

January 17, 2018

SJ 5: Coal in Montana  
Environmental Quality Council

## SENATE JOINT RESOLUTION 5: COAL IN MONTANA

### COAL FOR POWER

Montana coal generates electricity around the world, and the state is home to the nation's largest coal reserves, but the planned closure of coal-fired electric plants around the U.S. will affect the industry and the revenue it generates. In 2015 about three-quarters of all coal mined in Montana was shipped by rail to out-of-state utilities and foreign nations. Montana used the rest, with about 90 percent consumed to produce electricity at the Colstrip Generating Station.<sup>1</sup>

Across the country from 2002 to 2016, 531 coal-fired power plants, or 59 gigawatts (GW), were retired, according to U.S. Energy Information Administration (EIA) data. Another 12.7 GW is scheduled to retire through 2020, and the EIA's 2017 Annual Energy Outlook estimates nearly 90 total GW of U.S. coal capacity will be retired between 2017 and 2030.

A snapshot of coal production in Montana is included in **Figure 1**.

### COAL FOR EXPORT

In 2015, about half of Montana's coal production was sent by rail to other states and burned in coal-fired power plants, according to the EIA. Since 2007, Michigan, Minnesota, and Montana used about three-quarters or more of all the coal mined in Montana for energy generation as demonstrated in **Figure 2**. The remainder likely was either exported to western Canada, where much of it continued on to Asia or was exported through traders and brokers. Most Montana coal that goes overseas is shipped to the Westshore Terminal, a British Columbia coal port off the shore of Vancouver.

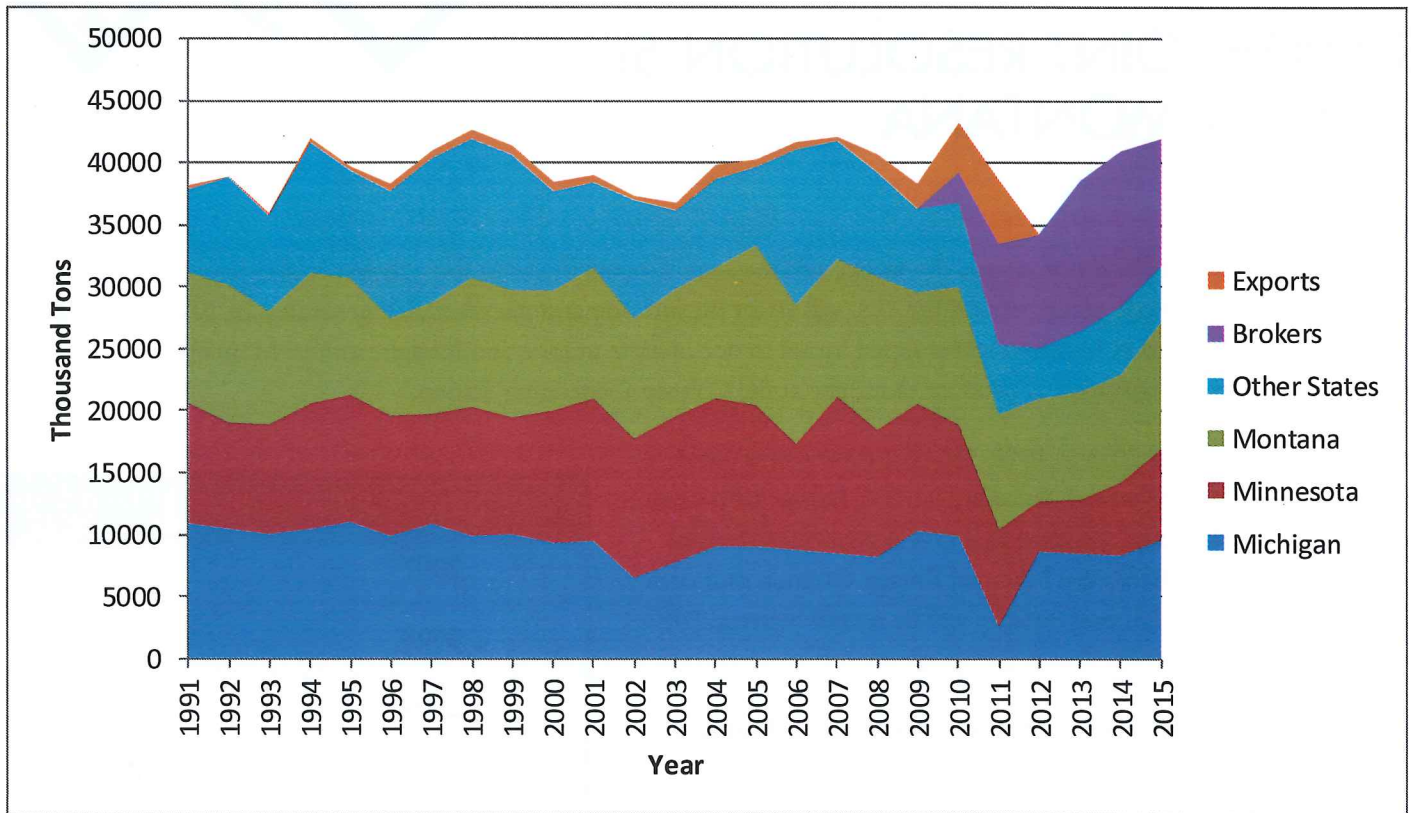
### Montana Coal Production in Million Tons

2007	43.2
2008	44.9
2009	39.6
2010	44.7
2011	42
2012	36.7
2013	42.2
2014	44.5
2015	42.1
2016	32.4

FIGURE 1 -- MONTANA COAL COUNCIL

<sup>1</sup> "Understanding Energy in Montana: A Guide to Electricity, Natural Gas, Coal, Petroleum, and Renewable Energy Produced and Consumed in Montana," Jeff Blend, Montana Department of Environmental Quality draft report and updates before Energy and Telecommunications Interim Committee, January 2018.

