

JAY INSLEE
Governor



STATE OF WASHINGTON
Office of the Governor

December 1, 2014

The Honorable Gina McCarthy, Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Administrator McCarthy:

The state of Washington commends you and President Barack Obama for proposing the first-ever national limits on carbon pollution from existing power plants. Under the Clean Air Act, our nation has for decades placed limits on how much mercury, sulfur dioxide, soot and other pollutants power plants can put into our air. But there have been no limits on carbon pollution — even though power plants are the single largest source of carbon pollution in the country.

The Clean Power Plan is an important step to reduce the country's carbon emissions. The approach provides flexibility to states to create solutions that best fit their needs and spur innovation. The rule not only helps reduce emissions of carbon but also of toxic air pollutants, providing public health and additional climate benefits. It will help spur investments in clean energy innovation, reduce our reliance on fossil fuels, create jobs and lower consumer energy costs.

In Washington State, we see first-hand the effects of carbon pollution. Ocean acidification is severely affecting our shellfish industry. Sea-level rise is hurting our coastal communities. Warmer winters allow forest and crop pests to reproduce longer and suffer less winter die-off. Climate change is driving more devastating wildfires and straining water resources. These impacts and others will cost our state almost \$10 billion per year after 2020 unless we take additional actions. We have an obligation to protect our state, our economy and our environment for our children and for future generations.

EPA has developed a proposal that creates an effective structure for achieving significant carbon emission reductions in the energy sector. Rather than a one-size-fits-all standard, the proposal tailors the standard to each state's electricity generation and distribution situation, providing a fair, balanced, cost effective and equitable regulatory environment across the country. We appreciate the tremendous level of thought, analysis and extensive outreach from EPA in the development of the rule.

We offer the enclosed comments in the spirit of improving the rule and ensuring the final rule will drive significant reductions in carbon pollution. Our strong support for the Clean Power Plan and the proposed framework for the rule far outweigh any concerns we have with the details of the proposal.



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We stand ready to continue to assist in this priority work and urge the expeditious development and adoption of your final rule.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Jay Inslee", with a long horizontal flourish extending to the right.

Jay Inslee
Governor

Enclosure



Department of Commerce
Innovation is in our nature.



December 1, 2014

State of Washington Comments on the Environmental Protection Agency's Proposed Clean Power Plan for Existing Power Plants under Section 111d of the Clean Air Act

*Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units
Docket Number: EPA-HQ-OAR-2013-0602*

I. KEY POINTS

We strongly support the Environmental Protection Agency's (EPA's) proposal to use the building block approach to establish the Best System of Emission Reduction (BSER), and the flexibility given to states to develop plans to reduce emissions of carbon pollution. Key points from our technical recommendations to improve the rule include:

- Use a multi-year average between three to five years to establish the baseline for setting the interim and final state goals. For hydro-dominant states consider using five-year baselines.
- Set the interim emissions goal assuming no heat rate improvement is required for coal units with a legally binding shut down date occurring in the interim period.
- Account for legally binding coal unit shut downs within the interim 2020 to 2029 period by adjusting the interim goal to ramp up the redispach of natural gas units over the interim period.
- Include renewable energy in the BSER. Either the primary (Renewable Portfolio Standard-based) or alternative (technical and economic potential) approach will work with modifications.
- Use renewable energy credits (RECs) as the basis for compliance with the renewable energy component of state plans.
- Include energy efficiency in the BSER, consistent with the following assumptions:
 - The state that implements energy efficiency measures claims the emissions reduction benefits.
 - Energy efficiency savings do not have to be tied specifically to an emissions reduction at an affected electric generating unit.

- Include savings from regional market transformation efforts, behavioral programs, and state and federal appliance standards as part of the eligible energy efficiency measures through robust evaluation, measurement and verification.
- States that can accurately count and demonstrate verifiable savings should be given credit for their energy efficiency savings from the baseline period forward.
- Maintain the options for both the portfolio and state commitment approaches.
- Clarify how programs funded or implemented by federal entities such as the Bonneville Power Administration may be incorporated in state compliance plans as enforceable measures.
- Allow and define mechanisms for states to submit amendments to their plans at any time subject to EPA approval.
- Allow states to enter into multi-state compliance approaches at any time before or during the compliance period, and retain as much flexibility as possible for multi-state approaches.

In the following paragraphs we provide more detail explaining our comments. In addition, specific recommended changes to the draft rule language are contained in Appendix I.

II. OVERVIEW OF THE WASHINGTON AND NORTHWEST POWER SYSTEMS

Washington State and the Northwest are uniquely dependent upon hydroelectric power. Hydropower is responsible for three-quarters of electric generation in Washington and the Northwest.¹ This abundant, emission-free resource keeps the region's carbon emissions among the lowest in the country. It is also a highly variable resource dependent upon annual weather conditions, with significant energy production variation from one year to the next.

The system of federal and local dams in the Northwest has a capacity of 33,000 megawatts (MW), and produces on average 16,000 average megawatts (aMW).^{2,3} In recent history, the lowest water years generated 11,800 aMW, but the wettest years generated 19,000 aMW. These variances have significant impacts on the other generating units in the region. During good water years, such as 2011, hydropower provided 80 percent of Washington's generation, and fossil fuels were under 10 percent. Conversely, 2010 was a relatively poor water year and hydropower accounted for only 65 percent of generation, thus doubling the fossil fuel generation. The unpredictability of hydropower in the Northwest requires

¹ U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report." Table 5 Electric Power Industry Generation by Primary Energy Source, 1990 – 2012; and Northwest Power and Conservation Council, Sixth Northwest Conservation and Electric Power Plan, page 6-17.

² Northwest Power and Conservation Council, Sixth Northwest Conservation and Electric Power Plan, page 6-16 and 6-17.

³ An average megawatt (aMW) is 8,760 megawatt hours of electric energy.

utilities to maintain and run additional generation capacity to meet load during poor water years. This generation typically comes from natural gas power plants.

Washington's low-emission generation mix includes one nuclear plant and significant wind resources. These provide another 15 percent of in-state generation.⁴ Natural gas generation accounts for 5 to 10 percent of the state's generation and the state's only coal plant provides another 3 to 10 percent.⁵ The state's only coal plant, Centralia Power Plant, is required by law to close by the end of 2025.

Washington has one of the highest proportions of customers served by consumer-owned utilities in the country. Consumer-owned utilities have priority access to the Bonneville Power Administration (BPA) marketed electricity over the investor-owned utilities and comprise over 50 percent of the state's load. The remaining customers are served by three vertically integrated investor-owned utilities that import a significant portion of their generation from outside the state. This complex system is coordinated by the Western Electricity Coordinating Council (WECC), which covers the western third of the United States.

III. SETTING THE BASELINE

Recommendation:

Use a multi-year average of three to five years to establish the baseline for setting the interim and final state goals.

EPA has proposed that 2012 CO₂ emissions from existing energy generating units, or EGUs, be used to establish the baseline emission rate. EPA notes 2012 was selected on the basis that it was the most recent emission data available and observed that using an alternative such as a four-year average (2009-12) would not alter the national baseline operating and emission rates significantly. At the national level relying on a single year may not strongly influence the baseline, but for individual states a single year may deviate substantially from normal or average conditions.

For the Pacific Northwest, the year 2012 is not representative of a normal or typical year of operation of the electric generation system due to above average hydropower electricity generation and consequent low generation from fossil EGUs. In addition, 2012 was a mild year in which temperatures rarely went below freezing. Even with the high percentage of homes and commercial businesses heated by electricity, mild temperatures reduced the demand on thermal plants. This results in the thermal plants being operated at lower capacities than normal during the winter months. In a more typical winter, the thermal plants are called upon to meet more heating load. Finally, wholesale natural gas prices were very low across the entire United States, including Washington State during 2012, which reduced the in-state coal-fired electricity generation thereby lowering electric power sector CO₂ emissions.

⁴ U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report." Table 5 Electric Power Industry Generation by Primary Energy Source, 1990 – 2012

⁵ Id.

The challenge of determining a representative baseline condition is not unique to this rule proposal. The Bonneville Power Administration, Northwest Power and Conservation Council, and the Army Corps of Engineers use very long multi-year averaging periods when conducting their analytical work involving hydropower. When doing dispersion modeling for stationary source permitting, Washington typically uses at least three years of meteorological data and prefers to do modeling with five or more years of meteorological data. Modeling for regional haze program analyses typically used three or more years of meteorological data.⁶ We recommend EPA review the discussion in 40 CFR Part 51, Subpart W when evaluating the appropriate number of years to include in establishing the baseline for this rule proposal.

As depicted in Appendix II, any multi-year average will better reflect average conditions and change the baseline condition for a state dominated by hydropower. The three-year averages are better baseline proxies than the single year of 2012, but still may not represent a “typical” year for Washington State’s electricity generation sector. A five-year average provides a better representation of a “typical” year. Therefore, we recommend establishing a baseline period for all states of between three to five years.

In the Notice of Data Availability (NODA) published October 30, 2014,⁷ EPA provides data for calendar years 2010 and 2011, suggesting the use of a three-year average of 2010 – 2012. Before EPA finalizes the rule, it is likely that it will be able to access and use 2013 data in establishing the average. We suggest that EPA use the most recent three to five-year period for which complete data can be acquired.

Recommendation:

If EPA chooses to use a three-year baseline as the standard approach, use a five-year baseline for hydro-dominated states.

Hydropower generation in Washington and other Pacific Northwest states is highly correlated with mountain snowpack which in turn correlates with winter temperature and precipitation. Because annual snowpack volumes are highly variable so is Washington’s hydropower generation.⁸ Generation in hydro-dependent states is also highly dependent upon weather cycles, such as an El Nino. These weather events occur every two to seven years.⁹ Furthermore, climate change could have significant impacts on hydropower through declines in snowpack, more severe winter flooding, higher summer drought risk and more competition for scarce water resources.

Based on the characteristics of hydro-dependent states, Washington recommends defining hydro-dependence as those states with hydroelectric generation consisting of more than 50 percent of total in-state generation. For these hydro-dependent states it is recommended that, if EPA has not already decided to use a five-year baseline as the standard approach, that a five-year baseline be used for this

⁶ 40 CFR Part 51 Appendix W Section 8.3.1 discusses the length of meteorological record needed to adequately represent all conditions for modeling.

⁷ Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 64543 (Notice of Data Availability published October 30, 2014).

⁸ Recently ranging from a low of 54.7 million MWh in 2001 to a high of 91.8 million MWh in 2011.

⁹ http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/ensofaq.shtml

subset of states that are reliant on hydropower for the majority of their in-state generation. We note that differentiating the baseline periods of states based on shared characteristics (such as hydropower dependency) is a concept that EPA specifically asked for comment on in the NODA. The approach proposed here is consistent that that concept.

IV. COMBINED HEAT AND POWER FACILITIES

Recommendation:

In the final rule's definition of affected EGU, clarify the status of industrial cogeneration units that use fossil and other fuels to generate retail electricity and modify the baseline accordingly.

