

# Montana Coal Revenue

Chris Watson

Governor's Office of Budget and Program Planning

Presentation to Revenue Interim Committee – September 23, 2021

# Montana's Coal Industry - Overview

---

Montana produces primarily subbituminous coal from the Powder River Basin

Powder River Basin coal has a lower heat content compared to other U.S. coal basins, but it burns cleaner because of its relatively low sulfur content

Montana has the largest coal reserves in the country, estimated to be over 100 billion tons

Historically, total coal production in the state has averaged near 40 million tons per year

- Production has been moving downward since 2018 and dropped sharply in 2020

Montana has four active coal mines, three of which are subject to state severance tax (Absaloka mine on Crow reservation is exempt)

- Spring Creek mine (Big Horn county) produces 10 – 13 million tons per year
- Bull Mountain mine (Musselshell county) produces 6 – 8 million tons per year
- Rosebud mine (Rosebud county) produced 5 million tons in CY 2020

Montana coal is shipped to domestic and foreign consumers

- Minnesota, Michigan, and Washington receive the bulk of domestic shipments (~60%)
- Foreign exports go primarily to the Asia-Pacific region

# Montana's Coal Industry – Recent Developments

---

Since the start of CY 2020 Montana has lost almost 7 million tons of annual coal production capacity from its taxable mines

Generating units 1 and 2 at Montana's Colstrip Power Plant were shuttered in January 2020

- Reduction of 614 MW of generating capacity
- Annual supply of coal from the adjacent Rosebud mine is lowered by about 2.5 million tons

Montana Dakota Utilities' Lewis and Clark Generating Station (44 MW) near Sidney closed in April 2021

- This closure ended the life of the power plant's coal supplier, Westmoreland Mining's Savage mine
- The Savage mine produced around 300,000 tons of coal per year

The Decker mine in Bighorn county ceased operation in February 2021

- Owner Lighthouse Resources filed for bankruptcy in December 2020, citing tough market conditions for coal
- The mine produced ~4 million tons annually

A proposed expansion of the Spring Creek mine was denied by a federal judge in February 2021

- Pollution costs weren't properly considered
- Uncertain if this expansion will continue to be pursued

# Montana's Coal Severance Tax

---

Montana levies a severance tax on the gross value of coal less exemptions

- This is referred to as the “contract sales price”
- Exemptions include federal, state, and local taxes

The applicable tax rate is determined by the mining method and the heat content of the coal

COAL DESCRIPTION	TAX RATE
Coal - surface mined w/ btu per pound $\geq$ 7,000	15% of value
Coal - surface mined w/ btu per pound $<$ 7,000	10% of value
Coal - auger mined w/ btu per pound $\geq$ 7,000	5% of value
Coal - auger mined w/ btu per pound $<$ 7,000	3.75% of value
Coal - underground mined w/ btu per pound $\geq$ 7,000	4% of value
Coal - underground mined w/ btu per pound $<$ 7,000	3% of value

# Montana's Coal Severance Tax

Of Montana's four major coal mines, three are surface mines and one is an underground mine

- Two of the three surface mines (Spring Creek & Rosebud) are assessed a 15% state severance tax rate
- The Absaloka mine is exempt from state severance tax
- The Bull Mountain mine is an underground operation taxed at the lower 4% rate

<b>Historical Coal Statistics</b>				
(production and tax revenue numbers in millions)				
<b>Fiscal Year</b>	<b>Production All Mines</b>	<b>Production Taxable Mines</b>	<b>Avg. Price per Ton*</b>	<b>Severance Tax Revenue</b>
2007	33.016	25.740	\$7.64	\$40.759
2008	44.045	37.504	\$8.04	\$45.332
2009	42.502	35.902	\$8.76	\$49.564
2010	40.381	34.809	\$9.78	\$44.177
2011	41.738	36.400	\$10.94	\$54.971
2012	40.833	36.740	\$11.72	\$52.743
2013	38.543	35.566	\$12.23	\$56.482
2014	41.359	35.725	\$12.55	\$57.676
2015	45.726	39.079	\$12.42	\$60.891
2016	35.109	30.920	\$13.15	\$60.359
2017	33.675	29.917	\$13.93	\$58.808
2018	38.244	34.308	\$15.91	\$60.097
2019	36.288	32.598	\$15.89	\$60.037
2020	32.258	29.710	\$16.28	\$46.754
2021	26.417	24.553	\$15.55	\$43.256

\* Contract sales price

# Coal Severance Tax Forecast Risks – U.S. Domestic Energy Market

U.S. electric power sector coal consumption has been on a downward trajectory since peaking in 2007

