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Research Report

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Utah's Coal Counties

Part II: Coal Mines, Jobs, and Economic Benefits

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The mission of Utah Foundation is to promote a thriving economy, a well-prepared workforce, and a high quality of life for Utahns by performing thorough, well-supported research that helps policymakers, business and community leaders, and citizens better understand complex issues and providing practical, well-reasoned recommendations for policy change.

Utah's Coal Counties

Part II: Coal Mines, Jobs, and Economic Benefit

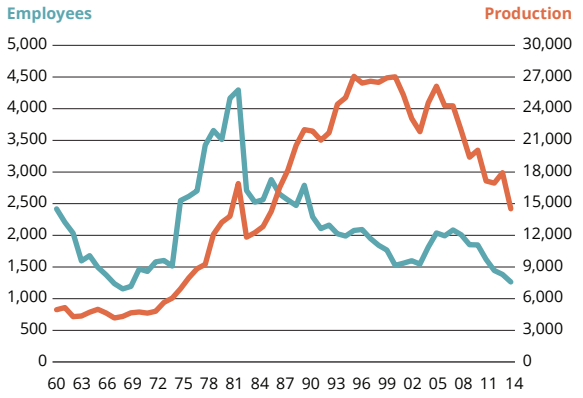
Utah's economic benefit from coal mining and coal-fueled electricity generation is substantial, estimated at nearly three billion dollars. Most of Utah's coal is produced from mines in a few rural counties. Most of the coal extracted is used to generate electricity at power plants in the state. While coal mining and coal-fueled electricity generation only provide direct employment to about 2,500 Utahns, this equates to over 5% of the 50,000 nonfarm jobs in seven rural counties – and there are a considerable number of support jobs as well. Accordingly, coal-related operations are important in several rural areas of the state. Coal-related jobs are also some of the best paying jobs available, and they bring in considerable tax revenues and natural resource royalties to these local economies.

Trump administration policies will not likely increase Utah's coal mining or coal-fueled power generation. Coal-fueled power plants may continue to close even with the unwinding of Obama administration greenhouse gas policies and other environmental regulations.

KEY FINDINGS:

- **Approximately 1,000 people work in Utah's coal mines. Many trucking and other kinds of jobs exist to support coal mining operations.**
- **Productivity improvements resulted in increased coal production in the 20th century, particularly in the 1980s. At the same time, the number of coal mining jobs in Utah decreased.**
- **Recent reductions in coal mine employment are due to a decrease in demand, the result of low natural gas prices and increased coal-fueled electricity generation regulation.**
- **Approximately 1,500 people work in Utah's five coal-fueled power plants.**
- **One coal-fueled power plant closed in 2015, another coal-fueled operation is projected to end by 2025, and another by 2030. This will mean a loss of jobs but could also decrease the demand for coal from Utah's mines.**
- **Trump administration policies may do little to "bring back" jobs for coal miners and coal-fueled power plants.**

Utah Coal Mine Employment Decreases with Innovation and Declining Production



This report was written by Utah Foundation Research Director Shawn Teigen. He can be reached for comment at 801-355-1400, extension 3, or by email at shawn@utahfoundation.org. Thanks to those who provided insight and reviewed Part II of this report, including Frank Lojko, Vice President Government Relations at Dixie State University, John Ward, spokesman for Intermountain Power Agency, and Ian Andrews, Director of Resource Development at PacifiCorp. Special thanks to Intermountain Power Agency for providing financial support to this project.

Coal mining and coal-fueled electricity generation is important to many rural Utah counties because of job creation and tax revenue. Part II of Utah Foundation's coal project looks at these jobs and the coal-related employment outlook in the coming years.

UTAH'S COAL MINES

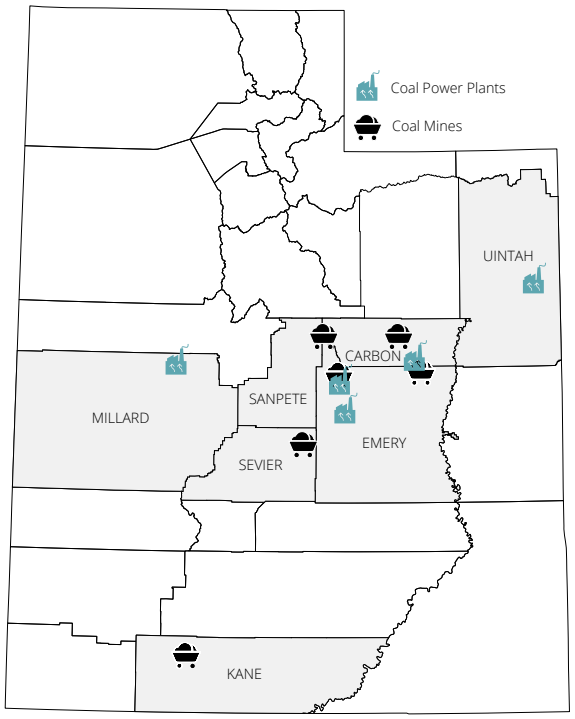
History of Coal in Utah

Southwestern Ancestral Puebloans used the high-combustion temperatures of coal to create pottery.[1] Over 600 years later in the 1850s, settlers found coal in southwestern and central Utah.[2] Expansion of coal mining accelerated rapidly across the state, particularly with the expansion of railroads, the help of immigrant labor, and increased mining productivity methods.[3]