EPA's proposed definition of affected EGU in the rule text, section 60.5795, is unclear on the treatment of industrial cogeneration operations that use coal and other fuels to produce electricity and process steam. The rule text can be read to include an industrial cogeneration as an affected facility.¹⁰ Conversely, the preamble and the spreadsheet determining affected EGUs indicate that industrial cogeneration units are not included in the rule, regardless of how much fossil fuel is used (unless the combustion units are natural gas combustion turbines). This lack of clarity provides ambiguity for at least one Washington facility.¹¹ EPA's proposals under section 111(b) to amend subpart D and KKKK provide clarity on the status of these types of plants. The proposed language for an affected EGU under this 111(d) proposal is not clear on the status of industrial cogeneration facilities that generate electricity for retail sale.

We request that EPA clarify the status of industrial cogeneration units that use fossil and other fuels to generate electricity for sale in the final rule's definition of affected EGUs. We also request that if this type of facility is included as an affected EGU, that these plants be included as cogeneration units with the baseline fossil emissions used to establish the final emission standards.

¹⁰ EPA included one NGCC industrial cogeneration facility in Washington in its listing of affected EGUs used for calculating the state goal. This unit has historically reported to CAMD as an affected plant for the Acid Rain Program.

¹¹ A Weyerhaeuser facility located in Longview, Washington contains a number of boilers used to produce process steam and electricity which it sells to an out of state retail utility. The owner of the facility classifies this boiler as a 40 CFR Part 60 subpart Db boiler. All of the boilers use natural gas or fuel oil, and one also uses coal as part of its fuel supply. The primary unit in question is exempted from reporting to CAMD, but does report to the EIA as a biomass/waste wood industrial cogeneration unit. This boiler is rated at 1,019 MMBtu/hr and is capable of and routinely uses coal as a significant part of the heat input. Over the past 10 years the portion of the heat input attributable to coal has varied from less than 10 percent to more than 40 percent. The EPA GHG emission inventory data shows the plant to use at 40 – 42 percent of its heat input as coal since the first inventory was reported. The plant generates electricity for sale to a distribution utility. Based on rates, the company makes more money selling electricity than it costs to purchase electricity from its local utility.

Recommendation:

Clarify the treatment of adding electric generation to existing fossil fueled boilers, incinerators, and industrial combustion units and use a more complex calculation for thermal output.

EPA is unclear or silent on the value or treatment of adding electric generation to existing fossil fueled boilers, incinerators, and industrial combustion units. Specifically, on page 34924, EPA requests comment on the use of industrial combined heat and power (CHP) units as a potential way to avoid EGU emissions and if the answer depends on the circumstances based on the type of CHP involved.

EPA, using its model of a CHP facility, has focused on fossil fuel fired electric generating units that also produce thermal energy. This approach shows up in the discussion on page 34914 in the published version of the proposed rule and in the discussions on state plan considerations and projecting EGU CO₂. This approach appears to match the reporting requirements in proposed 60.5805(c). It is less clear whether this coordinates with the criteria to be an affected unit in 60.5795(b).

We note that the proposed definition of a combined heat and power facility would exclude an existing industrial boiler or other combustion unit from consideration as an affected unit because it is not an electric generating unit. This is in contrast to the lack of clarity in the criteria to be an affected unit in proposed 60.5795(b). The affected unit criteria appear to include any cogeneration facility, regardless of whether it was built as an EGU with the added benefit of using the waste heat from electricity production, or if it is an industrial cogeneration unit selling electricity. EPA should make the criteria for an affected unit very clear to minimize future enforcement.

Based on Federal Energy Regulatory Commission criteria to be a cogeneration facility, the addition of electrical generation equipment to an existing industrial combustion unit makes these facilities CHP units that can provide new electricity generation without new emissions. EPA should clearly identify in the support documents and preamble that the addition of electric generation to existing industrial combustion sources can be used as a new generating source in calculating compliance with the proposed emission standards, even if it does not qualify as a renewable resource under state RPS requirements¹². If the state can demonstrate that there are no new CO₂ emissions resulting from adding electrical generation equipment to these combustion units, we request that a state be able to count this generation as new megawatt-hours (MWh) with no associated CO₂. Meaning, that in calculating compliance the industrial CHP produces energy (MWh) to include in the denominator but no CO₂ to include in the numerator of the calculation.

EPA requests comment on the calculation of equivalent electrical energy for thermal output of fossil CHP installations. EPA's proposed definition of 'net energy output' in 60.5820 establishes a default calculation method. The proposal oversimplifies how thermal energy is and is not used beneficially in an industrial plant. The balancing of thermal loads and losses is a complex undertaking and not amenable

¹² Clarify that 40 CFR 60 subpart Db, Dc, Eb, GGG, or KKKK, or other combustion based unit that adds electricity generation is new generation, (like incremental hydro) that can be counted as new MWh in the denominator but with no CO₂ emissions associated with it.

to a simple “one approach fits all” formula. For example, in a facility like an oil refinery or petrochemical plant, plant steam supplied by an EGU may be sent through equipment whose primary purpose is to reduce the energy content of the steam (pressure reducers) to allow it to be used in a specific process unit or through wasting steam to the process sewer system. If EPA plans to follow the proposed approach to calculating ‘net energy output’ it should be a secondary approach used if the EGU/CHP facility does not wish to go through a plant-specific thermodynamic analysis of the steam system.

V. CLOSURE OF COAL PLANT IN ANOTHER STATE

Recommendation:

Allow modification of a state goal and plan if permanent closure of out of state coal power plants increases utilization of a state’s gas fired sources and results in an increase in the state emissions rate.

Power plant decisions affecting a coal EGU in another state can affect NGCC operations in a given state. For example, a major coal fired power plant in Colstrip in Montana could potentially partially or completely cease operation over the next 10 years. Because all three of Washington’s investor owned utilities own part of the plant, it is likely that their share of the generation capacity of this plant would be offset at least partially by existing combined cycle power plants located in Washington and Idaho. As existing combined cycle power plants ramp up, they could contribute extra emissions resulting in a higher lbs/MWh final emission rate, even though combined emissions from Washington and Montana would in fact decrease. We suggest that EPA allow a state to modify its approved state plan and recalculate its emission standard to reflect the increased usage of existing NGCC units that offset the permanent closure of out of state coal EGUs. This would minimize the inherent penalty a state would face while remaining consistent with the overall goal of the proposal to ensure that greenhouse gases nationwide, not just within individual states, are reduced.

VI. LEGALLY BINDING COAL COMBUSTION SHUT DOWNS IN THE INTERIM PERIOD

Recommendation:

Set interim emissions goals assuming no heat rate improvements are required for those coal units with a legally binding shut down date occurring in the interim period.

While it is possible or even reasonable on a national scale to expect the total fleet of coal EGUs to achieve a heat rate improvement of 4 to 6 percent or more, a national potential does not correlate directly to the capabilities of a single coal EGU. The rule preamble and Goal Setting Technical Support Document (TSD) recognize that not all efficiency improvements can be made at each coal plant, and at many plants some improvements may have already been accomplished.

Specifically in Washington, our only coal fired power plant is under a federally enforceable, legal obligation to cease the combustion of coal by the end of 2025. EPA guidance and rules regarding

retrofitting emission controls on existing power plants require a consideration of the remaining useful life of the plant in the economic evaluation of the cost effectiveness of adding controls. Heat rate improvements are intrinsically a pollution prevention type of emission control. All cost effective heat rate improvements have been made to this plant and the remaining plant lifetime is short enough to make any additional heat rate improvements not cost effective. We would suggest that this situation may apply to other states where there is a legally binding and guaranteed commitment to cease coal combustion or shut down coal facilities in the interim period. For these situations we suggest that EPA consider excluding specific heat rate improvements for those units when the effects of building block one are calculated.

Recommendation:

Account for legally binding coal unit shut downs within the interim period by adjusting the interim goal to ramp up the redispatch of natural gas units over the 2020 to 2029 interim period.

EPA assumes that in-state natural gas combined cycle (NGCC) units will be preferentially dispatched before in-state coal units. This approach is not a concern for Washington as part of the final goal in 2030, as long as Washington has a mechanism to address changes to in-state emissions caused by out of state coal plant closures. However, EPA's dispatch assumption creates challenges for meeting Washington's interim goal for 2020-2029.

Washington's only coal power plant, the Centralia Power Plant, is required, by terms of state law, binding agreements, and the Washington State Implementation Plan (SIP), to cease operation by the end of 2025. As a consequence of the law and other binding documents (including the SIP), the plant has full legal authority and a contractual obligation to operate and provide power to in-state utilities through the end of 2025. The referenced documents (state law¹³, Best Available Retrofit Technology (BART) Order, Agreement¹⁴ and SIP approval¹⁵) are available as noted.

The law requires one unit to cease operation by the end of calendar year 2020 and the other unit by the end of 2025. The requirements of the state law have been incorporated into a BART decision that has been included as part of the existing Washington SIP. As part of the SIP, this closure schedule is also directly enforceable by EPA and private citizens.

Based on the BART FIPs and SIPs approved by EPA across the country, there are a number of other coal power plants where individual coal units or whole power plants will be ceasing operation between now and 2029. EPA has made all of these unit/plant shutdowns federally enforceable by their inclusion in state SIPs. As a result, these federally enforceable closures should be incorporated by EPA when finalizing the interim goals for the various states.

¹³ RCW 80.80.040(3) and RCW 80.80.100 specifically address the closure of the plant. The state emission performance standard is currently 970 lbs total greenhouse gas emissions per MWh (GHGs/MWh, about 922 lbs CO₂/MWh).

¹⁴ Available at http://www.ecy.wa.gov/programs/air/globalwarm_RegHaze/TransAlta_signed_MOU.pdf

¹⁵ See Washington's SIP codified in 40 CFR 52 subpart WW

Specific to Washington, we have evaluated the effects of including the operation of the Centralia Power Plan on the interim goal. Using the EPA goal setting spreadsheet (including EPA's proposed NGCC emission rate), we have estimated that Washington's interim goal would increase from 264 lbs/MWh to 341 lbs/MWh. The final goal would remain unchanged as a result of this request.¹⁶

The operation of this coal plant, whether at the capacity factor achieved in 2012, the levels in other years, or the company's expected 84-percent capacity factor, will tend to increase the CO₂ emissions used to calculate the interim emission standard for Washington. With the 2025 closure of this plant, Washington will eliminate its in-state coal based emissions, which supports the goal of the proposed rule. Our requested modification would only affect the interim goal setting process. We will still expect to be held accountable to achieve the final 2030 goal regardless of how the Centralia plant's emissions are addressed.

EPA could adjust the interim emission standards of other states in a similar manner to what we have suggested. We would suggest that such an adjustment be based on the same type of legally binding, federally enforceable requirements that Centralia has. Such an adjusted approach should still achieve the 2030 goal, even if the interim goal is modified.

As a preferred alternative to adjusting the interim standard as proposed above, EPA could instead use an average based on no adjustments to the dispatch order in 2020 and to full preferential dispatch of natural gas generation in 2029. In the NODA published October 30, 2014, EPA has asked for input on ramping the NGCC/coal redispatch in a manner similar to that proposed for renewable energy. We advocate that the interim goal be based on such an approach starting with no NGCC redispatch in 2020 and ramping to full NGCC redispatch no later than 2029. This would accommodate the adjustments suggested above.

VII. NATURAL GAS COMBINED CYCLE EMISSION RATE

Recommendation:

Calculate the CO₂ emission impacts resulting from increased dispatch to existing natural gas combined cycle (NGCC) power plants using different values than those proposed by EPA.