Domestic coal-fired generators have ramped up closures and more are on the horizon

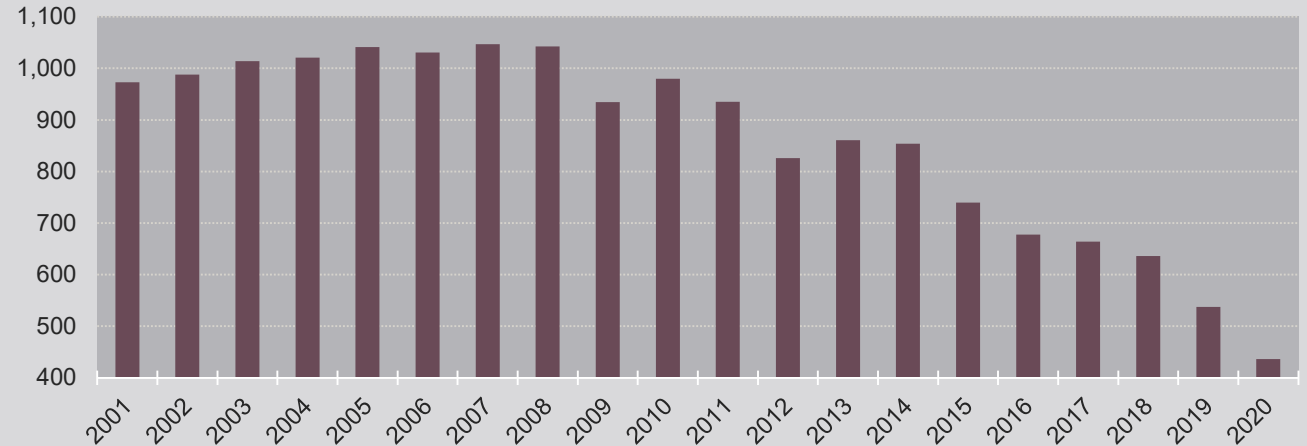
- Over 60 GW of coal-fired capacity has been shuttered since 2007
- 23 additional GW planned to go offline through CY 2025

Aging facilities are losing economic viability

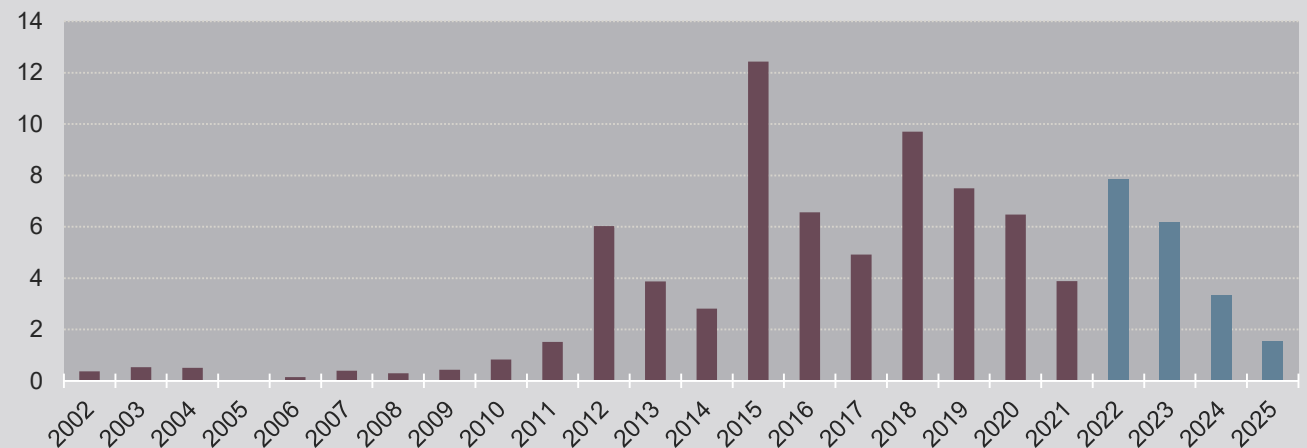
- Tighter emissions regulations are too costly
- Increased competition from natural gas and renewable energy

Montana domestic coal shipments have been falling as domestic generators retire

**U.S. Coal Consumption - Electric Power Sector**  
(Millions of tons)



**U.S. Coal-Fired Generation Retirements - Electric Utilities**  
(Gigawatts)



# Coal Severance Tax Forecast Risks – U.S. Domestic Energy Market

Shipments from Montana mines to domestic coal-fired power plants will continue to fall