Between 1870 and 1959, Utah mines produced over 270 million tons of coal.[4] In the next 30 years, Utah's mines almost doubled historical production – producing 500 million tons. Since 1990, Utah mines have again doubled historical production, producing 1.1 billion tons.

Production increases were bolstered by new mining techniques. In the early days of coal extraction, miners working underground employed blast mining – using dynamite, picks, and shovels – and then hand loading the coal to bring it to the surface. Modern, high-productivity longwall mining began replacing this type of room-and-pillar underground mining in the 1970s.

Figure 1: Utah's Coal Mines and Coal-Fueled Power Plants



Source: Utah AGRC and U.S. Energy Information Administration.

Coal Mining in the 21st Century

While coal is found in 17 of Utah's 29 counties, mining currently takes place in only four counties: Carbon, Emery, Kane, and Sevier.[5] Three mines account for 85% of Utah's production.[6] The highest producing mine is Sufco in Sevier County. Sufco began operations in 1941 and is one of the longest continually-operating mines in the nation. It switched to a more productive longwall mining operation in 1985. The mine's owner, Bowie Resource Partners, also operates the Dugout Canyon and Skyline mines on the border of Carbon and Emery counties, as well as a mine in Colorado. The Skyline mine is the second-most productive in Utah.

The third-most productive coal mine in 2015 was the WestRidge mine in Carbon County. Utah American Energy temporarily ceased operations in late November 2015. The company has recently moved the WestRidge mining equipment to the Lila Canyon mine in Emery County. This expansion is expected to substantially increase production and jobs.[7]

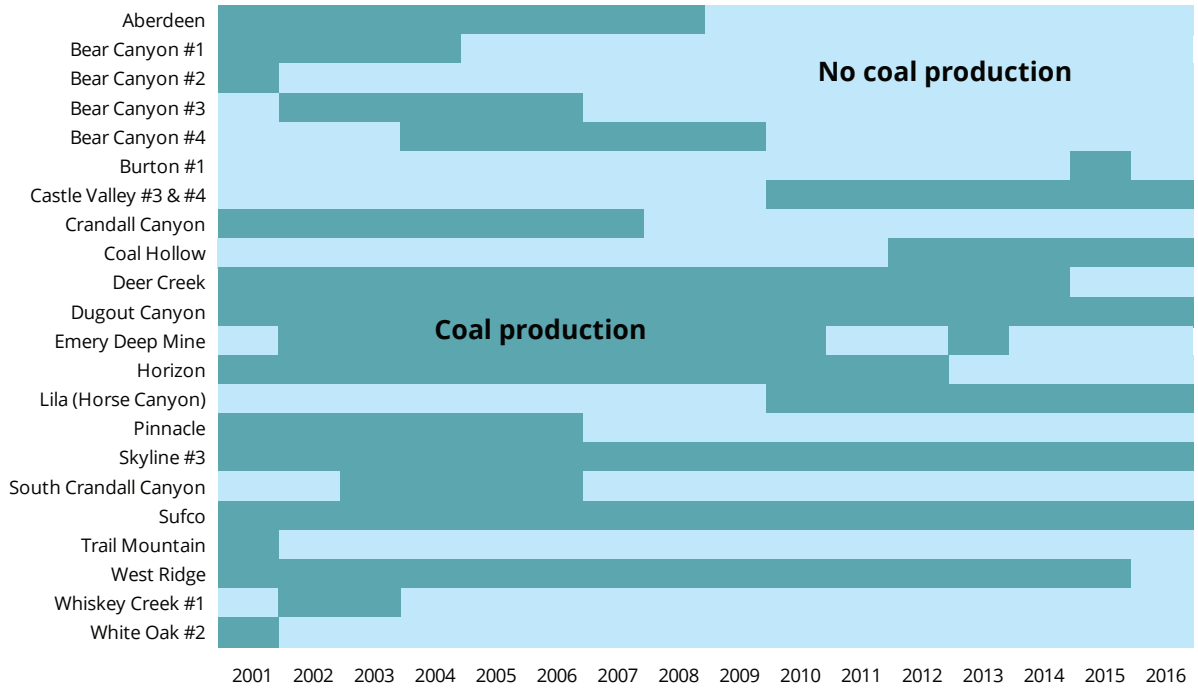
Intermittent Mine Operations

WestRidge operated for many years before the temporary cessation in 2015. Depending on market conditions, mining may resume because there are another 300,000 tons of coal reserves at the site.

