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November 12, 2014

The Honorable Gina McCarthy  
Administrator  
US Environmental Protection Agency  
EPA Docket Center (EPA/DC)  
Mail Code 28221T  
Attn: Docket ID No. EPA-HQ-OAR-2013-0602  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

Office of Information and Regulatory Affairs  
OMB  
Attn: Desk Officer for the EPA  
725 17<sup>th</sup> St. NW  
Washington, DC 20503

Re: State of Iowa coordinated comments on EPA proposed 111(d) regulations;  
Docket ID No. EPA-HQ-OAR-2013-0602

Dear Administrator McCarthy:

The following comments are from the State of Iowa, specifically, from the Iowa Department of Natural Resources (IDNR), the Iowa Utilities Board (IUB), and the Iowa Economic Development Authority (IEDA), who appreciate the opportunity to comment on the proposed 111(d) regulations. We thank the Environmental Protection Agency for conducting extensive outreach both before and after issuing the proposed rules; for listening to our ideas; and for providing flexibility to the states in the rules and as we develop our implementation plan.

The IDNR implements state and federal laws that protect air, land and water through technical assistance, permitting, and compliance programs. IDNR has authority through both a delegation agreement with EPA and state statute to implement 111(d) regulations in the State of Iowa.

The IUB regulates public utilities in Iowa, including electric utilities that own and operate electric generating plants in Iowa. The IUB makes decisions that balance the interests of all parties to ensure that utilities provide adequate, reliable, environmentally responsible, and safe service to Iowa consumers at reasonable prices. Therefore, the IUB has an interest in ensuring that the requirements EPA chooses to apply to existing electric generating plants be written and implemented without creating disruptions in the provision of electric service to consumers and without generating significant, unnecessary increases in the cost of electric service to customers.

The IEDA assists economic development projects in the State of Iowa with financial and technical assistance. IEDA oversees job creation programs, business recruitment programs, community development programs, housing programs, workforce training programs, foreign

trade programs, tourism programs, and energy programs. IEDA is the parent agency of the Iowa Energy Office and the Iowa Tourism Office. IEDA has an interest in ensuring that the use, cost, and regulation of energy in Iowa do not limit economic growth in the State.

In these comments, we refer to these three agencies jointly as the State of Iowa. These comments were developed after thorough stakeholder coordination and input. Since the EPA began its outreach to states in the fall of 2013, Iowa stakeholders have met four times collectively, with approximately thirty-five different organizations participating. In addition, the DNR and/or IUB have participated in more than twenty-five individual stakeholder meetings since the rule was proposed on June 2, 2014. This has been an excellent opportunity to obtain stakeholder input.

### **Important Principles**

Iowa encourages EPA to consider the following important principles when finalizing the 111(d) regulations.

- It is critically important that EPA consider the impacts of the rules on the reliability of the electric system and the cost to consumers. EPA's goal with the final regulations should be to reduce carbon dioxide (CO<sub>2</sub>) emissions while maintaining a reliable, affordable electric system that can be sustained over the long term.
- States and utilities should be given sufficient time to carefully plan and implement the changes that will be required.
- EPA should give states appropriate credit for all actions that have been taken or will be taken to reduce CO<sub>2</sub> emissions or reduce the carbon intensity of the state's electric generation.
- EPA should reward early action and should not discourage state or utility implementation plans from counting greenhouse gas reductions from ongoing programs which occur any time after the baseline date.
- If utilities have taken actions to comply with any other environmental requirement, and the actions have had the effect of reducing CO<sub>2</sub> emissions, the utilities and states should receive appropriate 111(d) credit.
- EPA's rules should provide flexibility for states and utilities, and to the extent possible, should minimize the administrative burden on the states.
- State plans must be allowed the flexibility to count renewable energy that is generated in one state and consumed in another, as long as the generation is not double-counted.
- States must be allowed the flexibility to include new natural gas units in their 111(d) implementation plans if they choose to do so.
- States should have the flexibility to join a multi-state plan or opt out of a multi-state plan if they so choose. Multi-state plans should have the same flexibility in demonstrating compliance as state plans do.
- EPA's rules must respect the existing regulatory authority of the Federal Energy Regulatory Commission (FERC) and state public utility commissions.

