

The 2013-14 Concise Guide to *Wyoming Coal*



WYOMING MINING
ASSOCIATION

Welcome to the Concise Guide, an educational effort to raise awareness of the economic contribution and value of Wyoming's coal industry.

Wyoming has led the nation in coal production since 1986 and currently mines nearly 40 percent of the nation's coal.



A Culture of Safety

Safety remains a top priority and core cultural value for Wyoming's coal mining industry. In fact, Wyoming coal mines are recognized as some of the safest mining operations in the nation. Safe mines are productive mines, and at the end of the day our goal is for every employee to arrive home safely.

All mines employ dedicated safety professionals, and all employees are trained in proper safety practices to foster a safe work environment.

- All new employees attend 40 hours of safety training prior to their first day on the job.
- All employees participate regularly in safety refresher training.
- Every shift starts with walk-around safety inspections.

Data from the Bureau of Labor Statistics shows that working in a Wyoming coal mine is safer than a number of common occupations. On average, a coal miner can expect to work his entire career without a lost-time accident, defined as a non-fatal workplace illness or injury resulting in at least one day away from work to recuperate.

Wyoming Coal Industry in 2013

In May, 2013, Wyoming governor Matt Mead announced that Wyoming mined its ten billionth ton of coal. Coal has been a part of Wyoming since its

territorial days, powering the first transcontinental trains. Coal remains a significant source of energy in the 21st century, generating nearly 42 percent of the nation's electricity. Despite difficult market and regulatory conditions, Wyoming's mines are still the low-cost leaders of the industry. As the nation's pre-eminent coal producer, Wyoming is home to 9 of the top 10 producing mines in the nation. Wyoming coal is a secure and affordable source of fuel that provides 20 percent of US domestic electric power generation. Wyoming has led the nation in coal production since 1986. Two Wyoming mines alone, North Antelope Rochelle and Black Thunder, accounted for 20 percent of all coal mined in the U.S. in 2012.

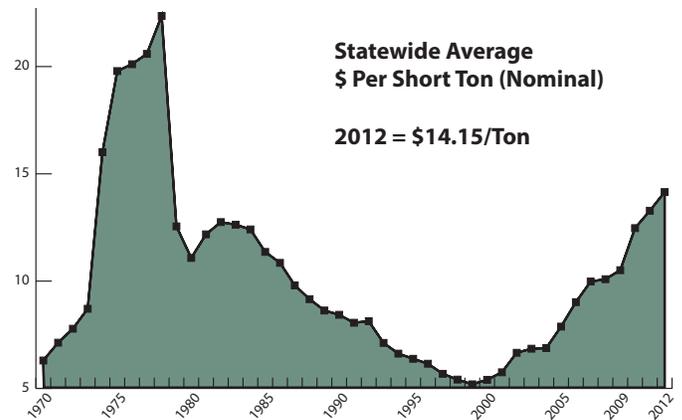
Wyoming's Coal Resources

Wyoming is fortunate to be able to boast of total coal resources over 1.4 trillion tons in seams ranging in thickness from five feet to some in excess of 200 feet in the Powder River Basin (PRB). Recent estimates give Wyoming more than 165 billion tons of recoverable coal. While other regions of the country also have considerable resources, Wyoming's growth as the center of the nation's coal production has been driven by several factors:

- Low sulfur composition of the coal.
- Lower production costs due to the coal's proximity to the surface.
- World-class recoverable coal seams.



Wyoming Coal Prices, 1970-2012



During 2012, coal unit trains carried more than 388 million tons to energy markets in 34 states across the country. Unit trains are single destination trains with up to 150 cars. Seventy-five to 80 unit trains leave the PRB daily. On average, coal is mined at the staggering rate of 12 tons per second. Trains do not stop to be loaded, but move through the loading chute at up to 2 mph. It takes less than one minute to load a train car and about an hour and a half to load a unit train.

Wyoming producers experienced growth in coal prices in the first decade of the twenty-first century. Recent advances in production technology for natural gas have dampened coal demand and production has slowed, but prices continue to rise. The average price for Wyoming coal in 2012 was \$14.15 per ton, up 6.5 percent from 2011.