As part of building block two, the existing natural gas combined cycle (NGCC) units are assumed to increase in utilization and capacity factor to replace generation at coal based generation units. In establishing the goal, EPA has calculated 823 lbs CO₂/MWh for the emission rate for the existing NGCC units in Washington. EPA has calculated different rates for each state. Based on the analyses done in Washington for establishing our power supply/power plant greenhouse gas emission performance standard and recent BACT decisions, this 823 lbs/MWh value would be appropriate as a BACT emission

¹⁶ Attached to these comments is a spreadsheet showing the effects of the requested change to the interim emission standard (WashingtonOnly-20140602GoalSetting-CentraliaOperating).

limitation. This emission rate is lower than could be expected of some, but does not reflect the capabilities of all existing NGCC units.

EPA has stated the NGCC value has been calculated using the information collected by the Energy Information Administration (EIA) for 2012. EPA has determined the average state emission rates for natural gas units by summing the emissions and net energy output (electricity plus value of thermal energy used) and dividing the total emissions by the total generation to calculate the emission rate for a state's turbines.¹⁷ EPA's approach establishes the average of all the turbines existing in a state, but does not reflect the actual capabilities of any of them. When there are a small number of units evaluated that have significantly different capacity factors the state average can be skewed by one unit with a high capacity factor.

As noted elsewhere, Washington suggests that the baseline conditions used to establish the goals should be a multiyear average. Using a multiyear average will better reflect actual operating conditions at each NGCC using EPA's proposed approach to calculating the NGCC emission factor. When using a multiyear average the emission rates for each NGCC produces a state NGCC emission rate that better reflects the characteristics of the turbines in a state's NGCC fleets.

Washington State recently evaluated and completed rulemaking setting an emission standard for new power plants¹⁸. The evaluation was limited to the emission rates for new power plants offered for sale in the United States. This evaluation determined that an emission rate of 970 lbs total greenhouse gases per MWh was an appropriate standard for new power plants to meet throughout their operating lifetime. The state's 970 lbs GHG/MWh equates to 922 lbs CO₂/MWh.

The recently proposed NSPS¹⁹ for new electric utility generating units proposed an emission limitation for CO₂ from new NGCC units of 1000 lbs CO₂/MWh²⁰ In the preamble EPA discussed the range of possible emission limitations that could be applied to new NGCC units and requested comment on a range of limitations, specifically the range of 950 – 1100 lbs/MWh.

In the support document for the New Source Performance Standards (NSPS) proposal, EPA noted that new units could achieve lower emission rates than the proposed 1000 lbs/MWh, but EPA chose that rate based on a review of emission rates achieved by NGCC units constructed since 2000 and reported to the Clean Air Markets program. EPA stated in the preamble that the 1000 lbs/MWh emission rate could be met by 95 percent of all combustion turbines constructed since 2000. EPA does not present a similar analysis of emission rates from existing NGCC units for this existing EGU rule, nor does it reference the data collected and evaluated for the proposed new source rule.

¹⁷ EPA spreadsheet "20140602tsd-plant-level-data-unit-level-inventory.xlsx"

¹⁸ WAC 194-26, Greenhouse Gas Emission Performance Standard, available at <http://app.leg.wa.gov/wac/default.aspx?cite=194-26>

¹⁹ Federal Register, Vol. 77, No. 72, April 13, 2012.

²⁰ Published January 8, 2014, Section VIII on pages 1485 – 1487 and supporting documents in the rule Docket.

We request that EPA revise its calculation of natural gas combined cycle turbine emission rates consistent with a multiyear baseline approach and set an emission rate for all existing, affected NGCC units in the United States that is no lower than the lbs CO₂/MWh that EPA finalizes for new NGCC units.

VIII. ALTERNATIVE GOAL COMPUTATION PROTOCOL IN THE NODA

In the Notice of Data Availability (NODA) published on October 30, 2014, a radically different target methodology was proposed by EPA in which the energy attributed to building blocks three and four would be substituted, in a one for one manner, with reductions in fossil fuel usage. For Washington this would reduce the state's final target from 215 lbs/MWh to an estimated 27 lbs/MWh.²¹ In essence, this would set Washington's target to zero.

Washington does not support this alternative methodology. We note that the proposed approaches for building blocks three and four already "zero out" the emissions from all fossil fuel generation in the state, even if a one-for-one substitution does not occur. Moreover, because renewable energy is dependent on some load-following fossil resources to shape and firm intermittent resources, the conceptual foundation for this approach is lacking.²² EPA has been clear to date that the "building block" approach is a methodological approach to generate a fair and equitable implementation of the BSER for setting emission rate goals for states. It is not a rigorous modeling approach, which seems to be the direction of this suggested modification. The "building block" approach meets its purpose of balancing simplicity, fairness, and policy neutrality, and should not be stretched to cover compliance approaches.

IX. RENEWABLE ENERGY

Washington strongly supports the inclusion of renewable energy as a "building block" to be used in the setting of each state's emission rate standard as part of the final rule for Section 111d. In addition, the State is encouraged by the flexibility offered in the proposal to ensure that renewable energy can and will be a significant component of the compliance strategy that states use to meet the standard.

To assist EPA, we have identified several areas where the proposed approaches can be improved. These improvements are intended as technical corrections that better align the proposed approaches with the justifications for those approaches found in the preamble and technical support documents.

Recommendation:

²¹ M.J. Bradley & Associates LLC; <http://mjbradley.com/about-us/case-studies/clean-power-plan-evaluation-tool>.

²² Note also that energy efficiency essentially reduces the rate of load growth and renewable energy is the primary resource in Washington that will meet load growth. Therefore, energy efficiency and renewable energy do not replace fossil fuel generation but rather prevent the next fossil fuel resource from being built.

Establish a ceiling on the state renewable energy target such that no state is assumed to have to generate more than 100 percent of its baseline generation from carbon-free generation sources.

EPA asks for comment on a situation unique to Washington, where the state's renewable energy target generation (under the primary proposed approach) exceeds the state's 2012 fossil-fueled generation level. EPA asks whether the target should be capped at the baseline 2012 fossil-fuel level. Regardless of the target setting approach taken by EPA, Washington supports setting the target such that the difference between a state's renewable energy target and its corresponding level of renewable energy does not exceed the state's reported baseline fossil-fuel fired generation.²³ We note that in doing so EPA is asking, from a target setting perspective, that no more than 100 percent of a state's generation be derived from carbon pollution free generating resources relative to the baseline. It is clear that asking that the entirety of a state's generation be carbon pollution free is a sufficiently stringent upper bound for setting the renewable energy target for any given state.

Primary Proposed Renewable Portfolio Standard-based Approach

EPA is to be commended for recognizing the leadership and policy innovation that states have demonstrated over the last several decades in promoting renewable energy. A mandate to provide renewable electricity to consumers (i.e., a "renewable portfolio standard" or RPS) is the centerpiece of Washington's renewable energy policy, and plays a similar role for many other states. Using these RPS policies as the foundation for EPA's primary approach is logical and consistent with the deference given throughout the proposal to state-based policy solutions.

EPA explains that the RPS-based approach was chosen because it provides an opportunity to use the judgment and expertise within the states—as expressed through their own technical and democratic processes – to identify the most realistic potential for renewable energy in each state.²⁴ This is a laudable goal, and a logical approach to what is otherwise a difficult problem in terms of assessing the realistic potential (beyond just the technical potential) for promoting renewable energy in each state.

To fully recognize the end results of these complicated technical, administrative, and political processes, the fully realized RPS policies put in place and implemented by the states should be the foundation for this RPS-based approach. By contrast, the "simple target" versions of these policies used by EPA ignore the complexity of the policies in terms of the real world targets put in place after the full effect of the

²³ Note also that EPA asks whether a floor on 2012 generation should be established in cases where the target-setting methodology produces a result below 2012 renewable energy levels. Washington supports having such a floor. Further, if EPA uses energy sales instead of energy generation, the same cap should apply to the level of energy sales.

²⁴ Federal Register /Vol. 79, No. 117 /Wednesday, June 18, 2014. As noted in the Preamble in section 3.(a)1, "states have already had the opportunity to assess those requirements against a range of policy objectives including both feasibility and costs" and, "the RPS requirements developed by the states necessarily reflect consideration of the states' own respective regional contexts."

RPS policies are included.²⁵ In short, for the primary proposed approach, EPA should amplify the commitment to the RPS policy approach, rather than diminish it.

Recommendation:

Use annual state retail sales of electricity as the basis for the target (the same basis as for building block four), instead of total in-state electricity generation.

In virtually every case the targets set by RPS policies in states are applied to the total retail sales within a state, as opposed to the in-state generation total or as a capacity target within a state. EPA's proposed approach is contrary to this fundamental design approach of most RPS policies. Using retail sales as the basis for the target also creates an important link to building block four where an analogous energy efficiency resource standard approach is used (essentially a RPS for energy efficiency).

EPA justifies the in-state generation target approach by implying that the primary motivation for state RPS policy is to increase in-state renewable generation.²⁶ Reducing greenhouse gas emissions and catalyzing renewable energy development, regardless of location, are clearly major factors as well. Given that most RPS policies allow renewable energy to come from a broad geographic area demonstrates that state RPS policies are more broadly focused than on just encouraging in-state renewable generation. This approach is also consistent with using renewable energy credits to track compliance, since they may come from out of state.

Recommendation:

Adjust the regional average RPS target to reflect the RPS targets in state laws or regulations multiplied by the amount of statewide retail sales to which those RPS targets apply.²⁷

In practice, RPS policies do not require that the full effect of their "simple" targets be achieved. All RPS policies have some conditions or limitations on scope that result in the effective target of the RPS being less than the "simple" target outlined in the law. Typically the difference is not insignificant. For Washington, given the limited coverage of the law (See footnote 27), and given cost cap provisions and other aspects of the law, the effective RPS target for Washington is about 10 percent, in contrast to the "simple" target of 15 percent. Ideally, the RPS targets used to develop the regional "proxy RPS" target would take into account the full spectrum of qualifiers that might apply,²⁸ but projecting all of these

²⁵ The "simple target" approach used by EPA uses only the starting "base" target as identified in law or regulation and ignores any secondary targets or other factors in the law or rule that adjust the target for specific conditions.

²⁶ US EPA, GHG Abatement Measures Technical Support Document, page 4-19.

²⁷ For example, the Washington RPS has a "simple" target of 15 percent by 2020 embedded in the state's Energy Independence Act (Chapter 19.285 RCW). That Act only applies to 17 of the 63 utilities in the state, covering about 80 percent of the load in the state. Therefore, the load-weighted RPS target for Washington is around 12 percent by 2020.

²⁸ For example, by only taking into account the proportion of each state's renewable energy target that accounts for the proportion of each target that is intended to compel new renewable energy resources to be developed or acquired, as opposed to the proportion of the target that merely recognizes renewable energy resources that were

effects out to 2030 may be prohibitively difficult. Therefore, we recommend at least accounting for the retail sales (i.e., load) to which the RPS target (or targets) apply, instead of assuming all load is affected.

