
EPA 111(D) STAFF ANALYSIS #1: FINAL RULE

TO: Commissioners
FROM: Margo Schurman and Bob Decker
SUBJECT: EPA § 111(d) Final Rule
DATE: August 12, 2015
CC: PSC Electric

Montana's Goal:

- **Rate-based**
 - o **Interim (2022-2029) = 1,534 lb CO₂/MWh**
 - o **Final (2030) = 1,305 lb CO₂/MWh (a 47% reduction from 2012 baseline)**
- or
- **Mass-based**
 - o **Interim (2022-2029) = 12,791,330 tons CO₂**
 - o **Final (2030) = 11,303,107 tons CO₂ (a 37% reduction from 2012 baseline)**

Recommendations from Comments Submitted to EPA:

Adequately Demonstrated, Baseline Data

PSC 1. EPA should derive baseline data—generation, emissions, capacity factors, et al.—from a statistically representative period instead of from one year (2012 in the proposed rule). For states dependent on fluctuating hydrologic cycles, the baseline period should be 10 years.

EPA is still using 2012 as the baseline year, with an adjustment to MT data for annual variation in the hydrologic cycle as it relates to fossil generation (p. 793).

Adequately Demonstrated, Transmission/Reliability]

PSC 2. Before enacting a final rule, EPA should subject its proposed rule—and the application of the four building blocks—to transmission modeling. Only after such modeling is performed can stakeholders properly evaluate the proposal and its ramifications for the grid.

No transmission modeling is mentioned in the final rule. EPA, DOE and FERC have agreed to coordinate efforts at the federal level to help ensure continued reliable electricity generation and transmission during the implementation of the final rule (p. 51).

PSC 3. EPA should include in the rule a reliability safety valve to prevent the adoption of state plans that result in unreliable grid operations.

The final rule includes a reliability safety valve as an additional reliability assurance, for use where the built-in flexibilities are not sufficient to address an immediate, unexpected reliability situation (p. 854). This is to include an initial period of up to 90 days during which an affected EGU(s) will not be required to meet the emission standard, but will meet an alternative standard (p. 1122).

Adequately Demonstrated, Building Block 1 – Heat-Rate Improvements

The section detailing Building Block 1 starts on page 647 (of 1560).

PSC 4. EPA should modify a state's goal if sufficient evidence exists to demonstrate that a fossil facility cannot obtain a six percent heat-rate improvement because of efficiency measures already undertaken, i.e., operational before the beginning of the rule's baseline data period.

EPA has calculated HRI on a regional level, reducing the Western Interconnection to 2.1 percent and the Eastern Interconnection to 4.3 percent (p. 333). 98.24% of electricity generation in Montana comes from the Western portion of the state's interconnectivity.

PSC 5. A state's heat-rate efficiency target should take into consideration the nature of the fossil fuel stocks used and available in the state and the extent to which those fuels allow for the safe application of alternative methods of consumption for purposes of heat-rate improvement.

See #4. The methodology used to calculate the HRI was modified, and included possible effects of design and fuel characteristics (p. 674).

PSC 6. Any emission of a facility that results from other air pollution rules should not be included in the calculation of that facility's emission rate for purposes of complying with the § 111(d) rule.

This adjustment is not explicitly made in the final rule. Increased emissions due to other air pollution measures is still counted for in the final emission rates, however the methodology uses gross heat rates, not net heat rates (p. 682). An additional 'other rules' section begins on p. 1347, which explains expected results from various rules.

PSC 7. EPA should exempt any heat-rate improvements made to comply with the § 111(d) rule from a requirement to undergo EPA's New Source Review permitting process.

This is partially taken into account, not through exemption, but through modified New Source Review program rules (p. 1341). EPA will consider reviewing the permitting process if/when there is a need that arises from a specific situation.

Outside-the-Fence Measures, Building Block 3 – Renewable Energy

Building Block 3 has been modified extensively, with a new name of "New Zero-emitting Renewable Generating Capacity" and begins on p. 731. The methodology in the final rule is a modified version of the alternative RE approach in the proposed rule with additional adjustments.