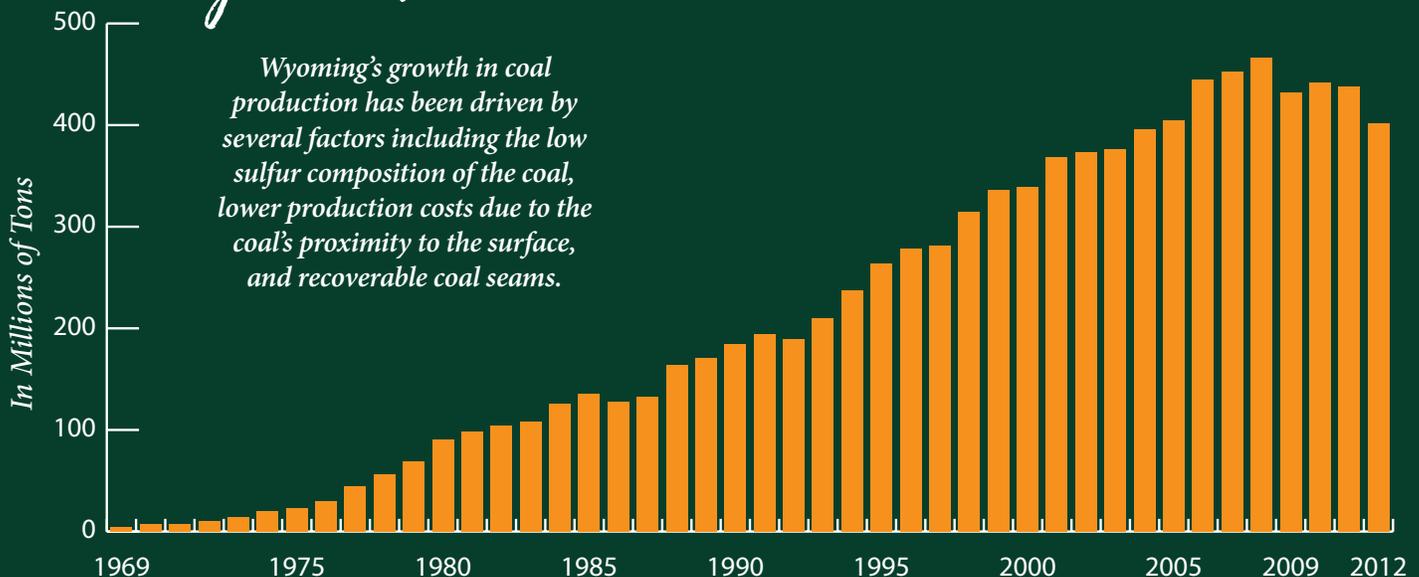
Technology and the Future

Coal is a reliable and economically efficient energy source that will continue to be used for decades. The Department of Energy's Annual Energy Outlook 2013 predicts coal's share of energy production in 2040 will be 35 percent, compared to about 40 percent today. Electrical power generation is by far the largest consumer of coal in the United States, using about 91 percent of all coal mined.

Wyoming is the focal point of coal development and research.

- Dry Fork's new 422 MW power-generation plant near Gillette uses state of the art environmental technology.

Wyoming Coal Production, 1969-2012



Coal is an important source of income for Wyoming and is the second largest source of tax revenue for state and local governments. Coal mining companies pay tax and royalty payments to all branches of government, federal state and local.

- DKRW continues to advance its clean coal project near Medicine Bow, construction is set to begin in 2014.
- New developments are expected in Integrated Gasification Combined Cycle (IGCC) technology to further reduce greenhouse gas emissions.
- The University of Wyoming is collaborating with private industry and the Department of Energy (DOE) to research carbon capture and sequestration (CCS) as well as clean coal technology.
- In 2012, the Wyoming State Legislature redirected \$10 million of AML monies to the University Wyoming School of Energy Resources for clean coal research.
- Since 2007 almost \$41 million has been awarded by the Clean Coal Task Force for research in areas such as development of new technologies