Technical and Economic Potential Approach

An advantage of the renewable energy approach based on technical and economic potential, as described in the Alternative RE Approach TSD, is that it can avoid the myriad of complexities inherent in RPS policies. However, it must be based on current data and robust regional analysis. We recognize that EPA likely lacks the time to complete a more thorough technical potential analysis, and we cannot, in good conscience, recommend an approach resulting in the Washington targets produced by EPA's analysis. The 2012 existing renewable energy (excluding existing hydropower) level of 7 percent is identical to the 2020 target and the 2030 target, both of which are also 7 percent (excluding existing hydropower).²⁹ We encourage EPA to continue developing robust data and analysis that would better support this approach, and would help inform states of their options as they chart compliance paths using renewable energy. If EPA decides to use this approach in this rulemaking, the following adjustments are recommended.

Recommendation:

Set the target for the renewable technical and economic potential approach as an energy target expressed in MWh.

Targets based on potential are not meaningful as a percentage of in-state generation, because technical potential is based on technology specific research and geographic characteristics. In addition, in-state generation can fluctuate wildly in hydropower dominant states like Washington. If desired, a specific energy target can be converted to a percentage of a states' retail sales (i.e., load). Basing the percentage on retail sales instead of generation will have less variance over time and serves as a better base for renewable energy target setting than using in-state generation.

Recommendation:

Replace the generic \$30/MWh cost reduction threshold that is applied nationwide with cost effectiveness criteria that more closely tracks regional avoided cost data, or that scales up over time.

In the manner that EPA envisions in section 1.4 of the "Alternative RE Approach" TSD, or based on a simpler approach, EPA should develop a regional cost curve (or curves) so that the cost effectiveness threshold can be determined based on the avoided costs of energy in the region. If regional or state-specific data can't be generated for any given state the EPA could revert to a generic nationwide figure along the lines of what was already modeled for the proposal.

If EPA is unable to do more specific regional modeling, and chooses to retain its cost effectiveness threshold starting at \$30/MWh, it may make sense to increase it to \$50/MWh or a similar level by 2030

already in existence when the law or regulation was put into effect.

²⁹ US EPA, Alternative RE Approach Technical Support Document, Table 1.4, pp. 13-14.

to encourage penetration of alternative technologies. A precise trajectory would need to be modeled, and could vary by state or region, but the essential concept is that more renewable energy should be encouraged over time.

Recommendation:

Fix the Integrated Planning Model (IPM) to estimate cost-effective hydropower potential and use the results to increase the assumed hydropower potential based on region-specific hydropower potential data.

The noted inability of the IPM to project the economic deployment of new hydropower resources, combined with the methodology chosen in the technical and economic potential approach, results in an effective ceiling on the renewable energy target for Washington under this approach equivalent to its existing fleet of federal large-scale dams.³⁰ No allowance appears to be made for either operational efficiency upgrades at conventional hydropower facilities (such as turbine replacement), or the additional hydropower opportunities identified by NREL. An appropriate hydropower potential for Washington would be a summation of the existing conventional hydropower and additional potential, along with an allowance for efficiency upgrades at conventional hydropower facilities.

We note that a recent study provides an appropriate hydropower potential estimate for the Pacific Northwest that is easily adaptable to the proposed technical potential methodology (118 percent of existing capacity).³¹ Using these data for the Pacific Northwest, and similar data for other regions, would allow EPA to produce a more realistic hydropower component of this technical potential approach. Ideally this would be shaped by an economic potential analysis similar to that done for the other renewable energy technologies. Therefore, the IPM should be upgraded to handle hydropower potential, and the appropriate cost-effectiveness analysis should be completed by EPA. The results will allow EPA to combine small- and large-scale hydropower technical and economic potential into a more comprehensive result consistent with the way other renewable technologies are treated.

Recommendation:

If EPA is unable to address the issues with the current technical and economic potential approach, use the regional approach proposed in the NODA in which the existing targets from the Alternative RE Approach TSD are aggregated by region and reassigned based on retail sales.

We have concerns about the methodology used to assign renewable energy targets to states that are dominated by hydropower in the technical and economic potential approach. Suggestions for strategies to either fix or compensate for those issues have been noted here. However, in recognition of the fact that EPA may simply not have the time or resources to address those issues and provide solutions in a timely fashion, we would recommend using the “regional potential” approach outlined in the NODA. Specifically, we would recommend using the same regional grouping as with the RPS-based regional

³⁰ US EPA, Alternative RE Approach Technical Support Document, pp. 5-6.

³¹ <http://www.nwcouncil.org/media/7148543/final-nwha-power-council-11-17-14.pdf>

approach (i.e., the WECC footprint) and assigning the total renewable energy potential based on the proportion of baseline retail sales for each state. We note that the IPM modeling done for the technical and economic potential approach is regional in nature already and based on WECC classifications for the west. Therefore, this approach is more consistent in terms of using the data that provides the foundation for the assigned targets. Also note that the renewable energy target would be bounded by the requirement above that no state is assumed in the target setting process to be required to generate more than 100 percent of its baseline generation from zero emission sources.

Renewable Energy Compliance

Recommendation:

Use renewable energy credits (RECs) as the basis for compliance with the renewable energy component of state plans.

Regardless of the approach used to set the renewable energy target as part of the BSER the preferred compliance accounting method is the use of renewable energy credits (RECs). Because RECs already serve as the *de facto* currency of renewable energy and serve to prevent double counting when proper protocols are in place, they are the logical choice as the renewable energy accounting tool for demonstrating compliance. If EPA sets the renewable energy goal portion of the BSER based on retail sales of electricity, any potential for states to double count emission reductions is reduced. If instead EPA finalizes the proposal based on a state's generation, the use of RECs will increase the chance for double counting of emission reductions. In addition, RECs provide a means for renewable portfolio standards established by the states to be used as enforceable mechanisms as part of compliance plans.

Recommendation:

Ensure that the final rule accommodates the Western Renewable Energy Generation Information System (WREGIS) and other similarly robust REC tracking systems.

Consistent with the recommendation to use RECs as the compliance method for renewable energy in the final rule, EPA should further reach out to technical professionals and stakeholders with extensive experience in using the nation's key REC tracking systems to ensure harmonization between EPA's compliance approaches and these systems. In particular the final rules should ensure that the key system in place in the West (WREGIS) is fully compatible with the final rule and supporting technical guidance (a more likely source of potential incompatibility). Moreover, EPA should endeavor to ensure that any reporting or tracking systems EPA develops are able to directly import data from WREGIS data systems to maximize consistency and minimize administrative burden for state agencies.

X. ENERGY EFFICIENCY

The Clean Power Plan rightfully places a strong emphasis on the role of energy efficiency in reducing carbon emissions. A MWh of electricity conserved is a MWh not generated. Energy efficiency has a long history in Washington, as summarized in Appendix III. The Preamble and State Plan Considerations

Technical Support Document lay out several options for incorporating end-use energy efficiency under a rate-based approach.³² Due to the heavy proportion of in-state generation that does not emit carbon pollution careful consideration must be given to the treatment of energy efficiency savings in this rule.

Accounting Principles for Energy Efficiency

Recommendation:

Include energy efficiency in the BSER in a manner that ensures that energy efficiency savings do not have to be tracked to emissions reduction at a specific affected electric generating unit.

Washington interprets the proposal to require states to track efficiency savings to specific in-state EGUs subject to the Clean Power Plan. We believe this is an unnecessary and complicated step to the rule. It is inconsistent with the way EPA established the emissions reduction goal, and it is inconsistent with the EPA proposal to allow states to count all energy efficiency achieved and claimed through program implementation despite the intricacies of inter-state electricity transmission. Furthermore, it would significantly diminish the efficacy of a state's energy efficiency programs.

Washington has been a leader in energy efficiency since the late 1970s, and is nationally recognized for its programs.³³ However, in 2012 only 10 percent of Washington's in-state generation came from affected electric generating units. Ninety percent of the state's generation came from unaffected sources such as hydroelectric power, nuclear, and wind, and the investor-owned utilities receive a significant portion of their energy from out-of-state EGUs. If Washington could only claim "those CO₂ emission reductions occurring (or projected to occur) in the state that result from demand-side EE measures implemented in the state,"³⁴ Washington would only claim a fraction of the efficiency savings it actually achieved. Yet the building block four target assumes Washington could claim 100 percent of its savings compared to the small proportion of that the proposal implies would be available for use in demonstrating compliance. Under this approach it is reasonable to assume that compliance with the plan would be unnecessarily expensive and challenging. If the final rule insists upon tracking back efficiency savings to an affected EGU, we recommend that the EPA symmetrically adjust the process of setting the value for the building block four targets to account for the value of energy efficiency in reducing emissions from a state's fossil EGUs.

Recommendation:

Washington supports a consistent compliance approach where the state that implements energy efficiency measures claims equivalent emissions reduction benefits in its state compliance plan.³⁵

³² Federal Register /Vol. 79, No. 117 /Wednesday, June 18, 2014 / Proposed Rules 34919; TSD State Plan Considerations, p. 20.

³³ See Appendix V.

³⁴ Federal Register /Vol. 79, No. 117 /Wednesday, June 18, 2014, p. 34922.

³⁵ US EPA, State Plan Considerations TSD, p. 88.

Allowing the state that implemented the energy efficiency program to claim the savings and emissions reductions benefit is consistent with the approach the EPA took when it calculated building block four savings. A significant portion of Washington's investor-owned utilities import fossil fuel generation from outside state borders. Dispatch of those out-of-state plants is dependent upon the load demand in Washington. If the state is unable to claim out-of-state efficiency savings, it distorts the value of energy efficiency implemented within the state. If the final rule only allows a state to claim the in-state emissions reductions of energy efficiency, the EPA would need to symmetrically adjust the building block four target to reflect the diminished energy efficiency savings.

Recommendation:

Emission reductions from energy efficiency should represent an avoided MWh of electric generation at the marginal plant.

The final rule should incorporate an emissions reduction crediting framework resulting from energy efficiency measure savings. Each state would use the value based upon the marginal generating resource. In Washington and the Northwest, under the guidance of the Northwest Power & Conservation Council, the CO₂ emission rate for each MWh of generation reflects the most recent technological improvement in a NGCC combustion turbine. As previously explained, much of the generating resources owned by the Washington investor-owned utilities are located outside the state borders. It reflects the reality of regional generation and transmission inter-dependence. A marginal resource emissions reduction credit would reflect that inter-dependence and fully recognize the value of energy efficiency across the region. It would also create a market based mechanism that states could use to meet their targets.

Early Action

Recommendation:

States that can accurately count and demonstrate verifiable savings should be given credit for energy efficiency savings beginning from the baseline period.

By waiting until 2017 to begin counting energy efficiency savings, the EPA inadvertently punishes states that have been aggressively pursuing conservation, and rewards laggard states. Allowing credit for energy efficiency implemented prior to 2017, but beginning by the baseline period, would acknowledge the significant investment leading states have made while not adding additional costs relative to the underperforming states. The adjustment also removes the perverse incentive to avoid acquiring efficiency savings that could be cost-effectively achieved between now and 2017. While Washington believes its Energy Independence Act, first implemented in 2010, is an effective tool to prevent this problem in Washington, we recognize that it will certainly be a problem in states without an energy efficiency resource standard.

