOE/EIA-0584(2000) (Washington DC, January 2002*); Annual Coal Report 2003,* DOE/EIA-0584(2003) (Washington, DC, September 2004*);* and *Electric Power Monthly,* March 2005,DOE/EIA-0226(2005/03) (Washington DC, March 2005*).* **Exports and imports**: U.S. Department of Commerce, Bureau of the Census, "Monthly Report EM 545" and "Monthly Report IM 145."

China in 2004 drove world markets for many commodities into overdrive and helped to reestablish the United States into Asian coal markets.

Appalachian Region

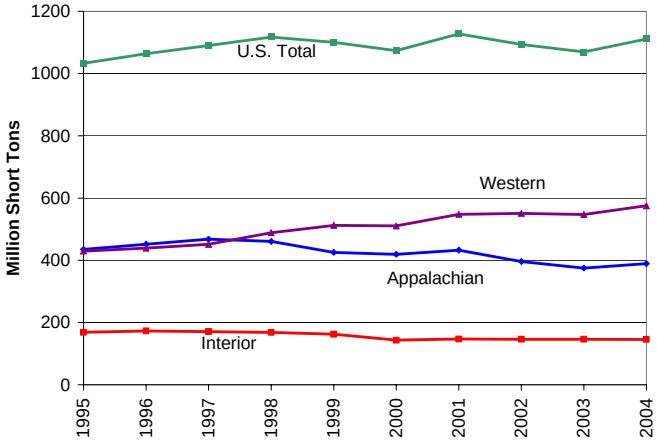
Coal production in the Appalachian Region increased in 2004 by 13.2 million short tons, to end the year at 389.3 million short tons, an increase of 3.5 percent, but still below the 2002 level of 396.2 million short tons. Although

Figure 1. Coal Production by Coal-Producing Region, 2004
(Million Short Tons and Percent Change from 2003)
Regional totals do not include refuse recovery



Source: Energy Information Administration, *Quarterly Coal Report*, October-December 2004, DOE/EIA-0121(2004/Q4) (Washington, DC, March 2005).

Figure 2. Coal Production by Region, 1995-2004
(Million Short Tons)
Regional totals do not include refuse recovery



Sources: Energy Information Administration, *Quarterly Coal Report*, October-December 2004, DOE/EIA-0121(2004/Q4) (Washington, DC, March 2005); *Coal Industry Annual*, DOE/EIA-0584, various issues; and *Annual Coal Report 2003*, DOE/EIA-0584(2003), (Washington, DC, September 2004).

there was an increase in total coal production in the region in 2004, the Appalachian Region has not experienced 3 consecutive years of coal production of less than 400 million short tons since the early 1970s. The increase in 2004 in coal production in the region was in part, fueled by the rise in U.S. coal exports (which are primarily produced in the East), and the large increases in spot coal prices in the region that occurred during the year.

Although the Appalachian Region produced more coal in 2004, the production level was still constrained by several factors. Transportation problems affected the amount of coal moved to markets. Railroads experienced numerous delays and barge shipments were curtailed due to river flooding, lock maintenance, and blocked river locks due to sunken barges. The combination of reserve degradation in the region along with the legacy of past lawsuits that had temporarily halted the issuance of needed permits to open new mines or to expand current operations, continued to constrain the amount of coal produced. Geological and equipment problems added to the limitations in coal production in some Appalachian States. Declining productivity and increasing operating costs also contributed to the constrained production levels in the region. However, all but two States in the region had higher production levels in 2004 and the declines that were experienced in those two States were slight.

Table 2. U.S. Coal Production by Coal-Producing Region and State, 2001 – 2004
(Million Short Tons)

Coal-Producing Region and State	2001	2002	2003	2004	Percent Change 2003 – 2004
Appalachia Total	**431.2**	**396.2**	**376.0**	**389.3**	**3.5**
Alabama	19.4	18.9	20.1	22.3	10.9
Kentucky, Eastern	109.1	99.4	91.2	90.6	-0.7
Maryland	4.6	5.1	5.1	5.1	1.2
Ohio	25.4	21.2	22.0	23.2	5.2
Pennsylvania Total	74.1	68.4	63.7	66.0	3.5
Anthracite	1.5	1.3	1.3	1.7	30.8
Bituminous	72.7	67.1	62.5	64.3	2.9
Tennessee	3.3	3.2	2.6	2.9	12.6
Virginia	32.8	30.0	31.6	31.4	-0.6
West Virginia	162.4	150.1	139.7	147.9	5.8
Northern	38.2	34.0	34.9	40.7	16.3
Southern	124.5	116.0	104.8	107.2	2.3
Interior Total	**146.9**	**146.6**	**146.0**	**145.8**	**-0.1**
Arkansas	*	*	*	*	-3.1
Illinois	33.8	33.3	31.6	31.9	0.7
Indiana	36.7	35.3	35.4	35.1	-0.7
Kansas	0.2	0.2	0.2	0.1	-28.9
Kentucky, Western	24.7	24.7	21.5	23.2	7.8
Louisiana	3.7	3.8	4.0	3.8	-5.5
Mississippi	0.6	2.3	3.7	3.6	-3.0
Missouri	0.4	0.2	0.5	0.5	1.1
Oklahoma	1.7	1.4	1.6	1.8	14.5
Texas	45.0	45.2	47.5	45.9	-3.5
Western Total	**547.9**	**550.4**	**548.7**	**575.2**	**4.8**
Alaska	1.5	1.1	1.1	1.5	42.2
Arizona	13.4	12.8	12.1	12.7	5.6
Colorado	33.4	35.1	35.8	39.9	11.3
Montana	39.1	37.4	37.0	40.0	8.1
New Mexico	29.6	28.9	26.4	27.2	3.3
North Dakota	30.5	30.8	30.8	29.9	-2.7
Utah	27.0	25.3	23.1	21.7	-5.7
Washington	4.6	5.8	6.2	5.7	-9.3
Wyoming	368.7	373.2	376.3	396.5	5.4
Refuse Recovery	**1.8**	**1.0**	**1.0**	**1.1**	**12.9**
U.S. Total	**1,127.7**	**1,094.3**	**1,071.8**	**1,111.5**	**3.7**

* Less than 50 thousand short tons.
Sources: Energy Information Administration, *Annual Coal Report 2002*, DOE/EIA-0584 (2002)(Washington, DC, November 2003); and *Quarterly Coal Report*, October-December 2004, DOE/EIA-0121(2004/Q4)(Washington, DC, March 2005).

