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DEPARTMENT OF ECOLOGY
State of Washington

The Proposed EPA Clean Power Plan CO_2 Rule for Existing Power Plants (Section 111d)

October 27, 2014

Outline of EPA Proposed Rule

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- 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

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Building Block	Value Allocated in Goal-Setting Formula
Make fossil fuel power plants more efficient • Improve equipment and processes to get as much electricity as possible from each unit of fuel • Using less fossil fuel to create the same amount of electricity means less carbon pollution.	Average heat rate improvement of 6% for coal steam electric generating units (EGUs)
Use low-emitting power sources more • Using lower-emitting power plants more frequently to meet demand means less carbon pollution.	Dispatch to existing and under-construction natural gas combined cycle (NGCC) units to up to 70% capacity factor
Use more zero- and low-emitting power sources • Expand renewable generating capacity, which is consistent with current trends. • Using more renewable sources, including solar and wind, and low-emitting nuclear facilities, means less carbon pollution.	Dispatch to new clean generation, including new nuclear generation under construction, moderate deployment of new renewable generation, and continued use of existing nuclear generation
Use electricity more efficiently • 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.	Increase demand-side energy efficiency to 1.5% annually

SOURCE: US EPA, http://www2.epa.gov/carbon-pollution-standards/fact-sheet-clean-power-plan-framework

How EPA Used Building Blocks to Set Washington State Standard

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Washington Standard

1. 

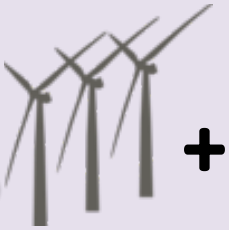
- **Improve coal EGU heat rate**

4% Rate Reduction

2. 


- **Increase average NGCC utilization to 70%**

37% Rate Reduction

3. 
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- **Achieve average regional renewable energy growth targets**
- **Avoid retirement of nuclear fleet**

20% Rate Reduction

4. 

- **Annual incremental electricity savings rate of 1.5 percent (energy efficiency)**

11% Rate Reduction

Source: Georgetown Climate Center

Total: 72% Reduction

Proposed State Rate Based Standards

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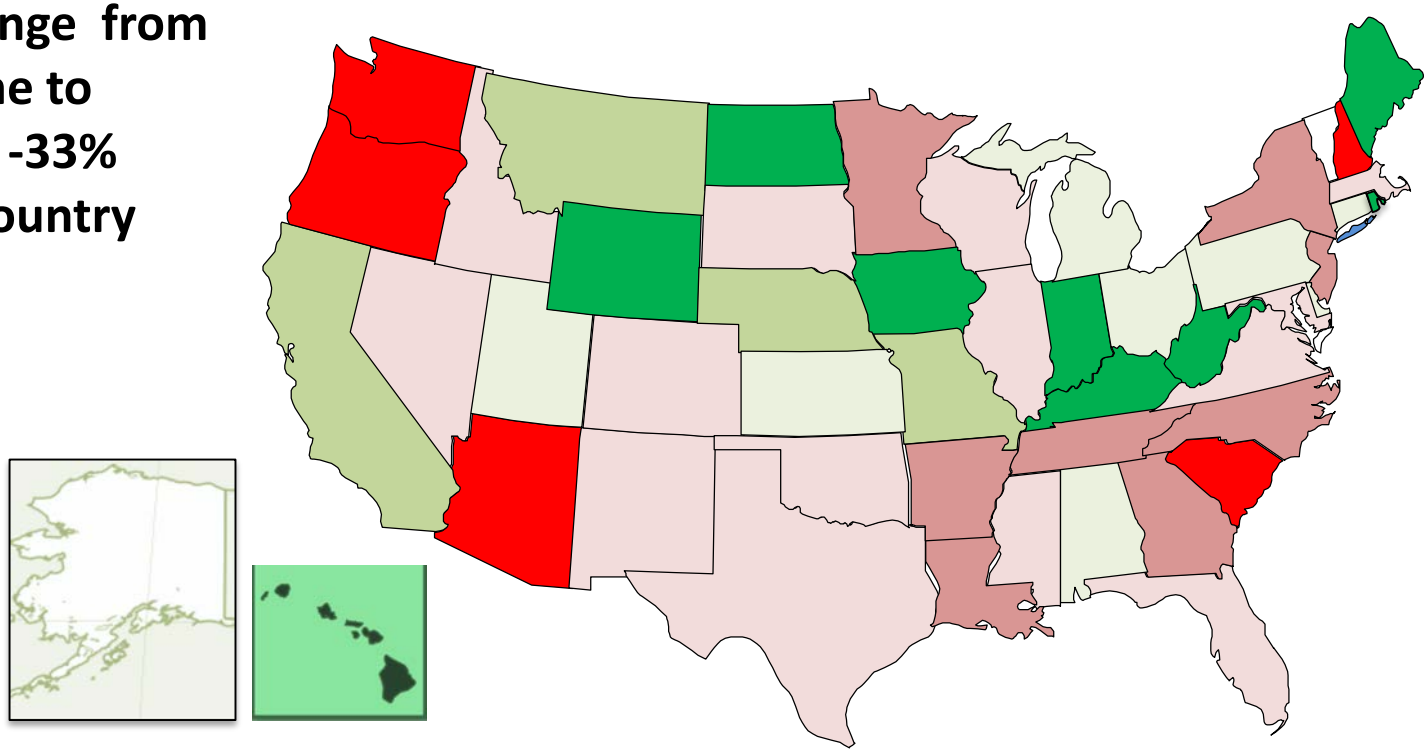
Average change from 2012 baseline to 2030 limit is -33% across the country