Roughly half of Montana coal production is shipped to domestic consumers

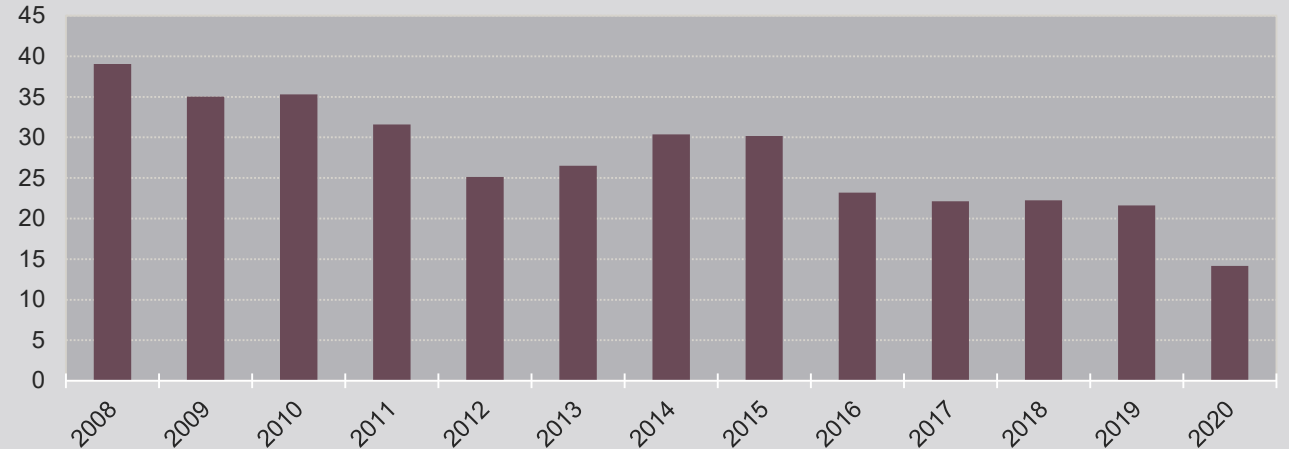
In the near-term, through 2025, 3.5 GW of coal-fired capacity fueled by Montana coal is slated to go offline

- ~6 million tons of annual coal consumption

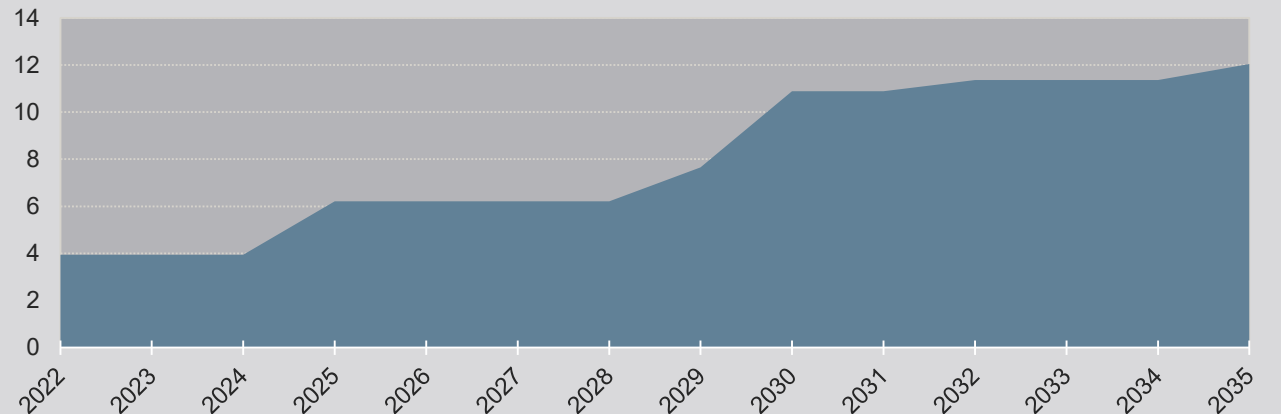
By 2035, and additional 4 GW of electric generating capacity that burns Montana coal will be shut down

- Another 6 million tons of annual coal consumption

**Montana Domestic Coal Shipments**  
(Millions of tons)



**Estimated, Cumulative Reduction in Future Montana Coal Shipments Due to Montana-Supplied Generator Retirements**  
(Millions of tons)