West Virginia, the largest coal-producing State in the Appalachian Region and the second largest in the United States, increased 5.8 percent to end the year with 147.9 million short tons of production, just slightly below the production level in 2002. Most of the increase in coal production in West Virginia is attributed to seven mines. One new mine, the Superior mine, began producing coal in the second quarter of the year. Two other mines, the Coalburg No. 1 and the Guyan, which opened in mid-2003, had a full year's production in 2004. Two other mines came back on-line in 2004 after being temporarily idle in 2003. The Loveridge underground mine experienced a fire in 2003, and the Fourmile Fork surface mine was placed into non-producing status for most of 2003. The McElroy mine expanded production after installing a second longwall unit in 2004 and the Twilight MTR mine expanded production as it increased its workforce.

Eastern Kentucky produced 90.6 million short tons of coal in 2004, down by only 0.6 million short tons or 0.7 percent. The drop in Eastern Kentucky, even with increased production from some mines, is in part due to the closing of a few mines due to reserve depletion. Also, the Big Elk mine was placed into non-producing status in late 2004 and as a result produced 1.0 million short tons less than in 2003, while the Number 10 mine operated by Ember Contracting was only active during the middle of the year and as a result produced 1.8 million short tons less than in 2003. Pennsylvania produced 66.0 million short tons, an

increase of 3.5 percent from 2003, as expansions in production at the High Quality, Bailey, and Enlow Fork mines accounted for almost 95 percent of the increase in production for the State. Coal production increased in Alabama in 2004 by 10.9 percent to reach 22.3 million short tons, a level not seen since the mid 1990s. Eight new mines opened in Alabama in 2004 and their combined production accounted for 30.3 percent of the State's increase. Also, Walter Resources expanded production at the Number 7 mine by 0.5 million short tons to help meet the increasing demand in the metallurgical coal market. Ohio increased coal production in 2004 to a total of 23.2 million short tons, an increase of 5.2 percent, as the Century mine expanded production by 1.1 million short tons. Tennessee had increased coal production in 2004 of 0.3 million short tons, while Maryland remained at approximately the same level. Virginia had a decline in coal production in 2004 of 0.2 million short tons

Interior Region

The Interior Region experienced a slight decrease in coal production in 2004 of almost 0.2 million short tons, or 0.1 percent. Coal production in the Interior Region did not fall further because coal production in western Kentucky rose by 1.7 million short tons in 2004 to end the year at a total of 23.2 million short tons. Five new mines in western Kentucky contributed to the increase in production, but the expansion at the Highland Number 9 mine and the Cardinal mine is the key factor in the increase for the year. Texas, which usually accounts for about one-third of the Interior Region's coal production, had a 3.5 percent decline in total production to end the year at 45.9 million short tons, a drop of 1.7 million short tons. This decline in total coal production in Texas is primarily due to decreases in production at two mines in the State, the Beckville and Jewett mines. The decline in production at the Jewett mine was the result of near-record rainfall in June that halted production and caused a weather related *force majeure*. Production at the Beckville mine declined in 2004 as the Martin Lake power plant that it supplies, relied more heavily on lignite from the power plant's other mine, the Oak Hill.

Indiana, the second largest coal producing State in the Interior Region remained almost level in 2004, decreasing by only 0.7 percent to 35.1 million short tons. Coal production in Illinois increased slightly by 0.7 percent to end the year at 31.9 million short tons. The other States in the Interior Region (Arkansas, Kansas, Louisiana, Mississippi, Missouri, and Oklahoma), which accounted for a total of 6.7 percent of the entire Region's production in 2004, all fluctuated some from their 2003 coal production levels.

Western Region

Coal production in the Western Region increased in 2004 by 4.8 percent to a total of 575.2 million short tons, which represents 51.8 percent of total U.S. coal production. The increase of 26.5 million short tons resulted in another record level for the region, surpassing the previous one set in 2002 by 24.8 million short tons. Of the nine States in the Western Region, only three had lower coal production levels in 2004 than in 2003: North Dakota, Utah, and Washington.

Wyoming continued its dominance as the largest coal-producing State in the Nation, a position it has held for 18 consecutive years. In 2004, Wyoming produced a record 396.5 million short tons of coal, an increase of 5.4 percent for the year. This production level was only 17.0 million short tons less than the combined total of the next five largest coal-producing States (West Virginia, Kentucky, Pennsylvania, Texas, and Montana). The sheer dominance of Wyoming's coal industry in the United States is further illustrated by the fact that Wyoming: accounted for about 68.9 percent of the Western Region total; was close to three times the entire Interior Region's total; was 7.2 million short tons more than the entire Appalachian Region; and was 35.7 percent of the total U.S. coal production for the year. Two new mines opened in 2004 in Wyoming, the Bridger underground mine, and the Bridger highwall mine. Although five of the twenty mines in Wyoming had declines in production, expansions of 3 million short tons or more at four other mines in the State accounted for most of the 20.2-million-short-ton increase that occurred in 2004. The Jacobs Ranch mine, the Rawhide mine, and the Caballo mine had coal production increases of 3.1, 3.2, and 3.7 million short tons respectively. However, the largest tonnage increase in production for any mine in Wyoming in 2004 was the 9.6-million-short-ton increase at the Black Thunder mine, which became the world's first coal mine to ship 1 billion short tons during its lifetime.