**FIGURE 2 – DISPERSION OF MONTANA MINED COAL -- MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY**



Traders and brokers don't consistently report the final destination of coal exports, and the EIA provides only estimates of coal exports by brokers and traders. Since 2011, those estimates show increasing amounts of Montana coal being exported out of the country.<sup>2</sup> Discrepancies between coal production numbers or totals overall in Montana and coal shipped to U.S. power plants as demonstrated in the tables below are largely attributable to coal exported through brokers and traders that is estimated but not included in the tables. Estimates show that much of the coal from Signal Peak, for example, is exported out-of-the country and that much of the coal from Spring Creek is either exported out of the country or sold to brokers.

The attached table for 2016 coal shows where 23.2 million tons, or about 72% of the 32.4 million tons of coal mined in Montana, was dispersed. That is consistent with overall estimates that about half of Montana mined coal is burned in power plants across the U.S. and about a quarter is burned in Colstrip. Between 2008 and 2015, Montana coal also went to the plants listed in the 2016 table. The information, however, was not repeated in the second table. For example, nearly all the coal mined at Rosebud was burned at Colstrip between 2008 and 2016, and coal from the Absaloka Mine was sent to the Sherburne facility every year since 2008.

<sup>2</sup> "Understanding Energy in Montana: A Guide to Electricity, Natural Gas, Coal, Petroleum, and Renewable Energy Produced and Consumed in Montana," Jeff Blend, Montana Department of Environmental Quality draft report and updates before Energy and Telecommunications Interim Committee, January 2018.

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The tables below do not account for overseas exports, sales through brokers or traders, or future gains that could be attributable to new energy demand. They demonstrate only where Montana coal has been burned in U.S. power plants. Two tables are included—one for 2016 providing a snapshot in time for Montana coal exports, and a second demonstrating the diversity in Montana coal exports.

In 2017, Montana coal production also increased over historical low number in 2016. As of October 2017, coal production was about 2 million tons ahead of 2016 numbers, according to EIA data. The increased production is attributed to Spring Creek, according to information from the Montana Coal Council. Exports to Asia, primarily South Korea and Japan, fueled the 2017 uptick, according to Cloud Peak, the owner of the Spring Creek mine. The U.S. Department of Energy in December announced that U.S. coal exports for the first three quarters of 2017 were 69 million tons, or 68 percent higher than exports for the same period in 2016.

The same EIA data estimates U.S. coal production for the first 11 months of 2017 at 719 million short tons, or 8 percent higher than production for the same period in 2016. Annual production is expected to be 791 million tons in 2017, falling to 771 million tons in 2018 because of lower exports and no growth in coal consumption.<sup>3</sup>

The tables below use information from an EIA database that tracks where coal mined in the U.S. is burned. The tables list the coal-fired power plants in the U.S. that burned Montana coal since 2008. An outlook on those power plants is included, based on utility or energy company and public utility commission and regulatory data.

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<sup>3</sup> <https://www.eia.gov/outlooks/steo/report/coal.php>

Which U.S. Power Plants Burned Montana Coal in 2016?

Coal Plant	Megawatts	Outlook	Owner Position	MT Coal Used
TES Filer City Station CMS Energy, MI	73 MW	Consumers Energy says the coal and biomass plant will be converted to natural gas in 2018.	CMS Energy has stated it is transitioning to clean energy sources and retired their seven oldest coal-fired generating plants.	In 2016, the facility used about 144,402 tons of coal from Signal Peak.
DTE-BRSC Shared Storage DTE Energy, MI	1,664 MW Belle River 1,547 MW St. Clair	Belle River is scheduled to retire in 2030.  St. Clair is scheduled to retire between 2020 and 2023.	In May, DTE Energy, Michigan's largest electricity supplier, announced plans for an 80% reduction in carbon emissions and the closure of all of its coal-fired power plants by 2050.	In 2016, 2.1 million tons of Decker Mine coal shipped to the facilities – about 49% of its average annual production.
Presque Isle Power Plant We Energies, MI	359 MW Unit 5 & 6: 55 MW Unit 7-9: 83 MW Units 1 & 2: Retired Units 3 and 4: Retired	The plant is expected to be retired by 2020 and replaced by two natural gas generating stations. In October 2017, the Michigan Public Service Commission approved a request to build 2 gas plants and once complete allow for closure of the plants.	We Energies announced in 2017 it will shut down its Pleasant Prairie coal-fired power plant (1,200 MW) in 2018, citing pressures from inexpensive natural gas and stagnant demand. The utility also announced it would be investing in renewable energy, with plans to have 350 MW of solar online by 2020.	In 2016, the plant received 631,587 tons of Spring Creek coal.
Clay Boswell Minnesota Power, Minn.	1,025 MW Units 1 and 2: 70 MW Unit 3: 350 MW Unit 4: 535 MW	The Minnesota PUC in 2016 approved Minnesota Power's 15-year resource plan, calling for retiring 2 older units at Clay Boswell by 2022, 2 years earlier than the utility proposed. Units 3 and 4 are not scheduled for retirement.	Minnesota Power says its long-term goal is to transition from about 75% coal to 1/3 coal, 1/3 renewables, and 1/3 natural gas, a strategy officials are calling EnergyForward. Ten years ago Minnesota Power generated about 95 percent of its electricity from coal.	In 2016, the facility used about 1.3 million tons of Montana coal. The plant has used coal from the Decker Mine, the Spring Creek Mine, and the Rosebud Mine.