A recent permanent closure of a mine with many years of operations was the Deer Creek mine in 2015. This mine is at the mouth of Huntington Canyon in Emery County. The closure put 182 miners out of work at the state's last unionized coal mine.[8] Rocky Mountain Power used the coal for its adjacent power plant. It closed the mine because it was less expensive for its customers in the long-term.[9]

Of the 22 mines that have produced coal since 2001, only six produced coal in 2016, three of which produced coal each of those fifteen years. Several mines opened and closed in the time period, such as the Emery mine in Emery County. While it has been without substantial, ongoing operations since 2010, the mine may be opening again.[10] In 2017, the Utah Division of Oil, Gas and Mining approved the final permit to reopen the mine. Initially, the mine will perform room and pillar exploratory mining, but it could switch to more productive "longwall" mining if warranted, which would create more jobs.

Figure 2: The Opening and Closure of Utah Mines



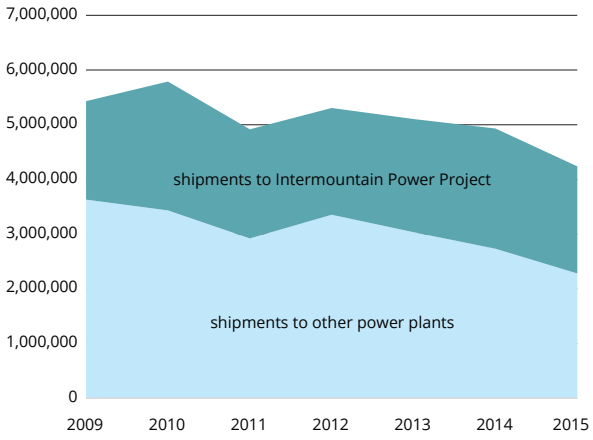
Source: EIA.

Mines close for numerous reasons, including the increased economic costs of mining. According to the Utah Division of Oil, Gas and Mining, much of Utah's easy-to-access coal has been mined; the remaining seams of coal are located relatively deep underground.

Another reason for mine closures is lower demand. For instance, in 2004, Canyon Fuel closed the Skyline Mine in Carbon County, which put 215 people out of work. The mine was closed due to a "continuing weakness in the Utah coal market."[11] However, the mine reopened late in 2005.

Demand for coal in the Utah market might be negatively impacted by the possible closure of the Intermountain Power Project (IPP) coal-fired operations in 2025. Since 2008, coal for IPP has come from 17 Utah, Wyoming, and Colorado mines, including several that have closed.[12] Coal has most consistently originated from the Sufco mine in Sevier County. In 2015, over 40% of IPP's needs were handled by Sufco, and just under 20% from each of Utah's Skyline #3 and West Ridge mines. Similarly, over 45% of the coal mined from Sufco ends up at IPP (see Figure 3).[13] The effects on the demand for coal from Sufco, Skyline #3, West Ridge, and other mines from the closure of IPP's coal-fueled operations are unknown at this time.

Figure 3: Importance of IPP to Sufco Mine, coal shipments in tons



Source: EIA.

New Federal Leases

Most of Utah's remaining coal is on federal lands. Operators pay a royalty rate of 12.5% for surface mines and 8% for underground mines on federal lands to access the coal, in addition to the cost of the leases.

There are four new, large federal coal prospects in Utah. Greens Hollow is a tract near Sufco mine, Flat Canyon by Canyon Fuel Company is part of the Skyline Mine, Long Canyon is near Scofield, and Coal Hollow is an expansion of the Alton Coal Mine.

On December 1, 2016, the Bureau of Land Management (BLM) announced that it was opening the Greens Hollow Tract for mining. Sevier County's Sufco won a bid on January 4, 2016, for $23 million.[14] The tract is under 6,200 acres of national forest with an estimated 56 million tons of recoverable coal in 11-foot thick coal seams. [15] This should extend the life of the Sufco mine through the late 2020s.

Carbon County's Flat Canyon tract in Sevier and Sanpete counties has an estimated 42 million tons of recoverable coal under 2,692 acres of federal mineral estate and provides access to 1,100 acres of private coal reserves extending into Emery County. This lease could extend operations at the Skyline mine for nine additional years at 4.3 million tons annually.[16] In June 2015, Bowie Resource Partners submitted a $17.2 million bid for Flat Canyon. In September 2015, WildEarth Guardians filed a suit in U.S. District Court to block the sale. They argued that the 13-year-old environmental review on the tract did not account for climate change concerns.[17]

Also in Carbon County, Long Canyon mine's Kinney #2 has Utah Division of Oil, Gas and Mining approval to proceed. However, when the BLM put the lease up for bid, the interested operator decided not to bid on the tract. The project itself is a small mine, but could develop into a more substantial operation.

