CHANGING ENERGY LANDSCAPES AND COMMUNITY IMPACTS IN MONTANA
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Colstrip Community Impact Advisory Group

http://cciag.mt.gov/
Presentation Overview

- Coal in Montana
  - Quick overview, make-up, recent events
- Colstrip, MT challenges
- Colstrip Community Impact Advisory Group
  - impetus
  - representative membership
  - Discussion topics & status
  - what’s next
Coal Production in MT

- Primarily subbituminous coal
- ~40 million short tons/yr
- 90% of coal exported (physically or by wire)
- Colstrip uses ~1/4 to 1/5 of total MT production

Coal Production in Montana (1960-2015)
Colstrip, MT

~950 miles

~1100 miles
COLSTRIP, MT

- Established 1924
- Incorporated 1998
- Population 2,300
- 5th highest municipal tax-base in Montana
PLANT AND MINE

- Colstrip mine-mouth operation
- ~750 employees total
- $80 million/yr in wages
- 85% of city tax base
- 77% of county tax base
- Rosebud Mine
  - ~25,000 acres
COLSTRIP POWER PLANT

- 4 Units: 2094 MW
  - 1 & 2: online 1975/1976
  - 3 & 4: online 1984/1986
- Constructed by Montana Power Company and Puget Sound Energy
- Currently employs ~380
- Diverse ownership (units 1-4) - 6 companies
## COLSTRIP OWNERSHIP

<table>
<thead>
<tr>
<th></th>
<th>Units 1 &amp; 2</th>
<th>Unit 3</th>
<th>Unit 4</th>
<th>Total (%)</th>
<th>Total (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puget Sound Energy</td>
<td>50%</td>
<td>25%</td>
<td>25%</td>
<td>32%</td>
<td>677 MW</td>
</tr>
<tr>
<td>Talen Energy</td>
<td>50%</td>
<td>30%</td>
<td>--</td>
<td>25%</td>
<td>529 MW</td>
</tr>
<tr>
<td>Portland General Electric</td>
<td>--</td>
<td>20%</td>
<td>20%</td>
<td>14%</td>
<td>296 MW</td>
</tr>
<tr>
<td>NorthWestern Energy</td>
<td>--</td>
<td>--</td>
<td>30%</td>
<td>11%</td>
<td>222 MW</td>
</tr>
<tr>
<td>Avista Corp.</td>
<td>--</td>
<td>15%</td>
<td>15%</td>
<td>11%</td>
<td>222 MW</td>
</tr>
<tr>
<td>PacifiCorp</td>
<td>--</td>
<td>10%</td>
<td>10%</td>
<td>7%</td>
<td>148 MW</td>
</tr>
</tbody>
</table>
COLSTRIP: Units 1 and 2

• 2013 lawsuit alleging major violations of the Clean Air Act
  • Sierra Club and the MT Environmental Information Center v. Talen Montana and Puget Sound Energy
• July 2016 Settlement Agreement reached
  • Units 1 & 2 must be closed no later than July 1, 2022
• 2016 - Oregon and Washington legislatures passed measures that directly impact Colstrip
  • Oregon: completely coal free by 2030
  • Washington: allowed for PSE to help pay for the retirement and cleanup of Colstrip Units 1 and 2
COLSTRIP: Units 3 and 4

- Depreciation schedules on Units 3 & 4
  - Avista 2027
  - Puget Sound Energy 2027
  - Portland General 2030
  - PacifiCorp 2032
  - NorthWestern Energy 2042
COLSTRIP COMMUNITY IMPACT ADVISORY GROUP

- Formed December 2017 by Governor Bullock and Attorney General Fox
- $10 million from Puget Sound Energy
- Develop a plan to address economic impact of closure of Units 1 & 2
- Includes state and local officials, community leaders, labor and economic development organizations
COLSTRIP COMMUNITY IMPACT ADVISORY GROUP

- Stage 1 - Compile and Study Background Information
- Stage 2 - Identify and Research Issues
- Stage 3 - Develop and Finalize Plan for Consideration
  - Colstrip City Council
  - Rosebud County Commission
• Workforce impacts
• Economic impacts
• Infrastructure impacts

• Within Colstrip
• Within Rosebud County
• Regional impacts
• State impacts
Solutions to Many Challenges

- Workforce training
- Investment
- The role of technology
- Global economy
- Localized pain
Montana POWER Grant

- The POWER Grant: a workforce development grant aimed at retraining workers impacted by the downturn in coal-related industries
- This ~$4.0M available funding is separate from the $10 million in settlement funds for the community of Colstrip
- Goals:
  - Train and assist current coal-impacted workforce by upgrading skills for existing jobs or a new career
  - Opportunities in apprenticeships and on-the-job training
  - Providing career planning and other employment services
  - Work with local partners to develop a workforce plan to a transitioned economy
MONTANA POWER INITIATIVE
DOE ANALYSIS OF CO2 REDUCTION AT COLSTRIP (2016)

• Improving Plant Efficiency (1-3% reduction)
  • Turbine modifications
  • Coal drying
  • Increasing steam temps
• Co-Firing (2-3% reduction)
  • Biomass
  • Natural gas
• Carbon Capture and Utilization
CURRENT USE OF CO2 - EOR IN MONTANA

- Bell Creek Field in Southeast MT
- CO2 sourced from natural gas processing plants in WY and piped into MT
- CO2 injection began in 2013 and ~1 million tons of CO2 per year are going into the field
- Anticipate an additional 40-50 million barrels of incremental oil over the life of the project
Questions and Discussion

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