Which U.S. Power Plants Burned Montana Coal in 2016?

Coal Plant	Megawatts	Outlook	Owner Position	MT Coal Used
<p><b>Sherburne County</b> Xcel Energy and Southern Minnesota Municipal Power Agency, Minn.</p>	<p>2,238 MW Unit 1: 680 MW Unit 2: 682 MW Unit 3: 876 MW</p>	<p>In 2016, the Minnesota Public Utilities Commission approved a plan to retire the Sherburne Unit 2 by 2023 and Unit 1 by 2026. Unit 3 is not scheduled for retirement.</p>	<p>Xcel, is closing 2 of its coal units in Pueblo a decade ahead of schedule. Xcel is requesting bids for 1,000 MW of wind, 700 MW of solar and 700 MW of natural gas under its Colorado Energy Plan.  SMMPA's main source of electricity is its 41% share of Unit 3. It sells to 18 municipal utilities.</p>	<p>In 2016, 3.8 million tons of Montana coal was shipped to the Sherburne County plant – about 70% of the average annual production at the Absoloka Mine.</p>
<p><b>Stanton Station</b> Great River Energy, North Dakota</p>	<p>198 MW</p>	<p>The plant shut down in 2017. Great River Energy announced in 2016 that it would close the plant rather than undertake expensive upgrades. It is scheduled for demolition in 2018.</p>	<p>Great River Energy provides electricity to 28 cooperatives serving 1.7 million customers. It remains dependent on fossil fuel plants, primarily coal for baseline generation. But wind has increasingly become an investment of choice.</p>	<p>In 2016, the plant received 397,710 tons of Spring Creek coal.</p>
<p><b>Coronado</b> Salt River Project, Arizona</p>	<p>773 MW Unit 1: 389 MW Unit 2: 384 MW</p>	<p>SRP is in ongoing discussions with EPA on regional haze requirements at the facility.</p>	<p>Four utilities, including SRP, agreed to close the Navajo Generating Station by 2019 due to competition from cheaper natural gas.</p>	<p>In 2016, about 475,000 tons of Spring Creek Coal went to Coronado.</p>
<p><b>Centralia</b> TransAlta, Wash.</p>	<p>1,340 MW Units 1 &amp; 2: 670 MW</p>	<p>Based on an MOU with Washington state, TransAlta will shut down the first unit at Centralia in 2020. The second will stop burning coal in 2025.</p>	<p>TransAlta in 2017 announced a strategy to accelerate the transition to gas and renewable generation.</p>	<p>In 2016, the facility received 2.5 million tons of Spring Creek coal or about 15% of the mine's average annual production.</p>

## Which U.S. Power Plants Burned Montana Coal in 2016?

Coal Plant	Megawatts	Outlook	Owner Position	MT Coal Used
Colstrip Generating Station Talen Energy, Puget Sound Energy, Portland General, Avista, PacifiCorp, and NWE, Montana	2,094 MW Units 1 & 2: 307 MW Units 3 & 4: 740 MW	Units 1 and 2 will close by July 1, 2022, under a legal settlement. No retirement date is scheduled for Units 3 and 4. Under a plan approved by the Washington Utilities and Transportation Commission, Puget Sound Energy, the largest owner of the Colstrip plant, will pay down its debts from Units 3 and 4 by 2027.	<p><b>PSE:</b> In 2016, 37% of the company's fuel mix for electricity came from coal.</p> <p><b>PGE:</b> PGE will cease serving customers with power from Colstrip by the end of 2035.</p> <p><b>Avista:</b> Avista is poised to be acquired by Hydro One of Ontario. In 2015 Ontario banned coal-fired electricity.</p> <p><b>PacifiCorp:</b> PacifiCorp's 2015 energy plan includes "ending coal generation at 10 units by 2029. By 2034, the company will reduce reliance on coal by 2,800 megawatts.</p> <p><b>NWE:</b> 60% of generation from wind and water in 2016. 22% from owned thermal and the remainder from contract thermal.</p> <p><b>Talen:</b> In August 2017, Talen Energy Corp. informed the co-owners of the plant that it planned to operate the facility and keep it open.</p>	In 2016, 8.5 million tons or 85% of the coal mined at Rosebud, was used at the Colstrip Generating Station.

- The information in this table was compiled using the U.S. Energy Information Administration Beta Database. Projects published in Beta are not final and are for comment only. The coal data browser and database is available [here](#). Totals may not equal sum of components because of independent rounding.
- The U.S. coal data are collected and prepared for release by the Office of Oil, Gas, and Coal Supply Statistics, U.S. Energy Information Administration (EIA). The data are compiled from the following EIA survey sources: Form EIA-923, "Power Plant Operations Report" and the U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."
- The categories used in the database are for coal receipts, with one exception. Coal distributed to industrial plants includes a small amount of coal consumed by coal preparation plants.
- The EIA in its Annual Coal Distribution Report includes estimates of coal exports data by brokers/traders. The coal exports by brokers/traders are estimated. The data in EIA Form 923 indicate that starting in 2011, large amounts of Montana coal were exported out of the country, or exported by brokers to locations unknown. Information as to where broker exported coal went is not available. This table does not include coal that went overseas.

