

COAL PRODUCER SURVEY

2016

National Mining Association



NMA®

NATIONAL MINING ASSOCIATION 2016 COAL PRODUCER SURVEY

June 2017

The U.S. Coal Industry in 2016

Review

The U.S. coal market in 2016 was challenged by low natural gas prices in combination with current, pending, and proposed environmental regulations, weak global demand and relatively mild winter weather. Preliminary Energy Information Administration (EIA) data indicates that domestic coal-based generation demand from all sectors decreased 8.3 percent in 2016.

Coal trade was negatively impacted by lower demand globally, particularly as Asia reduced its demand for coal imports – which was magnified by the U.S. role as a swing supplier in many markets. The oversupplied coal market resulted in lower global coal prices, subjecting the U.S. industry to even greater competitive pressure due to the strong U.S. dollar. However, in the latter half of the year, U.S. coking coal demand for use in steel production got a boost from China's domestic production curbs in summer/fall 2016. Stronger than expected steel demand led to higher coal imports from China. The U.S. market, as well as the global market, benefited from the demand shift and the resulting price spike last year.

Production last year was 728.2 million tons, down 18.8 percent, with decreases in all regions of the country as mines continued to respond to lower demand by curtailing production throughout much of the year. The Western coal region was especially impacted.

Demand and Fuel Competition

Consumption/Inventories – Coal consumption totaled 729.5 million tons in 2016, a decrease of 8.6 percent from the prior year level of 798.1 million tons. Sustained low natural gas prices have continued to make coal electricity dispatch less competitive and has been an added incentive for the closure of additional plants due to stringent environmental regulations. Warmer winter temperatures also resulted in lower heating demand and therefore lower generation from coal.

Consumption by the electric power sector, coal's largest market, was down 8.3 percent to 677.2 million tons, or almost 61 million tons less than in 2015. The largest declines in consumption occurred in the North Central and Mountain regions of the country.

Coking coal consumption from coke plants decreased 16.4 percent in 2016, to 16.5 million tons. Demand for metallurgical coal from coke plants was impacted by slowing global steel demand, particularly from China, a leading market driver. However, as mentioned above, China's production cuts in the latter half of 2016 have begun to drive global demand higher again benefiting U.S. coal exports in 2017.

Other industrial demand, which includes cement kilns, agricultural processing, heavy industry and non-utility generation, decreased 10.1 percent to 34.6 million tons, while the commercial sector decreased 21.4 percent to nearly 1.2 million tons.

EIA estimated consumer stockpile levels decreased from 202.6 million tons to 169.6 million tons at year's end, marking a 16.3 percent dropped in 2016. Power sector stockpiles ended 2016 at 163.9 million tons, down 16.2 percent. EIA estimates producer and distributor stockpiles ended the year at nearly 33.7 million tons, down 6.1 percent from 2015.

Electric Power Generation – Coal-based generation in all sectors decreased 8.3 percent from 1,352.4 billion Kilowatt Hours (kWh) in 2015 to 1,240.1 billion kWh in 2016.

Similarly, power sector coal generation decreased 8.2 percent in 2016 to 1,230.4 billion kWh. In the same period, natural gas generation increased 3.4 percent to 1,280.3 billion kWh. Nuclear generation held relatively flat at 805.3 billion kWh. Conventional hydro generation increased 6.8 percent to 264.5 billion kWh. Non-hydro renewable generation grew a hefty 18.4 percent to 311.8 billion kWh, especially wind and solar, which were up 18.7 percent and 47.8 percent respectively. Despite rapid growth, wind and solar combined represent less than 7 percent of total power sector generation.

In the power sector, coal's share of generation decreased from about 34 percent in 2015 to 31 percent in 2016 (see Figure 1 below). Natural gas gained market share, increasing from 31 percent to 33 percent of generation to emerge as the leading fuel source for the first time.

Power Sector Generation by Fuel Source – 2016

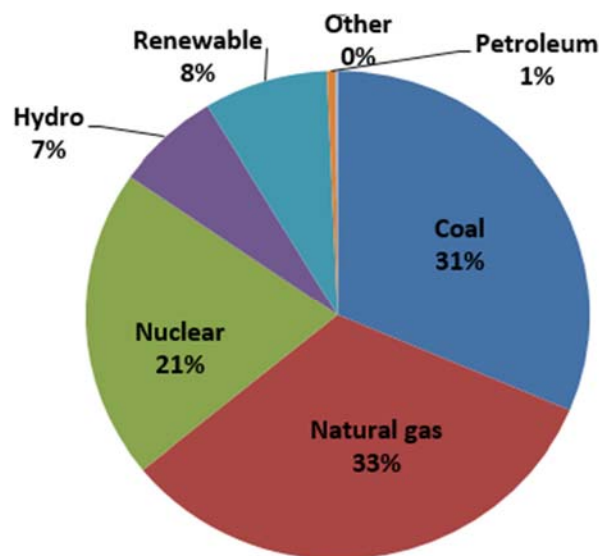


Figure 1

Source: Energy Information Administration

Fuel Prices – Both coal and natural gas prices have been decreasing in recent years. EIA estimates that the average cost of coal to electric power plants was \$2.12 per MMBtu in 2016, from \$2.22 per MMBtu in 2015, and \$2.37 per MMBtu in 2014. In comparison, natural gas prices are marginally higher than coal with an average cost of \$2.88 per MMBtu in 2016 compared to \$3.23 per MMBtu in 2015, and \$5.00 per MMBtu in 2014. Figure 2 below shows trends in natural gas spot prices on the Henry Hub.