Conservation is a resource that is acquired up to the marginal resource cost of the utility. But it is unique from other resources because it is made up of thousands of measures and almost as many prices. As

conservation is acquired and available conservation moves up the cost curve, increasing acquisition becomes more expensive. The early, low-cost conservation is often described as “low-hanging fruit.” An example is compact fluorescent light bulbs, which Northwest utilities have aggressively pursued to great effect.³⁶ Once the efficiency measure has been installed, those savings continue because the measure replacement is typically of equal or greater efficiency. A state that has not been achieving significant efficiency savings will have a larger reserve of cheap conservation.

Since the goal of the proposal is to cut carbon pollution from power plants without burdensome costs to the consumers, additional efficiency today is better than the same measure tomorrow. Unfortunately, the proposal penalizes states with energy efficiency resource standards by only beginning to count efficiency savings in 2017. Washington will still aggressively pursue all cost-effective conservation and continue to move up the cost curve. We encourage EPA to modify its proposal so that we do not find compliance with this proposal more expensive than in other states that do not begin implementation of energy efficiency. Application of this type of approach to recognizing early action is demonstrated in Appendix IV.

Types of Energy Efficiency

Recommendation:

States should be allowed to claim a broad range of energy efficiency measures including savings from regional market transformation efforts, behavioral programs, and state and federal appliance standards that can be quantified through rigorous evaluation, measurement and verification (EM&V).

The EPA is seeking comment on the types of energy efficiency programs and measures that could be included in a state plan, as well as the appropriate EM&V protocols.³⁷ Washington State benefits from strong regional organizational ties such as the Regional Technical Forum and Northwest Energy Efficiency Alliance (NEEA) and is developing new approaches for tracking efficiency savings. These nationally known organizations spend considerable time and effort researching the various aspects of energy efficiency measures and measuring market. EM&V is based on decades of well-accepted practices and protocols developed by the industry and policy makers. State of the art technologies are automating EM&V for energy efficiency and blending the existing building science and protocols with modern software and data analytics, resulting in EM&V that is more transparent, faster, and cheaper. It is important that the EPA does not disrupt the EM&V protocols implemented by states and regions with mature, robust programs nor create barriers to development of advanced measurement technologies. Rather, it should encourage technologies that will improve EM&V and can help provide a level of consistency across jurisdictions while maintaining the accuracy necessary to credibly assess cost-effectiveness, meet regulatory targets and provide the necessary rigor to make emissions calculations. Should the EPA develop national guidelines to assist states that need to create EM&V protocols,

³⁶ NEEA 2012-2013 Northwest Residential Lighting Market Tracking Study <http://neea.org/docs/default-source/reports/2012-2013-northwest-residential-lighting-market-tracking-study.pdf?sfvrsn=10>

³⁷ Federal Register /Vol. 79, No. 117 /Wednesday, June 18, 2014 / Proposed Rules, 34921; TSD State Plan Considerations, p. 50.

SEEAAction and the DOE Uniform Methods Project draw on the experience of state efficiency programs in the development of EM&V guidelines. National entities such as these should continue to serve as a guide for states with less mature efficiency programs.

Additional and more detailed information on market transformation programs, codes and standards, and behavioral programs is provided in Appendix V.

Energy Efficiency Data Source

Recommendation:

EPA should require that a state ensure utilities update form 861 energy efficiency data as part of the state compliance plan.

Accurate data is critical to effective oversight by regulatory agencies. As part of compliance with Washington's Energy Independence Act, every two years Washington utilities subject to the law must verify energy efficiency savings and submit the savings total to the regulatory agencies. The Washington reports are due in June of even numbered years. Utilities must file the Energy Information Administration (EIA) form 861 by April 30, following the end of the calendar year. Due to the timing of the Washington Energy Independence Act reporting and verification of savings, the efficiency savings data reported on form 861 are not necessarily accurate. For example, in 2012 one state utility reported to the EIA 11,551 MWh of total energy efficiency savings, and 15,703 MWh to the Washington State Department of Commerce.³⁸ Another utility did not report any savings to the EIA but 80,836 MWh to the state.³⁹ Discrepancies between the EIA reported savings and actual savings are substantial. In 2012, including Bonneville Power Administration (BPA) savings on behalf of its non-Energy Independence Act utilities, Washington achieved 1,031,621 MWh, or 175,000 MWh more than utilities reported to the EIA on form 861. To minimize discrepancies, streamline reporting requirements and ensure accurate data, EPA should require the use and timely reporting of energy efficiency data on form 861.

XI. ENFORCEABILITY

Recommendation:

Maintain the options for both the portfolio and state commitment approaches outlined in EPA's proposal.

Washington supports EPA providing for flexible state plan pathways to comply with the proposed rule. We also strongly support including renewable energy and energy efficiency as options for compliance under the plan. However, we have concerns regarding federal enforceability of state energy efficiency and renewable energy programs. We believe that state energy efficiency and renewable energy

³⁸ Energy Information Agency Form 861, Excel sheet 'dsm2012'.

³⁹ Cowlitz PUD 2013 Mid-Term EIA Utility Reports,

<http://www.commerce.wa.gov/Programs/Energy/Office/EIA/Pages/EnergyIndependence.aspx>

programs implemented or expanded for purposes of compliance should not be under EPA's direct enforcement authority or evaluated for 'adequacy' by EPA staff during plan review. However, the state plans should provide sufficient assurance that overall emission targets will be met.

The Energy Independence Act, also known as Initiative 937, was approved by voters as a citizen's initiative in 2006. Federal enforceability reduces a state's flexibility to modify these programs to continue achieving state objectives. In our experience with SIP approvals under section 110 of the Clean Air Act, EPA review of state programs is a lengthy process which requires continual review and upkeep as state and federal laws and regulations are revised. There is a high potential for the state's 111(d) plan to have an arduous review, approval and maintenance process.

We encourage EPA to include a state commitment approach as a state plan pathway that states could choose to implement in the final rule. Under this option, states can make commitments to achieve emissions reductions from specific programs without making the programs themselves federally enforceable. We believe that many states such as Washington would prefer to commit to achieving certain reductions and be held accountable to those reductions through the operation of renewable energy and energy efficiency programs, without making the specific provisions of those programs federally enforceable.

Recommendation:

Apply lessons learned from the SIP reform process into 111(d) approval process.

In our experience with SIP approvals under section 110 of the Clean Air Act, EPA review of state programs is a slow process which could lead to significant delays in implementing new program elements and compliance demonstrations under the finally approved state plan. We are concerned that the 111(d) process could become unnecessarily complicated, diverting other EPA staff from important SIP reviews and approvals, and causing EPA to fall behind on approval of other state air quality plans. We urge EPA to review the best practices developed by the NACAA-ECOS-EPA SIP reform workgroup and incorporate them in to the 111(d) planning and approval process.

Recommendation:

Allow states to rely on provisions with flexible compliance mechanisms in state plans and clarify how to address flexible compliance mechanisms when demonstrating enforceable achievement of the emission performance targets.

Washington's Energy Independence Act, or I-937, requires that each qualifying electric utility must pursue all available conservation that is cost-effective, reliable, and feasible. The amount of energy efficiency that is achievable and cost-effective varies from year to year, and from utility to utility, due to variable factors such as the price of fuel and the local development of the efficiency market. The two state agencies that oversee the utilities' implementation of the Energy Independence Act, the Utilities and Transportation Commission and the Washington State Department of Commerce, do not have the statutory authority to mandate a specific percentage of a utility's load to come from conservation. In 2012 and 2013 the state's energy efficiency achievement was just over one percent of retail sales.

However, the utilities in aggregate are expecting about 25 percent less conservation for the 2014 and 2015 biennium, due to two factors; low natural gas prices reducing the cost-effectiveness of some energy efficiency opportunities and the historical effectiveness of existing energy efficiency programs.

Around 20 percent of Washington's load is served by utilities that do not meet the customer threshold in the law and are not subject to the Energy Independence Act requirements. These are small consumer-owned utilities that obtain nearly all of their energy from the Bonneville Power Administration. With some of the cheapest energy in the country,⁴⁰ the energy efficiency potential is considerably less than a larger utility with more expensive power. Even if the Energy Independence Act was extended to these small utilities, the low avoided costs and relatively expensive administrative costs would prevent them from achieving cost-effective conservation at the same level as the larger utilities. It would help if the small utilities pooled their resources into a larger umbrella organization that could achieve the necessary efficiencies of scale.

In order to achieve consistency between EPA regions and speed up the drafting and approvals of state plans, we request clarification in the final rule on acceptable compliance mechanisms for state plans to demonstrate enforcement capability. We are concerned that EPA may not approve state laws and public utility commission programs that contain measures with flexible compliance mechanisms established to contain costs to ratepayers and to reflect what is feasible and achievable by individual utilities. We request clarification that EPA will accept cost control and feasibility limitations in the state plan.

We request clarification on appropriate enforcement mechanisms for affected EGUs not regulated by the state PUC, especially merchant power plants.

EPA has been unclear about whom it would take enforcement action against if a state plan or multi-state plan does not meet the emission standard. We request that EPA clarify the consequences and entities held liable under various state plan designs (i.e., fully enforceable plans, commitment plans, single state plans, full multi-state plans) if certain plan elements are not met.

Recommendation:

Clarify how programs funded or implemented by federal entities such as the Bonneville Power Administration may be incorporated in state compliance plans as enforceable measures.

In the Northwest, many of the energy efficiency programs relied upon by the consumer-owned electric utilities (e.g., public utility districts) are funded by BPA, a federal agency. The energy efficiency programs implemented by BPA are invaluable to the region and to customers of these utilities. They are also programs which EPA has implicitly included in setting its energy efficiency target since over half of the state's population is served by these utilities. Tying enforceable measures (such as accomplishing energy efficiency improvements) to budget decisions made by a federal agency is a scenario which EPA did not address in its proposal. For example, it is unclear how a state could set obligations and enforce

⁴⁰ BPA PF-14 Public Tier One rates in 2014 are \$31.50/MWh. <http://www.bpa.gov/power/psp/rates/current.shtml>

adherence to a SIP for federally financed energy efficiency programs. The alternative approach of transferring the financing of these projects to consumer-owned utilities is not efficient or politically feasible. Incorporating BPA's energy efficiency programs is essential to meeting the state's compliance goal, but without a protocol for doing so (e.g., an agreement between EPA and BPA) this vital contribution may, by necessity, have to be excluded.

XII. CONVERSION OF RATE TO MASS

Recommendation:

Retain the option to base state plans on either an emissions rate or mass-basis.

EPA has proposed that a state could use a mass basis rather than an emission rate basis for its state plan. Separately it has noted that a mass basis may be preferable to an emission rate when states participate in a multistate plan. EPA has also provided an outline of how to convert the 2030 emission standard to annual mass emissions. The outline proposes using a projection of the 2030 load or generation rate for the state and multiplying that by the emission standard. Finally, EPA has issued a TSD describing a rather complicated translation of this outline. Hopefully this complicated translation could be simplified by, for example, setting a presumptive mass standard or providing more clarity on the precise steps a state should take to generate its mass standard.

