The Economic Implications of Implementing the EPA Clean Power Plan in Montana
Implementing the Clean Power Plan

• EPA’s final rule for the Clean Power Plan aimed at reducing CO2 emission rates for power plants released August 3, 2015

• Percentage reduction for Montana mandated by the rule in 2030 is higher than any other state (47% below 2012 baseline for emission rates).

• As a state where targeted coal facilities make up more than 95 percent of fossil fuel electric energy production, easy options for compliance do not exist
• BBER retained by NorthWestern Energy and Montana Chamber of Commerce to analyze how compliance with the final rule (“111(d)”) could affect the Montana economy
• BBER used its economic model (REMI) to consider two futures for the state economy: a status quo baseline, and a compliance scenario
• Difference between those future paths is the impact of compliance with 111(d)
The Focus of the Study

- Many important details of an actual compliance plan for Montana are yet to be worked out.
- Despite the missing details, some major pieces of the puzzle are apparent.
- In particular, the continued operation of the Colstrip SES is challenged.
- This study focuses on the implications of compliance with the economy.
- To do this we must bring together all of the actions compliance with the rule and still meeting the needs of energy customers will require.
Montana’s Compliance Challenge

Colstrip Units

- Unit 1
- Units 1 & 2
- Units 1 & 2 and Half of 3
- Units 1-3
- All Other Coal

**Annual CO2 Emissions, Tons**

- 0
- 2,000,000
- 4,000,000
- 6,000,000
- 8,000,000
- 10,000,000
- 12,000,000

**Required Reduction**
1. Closures, decommissioning and remediation of existing generation
   Colstrip Units 1-4 (implies closure of Western Energy Co mine) 500 KV line

2. Replacement scenario for NWE share of Colstrip baseload generation
   250 MW CCCT located in Billings Gas line construction to serve new generation 230 KV line to address system reliability

3. Wholesale electricity market changes
Closures at Colstrip

• Units 1-4: 13.9 million mwh, 370 jobs plus contractors (2010 Colstrip study)
• Undepreciated value of asset: $275 mill.
• Site remediation: $200 mill.
• Property tax payments: $18.7 mill./year, from out-of-state firms
• Rosebud Mine: 390 jobs, 9.2 mill. tons/yr., $32 mill. production taxes/yr.
• Loss of 500 KV line: $8.8 mill. property tax/yr.
Replacement Scenario

- 250 MW CCCT in Billings: $275 mill.
- 75 mile pipeline with compressor station: $67.4 m
- New 135 mile 230 KV transmission line: $106 mill.
- Other infrastructure: $25 mill.
• All results presented are statewide unless otherwise indicated.
• Job, income and other impacts are the difference between status quo and 111(d) scenarios.
• Most impacts occur in 2022 and beyond.
• Impacts vary over time.
# Summary of Impacts

## Impacts Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>Units</th>
<th>2025</th>
<th>2035</th>
<th>2045</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Employment</td>
<td>Jobs</td>
<td>-7,137</td>
<td>-5,381</td>
<td>-3,715</td>
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<tr>
<td>Personal Income</td>
<td>$ Mill./Year</td>
<td>-515.9</td>
<td>-556.3</td>
<td>-482.2</td>
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<tr>
<td>Disposable Pers. Income</td>
<td>$ Mill./Year</td>
<td>-440.6</td>
<td>-481.2</td>
<td>-417.7</td>
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<tr>
<td>Selected State Revenues</td>
<td>$ Mill./Year</td>
<td>-145.6</td>
<td>-165.8</td>
<td>-152.0</td>
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<tr>
<td>Property Tax Revenues</td>
<td>$ Mill./Year</td>
<td>-44.4</td>
<td>-74.5</td>
<td>-78.5</td>
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<tr>
<td>Output</td>
<td>$ Mill./Year</td>
<td>-1,511.7</td>
<td>-1,407.4</td>
<td>-1,268.0</td>
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<tr>
<td>Population</td>
<td>People</td>
<td>-5,211</td>
<td>-10,731</td>
<td>-9,207</td>
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</tbody>
</table>

Note: All values are in negative units indicating a decrease from baseline years.
Employment Impacts by Industry

2025 EMPLOYMENT IMPACTS BY INDUSTRY

- Mining, -620
- Utilities, -339
- Construction, -1,760
- Retail Trade, -719
- Professional and Technical Services, -264
- Health Care and Social Assistance, -384
- Accommodation and Food Services, -427
- Other Services, except Public Administration, -253
- State and Local Government, -1,510
- Other, -860
- Other, -860
### Compensation Impacts

<table>
<thead>
<tr>
<th>Category</th>
<th>Units</th>
<th>2025</th>
<th>2035</th>
<th>2045</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wages and Salaries</td>
<td>$ Mill./Year</td>
<td>-340.3</td>
<td>-298.3</td>
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<tr>
<td>Compensation</td>
<td>$ Mill./Year</td>
<td>-423.2</td>
<td>-388.4</td>
<td>-303.9</td>
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<tr>
<td>Earnings</td>
<td>$ Mill./Year</td>
<td>-469.2</td>
<td>-399.3</td>
<td>-296.9</td>
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<tr>
<td>Earnings per Job, Lost Jobs</td>
<td>$ Dollars</td>
<td>65,742</td>
<td>74,216</td>
<td>79,926</td>
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</tbody>
</table>
## Impacts Summary - Eastern Montana Percent Change

<table>
<thead>
<tr>
<th>Category</th>
<th>2025</th>
<th>2035</th>
<th>2045</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Employment</td>
<td>-6.9%</td>
<td>-5.8%</td>
<td>-4.9%</td>
</tr>
<tr>
<td>Personal Income</td>
<td>-7.2%</td>
<td>-7.1%</td>
<td>-6.3%</td>
</tr>
<tr>
<td>Disposable Pers. Income</td>
<td>-7.0%</td>
<td>-7.0%</td>
<td>-6.3%</td>
</tr>
<tr>
<td>Output</td>
<td>-10.6%</td>
<td>-8.6%</td>
<td>-7.3%</td>
</tr>
<tr>
<td>Population</td>
<td>-4.9%</td>
<td>-7.2%</td>
<td>-6.6%</td>
</tr>
</tbody>
</table>
Summary of Findings

• 111 (d) could result in the loss of almost 7,150 jobs in 2025, which have average earnings of almost $66,000 per job

• It could impose a $1.5 billion decrease in sales realized by Montana businesses and other organizations

• We would expect to see over 10,000 fewer people in Montana as a result

• Job losses and other impacts are spread across every Montana industry
Implementation of 111(d) could be the biggest economic event in Montana for more than three decades

Decline of a half billion in personal income statewide is roughly half of what Montana experienced in the Great Recession

Impacts are particularly severe for eastern Montana, but all parts of the state could see significant economic contraction