Figure 2

Source: Energy Information Administration, *Natural Gas Weekly Update*

Coal Generating Capacity – In 2016, there were about 269 coal plants totaling 270 thousand megawatts of coal capacity in service (EIA). Plant capacity and the number of coal plants both have dropped in recent years. Coal retirements constituted about 74 percent of retiring electric generating capacity in 2016, according to the American Public Power Association. About 8.4 thousand megawatts of coal capacity were retired. Through 2020, another 16.9 thousand megawatts have publicly announced they will be retired. In past years, many of the coal plants retiring were smaller, older (more than 50 years old), less efficient plants in the Southeast, Mid-Atlantic and Ohio Valley regions of the country. However, several larger, newer, more efficient plants are now being considered for retirement in some states as competing fuel prices have remained low.

New Coal Plants – Petra Nova, NRG and JX Nippon Oil & Gas Exploration's new post-combustion carbon capture coal facility at the WA Parish generating station in Houston, Texas, began operating in January 2016. Ninety percent of the CO₂ from this 240 megawatt plant is captured and employed in enhanced oil recovery.

Southern Company's long-awaited Kemper County advanced integrated combined cycle (IGCC) 582 megawatt lignite coal plant in Mississippi has encountered operational challenges and is still undergoing final testing. It is now expected to begin full operation later in 2017.

There are currently no other new coal-based plants under development or construction.

Coal Supply and Trade

Production – According to preliminary EIA figures, total coal production in 2016 decreased to 728.2 million short tons, marking a 168.7 million ton (18.8 percent) decrease. Coal production east of the Mississippi River was approximately 281 million tons (including production from refuse recovery) and accounted for 39 percent of total production. Eastern coal production decreased 19 percent.

The West produced 447 million tons of coal or about 61 percent of production, down 18.4 percent. Wyoming, the leading coal producing state, mined 297 million tons, which was a 21 percent decrease from 2015.

Trade – U.S. coal exports in 2016 fell 18.5 percent, to approximately 60 million tons (see Figure 3), roughly half of the peak in 2012. The drop of nearly 14 million tons was driven by slowing demand for both steam and metallurgical coal from many regions of the world. The weaker export market resulted from a combination of lower demand, lower prices and competition from other major global exporters. China, the world's largest importer, has been importing less coal due to its slowing economy and new environmental restrictions. However, as mentioned, China's domestic production curbs in summer/fall 2016 led to higher coal imports. The U.S. market as well as the global market benefited from the demand shift and resulting price spike late last year.

U.S. metallurgical coal exports of 41 million tons decreased 11 percent in 2016. A significant drop in demand came from Europe (down 22 percent and 5 million tons). Metallurgical coal exports to Canada decreased by 12 percent to 3.8 million tons.

U.S. steam coal exports fell in all market regions except Africa. Decreases occurred particularly in Europe and Asia. Steam coal exports to Canada dropped 26 percent, from 1.7 million tons to 1.2 million tons. Beginning in 2011, Canada began phasing out its coal plants to meet government CO₂ restrictions.

The average coal export price was \$73.66 per ton, down 4.2 percent from 2015. Metallurgical coal prices dropped 5.4 percent, from \$89.31 per ton to \$84.48. Steam coal prices were down 10.1 percent, dropping from \$56.44 per ton to \$50.76.

U.S. exports represented approximately 8 percent of total production in 2016, according to U.S. Census and EIA data.

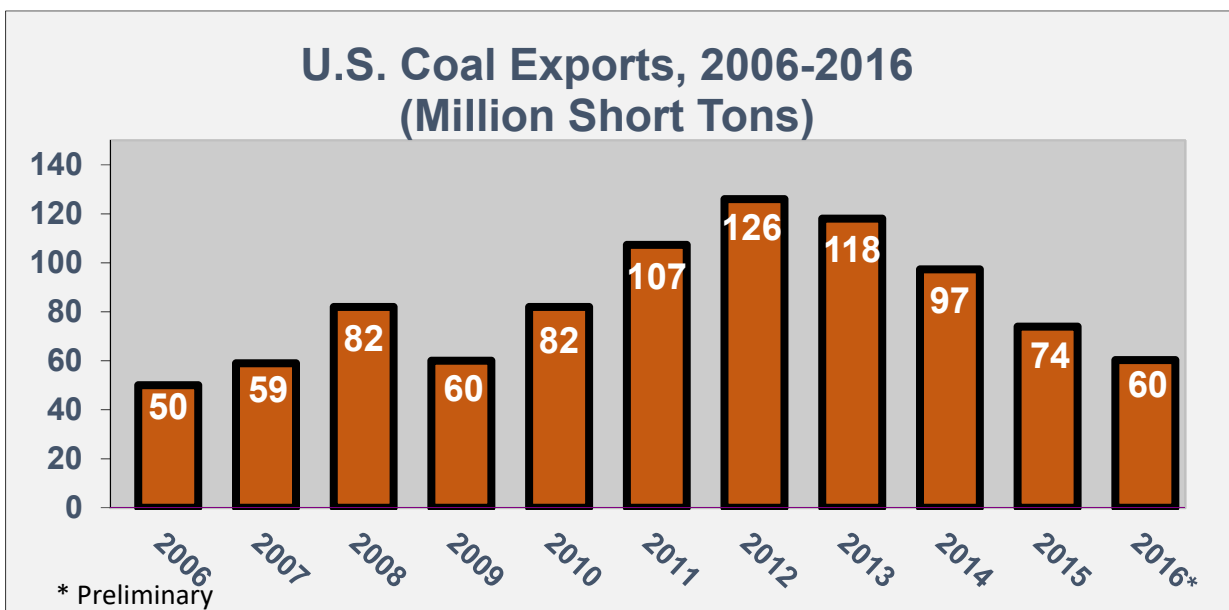


Figure 3

Sources: Energy Information Administration; NMA *International Coal Review* (U.S. Census Bureau trade data)

U.S. coal imports decreased 13 percent to 9.8 million tons, with decreases from most of the major regions – Colombia, Canada and Indonesia. The average price for imported coal was down 8.2 percent to \$65.72 per ton.