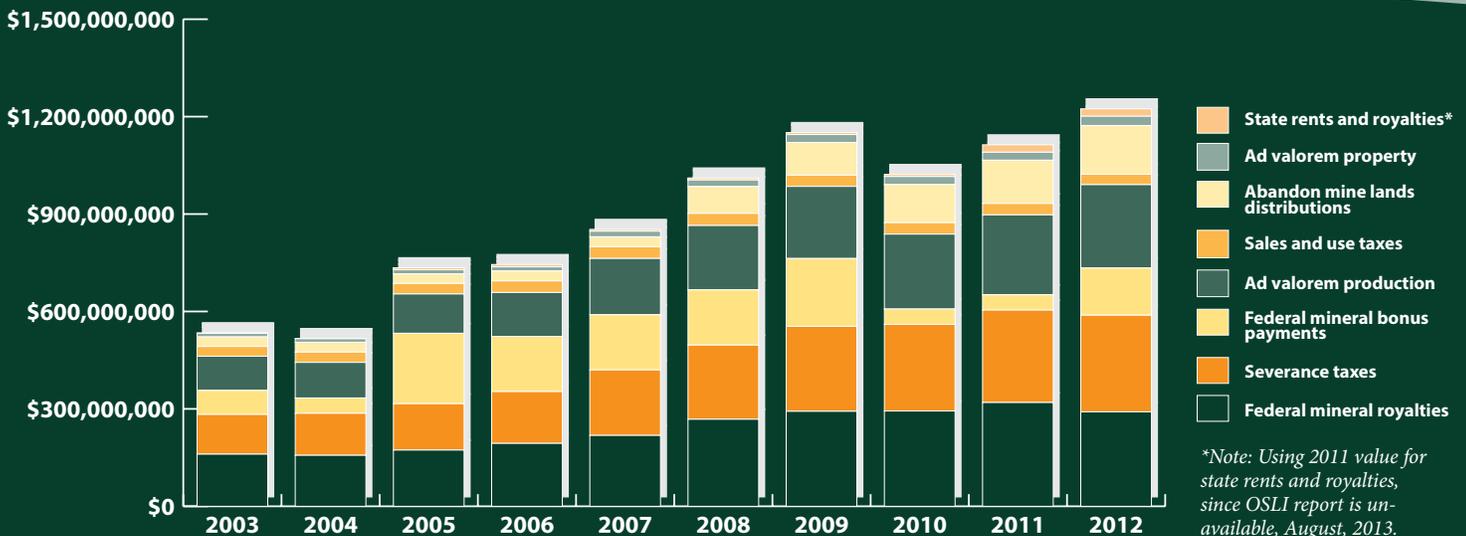
that reduce emissions from coal, integration of carbon capture technologies, and pilot-scale demonstrations of emerging technologies.

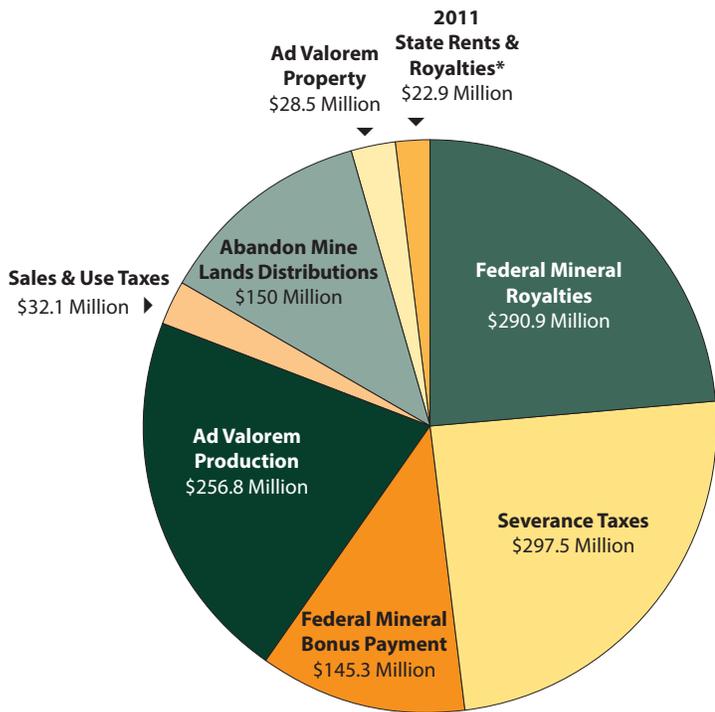
- Coal enhancement research is focused on reducing moisture levels and increasing the energy value of Wyoming coal. Advancements in this technology have the potential to improve coal marketability toward the east coast and overseas.
- Several coal companies are seeking construction permits for west-coast shipping ports to facilitate export sales.
- International demand for coal is growing. Japan has increased its reliance on coal in the wake of the earthquake and tsunami in 2011. European countries are turning to coal to fill voids in short-sighted energy policies. US exports of steam coal have increased in the last few years.