# Coal Severance Tax Forecast Risks – U.S. Domestic Energy Market

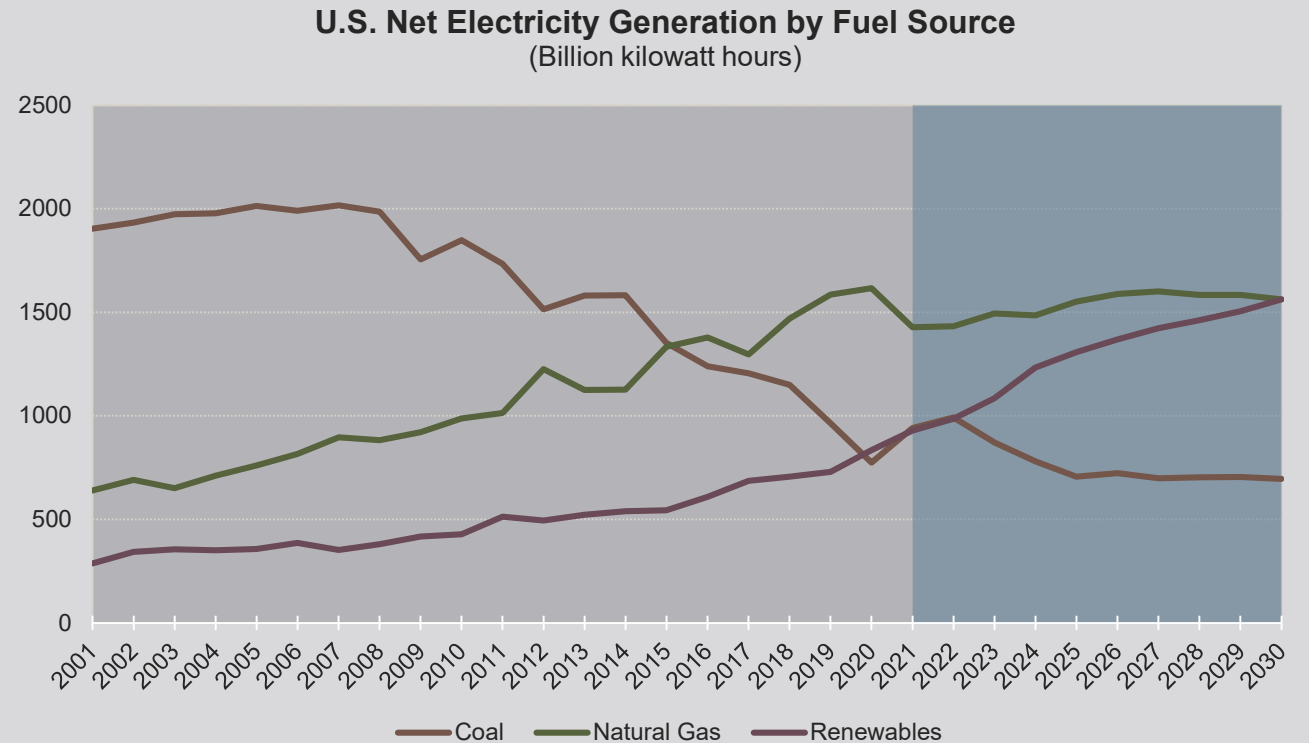
Natural gas is the primary input for electricity generation in the U.S.

Currently, renewable energy sources power just as much electricity generation as coal

Energy Information Administration projections (Annual Energy Outlook 2021) show a continued decline in coal as a domestic fuel source, while natural gas and renewables rise further

- New generating capacity will be supplied by natural gas and renewables

International exports of Montana coal could mitigate declines in domestic deliveries, but transportation costs are high and world prices are volatile