In May 2016, the U.S. Army Corps of Engineers denied a permit for the proposed coal terminal at Cherry Point in Washington state. The Corps ruled that SSA Marine's proposed Gateway Pacific Terminal at Cherry Point would harm the Lummi Nation's fishing rights.

In addition, in April 2017, Cowlitz County Washington and the Washington Department of Ecology completed environmental review for the Millennium Bulk Terminal Project near Longview, the largest proposed coal export terminal in North America. The review details potential impacts to the environment, local neighborhoods, and transportation, along with potential mitigation measures to reduce some, but not all, of the impacts. The U.S. Army Corps of Engineers will release a federal Environmental Impact Statement later in 2017.

Outlook for 2017

The Trump administration's strong economic and job growth policies, including a push toward less burdensome regulations on fossil fuels, are expected to be favorable to the domestic coal market – or at least more conducive to business and industrial growth than the previous administration.

Preliminary estimated weekly coal production numbers from the EIA show coal production up year-over-year by more than 17 percent through April 2017. Many analysts expect production in most regions to be higher. With the bulk of coal company bankruptcies behind them, many U.S. coal companies are now beginning to produce more coal. Some are opening mines, others reopening mines or increasing production at existing mines. The mines are rehiring workers.

According to EIA's March 2017 short-term outlook report, higher coal-based electricity generation will result in a 4 percent increase in coal production in 2017, and remain roughly the same in 2018. The delivered coal price averaged \$2.12/MMBtu in 2016 and is forecast to increase in 2017 and 2018 to \$2.17/MMBtu and \$2.21/MMBtu, respectively. Natural gas prices are above the 2016 average currently and are expected to remain higher than 2016 - roughly in the \$3.00/MMBtu to \$3.50/MMBtu range most of 2017.

Steam and met coal exports should rise this year as a result of production curtailments in China late last year leading to further domestic imports. However, it has proved difficult to predict China's future policies and influence on the U.S. and global market. Similarly, weather impacts are difficult to predict. Heavy rainfall in Indonesia in the latter half of 2016 reduced its coal supply. And the flooding associated with Australia's cyclone Debbie in March 2017 resulted in significant disruption of mine operations, export terminals and rail lines for several weeks. The U.S., as a swing producer, is currently experiencing higher export demand and higher prices in response to the tighter supply.

Demand from developing countries in Asia is likely to continue, but India has announced its intent to import less with a shift towards non-fossil fuel power sources. Several European countries, including the U.K. and France, are planning to move away from coal-based generation in the next few years. Canada continues to work toward phasing out its coal plants.

Asset Acquisitions, Sales and Restructuring Activity for Selected Companies – as of May 2016

Recent U.S. coal company sales, acquisitions and restructuring activities are identified below.

Alpha Natural Resources – Alpha filed for Chapter 11 bankruptcy protection in August 2015, re-emerged in July 2016. It sold more than 20 of its mining operations to raise capital. Newly-formed Contura Energy purchased Alpha's Powder River Basin mines, Appalachian complexes and its Dominion Terminal Associates (DTA) interest. In October 2016, it sold its Enterprise Mining subsidiary to Kingdom Coal. In February 2017, it sold its Harlan Kentucky mines and reserves to JRL Coal LLC of Marietta, Georgia.

Arch Coal – Arch filed for bankruptcy protection in January 2016, completing its restructuring in October 2016. In May 2016, Arch sold its interest in the Millennium Bulk Terminals-Longview project (see Lighthouse Resources). In March 2017, it expanded its equity share interest in the Dominion Terminal Associates (DTA) coal export terminal in Newport News, Virginia from 22 percent to 35 percent (see Peabody).

BHP Billiton – BHP sold its San Juan Mine in New Mexico to Westmoreland Coal Company in February 2016 (see Westmoreland).

Birmingham Coal & Coke Co. – In May 2016, bankrupt Alabama coal producer Birmingham Coal & Coke, a subsidiary of CanAm Coal Corp., received approval to sell its coal assets to Cedar Lake Mining and Yellowhammer Energy Services.

Blackhawk Mining – Blackhawk's Triad Mining subsidiary completed the sale of its reserves and a coal sales agreement associated with its Freelandville mining complex in Indiana to Sunrise Coal in March 2016.

CNX Coal Resources LP (CONSOL Energy Inc.) – CNX Coal sold its Miller Creek and Fola coal complexes in southern West Virginia to Booth Energy's Southeastern Land LLC in August 2016. It sold its Buchanan mine in Virginia and other metallurgical coal reserves to Coronado IV LLC in April 2016. CNX is working toward divesting its remaining coal assets in Pennsylvania and exiting the coal business.