Colorado and Montana both had increases in their coal production in 2004 and are vying for the spot of second-largest coal-producing State in the Western Region. Montana had a total of 40.0 million short tons of production in 2004 while Colorado had a total of 39.9 million short tons. Although the Big Sky mine in Montana was placed into non-producing status in 2004, increases in coal production at the Spring Creek mine of 3.2 million short tons, and at the Rosebud Number 6 mine of 1.6 million short tons more than covered the loss, resulting in an overall increase of 3.0 million short tons or 8.1 percent for the year. Colorado had an increase of 4.0 million short tons or 11.3 percent in 2004, even though the Sanborn Creek mine closed in 2003. Increases in coal production at the Elk Creek mine of 2.0 million short tons in its third year of operation in particular, along with increases at most of the other mines in the State, and the start of the Colowyo

highwall mine in 2004 enabled Colorado to reach a record level of coal production.

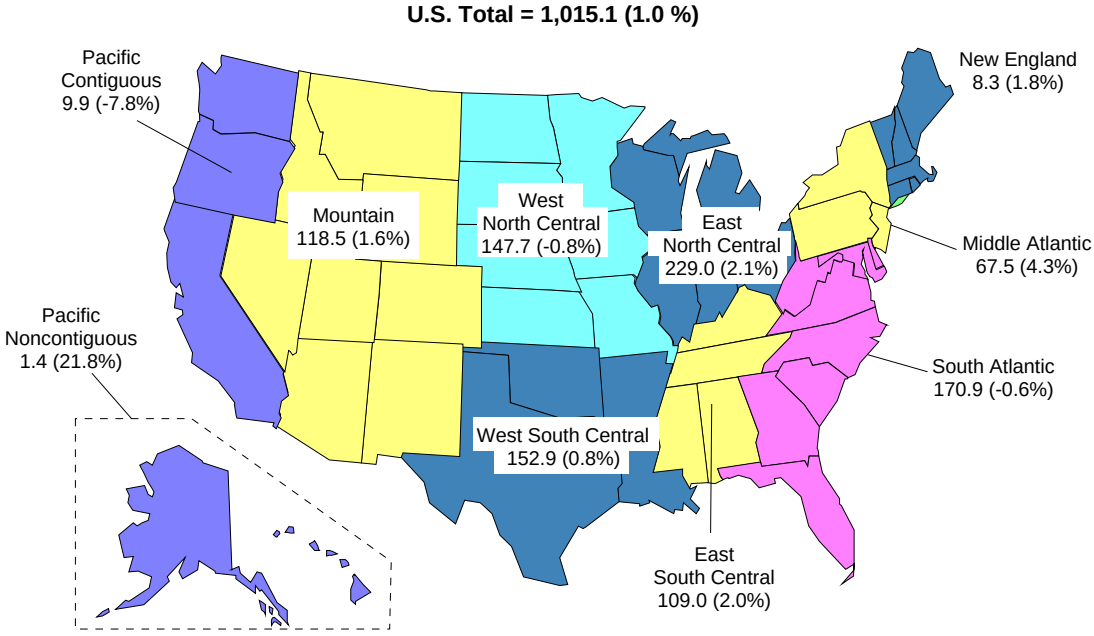
Coal production in Alaska, Arizona, and New Mexico also increased in 2004, with increases of 0.5, 0.7, and 0.9 million short tons respectively. Declines in coal production were experienced in North Dakota, Utah, and Washington in 2004. North Dakota had a decline of 0.8 million short tons in 2004, ending the year with a total of 29.9 million short tons, as three of the four mines in the State had somewhat lower production during the year. Coal production in Utah in 2004 was 21.7 million short tons, a decrease of 1.3 million short tons, or 5.7 percent. Although a new mine, the Bear Canyon Number 4, began production in the third quarter of the year, the geological problems at the Skyline mine resulted in it being placed into non-producing status in the third quarter of 2004. Washington, which has one mine, the Centralia mine, had a decrease of 0.6 million short tons in 2004 to end the year at a total of 5.7 million short tons.

Consumption

The continuing economic recovery in 2004 pushed total U.S. coal consumption to another record level. Preliminary data show that total coal consumption increased 9.4 million short tons to reach a level of 1,104.3 million short tons, an increase of 0.9 percent. The electric power sector (electric utilities and independent power producers) accounted for almost 92 percent of all coal consumed in the United States in 2004. The other coal-consuming sectors (other industrial, coking coal, and residential and commercial sectors) had minor changes in their consumption totals. The other industrial sector had almost the same level of coal consumption in 2004 as in 2003, while the coking coal sector had a decrease of 2.4 percent. The residential and commercial sector, the smallest of all coal consuming sectors, (accounting for less than one half of one percent of total consumption), remained at the same level in 2004.