**Which additional U.S. Power Plants Burned Montana Coal Between 2008-2015?**

Coal Plant	Megawatts	Outlook	MT Coal Used
<p>Michigan -- In 2016, coal-fired power plants provided 36% of Michigan's electricity generation; 2 years earlier, they had provided 50% of the state's electricity. Twenty-five coal units in the state are scheduled to shut down by 2020. EIA</p>			
Karn-Weadock	2,100 MW	Consumers Energy is closing 7 of its coal-fired plants. Closures include Karn-Weadock (2 units, 310 MW). The closure will leave Consumers with 5 units operating: 3 at the 1,450-MW Campbell plant and 2 (511 MW) at Karn-Weadock.	Absaloka; Spring Creek
BC Cobb	320 MW	Closed 2016.	Absaloka; Spring Creek
Monroe	3,066 MW	DTE says it plans to close Monroe in 2040.	Decker; Spring Creek
Wyandotte	73 MW	Can burn coal, natural gas, and tire derived fuel.	Decker; Spring Creek
River Rouge	651 MW	One unit retired in November 2015, and the other is planned for retirement in 2023.	Spring Creek
James De Young	62 MW	Retired in 2016 and replaced with natural gas.	Spring Creek
Shiras	77 MW	In 2017 Marquette Board of Light & Power officials said the Shiras coal-fired steam plant may no longer be a cost-effective generating asset in the long term.	Spring Creek
<p>Minnesota -- About 39% of utility-scale electricity generation in Minnesota came from coal-fired electric power plants in 2016, down from 44% in 2015. Almost all of Minnesota's coal supply comes by rail from Wyoming and Montana. EIA</p>			
Syl Laskin	110 MW	Converted to natural gas.	Decker; Signal Peak/Bull Mountain
Taconite Harbor Energy Center	150 MW	Idled in 2016 with full-closure planned in 2020.	Decker; Spring Creek
Hoot Lake	139 MW	According to a 15-year resource plan, Outer Tail Power will close Hoot Lake in 2021.	Spring Creek





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Ohio -- Ohio is among the top 5 coal-consuming states in the nation. Twice as much coal is consumed in Ohio as is produced there. In 2015, 15% of the state's coal-fired generation capacity was retired. However, in 2016, coal still fueled almost three-fifths of the state's power generation. EIA			
FirstEnergy Ashtabula	256 MW	Closed in 2015.	Signal Peak/Bull Mountain
FirstEnergy Eastlake	1,257 MW	Closed in 2015.	Signal Peak/Bull Mountain
FirstEnergy WH Sammis	2,210 MW	Units 1-4, about 720 MW of capacity, will retire in May 2020. Units 5-7 will continue to provide 1,490 MW of baseload generation.	Signal Peak/Bull Mountain
FirstEnergy Lakeshore	245 MW	Closed in 2015.	Signal Peak/Bull Mountain
FirstEnergy Bay Shore	136 MW	Bay Shore Units 2-4 were deactivated in 2012. Additional units to be sold or closed by 2020.	Signal Peak/Bull Mountain
Avon Lake	766 MW	NRG announced in 2017 a corporate reorganization that allowed GenOn Energy, a subsidiary of NRG, to file Chapter 11 bankruptcy. The plant's future will be determined by GenOn, after its emergence from bankruptcy.	Spring Creek
Niles	266 MW	Closed in 2012.	Spring Creek
Pennsylvania -- Pennsylvania has the nation's fifth-largest coal-fired electric generating fleet. Many of the state's coal-fired generating plants are older, and, with the increased availability of economic natural gas, 1/3 of Pennsylvania's coal-fired generating capacity shut down between 2010 and the end of 2016. EIA			
FirstEnergy Bruce Mansfield	2,490 MW	The plant was idled in February 2016, and restarted for some periods in 2017. The company is looking to potentially sell the plant.	Signal Peak/Bull Mountain





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Coal Plant	Megawatts	Outlook	MT Coal Used
New Castle Plant	330 MW	Converted to natural gas.	Spring Creek
Hatfields Ferry Power Station	1,710 MW	Closed in 2017.	Spring Creek
Chewswick Power Plant	565 MW	In 2017 the Sierra Club filed suit against the state Department of Environmental Protection for failure to enforce drinking water standards at the site. The plant continues to operate.	Spring Creek
<b>Wisconsin -- In 2016, coal provided 52% of the state's net electricity generation. EIA</b>			
Valley	280 MW	Converted to natural gas.	Signal Peak/Bull Mountain
Alma Site	400 MW (remaining)	Alma Station and JP Madgett Station are part of the Alma site. Alma Station is retired. John P. Madgett continues to operate.	Signal Peak/Bull Mountain
Nelson Dewey Generating Station	200 MW	Closed in 2015.	Spring Creek
<b>Arizona -- The Navajo Generating Station is scheduled to close in 2019, removing nearly two-fifths of Arizona's coal-fired capacity from service. EIA</b>			
Apache Station	605 MW	Units can burn coal or natural gas.	Decker
Cholla	1,129 MW	Unit 2 (289 MW) closed in 2015. PacifiCorp plans to retire Unit 4 (414 MW) by 2024. Unit 1 (113 MW) and Unit 3 (312 MW) remain in operation.	Spring Creek