Contura Energy – Contura is a newly formed coal company that bought a large number of Alpha Natural Resource mines in July 2016. In March 2017, it bought part of Peabody Energy's interest in the DTA coal export terminal, increasing its share of ownership from 41 percent to 65 percent (see Arch and Peabody). It filed for an initial public offering in May 2017.

Covington Coal – Covington Coal of West Virginia emerged from its February 2015 Chapter 11 bankruptcy in February 2017.

Energy Future Holdings – Energy Future Holdings, parent company of Luminant Mining, filed for Chapter 11 bankruptcy protection in April 2014, but re-emerged in October 2016.

Foresight Energy LP – Foresight completed an out-of-court restructuring agreement with noteholders and lenders in August 2016. On March 28, 2017, Foresight completed the refinancing of certain of its previously outstanding debt. The completed transaction also resulted in a new revolving credit facility. Concurrent with the refinancing transaction, Murray Energy exercised its option to acquire an additional 46 percent of the general partner of Foresight increasing its voting interest in the general partner to 80 percent.

Lighthouse Resources – In May 2016, Lighthouse acquired Arch Coal’s 38 percent ownership interest in the Millennium Bulk Terminal near Longview, Washington. The acquisition gave Lighthouse 100 percent interest in the project.

Murray Energy – In March 2017, Murray exercised its option to acquire an additional 46 percent of the general partner of Foresight, increasing its voting interest in the general partner to 80 percent (see Foresight above).

Peabody Energy – Peabody filed for Chapter 11 bankruptcy protection in April 2016, but re-emerged in April 2017. Peabody sold its stake in the Prairie State Energy Campus coal facility and adjacent mine to Wabash Valley Power Association in May 2016. In March 2017, Peabody sold its interest in the DTA coal terminal to Arch Coal and Contura Energy.

Ramaco Resources, Inc. – Ramaco bought coking coal reserves from Jewell Ridge Coal in March 2017. It completed its initial public offering in February 2017.

Rhino Resource Partners – Rhino announced in December 2016 that it had entered into an option agreement with Royal Energy Resources, its majority equity owner, to acquire the outstanding stock of Armstrong Energy, Inc. Rhino and Armstrong would both continue to operate as independent entities until Call Option or Put Option is exercised. Rhino also entered a new financing agreement with Weston Energy LLC, a Yorktown portfolio company, to restructure its outstanding debt.

Rhino signed an agreement in April 2016 to explore a joint venture with trading company Ion Carbon & Minerals (subsidiary of AMCI Holdings Inc.). Rhino entered an agreement to sell its Elk Horn Coal leasing company to a third party in August 2016.

Royal Energy Resources, Inc. – In March 2016, Royal Energy acquired certain interests from Wexford Capital LP including outstanding membership interest in Rhino GP LLC, Rhino Resource Partners LP’s general partner.

SunCoke Energy – SunCoke sold all its coal mining assets and mineral leases to Revelation Energy, LLC in April 2016.

Sunrise Coal – In March 2016, Sunrise (a Hallador Energy subsidiary) purchased certain underground coal reserves and a coal sales agreement associated with Triad Mining’s Freelandville mining complex (see Blackhawk).

TECO Energy – TECO exited the coal business in September 2015 and was later acquired by Emera Inc. in July 2016.

Vigo Coal – In April 2016, White Stallion Energy’s Steven Chancellor acquired Vigo’s Friendsville mine in Illinois and the Liberty mine in Indiana.

Walter Energy – Walter sold its Central and Southern Appalachian coal and coke non-core assets to Seminole Coal Resources, a division of ERP Compliant Fuels and an affiliate of the Virginia Conservation Legacy Fund (VCLF) in February 2016. In April 2016, Walter closed the sale of those core assets to newly created Warrior Met Coal LLC (formerly known as Coal Acquisition LLC).

Warrior Met Coal LLC – Newly formed last year from Walter Energy (above) assets, Warrior filed for an IPO in March of 2017.

Westmoreland Coal Company – Westmoreland completed acquisition and financing for the San Juan mine in New Mexico in February 2016.

Xinergy Ltd. – Xinergy filed for bankruptcy protection in April 2015 and re-emerged in February 2016. The reorganized company is named White Forest Resources, Inc.

Major Coal Producing Companies, Mines and Mine Complexes in 2015 (Tables 1-4)

Table 1, compiled by the National Mining Association from data collected through a survey of major coal producers and government data, shows 2016 production for 43 coal producing companies in the U.S. In 2016, Peabody Energy was the largest coal producer in the U.S., with output (including tons sold) of 145.1 million tons, which represented 19.6 percent of total U.S. coal production. The second largest was Arch Coal, with 93 million tons, which represented 12.6 percent of total coal production. Ranking third was Cloud Peak Energy, with 58.4 million tons and 7.9 percent of production. The fourth largest coal producer, Murray Energy, with an output of 35.7 million tons, or 6.2 percent of production. The fifth largest producer was Alpha Natural Resources, with an output of 35.7 million tons, or 8.0 percent of production. The top five coal producing companies in the survey accounted for 52 percent of total U.S. production, while the top 10 accounted for 72 percent.

Table 2 lists the top underground mines in terms of production. The top five mines were CONSOL Energy's Bailey mine in Pennsylvania, with 12.1 million tons; Foresight Energy's MC Number 1 mine in Illinois, with 11.4 million tons; Murray Energy's Marshall County mine in West Virginia (formerly known as the McElroy mine), with 10.5 million tons; CONSOL Energy's Enlow Fork mine in Pennsylvania, with 9.6 million tons; and Alliance Resource's River View mine in Kentucky, with 8.6 million tons.