### **Rate-to-Mass CO<sub>2</sub> Conversion**

Iowa recognizes that EPA provides some guidance on how to convert a state-specific rate-based goal to an equivalent mass-based goal in section III.B of EPA's "Projecting EGU CO<sub>2</sub> Emission Performance in State Plans" Technical Support Document. However, additional guidance is needed. One of the first questions a state must answer when developing its implementation plan is whether the state wishes to comply with a rate-based or mass-based

emission goal. Any conversion from a rate-based to mass-based emission goal is critical and must be done with accuracy and transparency. Therefore, it is imperative that states have this guidance as soon as possible, and definitely before the rule is finalized.

At a minimum, EPA should provide states with detailed directions, equations, and examples explaining how states can convert EPA's proposed state goals to mass-based goals. It would also be extremely helpful if EPA provided this guidance via some type of electronic calculation tool. This would also provide more consistency among the states' rate-to-mass conversion.

EPA should perform a presumptive translation of the state-specific rate-based CO<sub>2</sub> emission performance goal to an equivalent mass-based goal for all states and for multi-state regions. This should include default modeling assumptions and the results of modeling runs for a *Reference Case Scenario* and an *EPA Mass-Based CO<sub>2</sub> Emission Goal Policy Scenario*, as described in section III.B of EPA's "Projecting EGU CO<sub>2</sub> Emission Performance in State Plans" Technical Support Document. EPA's translation should include a clear description of how the conversion was done so that states may easily replicate EPA's work. State plans should be allowed to include a mechanism to recalculate the mass-based goal during the compliance plan based on demand growth and other factors.

### **Calculation of Multi-state Goals**

EPA should provide states with detailed directions, equations, and examples explaining how a rate-based multi-state goal can be calculated by states that agree to participate together in a multi-state plan. This guidance should also include directions on how to convert a multi-state rate-based goal to a multi-state mass-based goal with the same level of detail as described in our above comment on *Rate-to-Mass Conversion*.

### **Use of Significant Digits in EPA Calculations**

EPA's calculations of the state-specific CO<sub>2</sub> emission goals would be more transparent and easier to follow if EPA were more consistent in the use of significant digits in the proposed rule, technical support documents, and data files. For example, in many documents, EPA refers to an "at-risk" nuclear capacity of 6%, but in some documents EPA refers to a capacity of 5.8%. After several weeks of being unable to recreate EPA's calculations, IDNR discovered that EPA used a value of 5.84264%, not 6%. Had the percentage been used more consistently throughout the documents or more clearly noted, significant time and confusion could have been avoided. The same can be said of EPA's use of a North Central renewable energy goal of 15.114% in its calculations, when it is referred to in the proposed rule and technical support documents as 15%. We encourage EPA to revise the preamble and its technical support documents to make the calculations and percentages used as clear as possible.

### **Applicability Criteria for Affected Electric Generating Units (EGUs)**

In reviewing the preamble and the proposed regulatory text, there appear to be inconsistencies with the applicability criteria used to determine which EGUs are affected by the rule, specifically the criteria regarding the 219,000 MWh threshold. This inconsistency is presented below:

From the preamble 79 FR 34854:

**sells** (emphasis added) *the greater of 219,000 MWh per year and one-third of its potential electrical output to a utility distribution system;*

From the proposed regulatory text (Section 60.5795) 79 FR 34954:

***was constructed for the purpose of supplying*** (emphasis added) *one-third or more of its potential electric output and more than 219,000 MWh net-electric output to a utility distribution system on an annual basis.*

The phrase “constructed for the purpose of supplying” is not defined in either established or proposed regulatory text. It is unclear if this means the same thing as “has the potential to generate and supply at least 219,000 MWh per year” or if there is another test for determining the purpose for which the unit was constructed. The preamble indicates that the unit must actually sell at least 219,000 MWh per year, which also raises questions. It is unclear if the unit is affected if it ever sold more than 219,000 MWh in a year or if this is based on an average over a certain time period. In Iowa, there are several units that EPA has identified as “likely affected units” in the proposed rule; however, these units have never sold more than 219,000 MWh in a calendar year. Two examples are Streeter Station Unit 7 and Muscatine Unit 7. It is unclear whether these units should be affected units under the rule, which could affect the goal calculation for Iowa. The preamble and the regulatory text should be clarified so that states can easily determine which units are affected and which are not. Iowa also requests that EPA work with IDNR when the applicability criteria is more clearly defined so that EPA’s list of affected sources is accurate when the state goal is calculated in the final rule. IDNR also seeks clarification from EPA on whether a unit may request that IDNR limit their annual generation in an Iowa construction permit so that the unit would not be a 111(d)-affected unit.