Lastly, Alton mine's Coal Hollow surface-mining tract is about 10 miles west of Bryce Canyon National Park in Kane County. This location makes it possibly the most controversial of the new leases. While the lease is not visible from the park, expansion of the Alton project could increase truck traffic around the park. Nonetheless, most of the current issues with the lease are related to the Mine Safety and Health Administration concerning water in the mine. The Obama administration's moratorium on new, federal coal leases could have affected the Coal Hollow tract, but the moratorium has been retracted.

Moratorium on Mining

The BLM administers coal on federal land. The BLM declared a moratorium on new federal coal leasing in January 2016. The Obama administration put the pause on federal coal leases in order to give the Department of the Interior time to undertake a comprehensive review of the leasing program, including whether taxpayers are getting an adequate return on the leases.[18] Former Department Secretary Sally Jewel noted "we haven't undertaken a comprehensive review of the program in more than 30 years, and we have an obligation to current and future generations to ensure the federal coal program delivers a fair return to American taxpayers and takes into account its impacts on climate change."[19]

Figure 4: Utah's Surface Coal Mine, the Alton Mine on Private Property in Kane County, Utah.

Source: Google Earth.

The Department of the Interior collected feedback on the moratorium at locations around the country. In Utah, the Department reached out to the Navajo Utah Commission and officials in Carbon, Emery, Kane, Salt Lake, Sanpete, and Sevier counties. The Department asked for written comment and received 131 written submissions from Utah.[20]

On May 19, 2016, the Department held a forum at Salt Lake City's Salt Palace Convention Center. The event drew 550 attendees and an additional 214 people by phone.[21] Representatives from Barney Trucking, miners, operators, and representatives from Sufco mine and other mines, county council members and commissioners, and State of Utah representatives spoke about the jobs and economic impact of coal on the state and local communities. Attendees also voiced their concern about the health impacts of burning coal and climate change, as well as the sufficiency or insufficiency of federal lease revenue. Several examples follow.[22]

- Mark Compton, President of the Utah Mining Association, "believes DOI should elect to continue the current federal coal program without any modifications, or better yet, lower the federal royalty rate and improve the efficiency of the program."
- Brian Moench, MD, President, Utah Physicians for a Healthy Environment, noted that "each ton of publicly-owned coal leased during the Obama administration, when burned, will cause economic damage estimated at between $22 and $237" per ton from coal costing an average of "$35 a ton."
- David Hibbs, President Utah American Energy, Inc., noted that "proposed increases in federal coal royalty rates will have significant impacts on rural communities that have come to depend on jobs and revenue generated by federal coal leases."
- Kathleen Clarke, Director of Utah's Public Lands Policy Coordinating Office, expressed that "proposed new leasing costs will further discourage investment in federal coal leasing projects in Utah," which "will harm Utah's economy through accelerated reductions in coal mining and increased fuel costs that will drive higher power prices."
- Lincoln M. Nehring, Director of Voices for Utah Children, noted that the "three-year moratorium on new coal leases should be undertaken with an eye toward helping coal-dependent communities begin to develop robust and resilient "post-coal" economies."

The Trump administration repealed the moratorium on March 28, 2017, without taking the actions suggested by the BLM.[23] While the moratorium did not delay development of the federal leases described previously, had the moratorium remained in place it might have affected the Coal Hollow lease had it not received an allowable "emergency lease" under the provisions of the moratorium. In addition, any increase in the federal royalty rates would have increased coal prices, thus potentially affecting coal demand.

On April 3, 2017, the Department of Interior announced it will establish a Royalty Policy Committee that will provide advice to the Secretary on the fair market value of, and the collection of revenues derived from, the development of energy and mineral resources on Federal and Indian lands.[24] The next day, the Department put out a request for input regarding "whether revisions to the regulations governing the valuation, for royalty purposes, of… coal produced from Federal and Indian leases, are needed and, if so, what specific revisions should be considered."[25]