The five top producing surface mines (Table 3) in 2016 were: Peabody Energy's North Antelope Rochelle mine, with 92.9 million tons; Arch Coal's Black Thunder mine, with 67.8 million tons; Cloud Peak Energy's Antelope mine with 29.8 million tons; Contura's Eagle Butte mine, with 19.0 million tons; and Cloud Peak's Cordero Rojo mine with 18.3 million tons. All are located in Wyoming's Powder River Basin coal region.

Table 4 shows the 2016 output of major multi-mine production complexes, which are mine operations or complexes that process coal production from several mines. This year's list includes CONSOL Energy's PA Mining Complex operation in Pennsylvania with 24.7 million tons; Westmoreland's Oxford Mining operation in Ohio with 3.4 million tons; and Arch Coal Mountain Laurel and Lone Mountain complexes with 1.5 million tons and 1.3 million tons respectively.

Major U.S. Coal Reserve Holders in 2016 (Table 5)

The U.S. government is the single largest reserve holder, with about one-third ownership of the nation's coal resources - or approximately 85 billion tons of estimated recoverable coal reserves. Great Northern Properties Limited Partnership reported the second largest reserve holding with 21 billion tons. Third was Peabody Energy with 4.9 billion tons, and fourth and fifth were CONSOL Energy and Arch Coal with 2.4 billion and 2.1 billion tons respectively.

Coal Companies' Outlook for 2017

The majority of survey respondents reported they expected 2017 coal production to be higher than 2016 as the industry looked forward to a modest recovery. Recent years have marked a structural shift in the coal market with production and demand now in better alignment. The new administration appears more supportive of coal and its value in providing inexpensive, affordable, reliable electricity and living wage jobs.

Survey Methodology

Coal producers and reserve holders were asked to provide their company's total U.S. coal production and reserve holdings for 2016. They also were asked to name their mines and the production output of each mine using the following criteria: surface mines with production of two million tons or greater; underground mines with production of one million tons or greater; and multi-mine production complexes with output of more than one million tons. A multi-mine production complex is defined as an operation that is not a single mine, but processes production from more than one mine (excluding prep plants). As in past years, significant effort was made to include as many coal producers and reserve holders as possible.

Notes: The production figures reported in this survey are intended to reflect ownership of mine production as of the end of calendar year 2016 where possible. Companies not included in the list are encouraged to submit data for next year. The National Mining Association has conducted a survey of major coal producers since the 1980s. The results of prior surveys can be found in earlier editions of NMA's *Coal Producer Survey*, and prior to 1998, in NMA's *Facts About Coal* and *Facts About Coal & Minerals*, and Mining Media Publishing's *Keystone Coal Industry Manuals*. The latest edition of NMA's *Coal Producer Survey* report is available in PDF format. NMA greatly appreciates the many contributors to this annual survey and report.

Sources:

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National Mining Association, *International Coal Review*, February 2017 Edition.

National Mining Association, *2016 Coal Producer Survey*, June 2017.

News releases and annual reports of various coal companies.

Argus Coal Daily and *Platts Coal Trader*, various editions.

TABLE 1
Major U.S. Coal Producers - 2016
(Million Short Tons)

Company	Production Tonnage	Percent of Total U.S.
1. Peabody Energy Corporation ^{1/}	145.1	19.9%
2. Arch Coal, Inc. ^{2/}	93.0	12.8%
3. Cloud Peak Energy, Inc.	58.4	8.0%
4. Murray Energy Corporation	45.9	6.3%
5. Alpha Natural Resources, LLC	35.7	4.9%
6. Alliance Resource Partners	35.2	4.8%
7. North American Coal Corporation	32.3	4.4%
8. Westmoreland Coal Company	29.5	4.1%
9. CONSOL Energy Inc.	24.7	3.4%
10. Luminant Mining Company (Energy Future Holdings/Vistra)	24.4	3.4%
11. Contura Energy, Inc.	21.5	3.0%
12. The Cline Group (Foresight Energy/Coalfield Transport) ^{3/}	19.0	2.6%
13. Kiewit Mining Group, Inc.	12.0	1.6%
14. JMP Holdings LLC/Black Hawk Mining ^{3/}	11.5	1.6%
15. Bowie Resource Partners, LLC ^{3/}	10.7	1.5%
16. Coronado Coal LLC ^{3/}	7.2	1.0%
17. Sunrise Coal Company (Hallador/Bisland)	6.1	0.8%
18. Western Fuels Association - Wyoming, Inc.	6.1	0.8%
19. Armstrong Energy Corporation ^{3/}	5.9	0.8%
20. Prairie State Energy Company ^{3/}	5.9	0.8%
21. Signal Peak Energy, LLC (Global Mining Group/Boich/FirstEnergy/Gunvor)	5.6	0.8%
22. Knight Hawk Coal, LLC (Bunn)	4.2	0.6%
23. Navajo Transitional Energy Co. (NTEC) ^{3/}	4.1	0.6%
24. BNI Coal, LTD (Allete)	3.8	0.5%
25. Black Hills Corporation (Wyodak Resources)	3.8	0.5%
26. Booth Energy Group ^{3/}	3.7	0.5%
27. Interwest Mining Company (PacifiCorp)	3.6	0.5%
28. Revelation Energy, LLC (J. Hoops) ^{3/}	3.3	0.5%
29. Rhino Energy LLC	3.3	0.5%
30. Lighthouse Resources Inc. (Resource Capital Funds) ^{3/}	3.2	0.4%
31. Rosebud Mining Company	3.0	0.4%
32. Warrior Met Coal, Inc.	2.5	0.3%
33. Dolet Hills Lignite Company (AEP) ^{3/}	2.5	0.3%
34. Elk Ridge Mining and Reclamation, LLC (formerly Western Fuels-Colorado)	2.3	0.3%
35. Solar Sources, Inc.	2.3	0.3%
36. Dana Mining Company (GenPower Holdings LP/MEPCO, LLC) ^{3/}	2.3	0.3%
37. Vigo Coal Company, Inc. ^{3/}	2.3	0.3%
38. Drummond Company, Inc.	2.2	0.3%
39. Metinvest BV (United Coal Co.) ^{3/}	2.1	0.3%
40. ArcelorMittal ^{3/}	2.0	0.3%
41. Ranger Energy (Justice II) ^{3/}	2.0	0.3%
42. Trapper Mining Inc.	1.8	0.2%
44. Usibelli Coal Mine, Inc.	1.0	0.1%
45. Other Producers	31.2	4.3%
Total U.S. Production ^{4/}	728.2	100.0%