### **Reporting of Generation and Emissions by Affected Entities and Frequency of State Reporting**

In order to streamline reporting under §60.5815, EPA should require in the final rule that all affected entities report the emissions performance and net generation data required directly to EPA’s Clean Air Markets Division (CAMD). Currently, CAMD requires reporting of gross generation and CO<sub>2</sub> emissions by Part 75 and CAIR-affected units, so CAMD already has the infrastructure in place to add reporting of net generation. This method will allow states to easily access the reported data on the CAMD website in a timely fashion<sup>1</sup> and will save states the expense and time required to develop their own individual state reporting systems, train affected entities, and process submitted reports. CAMD will also provide a consistent reporting format and central data location to retrieve data for all affected units in all states.

Iowa is also concerned that the generation data reported to EIA by non-affected units, such as wind farms, will not be publicly released by EIA in enough time for states to complete the annual compliance reports required in § 60.5815. The reports are due annually on July 1 for the previous year starting on July 1, 2021. However, there is currently nearly a year lag between when the data is reported to EIA and when the final annual data is made publicly available. For instance, the final 2012 unit-level generation data was not released until November 2013. **EPA should not require states to submit annual compliance reports until all required data is publicly available.** Iowa recommends extending the due date to at least December 31 for demonstrating compliance for the previous calendar year.

### **EPA’s IPM Modeling Inputs for Iowa**

It appears that the Integrated Planning Model (IPM) modeling EPA conducted for the 111(d)

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<sup>1</sup> CAMD data is usually publicly available 30 days after of the end of the quarterly reporting period.

proposed rule is based on EPA's version 5.13 of the National Electric Energy Data System (NEEDS) database that was also used for EPA's 2018 Emissions Modeling Platform. Since the NEEDS database supplies many essential electrical generating unit (EGU) parameters to 111(d) IPM modeling, the NEEDS database must be as accurate as possible if IPM is to provide a useful forecast of power sector emissions and electricity generation. Iowa believes that the corrections, updates, and improvements to version 5.13 of the NEEDS database that IDNR and Alliant Energy provided during the public comment period for EPA's "Notice of Availability of EPA's 2018 Emissions Modeling Platform"<sup>2</sup> are still valid. Therefore, Iowa requests that EPA incorporate IDNR's and Alliant Energy's comments into its IPM modeling for 111(d). Copies of IDNR's cover letter and comments and Alliant Energy's comments are attached to this document as Attachments A, B, and C for your convenience.

It also appears that EPA made updates, such as heat-rate improvements, which created some differences in the projected statewide total emissions between the 111(d) IPM results and the original NEEDS v5.13 data, but Iowa cannot confirm this because EPA did not provide the unit-level results for the 111(d) modeling. Instead, the results are only available in statewide totals or by other aggregated methods. Iowa seeks clarification from EPA on the unit-level results for its 111(d) modeling.

### **Appropriate Baseline**

**A three year (2010-2012) average of generation and emissions should be used as the starting point for the EPA's goal calculations.** A multi-year averaging period is appropriate because of yearly variation in wind, solar, and hydrological conditions; maintenance cycles for affected and nuclear units; weather variations; economic conditions; and fuel prices; all of which can affect the dispatch of fossil and carbon free resources from year to year.

### **Interim Goal**

**Iowa requests that the interim goal be eliminated, or at the very least, start no earlier than the year 2025 with significantly less stringency compared to the final goal.** As proposed, there is very little difference between the interim goal and the final goal. (In Iowa, the interim goal is 1341 lbs/MWh and the final goal is 1301 lbs/MWh.) Effectively, the EPA has set a 2020 compliance deadline with no appreciable phase-in. The option offered by EPA to over-comply in later years to make up for lack of compliance in the early years is not realistic and may impose unnecessary costs and adverse effects on reliability that would most likely not be required if additional time were allowed to make necessary changes to the electric system.

