The Proposed EPA Clean Power Plan
CO₂ Rule for Existing Power Plants
(Section 111d)

October 27, 2014
Outline of EPA Proposed Rule

- Sets state specific emission rate limits
- Limits based on 4 universal building blocks
- Covers entire electricity system: from electricity generation to end use
- State develops plan to comply with standards
- Considerable flexibility in how to comply
EPA Proposal

• Two main elements
  – State-specific CO$_2$ emission rate limits
  – Guidelines for development, submission and implementation of state plan to meet standard

• State limit set from a baseline/base year

• Building blocks are applied sequentially to the baseline to develop state limits

• Interim standard for 2020 through 2029

• Final standard in 2030
# Building Blocks

<table>
<thead>
<tr>
<th>Building Block</th>
<th>Value Allocated in Goal-Setting Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make fossil fuel power plants more efficient</td>
<td>Average heat rate improvement of 6% for coal steam electric generating units (EGUs)</td>
</tr>
<tr>
<td>- Improve equipment and processes to get as much electricity as possible from each unit of fuel</td>
<td></td>
</tr>
<tr>
<td>- Using less fossil fuel to create the same amount of electricity means less carbon pollution.</td>
<td></td>
</tr>
<tr>
<td>Use low-emitting power sources more</td>
<td>Dispatch to existing and under-construction natural gas combined cycle (NGCC) units to up to 70% capacity factor</td>
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<tr>
<td>- Using lower-emitting power plants more frequently to meet demand means less carbon pollution.</td>
<td></td>
</tr>
<tr>
<td>Use more zero- and low-emitting power sources</td>
<td>Dispatch to new clean generation, including new nuclear generation under construction, moderate deployment of new renewable generation, and continued use of existing nuclear generation</td>
</tr>
<tr>
<td>- Expand renewable generating capacity, which is consistent with current trends.</td>
<td></td>
</tr>
<tr>
<td>- Using more renewable sources, including solar and wind, and low-emitting nuclear facilities, means less carbon pollution.</td>
<td></td>
</tr>
<tr>
<td>Use electricity more efficiently</td>
<td>Increase demand-side energy efficiency to 1.5% annually</td>
</tr>
<tr>
<td>- Reducing demand on power plants is a proven, low-cost way to reduce emissions, which will save consumers and businesses money and mean less carbon pollution.</td>
<td></td>
</tr>
</tbody>
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How EPA Used Building Blocks to Set Washington State Standard

1. Improve coal EGU heat rate
   - 4% Rate Reduction

2. Increase average NGCC utilization to 70%
   - 37% Rate Reduction

3. Achieve average regional renewable energy growth targets
   - 20% Rate Reduction
   - Avoid retirement of nuclear fleet

4. Annual incremental electricity savings rate of 1.5 percent (energy efficiency)
   - 11% Rate Reduction

Total: 72% Reduction

Source: Georgetown Climate Center
Proposed State Rate Based Standards

Average change from 2012 baseline to 2030 limit is -33% across the country

Source: Georgetown Climate Center
State Plans

• State must develop compliance plan
  – Like a state implementation plan, but not a SIP
• Plan demonstrates how emission reduction measures achieve standard
• Emission reduction measures:
  – not required to match “building blocks”
  – must be measurable, tracked and reported to EPA
  – must be enforceable
Key State Plan Decisions

• Where should enforceability lie?
  – with the state (“portfolio approach”)
  – with the power plants

• How should standard be implemented?
  – rate-based
  – converted to total emissions (“mass based”)

• Should WA join with other states?
  – EPA allows for multi-state plans and compliance
## Affected EGUs in Washington

<table>
<thead>
<tr>
<th>Plant</th>
<th>Number of units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralia Power Plant</td>
<td>2</td>
</tr>
<tr>
<td>PSE Sumas</td>
<td>1</td>
</tr>
<tr>
<td>PSE Ferndale</td>
<td>2</td>
</tr>
<tr>
<td>PSE Encogen</td>
<td>3</td>
</tr>
<tr>
<td>Shell/March Point Cogeneration</td>
<td>3</td>
</tr>
<tr>
<td>Fredrickson Power</td>
<td>1</td>
</tr>
<tr>
<td>Grays Harbor Energy Center</td>
<td>2</td>
</tr>
<tr>
<td>Chehalis Generating Station</td>
<td>2</td>
</tr>
<tr>
<td>PSE Mint Farm</td>
<td>1</td>
</tr>
<tr>
<td>Clark PUD River Road Generating Station</td>
<td>1</td>
</tr>
<tr>
<td>PSE Goldendale</td>
<td>1</td>
</tr>
</tbody>
</table>
Proposed Implementation Timeline

- **2015**
  - Emission Guideline Promulgation
  - June 1, 2015

- **2016**
  - State submits Negative Declaration
    - by June 30, 2016
    - State submits negative declaration
  - EPA publishes FR notice
  - State submits complete implementation Plan by June 30, 2016
    - by June 30, 2016
    - State submits plan
  - EPA reviews plan and publishes final decision within 12 months on approval/disapproval
  - State submits initial Plan by June 30, 2016 and request 1-year extension
    - by June 30, 2016
    - State submits initial plan and request for 1-year extension
  - EPA reviews initial plan and determines if extension is warranted
  - by June 30, 2017
  - State submits complete plan
  - EPA reviews plan and publishes final decision within 12 months on approval/disapproval
  - State submits initial multi-state Plan by June 30, 2016 and request 2-year extension
    - By June 30, 2016
    - State submits initial multi-state plan and request for 2-year extension
  - EPA reviews initial plan and determines if extension is warranted
  - by June 30, 2017
  - State submits progress report of plan
  - EPA reviews plan and publishes final decision within 12 months on approval/disapproval

- **2017**
  - by June 30, 2017
  - State submits progress report of plan
  - by June 30, 2018
  - States submits multi-state plan

- **2018**
  - by June 30, 2018
  - States submits multi-state plan

- **2019**
  - Compliance period begins
  - 2020

**Source:** US EPA