In Washington the projections of load growth are typically only reliable for 10 years into the future (and often wrong over the last 15 years). A 15 and 20-year projection may be made, but the confidence in these are low. To establish the mass limit, EPA is suggesting that states project the 2030 load in 2015 using a well educated guess of load 15 years into the future. The states are then beholden to comply with that mass rate even if the load forecast is wrong. As drafted, EPA would not allow the state to modify the plan to match the actual load, expecting states to implement additional renewable resources, energy efficiency measures and other methods to make up the difference. We recommend that EPA allow states to make "mid-course" adjustments to the state plans to accommodate changes in load growth between 2016 and 2030.

XIII. STATE PLAN ISSUES

Affected Entity Reporting

Recommendation:

Allow affected EGUs to report CO₂ emissions and energy output using existing reporting mechanisms, and ensure that CO₂ emissions and MWh production reported under different national reporting and compliance programs match requirements under this program.

EPA indicates that annual reporting requirements by affected EGUs of CO₂ emissions and useful energy output could be fulfilled under 40 CFR Part 75 through EPA's existing reporting mechanisms using EPA's

Emission Collection and Monitoring Plan System (ECMPS).⁴¹ The state supports using existing reporting mechanisms for cost savings and data consistency, instead of submitting an additional, separate report. This will minimize duplicative reporting requirements and ease the burden on affected EGUs. The state also expects to use existing reporting mechanisms where possible to allow non-EGU affected entities to comply with reporting requirements.

Existing reporting mechanisms should fulfill the requirement for annual, electronic reporting accessible to the states, EPA, and the public. Any additional reports from affected entities submitted pursuant to the 111(d) plan, other than those required under other applicable NSPS provisions or Part 75, should be submitted to the states for inclusion in annual reports to EPA. If EPA wants this information to be made available electronically to the public, EPA should request funding from Congress to develop and operate a reporting platform.

State Compliance Reporting

Recommendation:

Consider options to reduce the administrative burden on states for annual reporting during the interim performance period.

We are concerned about the additional administrative burden associated with the annual reporting requirements during the interim performance period. We urge EPA to consider what frequency of reporting is necessary to ensure that states are achieving their plan goals, and to recognize that different reporting frequencies may be appropriate for different plan designs.

Recommendation:

Allow states flexibility to develop their glide path, and determine compliance during the interim performance period based on a three or five-year running average comparison of actual to projected performance.

The proposal allows states flexibility to define the trajectory of emission performance between 2020 and 2029, as long as the interim emission performance level is met on a 10-year average or cumulative basis and the 2030 emission performance level is achieved.⁴² The trajectory of emission performance is critical because in the proposal it will be compared to actual cumulative performance each year for the prior two years starting in 2022. According to EPA's proposal, if the actual emissions performance rate for the state is higher than the projected emission rate by 10 percent (or 8 percent if corrective measures are not adopted as part of the state plan), this triggers additional reporting requirements, development or implementation of corrective measures, and possible plan modification and resubmission for re-approval. This is a significant workload when states face a situation that will likely be corrected by the following year, simply due to the variability of year to year electricity demand.

⁴¹ Federal Register /Vol. 79, No. 117 /Wednesday, June 18, 2014, pp. 34913-34914

⁴² Federal Register /Vol. 79, No. 117 /Wednesday, June 18, 2014, pp. 34904

If annual reporting during the interim performance period is part of the final rule, it should use a three or five year averaging period for comparing actual to projected emission performance. As demonstrated earlier, Washington's hydropower dominated generation system experiences significant year to year variability which results in equally variable fossil generation. Using a three or five year averaging period to determine compliance during the interim performance period would be a more representative reflection of state performance and would smooth out the year to year variability. A three-year average is used for determining compliance after the interim performance period and is also used when calculating design values and determining compliance with National Ambient Air Quality Standards.

Recommendation:

Corrective measures and other compliance and reporting mechanisms should be robust but take into account extraordinary, uncontrollable natural events or extreme circumstances.

The state supports EPA's proposal for corrective measures, which allows states a choice to either adopt corrective measures into the state plan or into regulations prior to submitting the plan, or wait until after a deficiency is discovered. The latter option gives states flexibility to better target the corrective measure to directly address the cause of the deficiency. The deadline for implementing corrective measures could be included by each state in the state plan rather than defined by EPA to accommodate differences in states' legislative and rulemaking timelines and processes. The state supports the approach that has been applied in the Acid Rain Program, and we suggest that states be required to go above and beyond, to achieve additional emission reductions to offset any deficiency during a performance period.

We suggest that the compliance process include a mechanism for states to approach EPA with requests to obtain short-term extensions or modifications due to extraordinary, uncontrollable events. Such a mechanism could help EPA set and hold states accountable to tough targets rather than set less strict targets to accommodate extreme events. Moreover, EPA should provide guidance to the states on how they can account for extraordinary and uncontrollable events that negatively impact compliance or a mechanism for a state to demonstrate emission rates above the state standard were due to unforeseeable and uncontrollable natural events. For example, EPA could expand the threshold for triggering corrective measures to a 15 percent difference in actual to projected performance, based on the three or five year averaging period described above. Alternatively, EPA could give states more time to respond and develop additional requirements or make plan modifications.

For states like Washington that are dependent upon a hydroelectric system, droughts and the variance in seasonal snow runoff create dramatic annual shifts in the amount of hydropower available to the state. In these situations the utility must ensure the reliability of the grid by running more generation from carbon emitting resources. We are not suggesting a broad-based escape path to avoid the reduction targets. We are simply urging some flexibility in enforcement and time for corrective action as a complement to the setting of strict targets.

Plan Submittal and Timing

Recommendation:

EPA should partner with states to ensure timely submittal of state plans, and allow extensions beyond those provided for in the proposal where warranted.

We appreciate the tremendous outreach effort EPA has undertaken in the development of this proposal. We expect to continue to work in a strong partnership with EPA to meet the very ambitious timeline laid out in the proposal. This is a significant new regulatory program which in many states will likely require additional authority under state law, rulemaking, and coordination among several state, local, and federal agencies. Depending on the type of plan developed, there may also be negotiation with other states on coordination and implementation of multi-state measures. We support aggressive and quick action to address carbon pollution, however, we also understand that the planning process is complex and will take time. EPA should consider allowing additional extensions where warranted to put the necessary laws and rules in place and finalize the state plan. EPA should set up rule language that clearly does not allow for unlimited extensions by states as a means to delay developing state plans to meet the rule. Conversely, EPA needs to be developing its federal plan to implement the final rule so it can be quickly implemented in states which have failed or chosen to not develop and implement a state plan.

We request that EPA issue clear guidelines on the state plans in or with the final rule. These guidelines would form the basis for states to develop plans and for EPA regions to review and approve them. Any additional guidance issued by EPA should be discretionary and available as soon as possible in advance of the deadline for initial plan submittal.

Modification of State Plan

Recommendation:

Allow and define mechanisms for states to modify state plans at any time subject to EPA approval.

EPA should develop clear guidelines and procedures for modification of state plans beyond what is described in 40 CFR part 60 subpart B. When undertaking modifications to state plans, states should be required to use the latest data, methods and assumptions, but not be held to the criterion in 60.26 that the revision must be to strengthen the plan. The revision may simply be to better reflect a change in state laws and the power supply system or development of a multi-state plan that cannot be envisioned at the time the plan is originally submitted.

XIV. MULTI-STATE COLLABORATION

Recommendation:

Allow states to enter into multi-state compliance approaches at any time before or during the compliance period, and retain as much flexibility as possible for multi-state approaches.

Washington agrees that multi-state options could provide greater flexibility and may result in lower-cost emissions reductions than individual state compliance plans. We support the flexible compliance options included in the proposed rule and urge the EPA to maintain this flexibility in the final rule. We recommend allowing states to enter into multi-state compliance approaches at any time before or during the compliance period, and recommend maintaining as much flexibility as possible for multi-state approaches by allowing a variety of compliance options. In the final rule, Washington recommends providing options for participants in multi-state approaches to design programs around BSER or other alternatives, including but not limited to implementing an in-state cap and trade program or joining other state or provincial programs.

While Washington is supportive of the overall timeline for developing, submitting, and implementing state compliance plans as part of a multi-state approach – individually, collectively, or with a shared submittal for common elements supplemented with state-specific plans – we encourage EPA to include in the final rule an option to allow states to change the approach by which they will meet the emission reduction interim and final goals. For instance, if a state submits, and EPA approves, a multi-state compliance plan based on BSER, states should not be barred from shifting to, for example, a cap-and-trade compliance option in later years.

We strongly encourage EPA to include in the final rule an option for states to enter into multi-state compliance approaches at any time after submitting single-state compliance plans. Washington recommends providing states with the option to enter into a multi-state agreement in later years, even if the state's initial individual compliance plan was submitted to and approved by the EPA.

We also recommend providing the option for a state in a multi-state plan to change its compliance approach in later years to a single state plan. EPA should consider the appropriate timeline under which states opting to join multi-state plans should evaluate the efficacy of implementation, and when states or groups of states should adopt changes to the multi-state implementation approach in the event that evaluation indicates insufficient progress toward interim or final targets.

Regional Planning

Recommendation:

Maintain the option for states to coordinate with regional planning and tracking organizations.

Washington supports maintaining the option allowing states to coordinate with regional planning organizations. The Northwest Power and Conservation Council produces analysis that states in the Pacific Northwest region should integrate into a multi-state compliance plan process.

In Washington's view, an emission reduction used as part of one state's demonstration of emission performance under its CAA section 111(d) plan cannot be used for demonstrating performance under another state's plan. To avoid duplication, we support including the option to use established regional renewable energy credit tracking systems and processes in multi-state arrangements. In the Western Electricity Coordinating Council coverage area, the Western Renewable Energy Generation Tracking System (WREGIS) is the entity responsible for tracking renewable energy generation from units that

register in the system, and creates renewable energy credits. As previously noted, we strongly support allowing states to use WREGIS for compliance with renewable energy programs, and further note that it is already well suited to use in multi-state arrangements. States should work cooperatively to avoid double counting of emissions reductions from renewable energy and energy efficiency, and should address double counting in their EM&V plans.

Multi-State Compliance Plan Submission Flexibility

Recommendation:

Maintain flexible plan submittal options for multi-state agreements.

To accommodate interstate cooperation on all or part of the required plan elements, we support maintaining flexible plan submittal options for multi-state agreements, including individual state compliance plans, a single compliance plan submittal for all states participating in a multi-state approach, or a single compliance plan for all common components of a multi-state approach supplemented by individual plans for state-specific plan components. In the final rule, EPA should clarify that states are allowed to enter into regional agreements without developing a regional plan with blended state goals.

XV. BEYOND 2030

Recommendation:

Review and strengthen state goals post-2030 at regularly defined intervals to reflect advances in technology and improvements in our scientific understanding of the mitigation efforts needed to avoid catastrophic climate change impacts.

EPA's proposal requires states to maintain the 2030 emission performance level beyond 2030. The State of Washington strongly supports an approach where EPA periodically reviews and strengthens the BSER/ state goals after 2030. We recommend that these reviews should occur at regularly defined intervals to reflect advances in technology and improvements in our scientific understanding of the level of mitigation needed to avoid catastrophic climate change impacts. To this end we suggest that EPA should establish revised state goals that come into effect after 2030 in a future rulemaking started in the 2025 to 2030 time period. The stronger goals should include continuity of actions by states and affected entities to achieve the 2030 goal. Tighter goals after 2030 should again allow for a period of time to achieve them, but not result in any additional reporting burden on the states or other affected entities.