**Which additional U.S. Power Plants Burned Montana Coal Between 2008-2015?**

Coal Plant	Megawatts	Outlook	MT Coal Used
<p>North Dakota -- In 2016, about 71% of North Dakota's net electricity generation came from coal. In 2015, North Dakota had 5.3% of the nation's recoverable coal reserves at producing mines and accounted for 3.2% of U.S. coal production. EIA</p>			
RM Heskett	100 MW	Units 1 and 2 continue to operate.	Absaloka
<p>South Dakota -- Coal's contribution has fallen from more than half the state's net electricity generation in 2008 to 1/5 in 2016. EIA</p>			
Big Stone	475 MW	In June 2008, the Sierra Club filed a lawsuit against Otter Trail Power, alleging violations of the Clean Air Act. The case has since been dismissed.	Absaloka
<p>Texas -- Coal-fired power plants historically accounted for about 1/3 of net electricity generation, but, in 2015, with older coal plants reducing operations or closing, coal supplied about one-fourth of generation. EIA</p>			
Gibbons Creek	470 MW	The Texas Municipal Power Agency in 2017 told the Electric Reliability Council of Texas that it plans to operate the plant for only five months of the year.	Rosebud
<p>Montana -- Montana produces almost 5% of the nation's coal from half a dozen mines. In 2015, about 1/4 of the coal mined in Montana was consumed in the state, and all but a small fraction of that coal was used to generate electric power. About half of Montana's coal production was sent by rail to other states in 2015. The remaining 1/4 was exported to western Canada, where much of it continued on to Asia. Montana has the nation's largest estimated recoverable coal reserves and holds 1/4 of the nation's demonstrated coal reserve base. EIA</p>			
Hardin Generating Station	116 MW	Rocky Mountain Power recently announced it may close the facility in early 2018 unless purchased by another company.	Absaloka



**Which additional U.S. Power Plants Burned Montana Coal Between 2008-2015?**

Coal Plant	Megawatts	Outlook	MT Coal Used
<p>Colorado -- Coal-fired power plants provide just over half of the state's net generation, and natural gas provides almost one-fourth. Electricity from renewable sources has more than doubled since 2010 to around one-fifth of the state's net electricity generation in 2016, led by increased wind power. EIA</p>			
Valmont	186 MW	Xcel announced it stopped burning coal at the facility in March 2017.	Signal Peak/Bull Mountain
<p>Iowa -- Iowa's five largest power plants by capacity are all coal-fired, and coal is the primary fuel used for electricity generation. As recently as 2008, coal accounted for 3/4 of Iowa's net electricity generation. In 2016, for the first time in decades, coal-fired plants produced less than half of the electricity generated in the state. EIA</p>			
Streeter Station	88 MW	Can burn natural gas or coal.	Signal Peak/Bull Mountain
<p>Indiana -- More than four-fifths of Indiana's electricity generation has historically been fueled by coal. In 2016, only 7 of every 10 MWh was generated by coal, while the 2016 share of net generation from natural gas more than doubled from two years earlier, to nearly 2 of every 10 MWh. Nine of the state's 10 largest power plants are still coal-fired, but more than 1,000 MWs of older coal-fired generating capacity was retired during 2016. EIA</p>			
Rockport	1,300 MW	Indiana Michigan Power Co. said in a 2015 resource plan they plan to keep the plant open through at least 2028 by renewing a lease and upgrading pollution controls.	Signal Peak/Bull Mountain
State Line Energy	515 MW	Closed in 2012.	Decker; Spring Creek
<p>Missouri -- Coal fuels about three-fourths of Missouri's net electricity generation, and 8 of the 10 largest power plants in the state are coal-fired. Coal's share of net generation has declined slightly as some older coal-fired plants have shut down or switched to natural gas. EIA</p>			
Asbury	213 MW	Empire District Electric wants to more than triple the amount of energy its gets from wind and close its Asbury coal plant in 2019.	Spring Creek
James River Power Station	253 MW	Converted to gas and/or idled.	Spring Creek



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Coal Plant	Megawatts	Outlook	MT Coal Used
<b>West Virginia -- Coal-fired electric power plants accounted for 94% of West Virginia's net electricity generation in 2016. EIA</b>			
FirstEnergy Harrison Power Station	1,984 MW	Fully operational.	Spring Creek
FirstEnergy Pleasants Power Station	1,300 MW	The West Virginia Public Service Commission is considering approval of the power plant transfer by First Energy to its subsidiaries, Mon Power and Potomac Edison.	Spring Creek
<b>New York -- Since 2000, coal has been providing progressively less of New York's net electricity generation because new generating capacity has been mostly natural gas-fired. In recent years, less than 5% of New York's net electricity generation has been fueled by coal. EIA</b>			
Cayuga Operating Company	323 MW	Upstate New York Power Producers sought PSC approval to repower Cayuga with natural gas, but failed. In 2016, Upstate sold both the Cayuga and Somerset plants to Riesling Power LLC, a wholly owned subsidiary of Beowulf Energy LLC.	Spring Creek
Somerset Operating Co.	655 MW	In 2016, Upstate sold both the Cayuga and Somerset plants to Riesling Power LLC, a wholly owned subsidiary of Beowulf Energy LLC.	Spring Creek
<b>Oregon -- In 2016 Oregon enacted legislation that requires two large investor-owned utilities operating in the state to supply 50% of the state's electricity from renewable sources by 2040. The law also requires these utilities to phase out electricity from coal by 2030. EIA</b>			
Boardman	550 MW	Planned for retirement in 2020.	Spring Creek