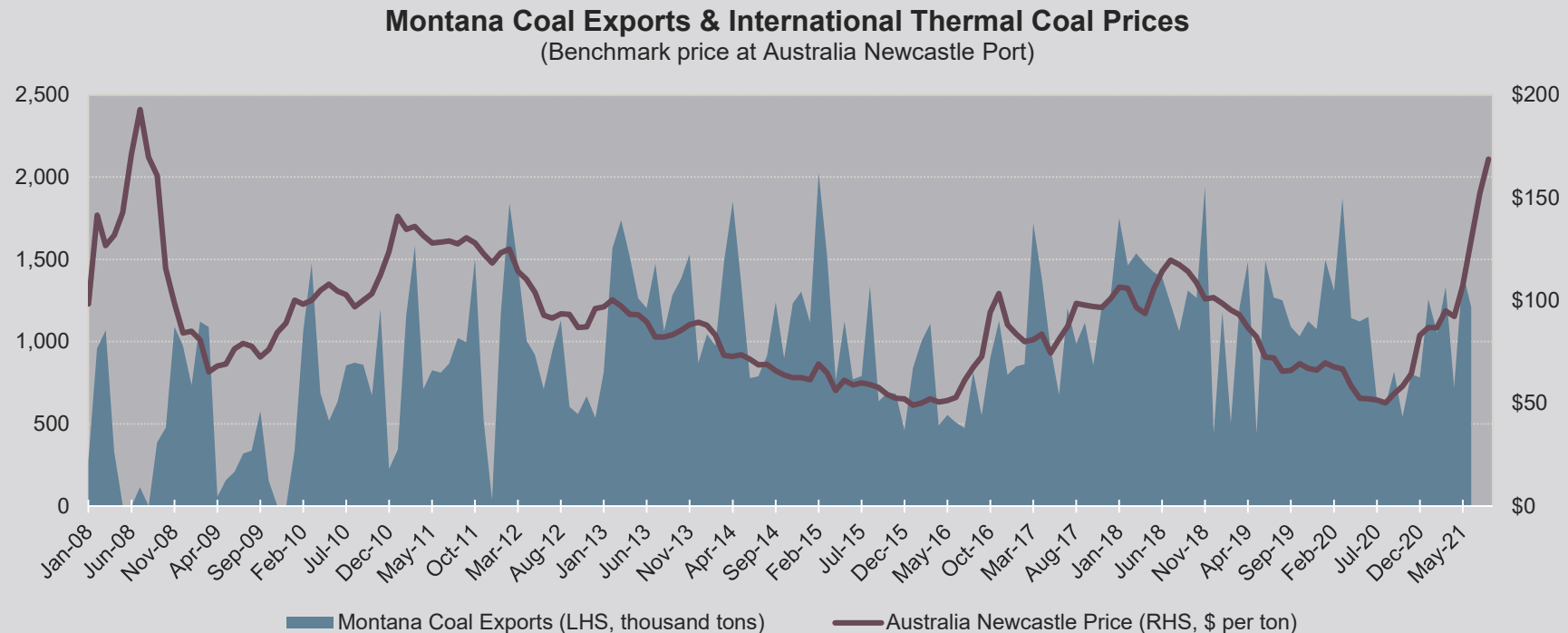
# Coal Severance Tax Forecast Risks – International Exports

Montana exports about half its production overseas, primarily to the Asia-Pacific region

- Significant transportation costs, export volumes are shipped by rail to Westshore Terminal in British Columbia
- Export volumes fluctuate in response to international price movements

Montana is a marginal supplier on the international market

- Market is distant and competition from other global suppliers is increasing
- Long-term growth is not expected for total U.S. coal exports



# Montana's Coal Severance Tax – Revenue Forecast

Coal production in Montana is expected to steadily decline from FY 2022 through FY 2025 while prices remain stable

- Full impact of Decker and Savage mine closures, and continued decline in domestic demand

Total severance tax revenue falls from \$45 million in FY 2022 to \$36.3 million in FY 2025