COAL-MINING EMPLOYMENT AND ECONOMIC IMPACT

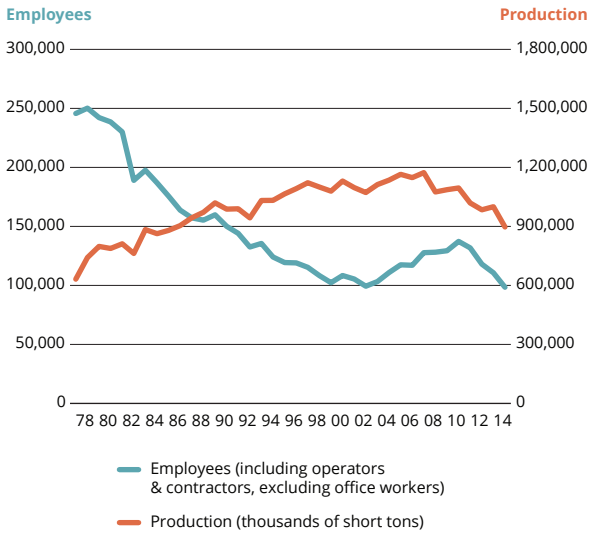
Decreasing U.S. Coal Mining Employment

Employment in U.S. coal mines has been decreasing. In 2015, the average number of employees decreased by 12% to 65,971, the lowest number of coal mining employees since the 19th century.[26] However, when operators and contractors (but not office workers) are included, total employment in 2015 was about the same as in the early 2000s (see Figure 5).[27]

Decreases in employment over nearly 100 years have left employment at a fraction of historical levels. Coal mining employment peaked at 862,536 in 1923, dipping to 133,302 workers by 1969.[28] These losses were caused in large part because of mining advancements that led to increases in productivity. There was a brief resurgence to 260,429 jobs by 1979, but with additional technological improvements and productivity gains (mostly longwall mining techniques), that total number was cut by nearly 100,000 jobs over the next decade.

Losses over the past ten years are due to a drop in demand, which has been due in part by energy prices and regulatory policy. Natural gas is cheap and has been particularly cheap for the past 10 years.[29] This is due in part to the surge of natural gas on the market with the advent of modern-day hydraulic fracturing, or fracking. The federal government and state and local governments have continued to act in response to pollution and climate change from burning coal. The costs from these regulations on coal-fueled power plants are responsible for some plant closures, thus lowering the demand for coal.

Figure 5: Long-term U.S. Decreases in Coal Employment Not Primarily the Result of Decreased Coal Production



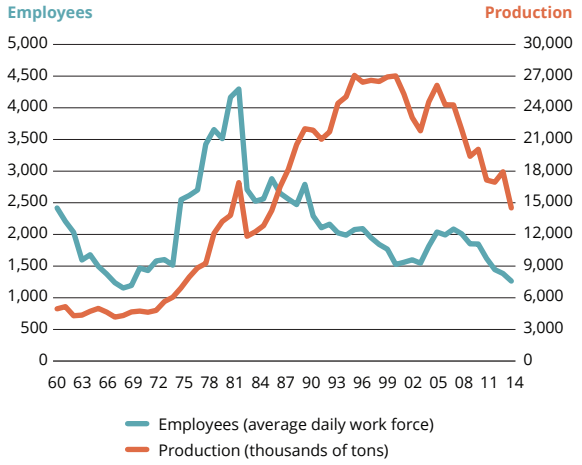
Source: United States Department of Labor, Mine Safety and Health Administration.

Decreasing Utah Coal Mining Employment

Like the rest of the United States, Utah has seen coal job losses. In 1920, Utah had 4,505 Utah miners.[30] Employment had been as low as 1,155 in 1968. Since then, peak average daily Utah workforce in mines was 4,296 in 1982 before a precipitous drop

to 2,707 in 1983. The number of Utahns employed trended downward until 2004 to 1,546 workers, and then back up to 2,085 workers in 2008. It has then again trended steadily downward to 1,263 in 2015. This is certainly a significant fluctuation, which impacts Utah's rural communities. However, to put Utah's job losses in perspective, large coal-producing states have had vastly higher historical employment than Utah, and a much larger decline. For instance, in 1950 there were over 75,000 Kentucky miners, but those numbers have fallen to just over 10,000 miners today.[31]

Figure 6: Utah Coal Mine Employment Decreases with Innovation and Declining Production



Source: Utah Geological Survey, Utah Energy and Mineral Statistics.

As in the rest of the country, many of Utah's jobs losses have been due to increased productivity. In 1920, 4,505 Utah miners produced 6,005,199 tons of coal.[32] Fifty years later, Utah was producing the same amount of coal with one-third the miners. While the past half-century's peak employment occurred in 1982, within 20 years, Utah production had increased by 60% but with only one-third of the employees (see Figure 6).

As in the rest of the country, Utah's more recent coal employment decreases have also been due to a decrease in demand.[33] Utah's lowest production in 30 years was in 2015. The decrease in production from nearly historical peak production in 2001 of 27 million tons to 15 million tons in 2015 is a 46% decrease. Along with this decrease in production, there was a corresponding decrease in jobs from 1,526 to 1,263 or 17%.

These fluctuations in employment are small when looking at the whole state, which added 45,700 jobs between February 2016 and 2017.[34] However, most of the state's coal mining activities take place in just a few small rural counties with limited employment opportunities, and the total nonfarm employment in the four rural counties that have coal mining, is under 30,000.[35] Coal jobs tend to be higher paying jobs than other alternatives that exist in these rural counties.