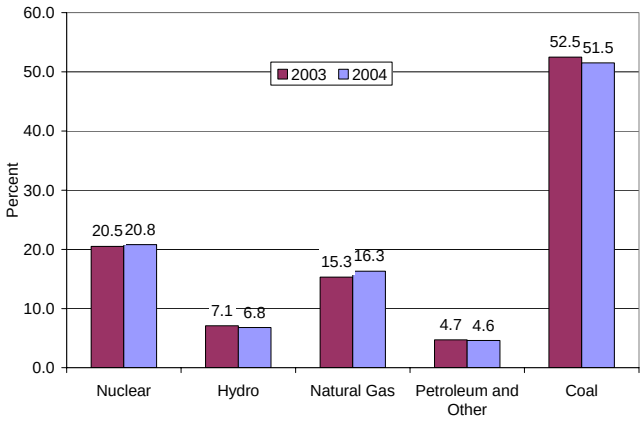
Coal consumption in the electric power sector increased by 10.0 million short tons to end 2004 at a record level of 1,015.1 million short tons (Figure 3). Although coal consumption by the electric power sector increased by 1.0 percent in 2004, coal-based generation remained almost flat, as increasing volumes of lower-Btu coal (subbituminous and lignite) were consumed. Nationally, total generation in the electric power sector from all fuels increased in 2004 by only 1.9 percent, with gains in electricity generation by natural gas and nuclear power, helping to make up the loss in generation experienced by the hydroelectric facilities in the United States(Figure 4). The decline in electric generation by hydropower plants was a result of lower-than-normal rainfall in areas with these facilities in 2004. The increase in electric generation by natural gas plants of 9.0 percent in 2004 was due in large part to the numerous new generating facilities in the last several years that were mostly natural gas-fired. In 2004, 92 percent of the new capacity to come on-line during the year was natural gas-fired. The increase in nuclear generation of 3.3 percent in 2004 was in part due to fewer nuclear plants being down during the year for

Figure 3. Electric Power Sector Consumption of Coal by Census Division, 2004
(Million Short Tons and Percent Change from 2003)



Source: Energy Information Administration, Form EIA-906, "Power Plant Report."

Figure 4. Share of Electric Power Sector Net Generation by Energy Source, 2003 vs. 2004



Source: Energy Information Administration, Form EIA-906, "Power Plant Report."

different reasons (scheduled maintenance, refueling, or operational problems) than had occurred in 2003. However, the generation from nuclear plants in 2004 was only 1.1 percent higher than the 2002 level.

One factor that helped to slow the increase in electric generation by the electric power sector was the weather. Compared to 2003, both heating and cooling degree days were lower for the country as a whole, by 4.2 percent and 4.3 percent respectively, indicating that the slight growth of 1.9 percent in total generation was primarily driven by economic factors. Also, the winter weather was warmer in 2004 than normal (30-year average) for the Nation. Overall, the United States experienced a 7-percent decline from normal in heating degree days for the first half of the year and a 9-percent decline for the second half of the year.

Even though there was a small increase in the electric power sector in total coal-fired generation for the United States, all of the Census Divisions had a decline in coal's share of the mixture of fuels for the electric power sector in 2004. The drop in the coal share ranged from 0.8 percent in the Middle Atlantic to 8.6 percent in the Pacific Division. Of the nine divisions, coal is a minor component (less than 20 percent) in the fuel mix in two divisions, New England and Pacific, and a major component (more than 50 percent of generation) in five divisions, East North Central, West North Central, South Atlantic, East South Central, and Mountain. In the other two divisions, Middle Atlantic and West South Central, coal is one of two predominant fuel sources for the electric power sector.

While six of the nine Census Divisions had increases in coal consumption in the electric power sector in 2004, only five of those six divisions had an increase in coal generation (Table 3). Almost three-fourths of the increase in coal consumption in the electric power sector was attributable to two of the nine Census Divisions, the East North Central and the Middle Atlantic. Coal accounts for over 70 percent of all electric generation in the East North Central Division making it the largest coal-consuming region for the electric power sector with about 22 percent

Table 3. Electric Power Sector Net Generation, 2003-2004 (Million Kilowatthours)

Census Division	2003	2004	Percent Change
New England			
Coal	19,201	19,045	-0.8
Total	122,954	128,064	4.2
Middle Atlantic			
Coal	147,356	150,876	2.4
Total	393,640	406,193	3.2
East North Central			
Coal	445,150	450,216	1.1
Total	618,898	633,080	2.3
West North Central			
Coal	231,608	228,914	-1.2
Total	296,528	296,345	-0.1
South Atlantic			
Coal	417,727	406,489	-2.7
Total	765,233	767,199	0.3
East South Central			
Coal	230,953	234,344	1.5
Total	350,884	361,974	3.2
West South Central			
Coal	226,684	227,655	0.4
Total	513,398	520,941	1.5
Mountain			
Coal	214,881	218,686	1.8
Total	323,453	340,393	5.2
Pacific			
Coal	19,154	17,742	-7.4
Total	336,172	339,407	1.0
U.S. Total			
Coal	1,952,714	1,953,968	0.1
Total	3,721,159	3,793,596	1.9

Source: Energy Information Administration, Form EIA-906, "Power Plant Report."

of all coal consumed for electric generation in the United States. Coal consumption for the electric power sector in this division increased in 2004 by 4.7 million short tons, or 2.1 percent, and that increase represents almost 47 percent of the total increase in coal consumption in the electric power sector for the year. Total generation in the electric power sector in the East North Central Division increased in 2004 by 2.3 percent, while coal-based generation increased by 1.1 percent. In the Middle Atlantic Division, where both the coal and the nuclear share of electric power sector generation is about 37 percent each, total electric power sector generation increased by 3.2 percent in 2004. The Middle Atlantic Division is the only division to have an increase in electric power sector generation from all fuels in 2004. Coal consumed in the electric power sector in the Middle Atlantic increased by 2.8 million short tons, or 4.3 percent in 2004.

In two of the Census Divisions, the Mountain and East South Central, coal accounts for about two-thirds of the fuel mix for electric power sector generation. The Mountain Division had an increase of 5.2 percent in total electric power sector generation and an increase of 1.8 percent in coal-based generation. The Mountain Division had an increase in coal consumption of 1.9 million short tons, or 1.6 percent. The East South Central Division had an increase of 3.2 percent in total electric power sector generation in 2004 and an increase of 1.5 percent in coal-based generation. Coal consumption in the East South Central Division in the electric power sector increased by 2.1 million short tons in 2004.

