

Coal Explained



How Much Coal Is Left – Basics

There are several measures that estimate how much coal is left in the United States. These measures are based on various degrees of geologic certainty and economic feasibility.

Coal reserves at producing mines

Every year, the U.S. Energy Information Administration (EIA) receives the amount of "recoverable reserves at producing mines" from the annual Coal Production and Preparation survey. The Coal Production and Preparation survey shows the amounts of coal that can be recovered from deposits at producing U.S. coal mines that produced at least 25,000 short tons of coal or 10,000 short tons of coal for anthracite from mines during the reporting year.

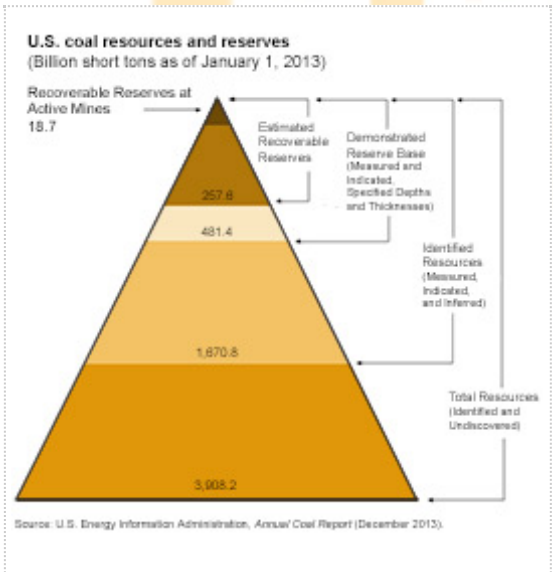
As of January 1, 2013, the recoverable reserves at producing mines were 18.7 billion short tons.

However, the amount of coal reserves at producing mines is a small portion of the total amount of coal that exists in the United States.

So how much coal is there?

It is impossible to know exactly how much coal exists in the United States because it is buried underground, but it is possible to make estimates.

- **Total resources** is our best estimate of the total amount of coal (including undiscovered coal) in the United States. Currently, total resources are estimated to be about 4 trillion short tons.¹ Total resources includes several categories of coal with various degrees of geologic assurance and data reliability.
- The **Demonstrated Reserve Base (DRB²)** is the sum of coal in both measured and indicated resource categories of reliability. This represents 100% of the in-place coal that could be mined commercially at a given time. EIA estimates that the DRB in 2012 was 481.4 billion short tons.
- **Estimated recoverable reserves** include only the coal that can be mined with today's mining technology, after accessibility constraints and recovery factors are taken into consideration. EIA estimates there are 257.6 billion short tons of U.S. recoverable coal reserves, about 54% of the Demonstrated Reserve Base.



Did you know?

As of January 1, 2013, over 81% of the coal tonnage in the Demonstrated Reserve Base (DRB) is located in just seven states. Montana and Wyoming in the western United States contain 37% of the coal tonnage in the DRB, followed by the interior states of Illinois and (western) Kentucky with over 25% of the DRB. Additionally, the eastern states of West Virginia, Pennsylvania, Ohio, and (eastern) Kentucky comprise slightly less than 19% of the coal in the DRB.

Based on U.S. coal production for 2012, the U.S. estimated recoverable coal reserves represent enough coal to last 253 years. However, EIA projects in the most recent *Annual Energy Outlook* (April 2014) that U.S. coal production will increase by approximately 0.3% per year from 2012–2040. If that growth rate continues into the future, U.S. estimated recoverable coal reserves would be exhausted in about 180 years if no new reserves are added.

What are international coal resources?

Coal is widely distributed across the continents in comparison to all other fossil fuels. As of December 31, 2011, total recoverable reserves of coal around the world were estimated at 979.8 billion short tons.