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

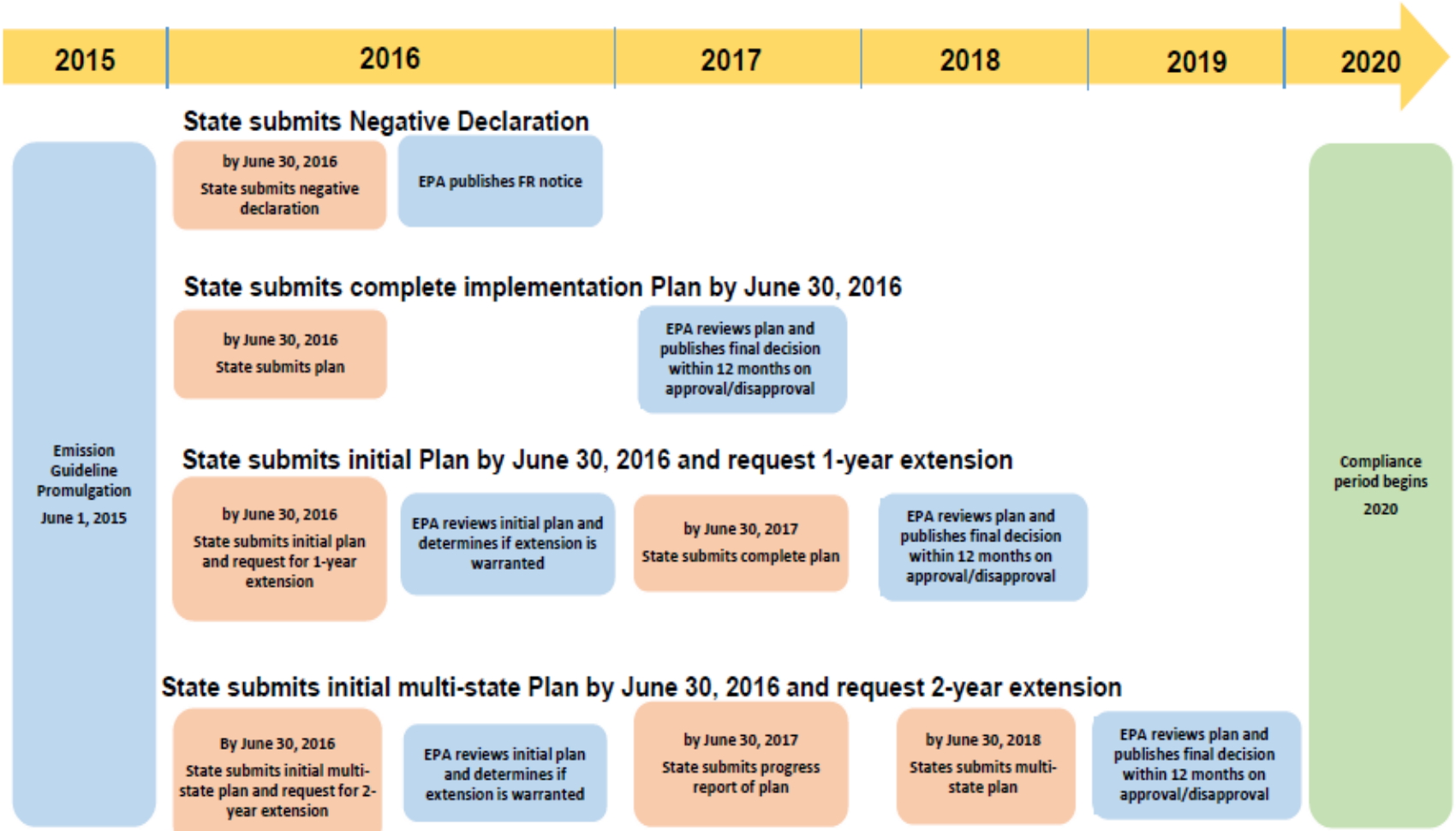
Key State Plan Decisions

- 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

Plant	Number of units
Centralia Power Plant	2
PSE Sumas	1
PSE Ferndale	2
PSE Encogen	3
Shell/March Point Cogeneration	3
Fredrickson Power	1
Grays Harbor Energy Center	2
Chehalis Generating Station	2
PSE Mint Farm	1
Clark PUD River Road Generating Station	1
PSE Goldendale	1

Proposed Implementation Timeline



SOURCE: US EPA