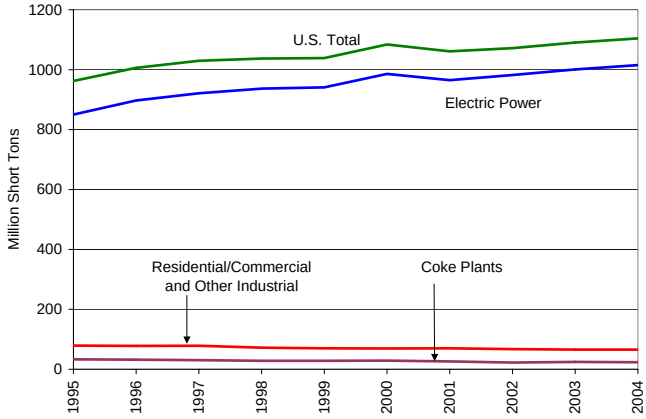
The West South Central Census Division had an increase in 2004 of 1.5 percent in total electric power sector generation and a 0.4-percent increase in coal generation. However, generation from nuclear power increased by 13.6 percent primarily due to the increase in electricity generation at the South Texas Number 1 plant that had been offline for 4 months in 2003. In the West South Central Division in 2004 coal consumption for electric power sector generation increased by 1.3 million short tons or 0.8 percent. In 2004, the South Atlantic Division had a slight increase in total electric power sector generation of 0.3 percent and a decrease in coal generation of 2.7 percent. An increase in generation by natural gas plants of 18.4 percent for the year, helped to hold down the coal generation. Coal accounts for about 55 percent of electric power sector generation in the South Atlantic Division and it had a slight decrease in coal consumption, 0.6 percent or 1.1 million short tons.

In 2004, total generation in the electric power sector in the West North Central Division decreased very slightly, less than 0.1 percent, while coal-based generation decreased by 1.2 percent. In the West North Central Division, coal accounts for about 78 percent of generation, and there was a decrease in coal consumption of 1.2 million short tons, or 0.8 percent. The other two Census Divisions, New England and Pacific, had minor changes in coal consumption in 2004.

Coal consumption in the non-electric power sector decreased in 2004, mainly due to the decline in the coking coal sector (Figure 5). Coal consumption at coke plants declined in 2004 by 2.4 percent, erasing the increase it experienced the prior year. The decline of 0.6 million short tons in coal consumption at coke plants was in part caused by the tight world market for metallurgical coal. Increasing international demand for metallurgical coal pushed exports higher as increasing prices motivated producers to switch some of the coal to overseas markets. To help meet domestic demand for coke, imports of coke into the United States jumped in 2004 by 149.2 percent to a total of 6.9 million short tons.

The economic expansion did not extend very deeply into the manufacturing sector in 2004, and as a result, coal consumption in the other industrial sector declined only a few thousand short tons to end the year at 61.2 million short tons. While the total coal consumption in the other industrial sector did not change much from the prior year, the amount of coal consumed by the combined heat and power plants increased by 12.7 percent as the plants produced 7.2 percent more coal-based electricity in part for the wholesale electricity market sales. The manufacturing sectors that experienced slight increases in coal consumption in 2004 include food, primary metal, and chemical manufacturing, while the paper, beverage, and fabricated metals sectors had declines in coal consumption for the year. Coal consumption in the residential and commercial sector remained steady in 2004.

Figure 5. Coal Consumption by Sector, 1995-2004
(Million Short Tons)



Source: Energy Information Administration, *Monthly Energy Review*, March 2005, DOE/EIA-0035(2005/03) (Washington, DC, March 2005).

Coal Prices

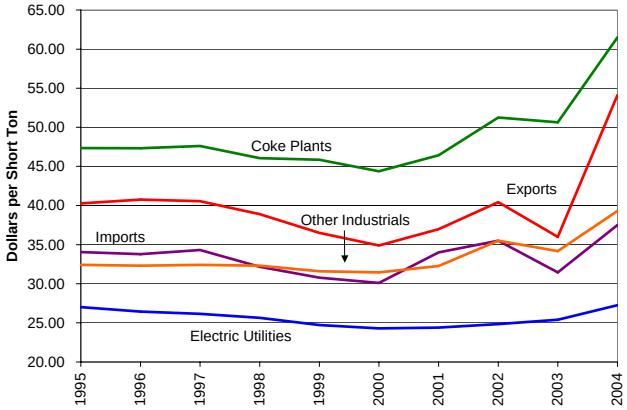
Coal prices rose across the board in 2004. While spot coal prices for some of the producing regions set record levels in 2004, average delivered prices in the consuming sectors increased for the year but not as steeply as the spot prices. Due to the fact that coal deliveries to the electric power sector are mostly done through long-term contracts, the delivered price of coal to the electric power sector increased in 2004, but not by huge amounts. According to preliminary data through November 2004, coal prices at electric utilities (a subset of the electric power sector) increased for a fourth consecutive year, to $27.28 per short ton (1.34 dollars per million Btu), an increase of 6.0 percent. Coal prices at independent power producers increased in 2004 to $27.18 per short ton (1.40 dollars per million Btu), but were still lower that the 2002 price of $27.96 per short ton, which was the first year the price data was available for publication. The increase in the delivered price of coal to the other sectors in 2004 was more evident as both the coking coal sector and the other industrial sector rely more heavily on short-term contracts and the spot market. The average delivered price of coal to the other industrial sector increased by 13.2 percent to an average price of $39.30 per short ton in 2004. The largest increase in consumer prices was in the coking coal sector.

The tight specifications needed for coal to produce coke limit the availability of the coal. As the world market for metallurgical coal tightened during the course of the year, the delivered price of coal to U.S. coke plants increased by 21.5 percent to reach $61.50 per short ton in 2004 (Figure 6).