Figure 7: Wage and Employment from Mining, 1st quarter 2016

Utah's Coal-Mining Counties	North American Industry Classification System Code	Average Employment	Establish-ments	Percentage of County Employment	Payroll	Percentage of County Payroll	Average Monthly Wage
Carbon	Mining (except oil and gas)	545	4	6%	$14,097,797	18%	$8,623
	Support activities for mining	26	10	0%	362,232	<1%	4,644
Emery	Mining – combined*	191	12	6%	3,526,144	10%	6,154
	Mining (except oil and gas)	n/a	n/a	n/a	n/a	n/a	n/a
	Support activities for mining	22	8	1%	459,612	1%	6,964
Kane	Mining	n/a	n/a	n/a	n/a	n/a	n/a
Sevier	Mining – combined	618	9	8%	8,174,490	12%	4,409
	Mining (except oil and gas)	607	7	7%	7,961,568	12%	4,372
	Support activities for mining	n/a	n/a	n/a	n/a	n/a	n/a

* Most mining activities in Emery County are related to coal mining.
Source: Utah Department of Workforce Services, accessed on Dec 12, 2016.

By industry, "mining (except oil and gas)" jobs are the highest paying jobs in Carbon and Sevier counties. These are predominantly coal jobs. "Mining" jobs are the third highest-paying in Emery County – the "mining (except oil and gas)" category is not available for Emery County. "Mining" job data are not available in Kane or Sanpete counties.

The "support activities" for coal mining are not inconsequential. Bowie Resources, for example, indicates that in 2015, they had 827 direct jobs at their three mining operations (Sufco, Skyline, and Dugout mines). However, they indicated that there were another 463 indirect trucking jobs (not employed by Bowie) and, based upon an industry multiplier of 3:1, another 2,481 "other support" indirect jobs. At Sufco mine alone, there were 381 direct jobs, 300 indirect trucking jobs (not employed by Bowie), and 1,143 "other support" indirect jobs. All of the coal at the Hunter and Huntington plants is brought in by truck. Other support activities include road and rail shipping, contracted engineers who build supporting infrastructure like roads, or extraction equipment manufacturing or servicing.

Figure 8: Utah's Coal Mines and Employment

Mine	Company	County	Employment
Operating			
SUFCO	Canyon Fuel, LLC - Bowie Resources, Inc.	Sevier	381
Skyline #3	Canyon Fuel, LLC - Bowie Resources, Inc.	Emery/Carbon	339
Lila Canyon*	UtahAmerican Energy, Inc. - Murray Energy Corp.	Emery	175
Castle Valley #3	Castle Valley Mining LLC - Rhino Resources	Emery	118
Castle Valley #4	Castle Valley Mining LLC - Rhino Resources	Emery	
Dugout Canyon	Canyon Fuel, LLC - Bowie Resources, Inc.	Carbon	107
Coal Hollow (surface)	Alton Coal Development	Kane	52
Burton #1 (underground)	Alton Coal Development	Kane	
Recently closed			
Deer Creek	Energy West Mining Co.	Emery	182
West Ridge*	UtahAmerican Energy, Inc. - Murray Energy Corp.	Carbon	175

*All of the employees from West Ridge transferred to Lila Canyon, a 45-minute drive away.
Source: Bowie Resources, UtahAmerican, Castle Valley, Salt Lake Tribune.

Economic Impacts of Coal Production

The United States Department of Energy estimates that Utah's fuels sector accounts for 11,223 jobs.[36] They report that approximately 5,000 jobs are in oil, 2,000 in natural gas, 2,000 in other fuels, and 1,566 in coal.

The Utah Governor's Office of Energy Development commissioned a study to look at the broader economic impact of Utah's energy sector beyond jobs. They found that coal mining economic output in Utah is estimated at $579 million in "direct" impacts – about 4% of the whole energy sector.[37] This impact increases to $887 million when considering direct, indirect, and induced impacts together. Direct impacts are related directly to the businesses and employees. Indirect impacts are related to business spending, such as contractors and engineers that assist the energy sector. Induced impacts are related to employee spending, such as grocery stores, auto dealers, and restaurants where employees spend their earnings.

UTAH'S COAL-FUELED POWER PLANTS

There are five coal-fueled power plants in Utah serving utility customers. Utah also has one large coal-fueled operation for an industrial purpose. The largest plant, Intermountain Power Project in Millard County, sells most of its power to six municipalities in southern California. It is owned by the Intermountain Power Agency.

The next largest plants are the Hunter plant and the Huntington plant in Emery County, owned by PacifiCorp, the parent company of Rocky Mountain Power.

The Bonanza plant is in Uintah County, owned by Deseret Power Electric Cooperative. Sunnyside Cogeneration Association owns the Sunnyside waste coal electric power plant in Carbon County.