Notes: Figures are rounded. 2016 data compiled from 2017 NMA survey of major producers. May not be all-inclusive. Any companies not included in this listing are invited to submit data for the next edition. The U.S. production total for 2016 is an EIA preliminary estimate.

^{1/} Peabody Energy Corp. production figure includes tons sold, excluding trading and brokerage operations.

^{2/} Arch Coal, Inc. production figure includes production, excluding trading and brokerage operations.

^{3/} Department of Labor, Mine Safety & Health Administration 2016 preliminary data.

^{4/} Department of Energy, Energy Information Administration 2016 preliminary data.

TABLE 2
Major U.S. Underground Coal Mines - 2016
(Million Short Tons)

Mine Name	Location	Tonnage	Operating Company
1. Bailey	Pennsylvania	12.1	CONSOL Energy Inc.
2. MC No. 1 ^{1/}	Illinois	11.4	M Class Mining LLC (Foresight Energy/Coalfield Transport)
3. Marshall County	West Virginia	10.5	Marshall County Coal Co. (Murray)
4. Enlow Fork	Pennsylvania	9.6	CONSOL Energy Inc.
5. River View	Kentucky	8.6	River View Coal, LLC (Alliance)
6. Cumberland	Pennsylvania	7.0	Cumberland Coal Resources (Contura)
7. Harrison County	West Virginia	6.6	Harrison County Coal Co. (Murray)
8. Tunnel Ridge	West Virginia	6.6	Tunnel Ridge, LLC (Alliance)
9. Ohio County	West Virginia	6.3	Ohio County Coal Co. (Murray)
10. Lively Grove ^{1/}	Illinois	5.9	Prairie State Generating
11. Bull Mountain	Montana	5.6	Signal Peak Energy LLC (Boich/FirstEnergy/Gunvor)
12. Mach No. 1 ^{1/}	Illinois	5.4	Mach Mining LLC (Foresight Energy/Coalfield Transport)
13. SUFCO ^{1/}	Utah	5.4	Bowie Resource Partners, LLC (Formerly Canyon Fuel)
14. Century	Ohio	5.0	American Energy Corp. (Murray)
15. Buchanan ^{1/}	Virginia	4.9	Coronado Coal, LLC
16. Skyline ^{1/}	Utah	4.5	Bowie Resource Partners, LLC (Formerly Canyon Fuel)
17. Marion County	West Virginia	4.4	Marion County Coal Co. (Murray)
18. San Juan	New Mexico	4.3	San Juan Coal Co. (Westmoreland)
19. West Elk	Colorado	4.2	Arch Coal, Inc.
20. Gibson South	Indiana	4.0	Gibson County Coal, LLC (Alliance)
21. Monongalia County	West Virginia	3.9	Monongalia County Coal Co. (Murray)
22. Oaktown Fuels No. 1	Indiana	3.8	Sunrise Coal Co. (Hallador)
23. Warrior (Cardinal)	Kentucky	3.8	Warrior Coal, LLC (Alliance)
24. Dotiki	Kentucky	3.7	Webster County Coal LLC (Alliance)
25. Leer	West Virginia	3.6	Arch Coal, Inc.
26. Prairie Eagle ^{1/}	Illinois	3.3	Knight Hawk Coal, LLC (Bunn)
27. No. 7	Alabama	3.1	Warrior Met Coal
28. Hamilton County No. 1	Illinois	3.0	Hamilton County Coal (Alliance)
29. Harvey	Pennsylvania	3.0	CONSOL Energy Inc.
30. Powhatan No. 6	Ohio	2.8	Ohio Valley Coal Co. (Murray)
31. Twentymile (Foidel Creek)	Colorado	2.6	Peabody Energy Subsidiary
32. Shoal Creek	Alabama	2.2	Drummond Company Inc.
33. Shay No. 1 ^{1/}	Illinois	2.2	Maryan Mining LLC (Foresight Energy/Coalfield Transport)
34. Francisco	Indiana	2.1	Peabody Energy Subsidiary
35. Kronos ^{1/}	Kentucky	2.1	Armstrong Energy Corp.
36. Mettiki (Mountain View)	West Virginia	2.0	Mettiki Coal LLC (Alliance)
37. Panther (American Eagle) ^{1/}	West Virginia	2.0	Panther Creek Mining (Black Hawk)
38. Oaktown Fuels No. 2	Indiana	1.9	Sunrise Coal Co. (Hallador)
39. 4 West ^{1/}	Pennsylvania	1.9	Dana Mining Co.
40. Paradise	Kentucky	1.9	KenAmerican Resources, Inc. (Murray)