Risks to severance tax collections are higher than in the past

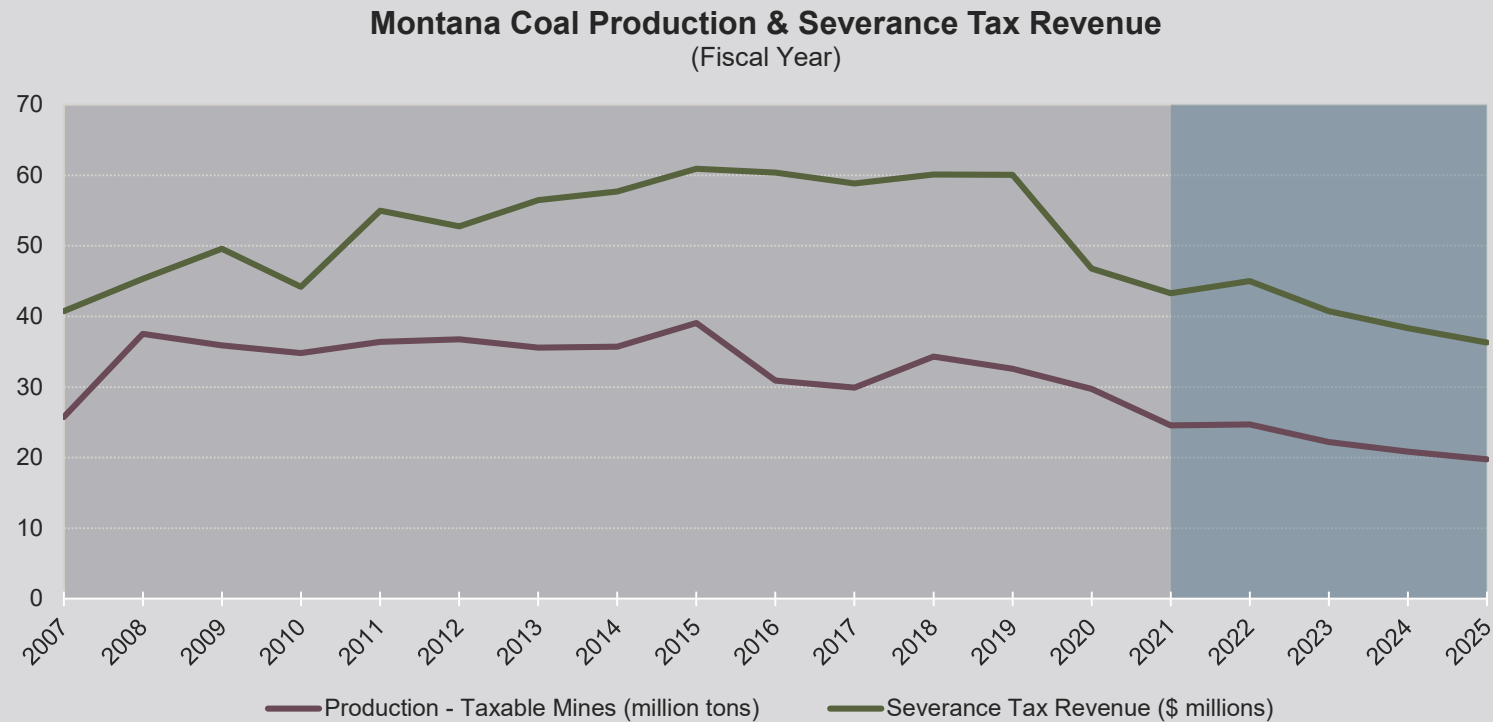
- Advancement of planned retirement dates for domestic coal power plants
- Difficulty of finding new coal customers
- Increasing exposure to volatile international thermal coal prices

Revenue forecast could like very different 12 months from now

<b>Historical Coal Statistics &amp; OBPP Projections</b> (production and tax revenue numbers in millions)				
<b>Fiscal Year</b>	<b>Production - All Mines</b>	<b>Production - Taxable Mines</b>	<b>Avg. Price per Ton*</b>	<b>Severance Tax Revenue</b>
2007	33.016	25.740	\$7.64	\$40.759
2008	44.045	37.504	\$8.04	\$45.332
2009	42.502	35.902	\$8.76	\$49.564
2010	40.381	34.809	\$9.78	\$44.177
2011	41.738	36.400	\$10.94	\$54.971
2012	40.833	36.740	\$11.72	\$52.743
2013	38.543	35.566	\$12.23	\$56.482
2014	41.359	35.725	\$12.55	\$57.676
2015	45.726	39.079	\$12.42	\$60.891
2016	35.109	30.920	\$13.15	\$60.359
2017	33.675	29.917	\$13.93	\$58.808
2018	38.244	34.308	\$15.91	\$60.097
2019	36.288	32.598	\$15.89	\$60.037
2020	32.258	29.710	\$16.28	\$46.754
2021	26.417	24.553	\$15.55	\$43.256
2022		24.705	\$16.45	\$45.004
2023		22.208	\$16.54	\$40.723
2024		20.867	\$16.55	\$38.329
2025		19.745	\$16.56	\$36.301

\* Contract sales price

# Montana's Coal Severance Tax – Revenue Forecast



Coal severance tax collections can be affected by factors other than price and production

- Significant audit revenue in FY 2016, FY 2017, and FY 2021
- DOR accruals

# Montana's Coal Severance Tax Trust Fund - Balances

The FY 2021 total balance of the coal tax trust fund was \$1.1 billion

- Projected increase to \$1.18 billion by FY 2025

Permanent fund is the largest sub-trust, making up almost half of the total balance (\$545 million)

The Big Sky Economic Development Fund balance will grow until its allocation ceases July 1, 2026