Figure 9: Employment at Utah's Coal-Fueled Power Plants

Utah Power Plants	County	Year Completed	Employment
Operating			
Intermountain	Millard	1986	430
Hunter	Emery	1978	216
Huntington	Emery	1974	161
Bonanza	Uintah	1986	n/a
Sunnyside	Carbon	1993	24
Recently closed			
Carbon	Carbon	1954	75

Source: IPP, Rocky Mtn. Power, Sunnyside, and Salt Lake Tribune.

Kennecott Utah Copper Corp., owns the KUCC Unit 4, which was completed in 1958. It is not a utility electricity provider but instead provides electricity to Kennecott Copper Mine operations. Kennecott shut down three of its four coal-fired power units in 2016. "This is an important step in the state's mission to continue improving air quality along the Wasatch Front," said Colin Nexhip, Kennecott interim managing director. "Shutting down our coal units will eliminate more than 3,500 tons of particulate and precursor emissions emitted annually from these facilities."[38] Kennecott is now purchasing a portion of its electricity from Rocky Mountain Power.

COAL-FUELED POWER PLANT EMPLOYMENT AND ECONOMIC IMPACT

Employment Implications of Coal-Fueled Power Plants

More than 80% of the electricity-generating plants that closed in 2015 in the U.S. were coal-fueled plants, and most of these were built between 1950 and 1970.[39] The Carbon Power Plant is an example of one such closure. Built in 1954, it was a modest 172-megawatt plant at the mouth of Price Canyon built in the 1950s. The plant closed one day before the EPA's 2011 Mercury and Air Toxic Standards rule took effect in 2015.[40] The rule requires that coal plants use maximum-achievable control technologies for mercury emissions control. This resulted in the direct loss of 75 jobs in the Helper, Utah area.

The Bonanza plant on the Uintah and Ouray Reservation land in the Uintah Basin will close in 2030 unless it installs top-shelf technology known as selective catalytic reduction to control nitrogen oxide emissions.[41] This would result not only in the loss of jobs at the plant, but could also result in job losses from the likely resultant closure of the Desperado mine over the border in Colorado.

Just over the Utah border in Page, Arizona, the Navajo Generating Station on the Navajo Indian Reservation is the largest plant west of the Missouri River. It is expected to end its operations in 2019 due to a lack of demand for its electricity, which is higher-priced than other alternatives. This will eliminate approximately 800 jobs at the plant and the coal mine from which it procures its coal. It would also have a large negative impact on tax revenues and coal royalties for the reservation.

Lastly, Intermountain Power Project's coal-fueled Intermountain Generating Station may be discontinued or scaled back by 2025. Its owner, Intermountain Power Agency, is currently developing two combined-cycle natural gas electricity generating units at the site. The six municipal utilities in Southern California that purchase most of the Project's electricity are prohibited by California state law from purchasing coal-fueled electricity after current power purchasing agreements expire. For the coal-fueled generating units to continue to operate, new customers for the electricity would need to be secured.

IPP had 620 jobs at peak employment in 1989. This is down to 430 jobs now. Even at lower-than-peak employment, IPP employs more people than other Utah plants due to its size, but also because it is a full-service entity, meaning that its engineers, administration, back-office, and environmental needs are all staffed in-house. IPP requires a full-service operation because it has no sister-support from other power plants or from a corporate headquarters.

While IPP is a full-service operation, it does operate with some contractors on site. This includes 14 people who work on fly ash marketing and refined coal processes to reduce emissions. There are also typically about 20 contract employees for mechanical, electrical, and maintenance support.

Like mines, power plants rely on many indirect jobs. For instance, for IPP, trucks bring coal from the mines to a rail yard, and the coal makes it the rest of the way to the Millard County plant by train. Coal shipments are also received at the generating station directly by truck. These jobs would no longer be needed with the possible closure of the IPP's coal-fueled operations. Furthermore, Utah's utility-scale coal-fired power plants have glue gas desulfurization systems – or scrubbers – that require limestone, which needs to be mined, processed, and transported to the plants.

Power plants require many construction jobs. There was a boost to the local economy in the 1980s during the construction of IPP. Construction for IPP's natural gas units is expected to begin in 2021. This will provide a temporary boon to the region in housing demand and sales taxes. Construction is expected to create 1,000 jobs between 2021 and 2024, fewer jobs than would be expected for the construction of a coal-fueled operation, but that is because many components of a natural gas unit are modular, shipped to Millard County in large pre-assembled parts for final assembly on site.