Coal Synfuel

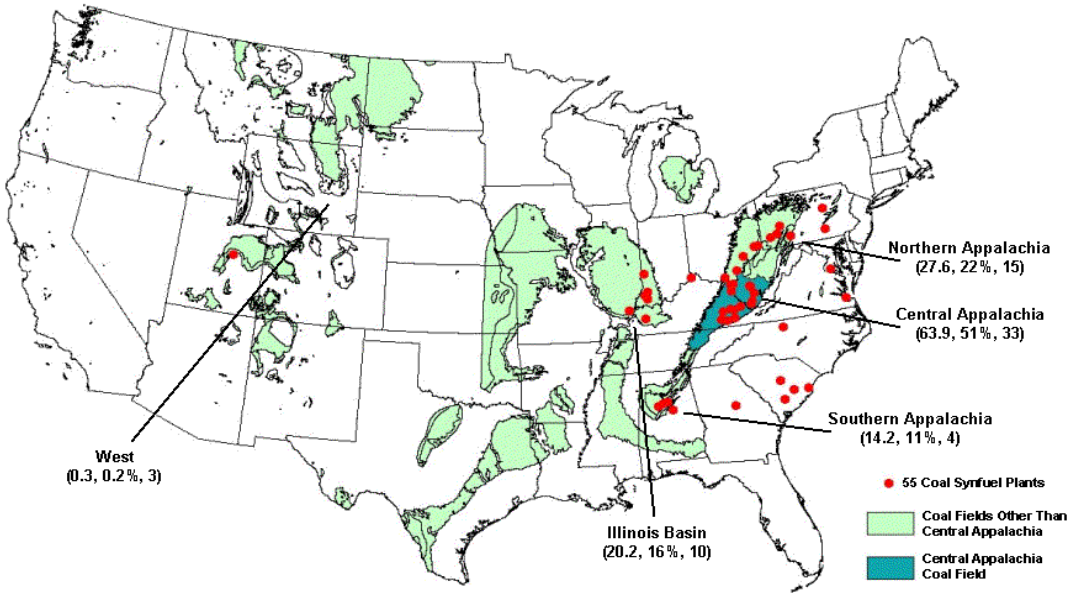
The coal synfuel industry is a somewhat recent addition to the U.S. marketplace. There were 55 coal synfuel plants in operation in the U.S. at the end of 2004 (Figure 7 and Table 4). These plants process both waste coal and run-of-mine coal to produce their end product, typically referred to as

Figure 6. Delivered Coal Prices, 1995-2004
(Nominal Dollars)



Sources: Energy Information Administration, *Quarterly Coal Report,* October-December 2004, DOE/EIA-0121(2004/Q4) (Washington, DC, March 2005); *Coal Industry Annual*, DOE/EIA-0584, various issues; and *Annual Coal Report 2002*, DOE/EIA-0584(2002), (Washington, DC, November 2003); and U.S. Department of Commerce, Bureau of the Census, "Monthly Report EM 545" and "Monthly Report IM 145."

Figure 7. Coal Shipments from Coal Producing Sub-Regions to Coal Synfuel Plants, 2004
(Million Short Tons, Percent of U.S. Total, and Number of Plants)



Note: The numbers of plants inside the parentheses add to 65 rather than 55 plants because 9 synfuel plants received coal from two or more different coal producing sub-regions.
Source: Energy Information Administration, Form EIA-3, "Quarterly Coal Consumption and Quality Report – Manufacturing Plants."

Table 4. Coal Statistics for Synthetic Fuel Plants
(Thousand Short Tons)

Year and Quarter	Coal Receipts	Average Price of Receipts	Coal Processed	Coal Stocks
2001				
January – March	9,409	$26.69	9,326	287
April – June	11,370	$28.19	11,158	523
July – September	13,261	$31.08	13,309	507
October – December	15,286	$32.61	14,578	631
	49,326	**$30.05**	**48,371**	
2002				
January – March	17,635	$32.27	17,237	970
April – June	20,367	$31.48	20,652	771
July – September	23,578	$31.87	23,248	1,128
October – December	23,600	$32.02	23,789	951
	85,180	**$31.90**	**84,925**	
2003				
January – March	26,558	$32.10	26,334	1,210
April – June	31,327	$32.71	31,077	1,455
July – September	27,911	$33.13	28,110	1,287
October – December	29,380	$33.52	29,787	1,132
	115,177	**$32.88**	**115,309**	
2004				
January – March	31,633	$34.39	31,374	1,251
April – June	31,882	$35.99	31,968	1,023
July – September	32,006	$37.46	32,172	810
October – December	30,645	$37.63	30,297	1,072
	126,165	**$36.36**	**125,810**	

Note: Total may not equal sum of the components because of independent rounding.
Source: Energy Information Administration, Form EIA-3, "Quarterly Coal Consumption and Quality Report - Manufacturing Plants."

coal synfuel, which enters into the supply chain and is consumed by various users in almost all sectors. For the second time in as many years, there was some upheaval in the coal synfuel industry in 2004, as the Internal Revenue Service (IRS) reviewed the specific start dates of some of the plants. The tax code states that for a plant to qualify for the available tax credits, the facility had to begin production prior to July 1, 1998. The IRS was reviewing several plants' placed-in-service dates to verify that they were in production in time to qualify. In November 2004, the IRS auditors recommended that some plants lose their coal synfuel tax credits. The final decision has not been made as to the loss of these credits. However, the amount of coal processed by all the coal synfuel plants in 2004 was a total of 125.8 million short tons, an increase of 10.5 million short tons over the 2003 amount.