Respectfully submitted,

Handwritten signature of Maia D. Bellon in black ink.

Maia D. Bellon
Director, Washington Department of Ecology

Handwritten signature of Brian Bonlender in purple ink.

Brian Bonlender
Director, Washington Department of Commerce

Handwritten signature of David Danner in black ink.

David Danner
Chairman, Washington Utilities and Transportation Commission

Appendix I. Specific Comments on Proposed Rule Text

Questions from the Preamble

Proposal to adjust reporting requirements specified in 40 CFR Part 75

On page 34913 of the Federal Register published June 18, 2014, EPA suggests specific changes to the Part 75 reporting requirements to explicitly require reporting of all electrical generation and thermal energy provided by EGU required to report the EPA Clean Air Markets Division (CAMD) under Part 75. The suggested changes are reasonable and will help clarify an issue that has arisen with some of our NGCC plants. Despite EPA guidance indicating EPA's preferred approach, we have NGCC units that have failed to report their steam turbine generation or steam energy to CAMD. Any change to the Part 75 reporting requirements that clarify how this electrical output is to be reported will improve the consistency of the data reported to the CAMD database. Our experience indicates that most NGCC unit owner/operators do not report electricity produced by the steam turbine, or do not apportion the steam turbine output when 2 combustion turbines produce steam for use in one steam turbine. EPA is seems to be proposing that these changes be made within this Part 60 rule proposal. However, these changes should be made in Part 75, so as to be applicable to all generation facilities including those that are not subject to this existing EGU rule.

Should net rather than gross electrical production be reported?

This depends solely on how EPA finalizes its choice of net or gross generation for the 111(b) proposals. This existing source rule should require electricity to be reported in the form used in the 111(b) rules – proposed to be gross generation. This allows for consistency between reporting requirements and simplification of calculation of emission limitations between new and old sources.

Comments Specific to the Proposed Rule Text

60.5740 What should I include in my state plan?

This subsection of rule should contain all requirements to be submitted to EPA as part of the state plan including a reference to requirements in Part B. We request that EPA assure the requirements listed in 60.5740(a) are not duplicative of those listed in Subpart B and only those elements that must be included are listed.

60.5770 includes the procedures to convert the rate based limits to a mass based limit.

EPA simply states to include the state process in the state plan submitted under 60.5740. Since EPA provides only general approach in the rule to make this conversion, we assume that any formula that a state comes up with to make this conversion and that incorporates the elements of EPA's outline will be accepted by EPA. EPA has produced a TSD on how to convert the state rate based limit to a mass based limit. This proposed method is overly complex and contains assumptions that do not reflect the reality of a hydropower dominated state. We suggest that if EPA wants to define a specific approach to make

this conversion, it should do so in rule, not guidance. This section would be the appropriate location to specify a conversion approach.

If EPA wants to continue to allow states to utilize only an outline of an approach to the conversion, EPA needs to make it clear to the EPA Regional office reviewers that the method proposed in the TSD is not a requirement or a preferred approach.

60.5785 What is the procedure for revising my state plan?

In this section EPA outlines the procedure for making revisions to approved state plans.

In the first sentence of this section the text is unclear whether the Administrator must give a state permission before the state can make revisions to its plan or, as in 40 CFR 60.27, stating that only the Administrator can approve a state's revision to its plan. We suggest the text be explicit such as it is in 60.27 and 60.28.

We also suggest that if EPA does not choose to explicitly allow a state to submit a completely revised plan as discussed in the following paragraph, the final rule may not need to include 60.5785 and instead rely on the procedures in 60.27, 60.28, and 60.29 for revisions to a state plan.

However, as we discuss above, EPA should explicitly allow a state to submit a complete revision to its plan in the event the state chooses to change from a state only plan to a multistate plan or vice versa. This opportunity is important in case several states want to pursue a multi-state plan but are unable to finalize one in the very limited time that EPA is allowing states to come up with such a plan. Similarly for a state that finds participation in a multi-state plan is not beneficial or the state's legislature chooses to alter state law to prevent participation in a multistate plan, the opportunity is important to allow a state to have a fall-back position.

60.5805 What applicable monitoring, recordkeeping, and reporting requirements do I need to include in my state plant for affected EGUs?

In general, this section repeats many requirements already included within Part 75 and makes some unexplained adjustments from the criteria in Part 75. We suggest that EPA need only reference the existing Part 75 requirements that should be included rather than modifying them for this rule. The changes proposed only provide an additional burden on the sources to supply EPA the same information calculated in a different way and having a different value. EPA then has the burden of either adding new data fields to its existing database for Part 75 or explaining why the each affected EGU is reporting two different values for emitted CO₂.

If EPA wishes to make the changes to Part 75 monitoring approaches proposed here and in the proposed amendments to part 60 subparts Da and KKKK, EPA should make those changes to Part 75.

60.5805(a)(1) If the affected EGU already has a monitoring plan meeting the requirements of Part 75, this language implies that it needs to develop and submit a new plan. Is this a correct interpretation? If an affected EGU already has the required monitoring plan and it has been approved, why would the EGU

need to resubmit a monitoring plan? We suggest the text be modified to require a new monitoring plan only if the state plan makes the EGU subject to Part 75 requirements or physical changes at the EGU make it impossible to utilize the existing monitoring plan.

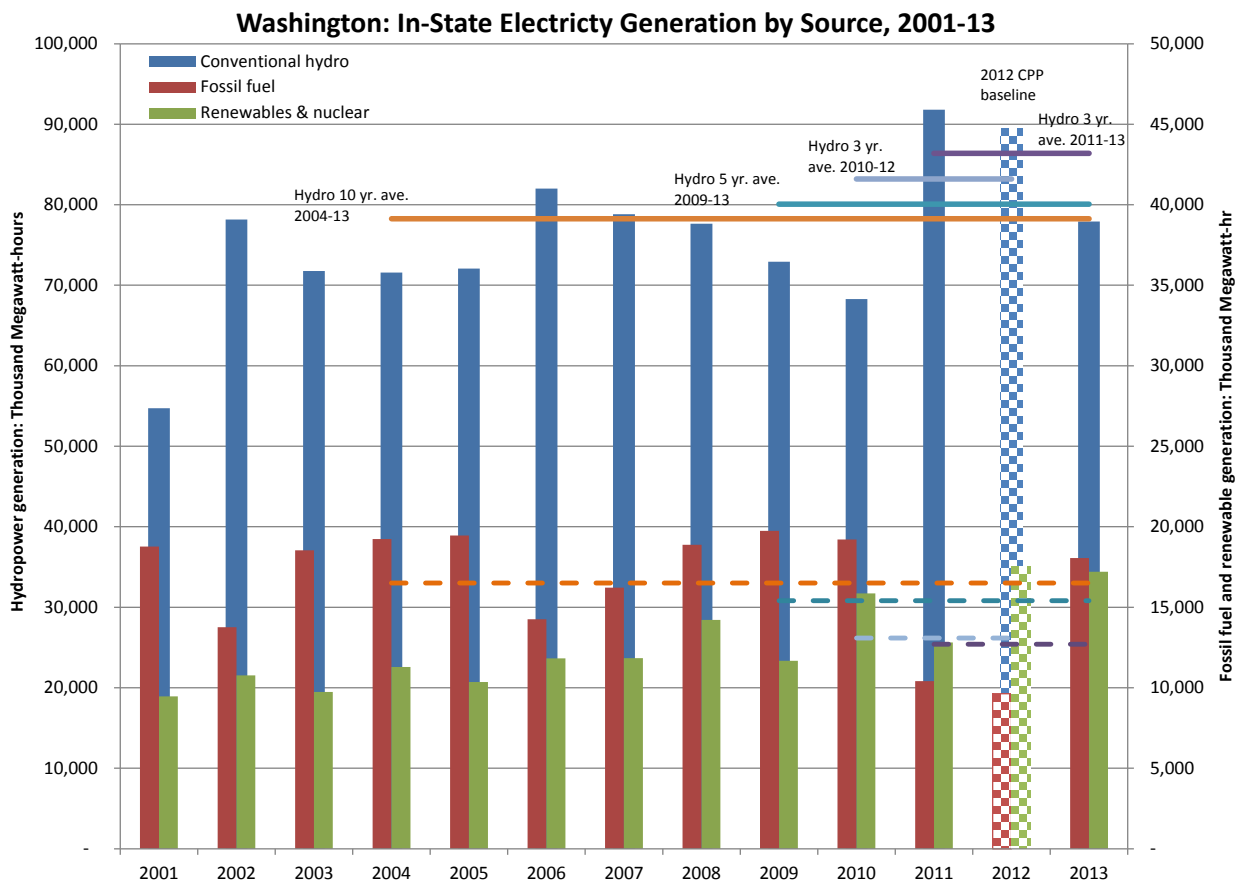
60.5805(a)(1)(iii) Why does EPA require the stacks to be re-measured with a laser measuring device? Will this improve the accuracy of the emissions calculations? In our view any improvement in the accuracy of the cross-sectional area of the stack is overwhelmed by the much lower accuracy in the rest of the stack measurements. We suggest not finalizing this requirement.

60.5805(a)(1)(iv) Again, EPA is proposing an adjustment to the monitoring requirements in Part 75 without modifying Part 75. We suggest EPA not make this change if for no other reason than to avoid explaining how the same source can have two different CO₂ emission rates in the same database.

60.5820 Definitions. EPA is proposing a number of new definitions, most of which are appropriate for the use of this rule. We do have a concern about EPA's proposal to use a different definition for standard conditions than is used in the rest of Part 60. The change to the use of a "standard atmospheric temperature and pressure" (SATP) adds another new variation that will result in yet another difference in the depiction of emissions from these sources from historical data. For consistency, we suggest that EPA retain the use of standard conditions as defined in CFR 60.2 for emissions quantification rather than using a new standard, SATP, which has not yet been used to standardize emissions from EGUs.

Appendix II. Why 2012 Is Not a Representative Baseline Year for Washington

While 2012 may be a representative Clean Power Plan baseline year for some states, it is not for Washington and the other Northwest states served by the BPA, as revealed in the chart below.



Annual hydropower generation is shown by the blue bars, while fossil fuel thermal electricity generation is represented by the red bar. A quick glance at the chart reveals that 2012 was the second highest hydropower generation year since 2001 and the lowest fossil fuel thermal generation year in the 2001-13 time series. As is well documented, 2012 was an especially good hydroelectric year in the Pacific Northwest, and in Washington it accounted for 77 percent of all generation.⁴³ In contrast, 2010 hydropower generation was only 66 percent, while 2011 was 80 percent. This 14-point increase happened in just one year, and the generation can disappear just as quickly. Washington's five- and ten-year average hydropower generation is around 72 percent.⁴⁴

⁴³ U.S. Energy Information Administration, Washington's Electricity Profile Table 5: Electric power industry generation by primary energy source, 1990 – 2012.

⁴⁴ U.S. Energy Information Administration, Washington's Electricity Profile Table 5: Electric power industry generation by primary energy source, 1990 – 2012.

The horizontal lines in the chart (solid for hydro and dashed for fossil fuel) represent three-year averages (purple 2011-13 and light blue 2010-12), a five-year average 2009-13, and a 10-year average (2004-13 , light orange bar). The table below presents the numerical generation values by source for the various multi-year averaging periods.