Local Benefits

Coal is an important source of income for Wyoming and is the second largest source of tax revenue for state and local governments. Coal mining companies pay taxes and royalty payments to all branches of government, federal, state and local. Coal's estimated contribution to Wyoming in 2012 was over \$1 billion. The collected revenue reflects a \$110 million (or 10 percent) increase from 2011. The increase is the result of increased federal mineral lease bonus payments as coal mines secure reserves for future mining.

Trend in Wyoming State and Local Government Revenue





Coal Contributed \$1.22 Billion in State & Local Government Revenue in Wyoming in 2012.

**2012 value not available, based on previous year's production*

A 2012 revision of federal statutes will change the allocation of Abandoned Mine Land (AML) funds to coal producing states like Wyoming. In 2012, Wyoming received over \$150 million in AML funds including \$87.3 million in “prior year replacement” funds. Prior year replacement funds will end in Federal fiscal year 2014, meaning an \$87.3 reduction in AML funding for Wyoming. Changes in the law mean that future AML funding will not be linked to production and capped at \$15 million annually, regardless of the amount generated by the AML tax (\$0.28 per ton on surface mined coal) paid by companies. Wyoming’s AML staff estimates that Wyoming will lose \$718 million over the next 10 years unless changes can be made in the statutes. Wyoming’s Congressional delegation is working to address the issue in Washington.



Leasing federal coal reserves is a detailed, highly regulated process. Each proposed lease is requested through the Bureau of Land Management. A mining company nominates proposed tracts for lease and completes detailed environmental assessments or environmental impact statements.

Wyoming’s 19 coal mines employed a total of 6,902 workers in 2012, a 47 percent increase over the past 10 years. Employment growth has been driven, in part, by increased overburden removal. Overburden includes the soil and organic matter that lies above the coal seam. The industry also employs an additional 2,500 contractors directly.

Coal industry jobs are among the best paying in the state. Wyoming coal miners take home an average of \$81,174 before benefits – almost twice the statewide average of \$44,579 per worker. Estimates indicate that each coal industry position drives the need for three additional jobs in the state.

Lease Bonus Bids

Leasing federal coal reserves is a detailed, highly regulated process. Each proposed lease is requested through the Bureau of Land Management (BLM) in a Lease by Application or LBA request. A mining company nominates proposed tracts for lease and completes detailed environmental assessments or environmental impact statements.

The BLM assesses proposals to determine the coal’s market value and scope of the application, and establishes sale parameters. Interested companies submit competitive bids, with the lease usually being awarded to the highest bidder. BLM also has the right to decline offers which are deemed insufficiently low.

Successful bidders for a coal lease pay a bonus bid for each ton of reserves. This is an additional payment on top of the royalty paid to the federal government when the coal is mined. This payment is split between the state and federal government and is paid out over a five year period. At any given time, there are potential new leases in the application process. The last payment on coal leased to date will be in 2017.

Reclamation goes beyond just restoring contours and reseeding native plant species. Reclamation specialists strive to build sustainable natural ecosystems using innovative methods and new techniques to further enhance reclaimed areas.



Wyoming has received a total of \$2.6 billion in coal bonus bid dollars since 1992. The money has been used to fund schools, highways and community colleges across the state. Most new schools built in the last decade have been built with coal bonus bid revenue. Every county in Wyoming has benefited from this new school construction.

Reclamation

Reclaimed mining lands represent sustainable development in action. Reclamation is done contemporaneously in a multi stage process once the recoverable coal is removed. Highly trained specialists employed by the mines manage the reclamation, and state and federal personnel provide oversight to ensure compliance with all applicable laws.

Reclamation stages include:

- Backfilling the void with overburden
- Contouring the filled surface
- Replacing topsoil and preparing the surface
- Preparing seedbed & sowing approved mixtures
- Monitoring plant growth and fauna populations.

Approved seed mixtures used in reclamation promote higher vegetative output than what is found on pre-mined land, attracting animals and plants to re-establish and promote a sustainable ecosystem. The success of reclamation is apparent on reclaimed land in the PRB, which now provides crucial winter habitat for

elk and other indigenous species. One reclaimed site is part of a conservation easement established through the Rocky Mountain Elk Foundation.

Land which houses facilities such as mine shops, coal plants and long-term roads and ponds cannot be reclaimed until long-term use is complete. Year-to-year reclamation focuses on all other areas as demonstrated by comparison of current disturbance and reclamation.