PSC 8. In calculating renewable energy goals for states, EPA should utilize state-specific RPS analysis and other renewable energy development data to accurately determine the current level of renewable energy in the state and to arrive at a reasonable expectation for potential future development.

The regional approach to the calculation remained in the final rule, with individual state-specific measures eliminated. The goal was calculated entirely on a regional level. Existing RE capacity constructed prior to 2012 is removed from this building block for compliance – only new generation will be allowed. Additionally, incremental RE generation, rather than total generation, is used in the final rule goal calculation methodology (p. 752).

PSC 9. As part of the recommended analysis above, EPA should tabulate the renewable energy already developed in a state for purposes of carbon reduction and allow the emission-reduction effects of those facilities to be utilized in compliance with the rule.

See #8, specifically regarding removal of existing RE capacity for compliance. Historical capacity additions were added to the RE methodology for goal calculations in high-hydro

states in order to adjust for fluctuation in hydrologic cycles (p. 750). Montana had an adjustment of 107% to 2012 baseline generation.

PSC 10. EPA should perform state-specific analysis of transmission and grid capability to ensure that renewable goals set for states are not established at levels that pose threats to transmission capacity and grid reliability.

The final rule implies that additional/new RE generators can provide more grid support and reliability (p. 761) and new transmission construction is within historical investment magnitudes (p. 766). Incremental grid infrastructure needs can be minimized by repurposing existing transmission resources (p. 767).

PSC 11. The final EPA rule should assign compliance credit for all renewable energy produced in a state to the state where emissions responsibility falls. If a state is responsible for 100% of emissions, no matter where the energy is utilized, the state should also be credited for 100% of renewable energy produced within the state.

The final rule introduces an extensive trading program, dependent upon the type of state plan submitted (i.e. individual vs. multi-state and rate-based vs. mass-based), that allows for trading of Emission Rate Credits. The rule also requires the state plan to prove non-duplicity in accounting for RE or EE measures for compliance (p. 1223).

Outside-the-Fence Measures, Building Block 4 – Energy Efficiency

This building block has been eliminated from the final rule. EE can be used as a method for compliance, but was not used in setting the state goals. Compliance measures must be outlined according to the final rule’s two-step process, and will only include new EE programs in low-income and vulnerable communities.

PSC 12. EPA should establish energy efficiency savings rates based on state-specific analyses that take into consideration past and existing efficiency programs. EPA should recognize the savings achieved by those past and existing programs for compliance purposes.

Outside-the-Fence Measures, Conversion from Rate-Based Emissions to Mass-Based Compliance Goals

PSC 13. EPA should provide and rationalize a single acceptable method for translating a rate-based goal into a mass-based goal.

The final rule provides both rate-based and mass-based goals for each state, as well as a conversion formula (p. 823). The formulas and spreadsheets are provided in the Technical Support Document “CO2 Emission Performance Rate and Goal Computation” and is still under revision on EPA’s website (will be finalized for publication in the Federal Register).

Cost-Benefit Analysis

PSC 14. EPA should revise its cost-benefit analysis to incorporate the direct costs required for rule compliance and to re-calculate its benefits analysis by revising the current global scope of estimated benefits to a state or regional scope that more closely matches the geographical scope of the estimation of direct costs.

Each section has a new/modified cost-benefit analysis methodology lined out. EPA attempted to outline regional approaches throughout, versus national calculations, but did not go into state-by-state detail.

State Role Under § 111(d)

PSC 15. EPA should clarify several questions regarding the authority of states to administer, execute, and enforce a final § 111(d) rule, including how litigation delay will affect timing of state plan submittal.

The legal section begins on p. 920. The deadline for state plans has been extended. There is no mention on litigation delay specifically. State plan legal authority section starts on p. 967, and general legal components are outlined beginning on p. 990. There are also numerous TSDs that outline additional legal issues.