The School Facilities Fund balance is capped at \$200 million under current law

- Cap reached sometime around 2031

Any unallocated revenue into the trust fund is deposited in the permanent fund

Coal Tax Trust Fund Balances						
(Average annual balance, \$ millions)						
Fiscal Year	Permanent Fund	TSE Fund	TSRWS Fund	BSED Fund	SF Fund	Total
2007	\$531.6	\$142.3	\$30.3	\$26.5	\$0.0	<b>\$730.8</b>
2008	\$531.6	\$153.4	\$35.9	\$32.1	\$0.0	<b>\$753.0</b>
2009	\$531.3	\$165.3	\$41.8	\$38.0	\$0.0	<b>\$776.5</b>
2010	\$531.3	\$177.6	\$47.9	\$44.1	\$0.0	<b>\$800.9</b>
2011	\$531.3	\$190.4	\$54.4	\$50.6	\$0.0	<b>\$826.6</b>
2012	\$527.8	\$203.8	\$61.1	\$57.3	\$0.0	<b>\$850.0</b>
2013	\$527.8	\$218.3	\$68.3	\$64.6	\$0.0	<b>\$879.1</b>
2014	\$524.8	\$232.4	\$75.4	\$71.8	\$0.0	<b>\$904.4</b>
2015	\$527.3	\$246.7	\$82.5	\$78.7	\$0.0	<b>\$935.1</b>
2016	\$524.3	\$262.1	\$90.0	\$86.2	\$0.0	<b>\$962.6</b>
2017	\$536.4	\$271.4	\$94.7	\$92.9	\$0.0	<b>\$995.4</b>
2018	\$543.0	\$271.4	\$94.9	\$99.8	\$10.8	<b>\$1,019.9</b>
2019	\$543.1	\$271.4	\$94.9	\$107.4	\$30.5	<b>\$1,047.3</b>
2020	\$542.3	\$271.4	\$94.9	\$114.2	\$50.8	<b>\$1,073.6</b>
2021	\$545.3	\$271.4	\$94.9	\$119.1	\$65.7	<b>\$1,096.5</b>
2022	\$545.1	\$271.4	\$94.9	\$124.4	\$82.5	<b>\$1,118.2</b>
2023	\$545.2	\$271.4	\$94.9	\$129.2	\$98.3	<b>\$1,138.9</b>
2024	\$545.2	\$271.4	\$94.9	\$133.6	\$113.0	<b>\$1,158.1</b>
2025	\$545.2	\$271.4	\$94.9	\$137.7	\$126.9	<b>\$1,176.1</b>
<b>2021 Share</b>	<b>49.7%</b>	<b>24.8%</b>	<b>8.7%</b>	<b>10.9%</b>	<b>6.0%</b>	

# Montana's Coal Severance Tax Trust Fund - Earnings

FY 2021 interest earnings from the coal trust fund totaled \$33 million

- Projected to decline to \$29 million by FY 2025

Yields on long-term assets are the primary determinant of trust fund income

- Trust fund balances are inviolate and so are managed for income rather than liquidity

Permanent fund interest earnings are distributed to the general fund

Earnings from all other sub-trusts are state special revenue

- TSE, TSRWS, and BSED trust earnings fund state infrastructure projects
- SF trust earnings are appropriated for school major maintenance projects

Coal Tax Trust Fund Interest Earnings (\$ millions)						
Fiscal Year	Permanent Fund	TSE Fund	TSRWS Fund	BSED Fund	SF Fund	Total
2007	\$30.5	\$8.5	\$1.8	\$1.6	\$0.0	\$42.3
2008	\$28.9	\$8.6	\$2.1	\$1.8	\$0.0	\$41.4
2009	\$27.0	\$8.3	\$2.1	\$1.9	\$0.0	\$39.2
2010	\$26.9	\$8.9	\$2.4	\$2.2	\$0.0	\$40.4
2011	\$26.8	\$9.4	\$2.7	\$2.5	\$0.0	\$41.3
2012	\$26.2	\$9.8	\$2.9	\$2.7	\$0.0	\$41.7
2013	\$23.8	\$9.4	\$2.9	\$2.7	\$0.0	\$38.9
2014	\$22.0	\$9.4	\$3.0	\$2.8	\$0.0	\$37.3
2015	\$20.6	\$9.6	\$3.2	\$3.0	\$0.0	\$36.5
2016	\$18.7	\$9.7	\$3.3	\$3.1	\$0.0	\$34.8
2017	\$18.1	\$9.7	\$3.3	\$3.2	\$0.0	\$34.4
2018	\$17.4	\$9.1	\$3.1	\$3.3	\$0.2	\$33.0
2019	\$17.6	\$9.4	\$3.3	\$3.6	\$1.0	\$35.0
2020	\$16.4	\$9.0	\$3.1	\$3.7	\$1.5	\$33.8
2021	\$15.3	\$8.9	\$3.1	\$3.8	\$1.9	\$33.0
2022	\$15.2	\$8.7	\$3.0	\$3.9	\$2.5	\$33.4
2023	\$14.3	\$7.9	\$2.8	\$3.7	\$2.8	\$31.6
2024	\$13.4	\$7.2	\$2.5	\$3.5	\$3.1	\$29.7
2025	\$13.1	\$6.9	\$2.4	\$3.5	\$3.2	\$29.2
<b>2021 Share</b>	<b>46.4%</b>	<b>26.9%</b>	<b>9.3%</b>	<b>11.4%</b>	<b>5.9%</b>	