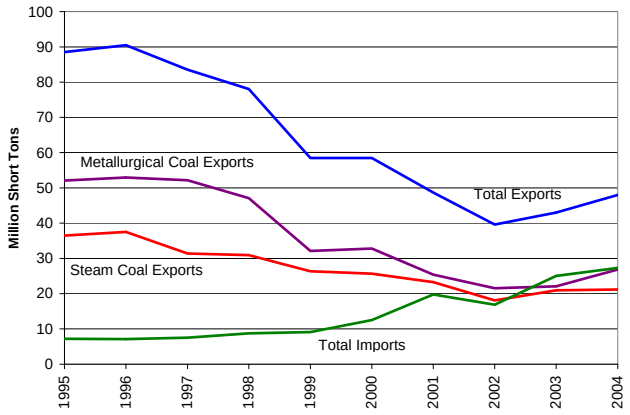
Exports and Imports

Exports. U.S. coal exports increased for the second year in 2004, but were still slightly below the 2001 level. Total U.S. coal exports were 48.0 million short tons, an increase of 5.0 million short tons (Figure 8). While total coal exports were up 11.6 percent in 2004, the average price per short ton increased by 50.4 percent to $54.11 per short ton as the tightening world coal market combined with the declining value of the U.S. dollar sent prices to unprecedented highs.

As the international coal market continues to grow, the United States continues to be a swing supplier in the world marketplace. In 2004, driven by the phenomenal economic expansion in China, international markets for most commodities were constrained. The impact was felt in the coal supply as well as the availability of coke, with the Asian markets experiencing shortfalls of coal and therefore returning to U.S. suppliers in a big way.

Even with the tight world market for coal, total U.S. steam coal exports only increased by 1.1 percent to a level of 21.2 million short tons in 2004; however, the average price per short ton increased by 56.0 percent to $42.03 per short ton. Although the increase in U.S. steam coal exports was only 0.2 million short tons, the distribution of the exports changed substantially. Due to the Chinese expansion, the Asian market rediscovered U.S. steam coal exports, increasing from 245 thousand short tons in 2003 to 2.3 million short tons in 2004. Japan once again became a major destination for U.S. steam coal, increasing from five thousand short tons in 2003 to 1.3 million short tons of steam coal in 2004 with an average price of $83.12 per short ton. South Korea experienced an increase in U.S. steam coal of more than a half-million short tons to 0.7 million short tons in 2004, with a corresponding increase in price, from $21.90 per short ton to $50.38 per short ton. Steam coal exports to India increased from 175 short tons in 2003 to 248 thousand short tons in 2004, while the price

Figure 8. U.S. Coal Export and Imports, 1995-2004
(Million Short Tons)



Sources: U.S. Department of Commerce, Bureau of the Census, "Monthly Report EM 545" and "Monthly Report IM 145."

increased from $40.88 per short ton to $110.87 per short ton. Although the Los Angeles Coal Export Terminal closed its coal-handling facility in May 2003, less than 6 years after it was opened, shipments to Asia increased by 2.1 million short tons.

Canada, still the largest market for U.S. steam coal exports, received 14.0 million short tons of U.S. steam coal exports in 2004, a drop of 3.2 million short tons. The average price of steam coal exports to Canada increased by 32.4 percent to $34.33 per short ton. The drop in steam coal exports to Canada, in part, reflects the Ontario government's decision to phase out all coal-based electric plants in the province by 2007. The first of the five coal-fired plants, the Lakeview station, is scheduled to close in early 2005. Also, three nuclear units, representing 2,000 megawatts of generating capacity, were returned to service between September 2003 and January 2004. Even with the drop in U.S. steam coal exports, Canada still accounted for two-thirds of all steam coal exports.

Europe, which has been a mainstay for U.S. steam coal exports due to the declining coal production in many of the countries combined with the proximity of the eastern U.S. major coal ports, increased somewhat in 2004. Steam coal exports to Europe were 3.2 million short tons, an increase of 12.8 percent from 2003. Declines in steam coal exports to Denmark, Finland, Ireland, Portugal, and Spain were offset by increases to the United Kingdom of 386 thousand short tons; to Belgium of 228 thousand short tons; and to the Netherlands of 149 thousand short tons. Romania had shipments of U.S. steam coal of 144 thousand short tons for the first time since 1997.

While U.S. steam coal exports to the African continent increased by 85.7 percent in 2004, the increase in tonnage was only 192 thousand short tons. Steam coal exports to South America increased in 2004 by 860 thousand short tons with Brazil accounting for most of the increase. Steam coal exports to Brazil increased by 773 thousand short tons to reach 1.0 million short tons.

Metallurgical coal exports increased in 2004, ending the year at 26.8 million short tons, an increase of 21.5 percent from the 2003 total, while the price per short ton reached $63.63, an increase of 42.8 percent. The international metallurgical coal market was driven by increasing demand coupled with decreasing production. As in the United States, there were production problems at some metallurgical mines in other countries.

Canada remained the largest market for U.S. metallurgical coal in 2004, accounting for 14.1 percent all U.S. metallurgical coal exports. Canada received 3.8 million short tons of metallurgical coal exports in 2004, an increase of 5.1 percent, while the price increased by 36.8 percent to $50.08 per short ton. Shipments of U.S. metallurgical coal to Brazil, the second largest destination of U.S. metallurgical coal exports increase slightly by 0.1 million short tons, or 2.3 percent in 2004, to end the year at 3.4 million short tons. The average price of metallurgical coal exports to Brazil increased by 30.1 percent in 2004 to reach $58.18 per short ton.

