EPA’s Clean Power Plan

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Overview

• Rule history
• EPA’s emission guideline and state goals
• State plan options
• Considerations for Oregon
• Stakeholder process
• Timeline
Rule History

• **September 2013:** EPA proposed CO2 reductions from new power plants under §111(b),

• **June 2014:** EPA proposed CO2 emissions guidelines for existing power plants under §111(d)

• **August 2015:** Final CO2 standards for new and existing power plants
§111(d): Existing Sources

- **EPA** sets emission guideline based on the “Best System of Emission Reduction”
- **States** develop compliance plans
  - Broad flexibility
  - Must include enforceable measures that will achieve the emission guideline
  - For Oregon, DEQ will adopt the state plan; collaborating with ODOE and OPUC
EPA’s Emission Guideline

Block 1: Coal plant efficiency
- 2% - 4%

Block 2: Shift to natural gas
- Based on capacity at “underutilized” existing plants

Block 3: Renewable energy
- New only, based on tech/ economic potential

Block 4: Energy Efficiency

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OREGON DEPARTMENT OF ENERGY
Nationally Uniform Coal & Gas Emission Rates

• EPA assesses blocks 1-3 within each region, then
• Used least stringent region to be the national rate
• Nationally uniform rates:
  – Coal: 1305 lbs/MWh
  – Gas: 771 lbs/MWh
• Applies to all units, regardless of location
State Goals

• **Rate-based**: blended rates reflect 2012 generation mix in each state (Oregon 2030 goal = 871 lbs/MWh)

• **Mass-based**: EPA uses states’ rate goal applied to 2012 fossil generation plus increase in renewable energy (Oregon 2030 goal = 8,118,654 tons)
State Plan Options

Rate-based
- Emissions standards approach
  - Sub-categorized rates
  - State-Wide Rate Goal
  - State-defined rates

Mass-based
- Emissions standards approach
  - Existing Units Only
  - Existing Units + New Sources
- State Measures approach
  - State Measures Plan
## Rate-Based Approaches

<table>
<thead>
<tr>
<th>Plan type</th>
<th>Standards on affected EGUs</th>
<th>Interstate Trading?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-categorized rates</td>
<td>All gas: 771 lb/MWh</td>
<td>“Trading-ready”</td>
</tr>
<tr>
<td></td>
<td>All coal: 1305 lb/MWh</td>
<td></td>
</tr>
<tr>
<td>State-wide rate goal</td>
<td>All affected EGUs: blended state goal rate (Oregon: 871 lbs/MWh)</td>
<td>Multi-state plan with joint blended rate</td>
</tr>
<tr>
<td>State-defined rates</td>
<td>Any other rate</td>
<td>No interstate trading</td>
</tr>
<tr>
<td></td>
<td>Requires EPA-approved projection that plan will achieve state goal</td>
<td></td>
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</tbody>
</table>

Model Rule

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Oregon Department of Energy
Rate-Based Crediting

• Emission Rate Credit (ERC) = 1 MWh of 0 emissions
  – Renewable energy
  – Energy efficiency
• Coal and gas plants must acquire ERCs to dilute their emission rates
• Requirements:
  1. Only measures installed after 2012 can produce ERCs
  2. EPA-approved monitoring and 3rd party verification of energy generation or savings
  3. State, regional, or national system for credit issuance, tracking, retirement
  4. Biomass not allowed by default. States can propose limited inclusion
# Mass-Based Approaches

<table>
<thead>
<tr>
<th>Plan type</th>
<th>Plan requirements</th>
<th>Interstate Trading?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Units Only</td>
<td>Emission budget trading program and Measures to address leakage</td>
<td>“Trading-ready”</td>
</tr>
<tr>
<td>Existing Units + New Sources</td>
<td>Emission budget trading program and Leakage is assumed to be address</td>
<td>“Trading-ready”</td>
</tr>
<tr>
<td>State Measures</td>
<td>Demonstrate to EPA that state policies will achieve emission goal; federally enforceable “backstop” on EGUs</td>
<td>If “backstop” is triggered</td>
</tr>
</tbody>
</table>
Mass-Based Trading

• Emission budget trading program requires:
  – Emissions monitoring and reporting
  – Allowance allocation
  – Allowance tracking

• Addressing leakage to new sources:
  – Include new sources under cap
  – Allocate allowances to existing gas and renewables
  – Propose another method to EPA
Mass allowance allocation

• Allocation options:
  – Direct allocation
  – Auction
  – Retire
  – Bank

• Other considerations:
  – Combination of allocation techniques
  – Who to direct allocate too?
  – Who to allow in an auction?
  – Timing/phasing
Considerations for Oregon

CO₂ (short tons) vs. Year

- Blue line: Oregon fossil EGU emissions
- Red dots: Oregon fossil EGU w/o Boardman
- Grey line: EPA 2022 cap for Oregon
- Black line: EPA 2030 cap for Oregon

Oregon fossil EGU emissions and the EPA caps for Oregon from 2010 to 2014.
Considerations for Oregon

- 2012 Emissions minus known retirements
- 2030 Mass goal
Considerations for Oregon

Reduction / Surplus

- North Dakota
- Wyoming
- Colorado
- Arizona
- Montana
- Utah
- Nevada
- South Dakota
- New Mexico
- Idaho
- California
- Oregon
- Washington
Considerations for Oregon

- Example of our connection to other states’ compliance plans: *Montana*
  - Roughly 5.7 million ton reduction required by EPA rule
  - Implications for Colstrip

<table>
<thead>
<tr>
<th>Unit name</th>
<th>PGE ownership</th>
<th>2012 emissions (Million Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colstrip 1</td>
<td>0%</td>
<td>1.6</td>
</tr>
<tr>
<td>Colstrip 2</td>
<td>0%</td>
<td>1.7</td>
</tr>
<tr>
<td>Colstrip 3</td>
<td>20%</td>
<td>5.6</td>
</tr>
<tr>
<td>Colstrip 4</td>
<td>20%</td>
<td>5.9</td>
</tr>
<tr>
<td>All other 2012 units combined</td>
<td>0%</td>
<td>2.7</td>
</tr>
</tbody>
</table>
Agency coordination and stakeholder outreach

- DEQ/ODOE/PUC joint agency team
- Stakeholder meetings since release of final rule
  - Investor-Owned Utilities
  - NGOs
  - IPPs (tomorrow)
  - COUs/BPA
  - Business and customer/rate-payer interest groups
  - Energy efficiency providers
- Upcoming:
  - All stakeholder meeting (Fall)
  - Webinar for COU managers (October 5)
  - Possible meeting for PUC Commissioners
  - Brief Legislature (September 29)
EPA’s Timeline

- **June 2014**: Rule proposed
- **August 2015**: Final Rule
- **September 2016**: States’ initial submittal with extension request or final plan
- **September 2018**: States’ final plans due
- **2020-2021**: Clean Energy Incentive Program
- **2022**: Compliance period begins
- **2030**: Final CO2 emission goals met
Questions?