# Montana's Coal Severance Tax Trust Fund - Rates

The extended low-yield environment since the Great Recession has steadily pulled down returns on coal trust fund investments

- Exacerbated by the pandemic

Coal tax trust fund balances are managed by the Montana Board of Investments

- Mostly invested in the Trust Fund Investment Pool (TFIP) – over 95% for all sub-trusts except for the permanent fund
- Small amount of holdings in Short-Term Investment Pool (STIP)

In addition to holdings in TFIP and STIP, the permanent fund provides resources for many commercial and residential loan programs

- Meet the objective of 17-6-305, MCA, that directs the BOI to invest 25% of the permanent fund in the Montana economy

Coal Tax Trust Fund Rates of Return (Total annual percentage rate)						
Fiscal Year	Permanent Fund	TSE Fund	TSRWS Fund	BSED Fund	SF Fund	
2007	5.7%	6.0%	6.0%	5.9%	0.0%	
2008	5.4%	5.6%	6.0%	5.5%	0.0%	
2009	5.1%	5.0%	5.0%	4.9%	0.0%	
2010	5.1%	5.0%	5.0%	5.0%	0.0%	
2011	5.0%	4.9%	4.9%	4.9%	0.0%	
2012	5.0%	4.8%	4.8%	4.7%	0.0%	
2013	4.5%	4.3%	4.2%	4.2%	0.0%	
2014	4.2%	4.1%	4.0%	4.0%	0.0%	
2015	3.9%	3.9%	3.9%	3.8%	0.0%	
2016	3.6%	3.7%	3.7%	3.6%	0.0%	
2017	3.4%	3.6%	3.5%	3.5%	0.0%	
2018	3.2%	3.3%	3.3%	3.3%	1.8%	
2019	3.2%	3.5%	3.4%	3.4%	3.2%	
2020	3.0%	3.3%	3.3%	3.2%	3.0%	
2021	2.8%	3.3%	3.2%	3.2%	3.0%	
2022	2.8%	3.2%	3.2%	3.2%	3.1%	
2023	2.6%	2.9%	2.9%	2.9%	2.9%	
2024	2.5%	2.7%	2.6%	2.6%	2.7%	
2025	2.4%	2.6%	2.5%	2.5%	2.5%	

# Montana's Coal Severance Tax Trust Fund – Long Term

---

Dim outlook for the coal economy adds increasing risk to coal-sourced revenues

- EIA projects percentage of U.S. electric generation from coal falling to near 10% by early 2030s
- Uncertain how long international coal exports remain a viable option

The expected ascent of long-term interest rates will help mitigate the effect of smaller trust fund deposits on interest earnings

- IHS Markit projects 10-year bond yield above 3% by 2028 (current yield is ~1.3%)

Trust fund balances cannot be spent unless approved by three-quarter vote of legislature

Future needs of the coal tax trust fund?

- Infrastructure (less so because of capital development fund?)
- Loan programs

General fund revenue from natural resources other than coal totaled \$70 million in FY 2021

- Oil and natural gas production tax, U.S. mineral royalties, metal mines tax, and electrical energy taxes
- Possible substitute for declining coal revenue, but future stability of these revenue sources is not guaranteed

# Resources

---

## U.S. Energy Information Administration

- <https://www.eia.gov/coal/>
- <https://www.eia.gov/electricity/>
- Annual Energy Outlook – 2021 ([https://www.eia.gov/outlooks/aeo/tables\\_ref.php](https://www.eia.gov/outlooks/aeo/tables_ref.php))

## Montana Board of Investments

- Investment policies ([https://investmentmt.com/\\_shared/docs/BOI\\_policies.pdf](https://investmentmt.com/_shared/docs/BOI_policies.pdf))
- Coal severance tax trust fund investment policy begins on page 235

## Title 17, Montana Code Annotated ([https://leg.mt.gov/bills/mca/title\\_0170/chapters\\_index.html](https://leg.mt.gov/bills/mca/title_0170/chapters_index.html))

- 17-5-703: coal severance tax trust funds
- 17-6-303 – 305: purpose and investment of coal severance tax trust fund