WDNR and PSCW Questions on EPA's Clean Power Plan Proposal.

I. OVERARCHING ISSUES.

a. **Electrical Reliability**. What factors or analyses need to be considered to evaluate impacts of this rule on electric reliability? Does the use of emissions averaging periods adequately ensure electrical reliability? Could other mechanisms help with this issue (e.g. MACT-type extensions, fail-safe/off ramp for emergencies, etc.)?

b. **Stranded Costs**. How does the proposed rule impact previous investments in emission controls, including type and magnitude of impact? Does the proposed rule include options to avoid stranded costs? If not, what could EPA change to address this? Is a certain level of stranded costs acceptable, and if so, what level?

c. **System- versus unit-based approach**. Please comment on the EPA's consideration of the electrical system as a whole in setting BSER (best system of emission reduction), and the EPA's interpretation of what is an 'adequately demonstrated' BSER. Would an 'inside the fence line' approach be more appropriate for goal setting and/or compliance? Why or why not? Please discuss any related legal concerns.

II. SETTING STATE GOALS.

a. **Baseline**. EPA set the BSER requirements based on a 2012 baseline.
   i. Does this baseline adequately credit, or conversely penalize, states and utilities for early action? If the latter, would a different year or type of baseline be more appropriate (e.g., use of the 3 highest of 5 years as used under CSAPR), and if so, why?
   ii. Please comment on EPA's legal argument that they must use 2012 as a baseline.
   iii. Does 2012 represent normal operating conditions?
   iv. Please provide your estimate of the amount of reduction due to actions between 2005 and 2012 that have not been included in the goal setting for our state, and the cost of those measures since 2005.

b. **Building Blocks**. Is the building block approach to setting state goals appropriate? Do you favor an alternative approach? Should states be allowed to propose alternative building blocks based on technical and economic feasibility when preparing a plan? Did EPA use the best data for Wisconsin power plants and power sector (renewable energy and energy efficiency) programs? For each of the building blocks below, please discuss any alternative approaches EPA could take.
   i. Building Block 1: Heat Rate Improvements. This block calls for an overall 6% improvement in the heat rate of coal units.
      1. Can Wisconsin's coal plants achieve a 4% improvement in heat rate on average through best practices? Can they achieve 2% improvement through equipment upgrades? If not, by how much could WI coal plants improve their heat rate?

2. What costs and timeframes would be needed to implement these heat rate improvements?
3. Should the goal be based on what is achievable on average across the nation or be more focused regionally or within a state?
4. Does EPA adequately consider possible interactions with Building Block 2 (increased dispatch of NGCC units) in determining what is achievable for heat rate improvements? For example, could decreased reliance on coal offset any benefit of efficiency upgrades because of reduced heat rate when a unit is run less or cycled more often, and by how much?
5. In calculating the goals, EPA assumes power plants can achieve all of the heat rate improvements by 2020. Is this feasible for Wisconsin units, or should EPA assume units can accomplish these improvements over a longer time period (e.g. by 2030)?
6. For utilities: please identify any heat rate improvements made since 2005 and provide specific cost and percentage change in heat rate for each unit.
7. For utilities: identify any heat rate changes from emission control projects and provide specific cost and percentage change in heat rate for each unit. Discuss whether these changes are considered in the baseline.

ii. **Building Block 2: Increased Dispatch of NGCC Units.**

1. Can the state's NGCC units operate at 70% capacity on a permanent basis? What are the equipment impacts and O&M costs of operating at 70%? What are the impacts on the electric system? Will decreasing the ability to quickly ramp up/down adversely affect intermittent renewables on the system?
2. Is this building block likely to create electrical reliability issues if NGCC capacity isn't available for increased dispatch upon demand? Would operating NGCC units at 70% capacity affect utilities ability to maintain the required 15% reserve capacity for reliability purposes?
3. Was EPA's determination that existing natural gas infrastructure could support such an expansion adequate? If not, how much additional capacity is needed and is firm gas available? Please comment on natural gas storage and hedging impacts.
4. EPA suggests that states could drive these changes in dispatch via either economic mechanisms (e.g., a carbon price on electricity generation) or via emissions limits in permits. Which mechanism do you think would be most effective? What are the strengths and weaknesses of each mechanism?
5. In calculating the goals, EPA assumes power plants can increase NGCC dispatch to 70% by 2020. Can Wisconsin units fully ramp up dispatch by 2020, or should EPA allow units to shift dispatch over a longer time period?