Economic Impacts of Coal-Fueled Power Plants

The study commissioned by the Utah Governor's Office of Energy Development to examine economic impacts of Utah's energy sector found that there were an estimated 1,800 indirect jobs in fossil-fueled power generation in the four counties that have coal-fueled power plants, as well as another 3,393 induced jobs.[42] This is not insubstantial, as existing nonfarm employment in the four coal-fueled electricity generation counties is approximately 23,000.[43]

The Utah Governor's Office of Energy Development study found that the economic direct output of electricity generation is estimated at $3.1 billion.[44] Approximately three-quarters of the state's electricity generation is from coal-fired power plants, with a direct impact of $2.3 billion, and an additional $820 million indirect and induced economic impact (see Figure 11).

Figure 10: Employment in Coal-Fueled Power Plants by County

County	Indirect	Induced
Carbon*	101	190
Emery	938	1,769
Millard	578	1,089
Uintah	183	345
Total	**1,800**	**3,393**

Note: These are "fossil-fueled power plants," though the only large-scale, fossil-fueled generation in these counties is coal-fueled.
*These estimates reflect employment before the closure of the Carbon plant.
Source: Utah Governor's Office of Energy Development.

Figure 11: Economic Impact of Coal-Fueled Power Plants by County, millions

County	Direct	Indirect	Induced	Total
Carbon	$134	$22	$24	**$180**
Emery	$1,244	$208	$219	**$1,671**
Millard	$765	$128	$135	**$1,029**
Uintah	$242	$41	$43	**$326**
Total	**$2,385**	**$399**	**$421**	**$3,205**

Note: These are "fossil-fueled power plants," though the only large-scale, fossil-fueled generation in these counties is coal-fueled.
Source: Utah Governor's Office of Energy Development.

Emery County alone – with its Huntington and Hunter plants – showed a direct economic impact of over $1.2 billion in 2012. The impact to Millard County, with its IPP electricity plant and transmission station, was over $765 million. This benefit to Millard County has been diminished with changes to the depreciation schedule, which resulted from the IPP's potential cessation of coal-fueled operations. However, once the natural gas plant is online, there will be an overall benefit to Millard County in terms of property tax revenue that is larger than that realized in recent years.

These benefits are felt in both the private and public sectors. For instance, the state reaps income tax from companies and individuals, sales tax benefits local, county, and state governments, and property taxes are particularly beneficial to the counties and school districts where these power plants reside. In 2013, total sales taxes collected from electricity in Utah was an estimated $90 million.[45] That year, total property tax revenue from electricity generation facilities was about that same amount.

THE FUTURE

Before the 2016 election, presidential candidate Trump said "if I win we're going to bring those miners back … These ridiculous rules and regulations that make it impossible for you to compete … we're going to take that all off the table, folks."[46] However, Kentucky Senator Mitch McConnell has responded, "whether that immediately brings business back is hard to tell because it's a private sector activity." [47] Further, Nick Carter, the interim president of the Kentucky Coal Association said, "I would not expect to see a lot of growth because of the Trump presidency."[48] As noted, one of these important factors has been the low price of natural gas.

The current administration has already begun to unwind the Obama administration's climate and environmental regulations. However, the New Source Performance Standards for greenhouse gas emissions of newly constructed electricity generation plants remains in effect. Coal-fueled plants do not meet these standards, but natural gas plants do. Regardless of the steps taken by the current administration, the construction of power plants takes a lot of time and immense investment, driving industrialists to think long term, beyond the duration of the Trump administration.

Further, there may not be a considerable change in the development of coal leases under the Trump administration. Even the new lease approved to Sufco by the BLM in March 2017 was simply the final step in an ongoing process to mine the Greens Hollow tract, which went up for lease late in the Obama administration.[49]

Nonetheless, on March 20, 2017, the president repeated a campaign promise about coal jobs: "as we speak, we are preparing new executive actions to save our coal industry and to save our wonderful coal miners from continuing to be put out of work."[50]

CONCLUSION

This report is presented in three parts. Part I examined coal-fueled electricity, coal consumption, and production.

Part II looked more closely at coal jobs and the economic impacts of coal on the state. It examined Utah's coal mines and the jobs related to those mines at the state's coal power plants. The economic benefit from coal mining and coal-fueled electricity generation is not inconsequential. The total number of jobs created is about 2,500. This number is not large in the context of state employment, which saw an increase in nonfarm employment of 45,000 between February 2016 and 2017. However, coal-related operations are limited to six rural counties with numerous employees coming from a seventh. Total nonfarm employment in these counties is under 50,000. Accordingly, the coal mining and coal-fueled electricity generation jobs are over 5% of the direct employment in those areas, with considerable indirect employment as well. In addition, these are some of the best paying jobs available in counties with limited alternative opportunities. These high-paying jobs bring additional money into community economies, as do tax revenues and coal royalties.

Part III provides insight into the communities that are most affected by changes in coal-related employment. It examines federal, state, local, and community supports in place for Utah's counties that rely most heavily on coal production and coal-fueled electricity generation.

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