Washington State Electricity Generation (Source EIA)

Washington St. annual generation by fuel: Thousand Megawatt-hours	23 year ave.	10 year ave.	5 year ave.	4 year ave.	3 year ave.	3 year ave.	CPP baseline
	1990 to 2012	2003 to 2012	2008 to 2012	2009 to 2012	2010 to 2012	2011 to 2013	Single year: 2012
Hydroelectric	79,546	77,638	80,028	80,626	83,190	86,396	89,464
Conventional							
Nuclear	7,338	8,156	7,857	7,504	7,794	7,534	9,334
Other renewable	3,920	4,562	6,566	6,973	7,615	8,327	8,214
Coal	8,282	8,068	6,752	6,249	5,839	5,244	3,763
Natural Gas	5,817	8,134	8,485	8,154	6,882	7,057	5,438
Other	445	471	486	505	536	582	623
Total	104,112	107,029	110,174	110,010	111,857	115,140	116,835

Appendix III. History of Energy Efficiency in Washington

In response to the energy crisis in the 1970s, Washington began pursuing energy efficiency through the creation of the Washington State Energy Office, whose duties included expanding energy efficiency in public buildings.⁴⁵ The Pacific Northwest Electric Power Planning and Conservation Act passed in 1980 established the Northwest Power and Conservation Planning Council (NWPPCC) which adopts a regional energy conservation and electric power, called a Power Plan.⁴⁶ The Power Plan sets the region on a path for implementing conservation measures and continues to be the guiding scheme for energy efficiency portfolios in the Pacific Northwest.

The west coast energy crisis in 2001 again demonstrated the direct link between increased energy cost and increased energy efficiency efforts. Washington State government reacted by affirming that it is the policy of the state to achieve significant gains in energy efficiency.⁴⁷ In response to this commitment and increasing energy costs, efficiency savings as a percentage of annual retail sales increased from a quarter of a percent to about three-quarters of one percent of load.⁴⁸

In 2006, through a citizen's initiative the voters passed the Energy Independence Act, which requires all utilities with more than 25,000 customers to pursue all cost-effective, reliable and feasible conservation.⁴⁹ The elegance of the law is that it accurately responds to the variability in the economics of energy efficiency implementation. Every two years, utilities subject to the law assess the amount of conservation available over a 10-year period, and are then required to set a target to acquire one-fifth of that conservation in the next biennium. Investor-owned utilities are regulated by the Washington Utilities and Transportation Commission, and submit their biennial targets and achievements for approval. The consumer-owned utilities report targets and achievements to the Washington Department of Commerce, which are reviewed by the State Auditor's Office. Since the law took effect in 2010, utilities' targets have ranged from 0.4 percent to 1.5 percent of annual retail sales, and the state has achieved between 0.8 and 1 percent of annual retail sales.⁵⁰ Notably the Energy Independence Act only applies to utilities with more than 25,000 customers, which comprises only 17 of the 61 utilities, representing 80 percent of Washington's load.⁵¹

⁴⁵ RCW 43.21F.045

⁴⁶ Northwest Power & Conservation Council: Power Act Summary, www.nwccouncil.org/reports/poweract/summary

⁴⁷ RCW 39.35.010

⁴⁸ NWPPCC Regional Conservation Summary 1978 – 2011. Until recently the NWPPCC only kept regional data and did not have specific Washington numbers for these years. Washington's load is slightly more than half of the Council's region, therefore conservation totals were assumed to be of an equal proportion.

⁴⁹ RCW 19.285. Cost-effectiveness is determined using a Total Resource Cost test, and includes a 10 percent preferential adder for energy efficiency measures.

⁵⁰ See Energy Independence Act (EIA or I-937) at <http://www.commerce.wa.gov/Programs/Energy/Office/EIA/Pages/default.aspx>

⁵¹ See Energy Independence Act Reporting at <http://www.commerce.wa.gov/Programs/Energy/Office/EIA/Pages/EnergyIndependence.aspx>

Appendix IV. Early Action Example for Energy Efficiency

To illustrate early action, Washington can demonstrate verifiable energy efficiency savings beginning in 2010 with the implementation of the Energy Independence Act.⁵² The building block four proposal expects Washington will demonstrate compliance by achieving 12,373,844 MWh of cumulative energy efficiency savings by the end of 2029.⁵³ This translates to 11.26 percent of 2029 business as usual retail sales.

Table 1: Replication of Washington's building block four target

Year	2012	2013	2014	2015	2016	2017	2018	2028	2029	2030
BAU Retail Sales	93,230,000	94,134,331	95,047,434	95,969,394	96,900,297	97,840,230	98,789,280	108,801,125	109,856,496	110,922,104
Sales after net EE	93,230,000	94,134,331	95,047,434	95,969,394	96,900,297	96,984,093	96,927,358	97,033,491	97,482,652	98,011,918
EPA Goal calculation										
EPA Annual Avoided as Percentage	0.93%	0.93%	0.91%	0.90%	0.89%	0.88%	1.08%	1.50%	1.50%	1.50%
Annual EE MWh						856,137	1,050,846	1,449,979	1,455,502	1,462,240
Expiring savings							45,060	772,978	849,293	925,898
Net Cumulative EE MWh						856,137	1,861,923	11,767,634	12,373,844	12,910,185
EPA GOAL cumulative % of Retail Sales						0.88%	1.88%	10.81%	11.26%	11.64%

If savings acquired since 2010 are counted toward the target, Washington achieves an additional 1,817,086 MWh for a total of 14,191,930 MWh of cumulative efficiency savings by the end of 2029, or 12.92 percent of 2029 business-as-usual sales.⁵⁴ Multiplying this new net cumulative savings percentage by the 2012 Total MWh sales results in 1,645,546 additional MWh added to the denominator of Washington's rate emissions calculation. Submitted with these comments are "Washington BB4 Workpapers" that demonstrate these calculations.

Table 2: Early action credit beginning in 2010

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2028	2029	2030
BAU Retail Sales	90,379,970	93,724,917	93,230,000	94,134,331	95,047,434	95,969,394	96,900,297	97,840,230	98,789,280	108,801,125	109,856,496	110,922,104
Sales after net EE	90,379,970	93,724,917	93,230,000	94,134,331	94,190,812	95,121,677	96,053,714	96,994,957	97,741,735	107,208,447	108,248,369	109,298,378
Washington 2010 Credit Goal Calculation												
EPA Annual Avoided as Percentage	1.20%	1.35%	1.20%	1.23%	0.91%	0.90%	0.89%	0.88%	1.08%	1.50%	1.50%	1.50%
Annual EE MWh	1,123,907	1,223,539	1,126,962	1,150,686	856,622	847,717	846,583	845,273	1,047,546	1,592,678	1,608,127	1,623,726
Expiring Savings		59,153	123,550	182,864	243,426	288,511	333,128	377,685	422,173	1,184,547	1,268,372	1,293,857
Washington Net Cumulative EE MWh	1,123,907	2,288,294	3,291,706	4,259,529	4,872,725	5,431,931	5,945,386	6,412,973	7,038,346	13,852,175	14,191,930	14,521,799
EPA GOAL Cumulative % of Retail Sales			0.93%	0.93%	0.91%	0.90%	0.89%	0.88%	1.88%	10.81%	11.26%	11.64%
Cumulative % of Retail Sales since 2010									6.55%	7.12%	12.73%	12.92%

⁵² Energy Independence Act Reporting;

<http://www.commerce.wa.gov/Programs/Energy/Office/EIA/Pages/EnergyIndependence.aspx>

⁵³ US EPA, GHG Abatement Scenario TSD 1 tab "MainModule - Washington" cell AZ17 and BA17.

⁵⁴ See Excel document Washington work papers tab "Washington" for calculation.⁵⁴ Reported savings were used for 2010 to 2013. Beginning in 2014 it is assumed Washington will achieve savings at the annual rate as stated in TSD GHG Abatement Scenario 1 tab "MainModule - Washington."

Appendix V. Additional Energy Efficiency Program Types EPA Should Include

Market Transformation

The Northwest Energy Efficiency Alliance (NEEA) is a leading market transformation organization made up of over 100 Northwest utilities that has accelerated the adoption of energy efficiency measures through the introduction of emerging technologies and practices, as well as codes and standards.⁵⁵ NEEA forecasts at least 145 aMW, or 1,270,200 MWh, of total regional energy savings between 2015 and 2019, at a cost of 3.5 cents per kWh.⁵⁶ For many of the small utilities in the region, NEEA savings account for over half of their energy efficiency savings.

As a result of a large and diverse membership structure, its evaluation, measurement and verification (EM&V) protocols use the best practices in the industry, providing the public and its funders with regular evaluations of its programs.⁵⁷ The EPA should allow savings achieved by market transformation organizations like NEEA that continuously demonstrate best practice EM&V to count toward meeting the emissions reduction targets.

Codes and Standards

The proposal states its apprehension with building codes and appliance standards, as those measures “have not typically been subject to similar evaluation of energy savings results.”⁵⁸ Building codes and appliance standards are a significant source of long-term energy savings, and over the last twenty years accounted for over one-third of all savings in the Northwest.⁵⁹ Codes and standards are a more efficient way of ensuring savings across a whole state, covering areas that may be outside the patchwork of robust utility efficiency programs. If a state can demonstrate appropriate EM&V, and enforcement of those standards, the savings should be included. As an example, in 2013 NEEA found that Washington State building code compliance was 96 percent.⁶⁰

Behavioral Programs

Behavioral programs provide personalized tips to change consumer behavior to conserve energy and participate in other energy efficiency programs. Since 2008, Home Energy Reports (HER) behavioral programs have been implemented by all the investor-owned, and multiple consumer-owned utilities in

⁵⁵ NEEA Success Story: Codes, <http://neea.org/docs/default-source/success-stories/neea-success-story-codes.pdf?sfvrsn=10>

⁵⁶ NEEA Business Plan | 2015-2019, July 8, 2014, <http://neea.org/docs/default-source/default-document-library/neea-2015-19-business-plan---board-approved.pdf?sfvrsn=2>

⁵⁷ For example, see Consumer Electronics Television Initiative Market Progress Evaluation Report #3 <http://neea.org/docs/default-source/reports/consumer-electronics-television-initiative-market-progress-evaluation-report-3.pdf?sfvrsn=7>

⁵⁸ Federal Register /Vol. 79, No. 117 /Wednesday, June 18, 2014 / Proposed Rules, 34921

⁵⁹ Sixth Northwest Conservation and Electric Power Plan, page 4-16.

⁶⁰ NEEA: Washington Residential Energy Code Compliance, March 27, 2013, <http://neea.org/docs/default-source/reports/washington-residential-energy-code-compliance.pdf?sfvrsn=11>

Washington. Most utilities hire a contractor to administer the program, which provides customers with feedback by comparing a household's energy use with that of its peer neighbors. To demonstrate actual savings, the contractor measures the reduction between the participating customers and a control group of customers that do not receive a report. The contractor must then net out potential double-counted savings from participation in other efficiency programs. To support the contractor's measurement and verification of savings, Washington also requires its investor-owned utilities to have third-party verification of HER savings. The EPA should accept programs like this that are supported by rigorous EM&V.