Continued

TABLE 2 (Continued)

**Major U.S. Underground Coal Mines - 2016
(Million Short Tons)**

Mine Name	Location	Tonnage	Operating Company
41. Gateway North	Illinois	1.8	Peabody Energy Subsidiary
42. Pattiki	Illinois	1.8	White County Coal LLC (Alliance)
43. Viper	Illinois	1.7	Arch Coal, Inc.
44. New Era	Illinois	1.7	American Coal Co. (Murray)
45. Wildcat Hills	Illinois	1.6	Peabody Energy Subsidiary
46. Lila Canyon	Utah	1.6	Utah American Energy, Inc. (Murray)
47. Oak Grove ^{1/}	Alabama	1.5	ERP Compliant Fuels LLC
48. Mountaineer II	West Virginia	1.5	Arch Coal, Inc.
49. Deep Mine #41	Virginia	1.5	Paramont Contura, LLC
50. Federal ^{1/}	West Virginia	1.5	ERP Compliant Fuels LLC
51. Deserado ^{1/}	Colorado	1.3	Blue Mountain Energy, Inc. (Deseret Power)
52. New Future	Illinois	1.3	American Coal Co. (Murray)
53. Riveredge	Kentucky	1.3	Pennyrile Energy LLC (Rhino)
54. MC Mining #4	Kentucky	1.2	MC Mining, LLC (Alliance)
55. Bridger Underground	Wyoming	1.2	Bridger Coal Company (Interwest)
56. Ruby Energy	West Virginia	1.1	Spartan Mining Co. (Alpha)
57. Sentinel	West Virginia	1.0	Arch Coal, Inc.
58. Pinnacle ^{1/}	West Virginia	1.0	Seneca Coal Resources LLC (ERP)
59. Beckley Pocahontas	West Virginia	1.0	Arch Coal, Inc.

Notes: Figures are rounded. Data compiled from 2016 NMA survey of major producers.

May not be all-inclusive. Any companies not included in this listing are invited to submit data for the next edition.

^{1/} Department of Labor, Mine Safety & Health Administration 2016 preliminary data.

TABLE 3
Major U.S. Surface Coal Mines - 2016
(Million Short Tons)

	Mine Name	Location	Tonnage	Operating Company
1.	North Antelope Rochelle	Wyoming	92.9	Peabody Energy Subsidiary
2.	Black Thunder	Wyoming	67.8	Arch Coal, Inc.
3.	Antelope	Wyoming	29.8	Cloud Peak Energy
4.	Eagle Butte	Wyoming	19.0	Contura Coal West
5.	Cordero Rojo	Wyoming	18.3	Cloud Peak Energy
6.	Belle Ayr	Wyoming	14.9	Contura Coal West
7.	Freedom	North Dakota	14.1	Coteau Properties Co. (North American)
8.	Caballo	Wyoming	11.2	Peabody Energy Subsidiary
9.	Spring Creek	Montana	10.3	Cloud Peak Energy
10.	Kosse	Texas	9.3	Luminant Mining
11.	Rosebud	Montana	8.9	Western Energy Co. (Westmoreland)
12.	Coal Creek	Wyoming	8.2	Arch Coal, Inc.
13.	Rawhide	Wyoming	8.1	Peabody Energy Subsidiary
14.	Bear Run	Indiana	7.4	Peabody Energy Subsidiary
15.	Falkirk	North Dakota	7.2	The Falkirk Mining Co. (North American)
16.	Buckskin	Wyoming	7.1	Buckskin Mining Co. (Kiewit)
17.	Three Oaks	Texas	7.0	Luminant Mining
18.	Martin Lake ^{1/}	Texas	6.6	Luminant Mining
19.	Dry Fork	Wyoming	6.1	Western Fuels-Wyoming, Inc.
20.	Kayenta	Arizona	5.8	Peabody Energy Subsidiary
21.	El Segundo	New Mexico	4.9	Peabody Energy Subsidiary
22.	Sabine/South Hallsville	Texas	4.2	Sabine Mining (North American)
23.	Absaloka	Montana	4.1	Westmoreland Resources Inc.
24.	Navajo ^{3/}	New Mexico	4.1	Navajo Transitional Energy Co. (NTEC)
25.	Kemmerer	Wyoming	4.1	Westmoreland Kemmerer, LLC
26.	Center	North Dakota	3.8	BNI Coal, Ltd. (Allete)
27.	Wyodak	Wyoming	3.8	Wyodak Resources Dev. Corp. (Black Hills)
28.	Jewett	Texas	3.7	Texas Westmoreland Coal Co.
29.	Decker ^{3/}	Montana	3.2	Lighthouse Resources (formerly Ambre Energy)
30.	Red Hills	Mississippi	2.8	Mississippi Lignite (North American)
31.	San Miguel ^{4/}	Texas	2.8	Kiewit Mining Group
32.	Wild Boar	Indiana	2.7	Peabody Energy Subsidiary
33.	Dolet Hills Lignite	Louisiana	2.5	Dolet Hills Lignite Co. (AEP/SWEPCO)
34.	Liberty	Texas	2.5	Luminant Mining
35.	Bridger Surface	Wyoming	2.4	Bridger Coal Co. (Interwest/Pacificorp)
36.	Somerville	Indiana	2.4	Peabody Energy Subsidiary
37.	Black Butte ^{2/ 3/}	Wyoming	2.2	Black Butte Coal Co. (Lighthouse/Anadarko)
38.	Colowyo	Colorado	2.2	Elkridge Mining and Reclamation (formerly Western Fuels Co.)
39.	Coal-Mac	West Virginia	2.1	Arch Coal, Inc.
40.	Walnut Creek Lignite ^{4/}	Texas	2.1	Kiewit Mining Group
41.				