iii. **Building Block 3a: Dispatch of At-Risk Nuclear Capacity.**

1. Is it appropriate and meaningful for EPA to count 5.8% of Point Beach's generation as "at risk"? Is this methodology reasonable, and if not, is there another approach you would propose to consider nuclear facilities? How

would this approach impact a non-regulated, merchant-owned plant like Kewaunee?

2. How does this effort to keep "at-risk" nuclear plants open interact with licensing requirements which may require the plants to close at a certain date? For example, Point Beach's units are licensed through 2030 and 2033.
3. Should EPA include other existing nuclear generation (e.g., the remaining 94.2% of Point Beach's generation) in setting the goal? If so, how?

iv. **Building Block 3b: Increased Generation of Renewable Energy.**

1. Is it possible for Wisconsin to expand renewable generation to 11% of total generation with only in-state resources, and if so, what is the estimated cost of doing so? Is this achievable using a combination of in-state and out-of-state renewable energy purchases (which EPA intends to allow), and what are the likely costs of complying? How close are utilities to reaching the 11% goal if the requirement was for in-state resources?
2. Is it appropriate for EPA to exclude out-of-state renewables in setting a state's goal? If it is not appropriate, can you suggest a mechanism by which EPA could account for the many different contracts for renewable electricity purchases across state lines?
3. Is it appropriate for EPA to determine the target and growth rate on a regional basis? Are there other ways (state-specific, nationally, based on technical renewable generation potentials) that would be better?
4. Is the use of state Renewable Portfolio Standard targets appropriate for a regional goal?
5. Is it appropriate for EPA to apply a growth rate that is a percent of existing capacity?
6. EPA describes an alternative renewable energy approach based on technical and market potential for renewable energy within different states. Do you believe this is a better approach? Do you agree with how they calculated renewable energy potentials? Please discuss why or why not. What would this mean for Wisconsin, specifically? Would an approach that is based on potential within in a state rather than RPS goals consider current or future out-of-state obligations?

v. **Building Block 4: Increased Energy Efficiency.**

1. Is it achievable for Wisconsin to sustain 1.5% incremental savings per year through 2030 and beyond? If so, should it be done through the Focus on Energy program or via some other means? If 1.5% incremental savings is not achievable, is there a different target that would be more appropriate?
2. Is the growth rate of 0.2% of sales per year appropriate? If not, what is the appropriate growth rate?
3. Is EPA's choice of measure lifetime (used to define the duration of energy savings) for the goal appropriate?

c.

d. Alternative Approaches Discussed by EPA.

i. EPA presents alternate targets for each building block that are less stringent and have shorter compliance periods. Please comment on each of these targets and whether you believe they are more or less appropriate than those proposed by EPA.

ii. EPA also discusses a different approach to setting the goals based on Building Block 1 (heat rate improvements) coupled with reduced utilization of fossil EGUs. Do you believe this is a better approach? Please discuss why or why not.

III. COMPLIANCE WITH THE RULE.

a. **Compliance Flexibility**. Do you have any concerns with the compliance flexibility proposed in the rule? Are there other flexibilities that should be considered (e.g. use of CHP, non-electric energy efficiency, etc.)? If EPA allowed too much flexibility, how could they narrow the scope of what is allowed for compliance?

b. **Responsible Parties.** EPA says this rule should allow states to comply via either an emission limit approach (in which limits are applied to units which may or may not be able to purchase and trade credits) or a portfolio approach (which may combine emission limits with other enforceable measures and may be utility-driven or state-driven). Does anything in the rule as written preclude the use of any of these approaches? Which parties (utilities, states, etc.) should bear the obligation for the different aspects of compliance?

c. **Rate and mass based standards**.

i. Does the rule structure adequately allow for use of either a rate or mass based standard? If not, how could the rule be modified to do so?