Metallurgical coal exports to Europe declined slightly in 2004, from 12.3 million short tons to 12.1 million short tons. Italy, although the primary destination in the European market, had a decrease of 0.8 million short tons (28.6 percent) with an average price of $60.77 per short ton. The other major European destinations of U.S. metallurgical coal all varied slightly in their totals in 2004. While the Netherlands had an increase of 22.5 percent to a total of 1.8 million short tons and the United Kingdom had an increase of 9.7 percent to a total of 1.4 million short tons, Spain, Belgium, and France all had decreases in U.S. metallurgical coal exports, with the total tonnages ranging from 1.4 million short tons for Spain to 1.1 million short tons for both Belgium and France. The average price of metallurgical coal exports to these major destinations ranged from $45.08 per short ton in Spain to $65.50 per short ton in the Netherlands.

The Asian market for U.S. metallurgical coal which virtually did not exist for the last 3 years, came roaring back to levels not seen since the late 1990's. Total metallurgical coal exports to Asia totaled 5.2 million short tons in 2004, a level above the 1999 total but less than the 1998 total. Japan was the largest Asian importer of U.S. metallurgical coal in 2004, increasing from less than 2 thousand short tons in 2003 to a total of 3.2 million short tons by the end of the year, while the average price increased by 75.2 percent to $89.03 per short ton. Other

substantial increases occurred for metallurgical coal exports to India with 0.8 million short tons, and to Taiwan with 0.5 million short tons. The average price for India was $99.24 per short ton while it was $68.96 per short ton for Taiwan. Metallurgical coal exports to South Korea increased from zero in 2003 to 0.2 million short tons in 2004 at an average price of $98.50 per short ton. The economic expansion in China extended to the metallurgical coal market. U.S. metallurgical coal exports to China in 2004 totaled 0.4 million short tons up from zero in 2003 with an average price of $81.95 per short ton.

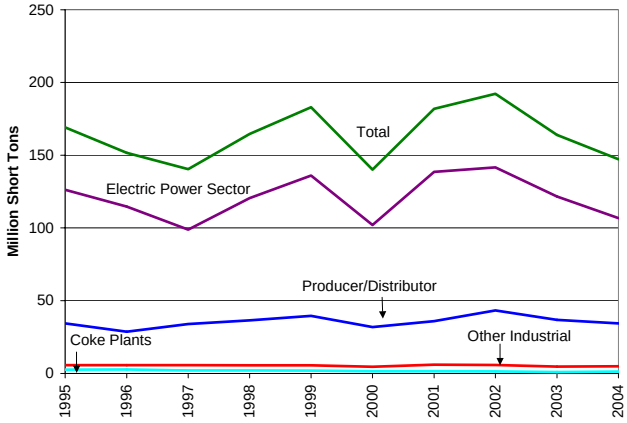
In part, driven by the worldwide demand for steel, U.S. coke exports increased in 2004 by 82.7 percent to a total of 1.3 million short tons. Most of the coke exports went to Canada which accounted for 45.2 percent of all coke exports with 0.6 million short tons. Other major destinations of U.S. coke exports were Chile, Mexico, and Brazil, all with 10 to 11 percent of the total coke exports.

Imports. U.S. coal imports set another record level in 2004. Total coal imports were 27.3 million short tons, an increase of 8.9 percent, or 2.2 million short tons. Although imports represent less than 3 percent of total U.S. coal consumption, they are a factor in the supply balance, particularly for the coastal electric power producers. As all coal prices did in 2004, the average price of imported coal increased in 2004. The average price of U.S. coal imports increased by 19.3 percent to a level of $37.52 per short ton. Colombia continued to dominate the U.S. coal import market, accounting for 16.7 million short tons, or 61.1 percent of all coal imports. This was an increase of 1.2 million short tons from the 2003 level. The average price of Colombian coal into the United States was $34.99 per short ton, an increase of 23.0 percent over 2003. Coal imports from Venezuela, the second largest supplier, decreased in 2004 by 0.2 million short tons, while the average price increased by 19.1 percent to $40.24 per short ton. Coal imports from Canada rose by 37.1 percent to 2.9 million short tons, while coal imports from Indonesia increased 3.6 percent to 2.2 million short tons in 2004. These four countries account for almost 96 percent of total U.S. coal imports. Although most coal imports are used for electric generation, metallurgical coal imports were 2.2 million short tons in 2004 mostly from Canada.

Coal Stocks

Total coal stocks at the end of 2004 were 147.2 million short tons, a decrease of 18.2 million short tons from the prior year (Figure 9). Coal stocks held by producers and distributors decreased by 3.9 million short tons, a drop of 10.3 percent as producers used their stockpiles to help meet the increased demand. Industrial users, including coke plants, held a total of 6.2 million short tons at the end of 2004, 0.6 million short tons more than the level at the start of the year. Coal stocks in the electric power sector dropped for the second consecutive year in 2004, declining by 14.9 million short tons (12.2 percent), to end the year at 106.7 million short tons, as power facilities used their stockpiles to meet increasing demand for electricity.

Figure 9. Year-End Coal Stocks, 1995-2004
(Million Short Tons)



Sources: Energy Information Administration, *Quarterly Coal Report*, October-December 2004, DOE/EIA-0121(2004/Q4) (Washington, DC, March 2005); *Coal Industry Annual*, DOE/EIA-0584, various issues; and *Annual Coal Report 2003*, DOE/EIA-0584(2003), (Washington, DC, September 2004).

Summary

In 2004, the coal industry experienced increasing production levels as well as increasing coal consumption. Both exports and imports of coal grew, with net exports also increasing. Delivered coal prices for all sectors increased for a second consecutive year, while export prices reached new heights. Coal stocks in the electric power sector experienced another significant decline in 2004. Factors expected to contribute to increased coal demand and production in 2005 (see Energy Information Administration's *Short-Term Energy Outlook*) include:

- Continued economic recovery
- Continued recovery in coal exports
- Assumed return to normal weather patterns (colder winter weather)
- High natural gas prices
- Settlement of legal issues affecting both coal producers and consumers

Overall, our current expectation is for coal production in 2005 to grow more rapidly than it did in 2004.