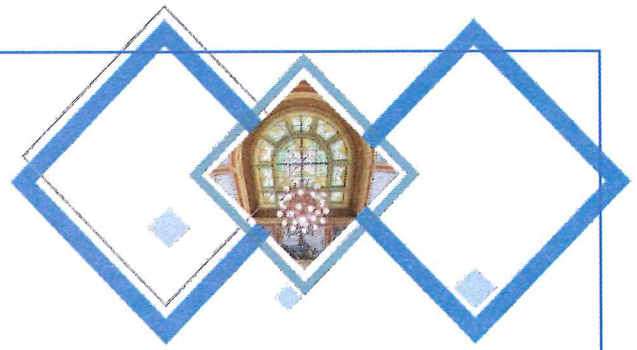


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- Between 2008 and 2015, Montana coal also went to the plants listed in the 2016 table. The information, however, was not repeated in the second chart. For example, nearly all the coal mined at Rosebud was burned at Colstrip between 2008 and 2016. Coal from the Absaloka Mine also was sent to the Sherburne facility every year since 2008. Decker coal shipped to Clay Boswell annually since 2008, with the exception of 2011. Decker coal also annually goes to shared storage for St. Clair and Belle River. Every year, Spring Creek coal has gone to Presque Isle, Clay Boswell, Centralia, Coronado, and with the exception of 2008, Stanton, Belle River, and St. Clair.



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Environmental Quality Council  
Sonja Nowakowski



# SENATE JOINT RESOLUTION 5: COAL IN MONTANA; FISCAL IMPACTS

## INTRODUCTION

All but a fraction of the coal mined in Montana is converted to electricity, either in-state, out-of-state, or out-of-country. Coal's contribution to U.S. electrical generation, however, continues to decline. In recent years, about three-quarters of Montana's coal production has been shipped by rail to out-of-state utilities and, increasingly, foreign nations. The remaining quarter is consumed in Montana.

There are six coal mines in Montana located in Big Horn, Musselshell, Richland, and Rosebud Counties. Westmoreland Mining, LLC, controls three of the mines. In 2015 Montana was the sixth largest coal producer in the U.S. at 42 million tons mined. The majority of mining in Montana occurs in the Powder River Basin. The price of Montana coal averaged \$17.44 per ton at the mine in 2015, up from the previous 20 years when it was near \$10.00 per ton. The price of Montana and Wyoming coal is far below the U.S. average of \$31.83, largely because of transportation costs and the lower heat content of the coal.<sup>1</sup>

Following national trends, production decreased in Montana from about 45 million tons in 2008 to 32 million tons in 2016. Weak economic markets for coal both in the U.S. and internationally contributed to the decline. Coal-fired power generation is in decline, as inexpensive natural gas and cheaper renewables fuel more electricity production. In addition, air quality regulations have accelerated. The future of Montana coal economics depends in large part on greenhouse gas regulations, use of coal-fired generation in the U.S., natural gas prices, and coal export markets.<sup>2</sup> Colstrip's future also will be dependent on policies enacted in Washington and Oregon concerning the use of coal-fired generation.

About 2,289 megawatts of coal-fired generating capacity exists in Montana, or 37 percent of the state's nameplate generating capacity, which is down from about 55 percent in 2015. A number of coal-fired power plants in the U.S. have closed or announced planned retirements since 2010. A total of 101 gigawatts (101,000 megawatts) in the U.S. have either retired or announced plans to retire in the coming years.<sup>3</sup> In Montana, the J.E. Corette coal-fired power plant in Billings ceased operation in 2015. Colstrip Units 1 and 2 will close no later than July 2022.

Taxes on coal, despite decreases from historic highs, remain a significant source of revenue. Severance and gross proceeds taxes generated more than \$81 million to state and local governments in FY

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January 17, 2018

SJ 5: Coal in Montana; Fiscal Impacts  
Environmental Quality Council

2016, according to the Department of Revenue (DOR). In addition to severance taxes, gross proceeds taxes are also paid to support the counties where mines are located. The DOR provided an overview of taxes paid by coal mines and power plants, which is outlined below.

Senate Joint Resolution No. 5 and the work plan adopted by the Environmental Quality Council request a review of the coal industry in Montana and the impacts of changes in coal production. At the January 2018 meeting, the EQC will be introduced to the subject and will receive an update on the taxation of coal in Montana and how those revenues are distributed.

## COAL MINES

### Cloud Peak Energy, Spring Creek Mine, Big Horn County

#### Sub-bituminous -- surface

Coal mined from Spring Creek is shipped primarily to electric utilities and industrial customers in the Northwest, Midwest, Northeast and southwest, and various Canadian provinces and exported to Asian utility customers via the Westshore terminal in British Columbia, Canada.

Ten-year Average Annual Production = 16.9 million tons

BTU/lb = 9,283 Btu

(2017) Full-time Employees = 230

### Western Energy Co., Rosebud Mine, Rosebud County

#### Sub-bituminous -- surface

The Rosebud Mine supplies most of its production to the four-unit Colstrip Power Station that is adjacent and was specifically designed to burn Rosebud coal. Coal is sold under two long-term contracts. Western is a subsidiary of Westmoreland.

Ten-year Average Annual Production = 10 million tons

BTU/lb = 8,550 Btu

(2017) Full-time Employees = 407

### Signal Peak Energy, Signal Peak Mine, Musselshell County

#### Bituminous – underground

Signal Peak is Montana's only underground coal mine. Coal is recovered using longwall mining equipment. Global Coal Sales markets coal from Signal Peak mine in the Bull Mountains near Roundup. Most is shipped to Asia.

Seven-year Average Annual Production = 6.4 million tons

BTU/lb = 10,300 Btu

(2017) Full-time Employees = 240

### Westmoreland Resources, Absaloka Mine, Big Horn County

#### Sub-bituminous – surface

The Absaloka Mine is located near Hardin and the Crow Indian Reservation. The coal reserves are leased from the Crow. The Absaloka Mine was developed to supply Powder River Basin coal to a group of Midwestern utilities, including Xcel Energy's Sherburne County Station near Minneapolis, Minnesota. It has also sold coal to other upper Midwest utilities.