ii. EPA does not prescribe a methodology for determining mass based limits. What factors should be considered in establishing a mass cap?

iii. EPA presumes that states may establish mass caps when developing a plan. Should these values be fixed or be adjustable going into the future?

iv. Should EPA determine mass caps for each state? Should states be required to use EPA's determined limit or allowed to calculate their own mass cap (subject to EPA approval)?

v. Would it be appropriate and feasible for Wisconsin utilities to adopt different approaches such that one utility could comply with a mass-based standard while another meets rate based goal?

d. **Use of new facilities for compliance**. EPA states that it intends to allow new units (such as new NGCC plants) to count towards compliance with the existing source rule. Do you see any potential issues with regulating these plants under both 111(b) and 111(d)?

e. **Expansion of renewables**. For utilities: how much additional renewable generation and what type do you anticipate using to comply with this rule? Are you likely to build this capacity in state or out-of-state? Please provide any costs estimates, if you have them, for this additional capacity, whether it is generation or transmission costs.

f. **Interstate effects - RE**. EPA states that renewable electricity purchased from out-of-state could count towards compliance if the states ensure that this electricity will not be double

counted. Is this appropriate? Can you suggest any way to structure the program to ensure that such electricity is not double-counted?

g. **Interstate effects – EE.** EPA proposed to scale down energy efficiency savings for states that are net importers of electricity and took comment on whether they should scale up EE savings for net exporter states to account for the cross-border savings from in-state programs. Are these each appropriate approaches? Is there a better way to handle this issue?

h. **Trading program.**
    i. EPA allows states or regions to create plans based on emissions averaging and trading. Is this appropriate?
    ii. Should EPA provide a default national trading program that states or sources can opt into for compliance purposes?
    iii. Are there types of credits or trading programs that may be barred from the rule as proposed?
    iv. Would it be appropriate to have separate systems for trading pounds of CO_2 and avoided megawatt-hours of generation?
    v. Should a trading program be state-wide, region-wide, or nation-wide?
    vi. Who should manage emission trading systems?

i. **Displacement of generation/emissions.** EPA does not specify a methodology for states to use in determining what kind of generation (and how large its associated CO_2 emissions) would be displaced by renewable electricity and energy efficiency measures. What would be the best way to determine this?

j. **Federal enforceability of compliance measures.** If a program is explicitly used as a compliance measure under this program, EPA has stated that that program must become federally enforceable. Do you foresee any issues with having existing state programs (such as the RPS and Focus on Energy) become federally enforceable?

k. **Regional approaches to compliance.** Do you have any thoughts on whether Wisconsin should participate in a regional compliance approach? What type of regional approach would be most appropriate? Which other states would you like to see as partners?

l. **Treatment of biomass.** EPA stated that they assume states will use biomass for compliance with the regulation, but also referred to their not-yet-released biomass accounting framework when discussing how biomass would be treated under this rule. How should biomass be treated? Should different types of biomass-based generation be treated differently? For example, should ag digesters receive credit for methane reduction as well as for displacing carbon emitting generation?

IV. OTHER TOPICS.

a. **Potential to trigger New Source Review requirements**. Do you agree that sources undertaking efficiency improvement projects under 111(d) should not trigger NSR permitting requirements for criteria pollutants? Can you provide any technical or legal analysis or justification for why sources complying with the state 111(d) plan should not (or should) trigger NSR permitting requirements?

b. **Permit interaction under multiple federal rules.** Do you have concerns about how the different requirements under different rules (i.e., the CO_2 NSPS, the modified and reconstructed source proposal and the existing source proposal) interact for permitting purposes? How should EPA and WDNR handle these interactions?

V. MODIFIED AND RECONSTRUCTED SOURCE PROPOSED RULE.

a. BSER. The baseline for modified steam boilers and fossil fuel gasification units is based on each unit's best historical annual emission rate plus an additional 2% emission reduction. Is this an appropriate baseline? Should EPA use an averaging period in determining a historic emission rate? Is it reasonable to require an additional 2% emission reduction?

b. **Proposed emission limits.** Are the emission limits that EPA proposes for modified and reconstructed units appropriate?