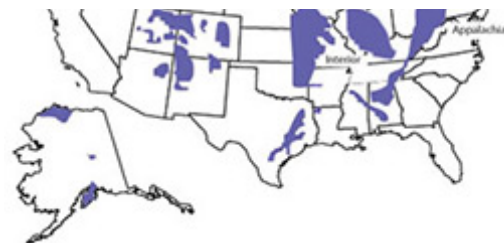
The distribution of world coal reserves varies from oil

U.S. coal resource regions



The distribution of world coal reserves varies from oil and natural gas

There are significant coal reserves in the United States and Russia, but not in the Middle East. In fact, the United States and Russia account for nearly half of global coal reserves. Oil reserves are predominantly found in Venezuela, the Middle East, and Canada while more than half of the world's natural gas reserves are in Russia, Iran, and Qatar.



Source: U.S. Energy Information Administration, [U.S. Coal Reserves 2012, December 2013](#)

Estimated world energy reserves by country

| Coal | | (January 1, 2013) Oil | | (January 1, 2013) Natural Gas | |
|-----------------------------------|--------|--------------------------|--------|----------------------------------|--------|
| United States* | 27.3% | Venezuela | 18.2% | Russia | 24.9% |
| Russia | 18.3% | Saudi Arabia | 16.2% | Iran | 17.5% |
| China | 13.4% | Canada | 10.6% | Qatar | 13.1% |
| Other Non-OECD Europe and Eurasia | 10.7% | Iran | 9.4% | Saudi Arabia | 4.2% |
| Australia and New Zealand | 9% | Iraq | 8.6% | United States | 4.0% |
| India | 7.1% | Kuwait | 6.2% | Turkmenistan | 3.9% |
| OECD Europe | 6.5% | United Arab Emirates | 6.0% | United Arab Emirates | 3.2% |
| Africa | 3.7% | Russia | 4.9% | Venezuela | 2.9% |
| Other Central and South America | 0.9% | Libya | 2.9% | Nigeria | 2.7% |
| Rest of world | 3.2% | Rest of world | 17.0% | Rest of world | 23.6% |
| Total | 100.0% | Total | 100.0% | Total | 100.0% |

Source: U.S. Energy Information Administration, *International Energy Outlook 2013*, July 2013, Tables 6, 9, and 12.

*Data for United States coal reserves are as of January 1, 2013. Data for coal reserves in all other countries are as of January 1, 2009.

¹ The most comprehensive national assessment of U.S. coal resources was published by the U.S. Geological Survey (USGS) in 1975, which indicated that as of January 1, 1974 coal resources in the United States totaled 4 trillion short tons. While more recent regional assessments of U.S. coal resources have been conducted by the U.S. Geological Survey, a new national level assessment of U.S. coal resources has not been conducted.

² The U.S. Bureau of Mines made an assessment of the portion of demonstrated resources that was suitable for mining with existing technologies. As of January 1, 1971, the U.S. Bureau of Mines estimated that 434 billion short tons of coal within the demonstrated resource categories lied within what they deemed to be minable coal deposits. Their estimate, published in the 1975 USGS report on U.S. coal resources, was referred to as the Demonstrated Reserve Base (DRB) of coal. However, it was estimated for 1971, so subsequent updates to the DRB reflecting downward adjustments for production begin with data reported for 1971.

The U.S. Energy Information Administration (EIA) has responsibility for the DRB. EIA's most recent estimate indicated that there were 481.4 billion short tons of in-place coal reserves in the DRB as of January 1, 2013. This is 47 billion short tons higher than the original estimate provided by the U.S. Bureau of Mines in 1971 and is primarily due to new regional assessments of coal resources over the years which have added additional resource tonnage.

Learn More

- [Coal Reserves](http://www.eia.gov/coal/reserves/) — <http://www.eia.gov/coal/reserves/>
- [International Coal Reserves](http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=1&pid=7&aid=6) — <http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=1&pid=7&aid=6>
- [Coal Resource Classification System](http://pubs.usgs.gov/bul/b1450b/b1450.htm) — <http://pubs.usgs.gov/bul/b1450b/b1450.htm>
- [U.S. Demonstrated Coal Reserve Base](http://www.eia.gov/totalenergy/data/annual/xls/stb0408.xls) — <http://www.eia.gov/totalenergy/data/annual/xls/stb0408.xls>
- [Related coal articles](http://www.eia.gov/todayinenergy/index.cfm?tg=coal) — <http://www.eia.gov/todayinenergy/index.cfm?tg=coal>

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