Notes: Figures are rounded. Data compiled from NMA survey of major producers.

May not be all-inclusive. Any companies not included in this listing are invited to submit data for the next edition.

1/ Includes Oak Hill, Beckville and Tatum mines.

2/ Fifty percent ownership each.

3/ Department of Labor, Mine Safety & Health Administration 2016 preliminary data.

TABLE 4
Major Multi-Mine^{1/} Production Complexes - 2016
(Million Short Tons)

	Complex Name	Location	Tonnage	Company
1.	PA Mining Complex	Pennsylvania	24.7	Consol Pennsylvania Coal Co.
2.	Oxford Mining Co., LLC	Ohio	3.0	Oxford Mining Co., LLC (Westmoreland)
3.	Mountain Laurel	West Virginia	1.5	Arch Coal, Inc.
4.	Lone Mountain	Kentucky	1.3	Arch Coal, Inc.

Notes: Figures are rounded. 2016 data compiled from NMA survey of major producers.

May not be all-inclusive. Any companies not included in this listing are invited to submit data for the next edition.

^{1/} A multimine complex is a mine operation that processes production from more than one mine.

TABLE 5
Major Holders of U.S. Coal Reserves - 2016
(Billion Short Tons)

Holder	Estimated Reserves
1. U.S. Government	85.000
2. Great Northern Properties Limited Partnership	21.000
3. Peabody Energy Corporation	4.900
4. CONSOL Energy Inc.	2.361
5. Arch Coal, Inc.	2.149
6. The Cline Group (Foresight Energy/Coalfield Transport) ^{1/}	2.100
7. Murray Energy Corporation	2.000
8. North American Coal Corporation	1.900
9. Alliance Resource Partners	1.760
10. Natural Resource Partners LP	1.722
11. Pocahontas Land Corporation (Norfolk Southern)	1.640
12. Contura Energy, Inc.	1.331
13. Cloud Peak Energy, Inc.	1.100
14. Kentucky River Properties LLC	0.982
15. Alpha Natural Resources, LLC	0.866
16. Penn Virginia Resource Partners, LP	0.772
17. Usibelli Coal Mine, Inc.	0.700
18. Luminant Mining Company (Energy Future Holdings/Vistra)	0.687
19. BNI Coal, LTD (Allete)	0.600
20. Armstrong Energy Corporation ^{1/}	0.566
21. Rosebud Mining Company	0.482
22. Prairie State Energy Company ^{1/ 2/}	0.390
23. Westmoreland Coal Company	0.361
24. Western Fuels - Wyoming, Inc.	0.295
25. Dana Mining Company/MEPCO, LLC (GenPower Holdings LP-MEPCO, LLC)	0.289
26. Dolet Hills Lignite Company (AEP) ^{2/}	0.270
27. Kiewit Mining Group, Inc.	0.269
28. Rhino Energy LLC	0.257
29. Lighthouse Resources Inc. (Resource Capital Funds) ^{1/}	0.250
30. Warrior Met Coal, Inc.	0.233
31. Signal Peak Energy, LLC (Global Mining/Boich/FirstEnergy/Gunvor)	0.225
32. Black Hills Corporation (Wyodak Resources)	0.200
33. Sunrise Coal Company (Hallador/Bisland)	0.175
34. Metinvest BV (United Coal Co.) ^{2/}	0.130
35. ArcelorMittal ^{1/}	0.123
36. Western Pocahontas Properties	0.122
37. Knight Hawk Coal, LLC (Bunn)	0.093
38. Elk Ridge Mining and Reclamation, LLC (formerly Western Fuels - Colorado)	0.089
39. Drummond Company, Inc.	0.082
40. Interwest Mining Company (PacifiCorp)	0.058
41. Trapper Mining Inc.	0.023
42. Solar Sources, Inc.	0.023
43. Vigo Coal Company, Inc. ^{1/}	0.017
44. Black Hawk Coal, LLC ^{1/}	0.012
Coronado Coal LLC	N/A
Bowie Resource Partners, LLC	N/A
Navajo Transitional Energy Co. (NTEC)	N/A
Booth Energy Group	N/A
Revelation Energy, LLC (Hoops)	N/A
Ranger Energy (Justice II)	N/A

Notes: Data compiled from NMA survey of major producers and reserve holders. May not be all-inclusive.

Any companies not included in this listing are invited to submit data for the next edition. * U.S. Government total is an NMA calculation based on federal ownership of about one-third of the United States' coal resources (Bureau of Land Management, 1993) and estimated recoverable reserves of 255 billion short tons (Energy Information Adm.)
N/A = Not Available. Reserves are estimated proven & probable. 1/ Company website and/or other public and private sources.
2/ Estimated from 2015 figures.

National Mining Association
101 Constitution Avenue, NW
Suite 500 East
Washington, D.C. 20001
(202) 463-2600 | www.nma.org