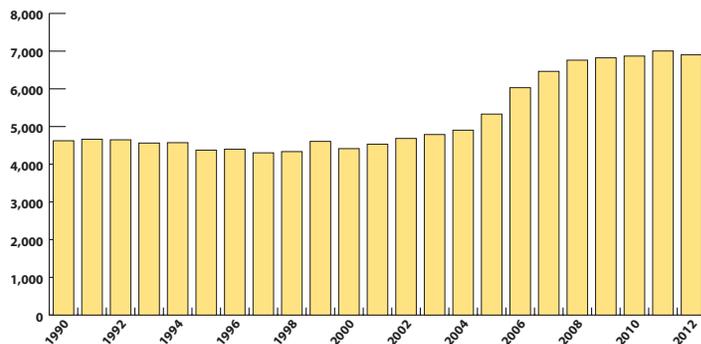
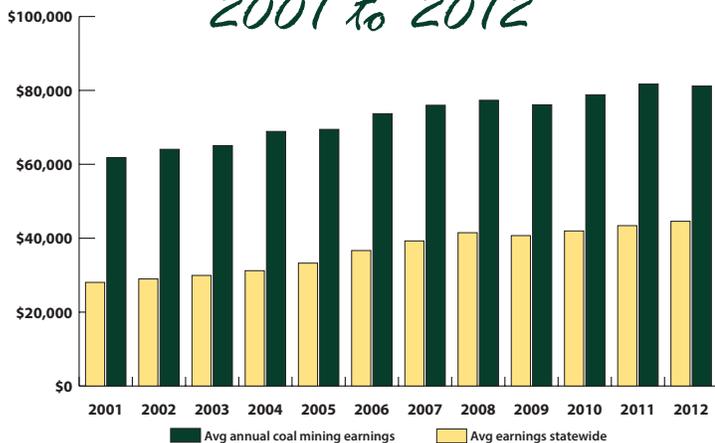
Reclamation goes beyond just restoring contours and reseeding native plant species. Reclamation specialists strive to build sustainable natural ecosystems using innovative methods and new techniques to further enhance reclaimed areas. Some examples include:

- Re-establishment of water features and storage in reclaimed streams, stock ponds and wetlands.
- Replacement of sage grouse breeding grounds.
- Establishment of mosaic patterns in grassland and shrubland reclamation.
- Replacement of rock outcrops and providing prey base habitats for eagles and other predators.
- Reconstruction of prairie dog towns and reclamation of mountain plover habitat.



Average Job Wages Over Time, 2001 to 2012

Wyoming Coal Employment, 1990 to 2012



2012 Wyoming Coal Production by County

Location/Operator	Mine	Employees	Production (in Tons)
Campbell County			
Alpha Coal West, Inc.	Belle Ayr Mine	346	24,227,846
Alpha Coal West, Inc.	Eagle Butte Mine	305	22,466,733
Buckskin Mining Co.	Buckskin Mine	381	18,058,827
Cloud Peak Energy LLC	Cordero Rojo Complex	628	39,204,737
Peabody Caballo Coal, LLC	Caballo Mine	277	16,841,183
Peabody Powder River Operations, LLC	Rawhide Mine	211	14,721,376
Powder River Coal Co.	North Antelope Rochelle Complex	1,368	107,639,188
Thunder Basin Coal Co. LLC	Black Thunder Mine	1,635	93,083,524
Thunder Basin Coal Co. LLC	Coal Creek Mine	145	7,564,231
Western Fuels of Wyoming, Inc.	Dry Fork Mine	77	6,006,7874
Wyodak Resources Develop. Corp.	Wyodak Mine	80	4,245,981
Carbon County			
Arch of Wyoming, LLC	Elk Mountain Mine	1	786
Arch of Wyoming, LLC	Seminole II Mine	10	0
Converse County			
Cloud Peak Energy, LLC	Antelope Coal Mine	536	34,316,314
Hot Springs County			
Grass Creek Coal Co.	Grass Creek Mine	4	24,040
Lincoln County			
Chevron Mining Inc.	Kemmerer Mine	281	4,659,485
Sweetwater County			
Black Butte Coal Co.	Black Butte and Lucite Hills	194	2,871,825
Bridger Coal Co.	Surface operations	189	887,654
Bridger Coal Co.	Underground operations	216	4,636,557
Uinta County			
Haystack Coal Co.	Haystack Mine	18	0
Total		6,902	401,457,074

Source: State Inspector of Mines of Wyoming, 2013

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