Ten-year Average Annual Production = 5.4 million tons

BTU/lb = 8,570 Btu

(2017) Full-time Employees = 131



January 17, 2018

SJ 5: Coal in Montana; Fiscal Impacts  
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#### Lighthouse Resources Inc., Decker Mine, Big Horn County

##### Sub-bituminous -- surface

Coal from the Decker Mine is sold to the US domestic market. Along with supplying the existing domestic market, Lighthouse Resources is exporting coal from Decker to the international market.

Ten-year Average Annual Production = 4.3 million tons

BTU/lb = 9,500 Btu

(2017) Full-time Employees = 132

#### Westmoreland Savage Corp., Savage Mine, Richland County

##### Lignite – surface

The Savage Mine is an 874-acre mine located on the Montana-North Dakota border. The Savage Mine has a full-requirements contract with the 57-megawatt Lewis & Clark Station, which is owned by Montana-Dakota Utilities, and a longstanding annual supply relationship with a sugar beet refinery near Sidney.

Ten-year Average Annual Production = 330,000 tons

BTU/lb = 6,500 Btu

(2017) Full-time Employees = 13

## COAL-FIRED POWER PLANTS

#### Colstrip Generating Station

Colstrip has a combined peak output of 2,094 megawatts and is the second-largest coal-fired generating facility west of the Mississippi. Colstrip includes four separate coal-fired generating units, collectively owned by Puget Sound Energy, Talen Energy, Portland General Electric, Avista Corporation, PacifiCorp, and NorthWestern Energy. Puget Sound Energy is the largest owner, owning 50 percent of Units 1 and 2 and 25 percent of Units 3 and 4. Units 1 and 2 each have 307 megawatts of net generating capacity. Units 3 and 4 each have 740 megawatts of net generating capacity. The facility is adjacent to the Rosebud coal mine, which supplies the coal. Units 1 and 2 are scheduled to close no later than July 2022.

(2017) Full-time Employees = 360

#### Hardin Generating Station

The Hardin Generating Station is located north of Hardin and has 116 megawatts of net generating capacity. It is owned by Rocky Mountain Power, a subsidiary of Centennial Power, which in turn is a subsidiary of Bient Power Company. The plant is operated by Colorado Energy Management. Colorado Energy is owned by Heorot Power Holdings, a subsidiary of Beowulf Energy. The plant opened in 2006. The Absaloka Mine near Hardin supplies the coal. Electricity from the Hardin plant has been sold to Powerex Corp. of Canada. Rocky Mountain Power recently announced it may close the facility in early 2018 unless purchased by another company.

(2017) Full-time Employees = 30

#### Lewis and Clark Station

Montana-Dakota Utilities operates the Lewis and Clark Station consisting of a coal-fired boiler capable of burning coal or natural gas and associated equipment for electricity. It has 44 megawatts of net generating capacity and is located near Sidney. Lewis and Clark Station annually consumes more than 300,000 tons of lignite supplied from the nearby Savage Mine.

(2017) Full-time Employees = 34

January 17, 2018

SJ 5: Coal in Montana; Fiscal Impacts  
Environmental Quality Council

### Rosebud Power Plant

Colstrip Energy Limited Partnership is a 38-megawatt waste coal-fired power project located in Rosebud County north of Colstrip. The plant began commercial operation in 1990. Energy produced is sold to NorthWestern Energy under a Power Purchase Agreement that expires in June 2025 (sold by former Montana Power Company). CELP is licensed as a qualifying small power production facility under the Public Utility Regulatory Policy Act. Fuel for the plant is primarily waste coal from the nearby Rosebud Mine.

(2017) Full-time Employees = 30

## TAXES PAID

### State Severance Tax

The coal severance tax is imposed on all coal mined in Montana, pursuant to 15-35-103, MCA. Producers of more than 50,000 tons of coal per year pay a quarterly severance tax on all production in excess of 20,000 tons. Producers of less than 50,000 tons per year are exempt from the tax. Tax rates depend on the heat content (BTUs) of the coal and the method of extraction. The value of coal to which the severance tax is applied is the "contract sales price". The contract sales price is the price of coal extracted and prepared for shipment "free on board", less the amount required to pay production taxes. Production taxes include the state severance tax, the resource indemnity trust and ground water assessment tax, local gross proceeds taxes, federal reclamation taxes, and the federal Black Lung Tax. The contract sales price includes royalties up to \$0.15 per ton paid to federal and state governments or Indian tribes and all royalties paid to other mineral rights owners. The DOR collects the tax. The tax is distributed pursuant to 15-35-108, MCA.

**FY 2016: \$60.4 million**

### Federal Royalty (49% distributed to Montana)

Under the federal Mineral Leasing Act of 1920, the federal government collects royalties on every ton of coal that is mined on federal lands located in the state. The Interior Department's Office of Natural Resources Revenue forwards about half of the royalty revenues to Montana. In Montana, money paid to the state is deposited in the state general fund, with 25% being deposited in a mineral impact account dedicated to local governments. The tax is distributed pursuant to 17-3-240, MCA.

**FY 2016: \$20.9 million**

### Gross Proceeds Tax

A statewide 5% yearly flat tax is imposed on coal gross proceeds, pursuant to 15-23-703, MCA. State and local governments do not levy or assess any mills against the reported gross proceeds of coal. The gross proceeds of coal are determined by multiplying the number of tons produced by the contract sales price. One-half of the contract sales price of coal sold by a coal producer who extracts less than 50,000 tons of coal in a calendar year is exempt from taxation. The tax is collected by the local county treasurer. The revenue is proportionally distributed to the appropriate taxing jurisdictions in which production occurred based on the total number of mills levied in fiscal year 1990.

**FY 2016: \$20.8 million**

### Resource Indemnity Trust and Ground Water Assessment Tax

The resource indemnity trust fund was created to indemnify the citizens of Montana for the loss of long-term value resulting from the depletion of natural resources and for environmental damage caused by mineral development. All businesses that mine or extract minerals within Montana are subject to the annual tax on the percentage of the gross value of the

January 17, 2018

SJ 5: Coal in Montana; Fiscal Impacts  
Environmental Quality Council

product, pursuant to 15-38-104, MCA. The tax rate is 0.4% for coal. The trust was to be funded with proceeds from the resource indemnity tax until the trust balance reached \$100 million, which occurred in December 2001. Deposits from the resource indemnity tax ceased at that point, and the balance has remained at \$100 million. Income from the trust fund is used to fund environmental and natural resource programs.

**FY 2016: \$1.8 million**

#### Electrical Energy Producer's License Tax

An electrical energy license tax is imposed on each person or organization engaged in generating, manufacturing, or producing electrical energy in Montana (15-51-101, MCA). The tax of \$0.0002 per kilowatt-hour (or \$0.20 per megawatt-hour) is levied against all electrical energy produced within the state. A deduction is allowed for "actual and necessary" energy use by the plant for the production of the energy. The revenue goes to the general fund. A total of \$4.31 million in taxes was due for FY 2016, and coal-related companies had a tax liability of \$3.6 million, which comprised 83.5 percent of total taxes due. DOR records don't provide a breakdown into energy types, but the DOR used an estimate of the share of energy generated in Montana that comes from coal.

**FY 2016: \$2.62 million**

#### Wholesale Energy Generation Tax

The Legislature, grappling with the changes brought about by the restructuring of Montana's electric industry in 1997, reduced the property tax rate applied to electrical generation facilities and imposed a replacement tax called a wholesale energy transaction tax (Title 15, chapter 72, part 1, MCA). In 1999, the Legislature reduced the tax rate on electrical generation property from 12% to 6%. To partly replace the reduction, a wholesale energy transaction tax was developed. The tax is imposed at a rate of 0.015 cents per kilowatt-hour on electricity that is transmitted by a transmission service provider in the state. The revenue from the tax is deposited into the state general fund. The total tax liability for 2016 of coal-related companies was \$3.4 million. The companies comprised 93.9 percent, or \$3.2 million, of the tax liability. The DOR used an estimate of energy generated using coal.

**FY 2016: \$1.8 million**

#### Corporate Income Tax and Individual Income Tax

Montana's corporate income tax is a franchise tax paid by corporations doing business in Montana. The rate of the tax is 6.75% and is calculated on net income earned in Montana. Corporate income tax revenue goes to the general fund. Due to confidentiality concerns, the DOR was unable to release corporate income tax. The tax information included in this report also does not consider the income taxes paid by employees of the coal mines or coal-fired power plants.

#### Property Tax

In Montana, there are 14 different classes of property. Coal mined in Montana is subject to a gross proceeds tax. However, some property owned by mines or coal-fired generating units likely also provides some level of property tax in the form of Class 4 property, which includes industrial land improvements and Class 8 property, including property used for business purposes, and potentially other classes. \*The DOR estimated the total property tax paid by the companies that own coal mines and coal-fired power plants. The estimates, therefore, include property that is not coal-related. NorthWestern Energy, for example, shows its total property tax in 2016 at \$136 million. NorthWestern owns only 30% of Colstrip Unit 4. They show \$3.6 million in taxes to Rosebud County, where the plant is located. Avista reports \$9.3 million in property taxes in Montana, but that also includes their ownership of the Noxon Rapids Dam.

January 17, 2018

SJ 5: Coal in Montana; Fiscal Impacts  
 Environmental Quality Council

NorthWestern Energy, Portland General Electric, Puget Sound Energy, Avista Corporation, and PacificCorp – all owners of Colstrip Units 1-4 – also pay property taxes based on their ownership of the Colstrip transmission lines. In the event that Colstrip Units 1-4 close, use of the transmission lines for the export of energy will be a significant piece of the tax puzzle.

**FY 2016: \$316 million (total for utilities and mines) FY 2016: \$5 million (total for only mines)**

Taxes Paid by Coal Mines and Coal-Fired Power Plants in Montana			
Tax	Coal Total (FY 2016)	Distribution	% of Total Attributed to Coal
Coal Severance Tax	\$60,359,000	(See Attached)	100% (See Attached)
Federal Mineral Royalties	\$20,889,000	75% general fund 25% local governments	74%
Coal Gross Proceeds Tax	\$20,757,000	Proportionally to appropriate tax jurisdiction	100%
Resource Indemnity Trust and Ground Water Assessment Tax	\$1,796,000	Net earnings and receipts appropriated by the legislature, provided that the fund balance is not less than \$100 million. (See attached)	77%
Electrical Energy Producer's License Tax	\$2,620,000	General fund	61%
Wholesale Energy Generation Tax	\$1,780,000	General fund	52%
Property Tax	\$316,000,000* \$5,000,000 (mines)	Proportionally to appropriate tax jurisdiction	20%
<b>Total</b>	\$424.2 million  Less Coal-Fired Generation Property Tax:  <b>\$113.2 million</b>		

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