**When requiring CO<sub>2</sub> reductions, EPA's rules should allow for implementation of the changes in ways that maintain a reliable, affordable electric system that can be sustained over the long term.** For many utilities, and therefore states, compliance with the final goal will require more time than allowed by the interim goal.

Therefore, the interim goal should be eliminated. The enforceable goal should start in 2030 with credit for early actions prior to that date. Credit for early action will provide an appropriate incentive for utilities to take actions to reduce their CO<sub>2</sub> emissions and the carbon intensity of their generation fleet prior to 2030.

If EPA requires an interim goal in the final rules, the goal should start no earlier than 2025, and

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<sup>2</sup> Published in the Federal Register (FR) on January 14, 2014 (79 FR 2437).

the level of the interim goal should be significantly less restrictive than the final goal to allow additional time for efficient, thoughtful planning and implementation of changes that will be required. This may lead to greater reductions in the long term if affected entities have more time for planning.

### **Compliance Averaging Time**

EPA proposes that an appropriate averaging time for any rate-based emission standard for affected EGUs and/or other affected entities subject to a state plan be no longer than 12 months within a plan performance period and no longer than three years for a mass-based standard, and invites comment on longer and shorter averaging times for emission standards included in a state plan.<sup>3</sup> **The compliance averaging time for both the final rate-based and mass-based standards should be three years.** A multi-year averaging period is appropriate for rate-based standards because yearly variation in wind, solar, and hydrological conditions and maintenance cycles for affected and nuclear units can affect the dispatch mix of fossil and carbon-free resources from year to year.

### **Renewable Energy Treatment**

Iowa is a world leader in wind energy generation. Over 27% of the energy generated in Iowa comes from wind. One of our investor-owned utilities has the most wind of any rate-regulated utility in the nation. One of our generation and transmission cooperatives has nearly 25% of its energy generated from wind. By the end of 2012, Iowa had installed 5,083 MW (nameplate capacity) of wind. MidAmerican Energy Company, the largest utility in Iowa, is constructing an additional 1050 MW of wind, which is expected to be in service by the end of 2015. On October 10, 2014, MidAmerican announced its plan to seek approval for an additional 162 MW of wind generation in Iowa. **Iowa's utilities and their customers have invested billions of dollars to reach the state's current level of renewable generation. In its treatment of renewable energy in the final rules, EPA should reward early action so utilities and their customers are able to benefit from the renewable energy investments they have already made.** Iowa recognizes and appreciates that EPA has rewarded Iowa's early investment in renewables by calculating the state's goal using the regional average as proposed.

Iowa has many statutes that encourage the development of renewable energy, including requiring investor-owned utilities (IOUs) to interconnect with and purchase energy from alternate energy production facilities, net metering, advance ratemaking principles, renewable electric generation law, an alternate energy revolving loan program, the requirement that utilities offer alternate energy purchase programs to their customers, generation siting exemption for small facilities, small wind innovation zones, solar access easements, property tax exemptions and special valuation and assessments for renewable generation property, replacement and sales tax exemptions, wind energy and renewable energy tax credits, and a small renewable portfolio standard. See Iowa Code §§ 423.3(54), 423.3(90), 427.1(29), 427B.26, 437A.3(27), 437A.6, 476.41-.48, 476.53, 476.53A, 476A, 476B, 476C, and 564A.

Iowa believes the proposed rules provide that the same unit of renewable energy may be used to show compliance with both a state renewable portfolio standard and a 111(d) state plan. Iowa supports the proposed rules' position on this issue because entities would be using the renewable energy units for two separate purposes, and there is no reason they should not be allowed to do this. Additionally, permitting states to use the same unit of renewable energy to

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<sup>3</sup> Proposed § 60.5820, definition of "Compliance Period."

show compliance with both the state's renewable portfolio standard and 111(d) would appropriately reward the state for adopting proactive policies.

Establishing which states or entities have a right to claim environmental attributes for future compliance credit can be complex. Iowa believes that Iowa utilities and their customers should be able to benefit from the investments that they have paid for. However, establishing who has paid for what renewable generation is not always simple.

**The final EPA rules should clearly provide that it is up to the owners of renewable generation to indicate which entity gets credit for the renewable generation. The States will review the owners' submission and state plans will then include and track these agreements.** The rules should clearly state that EPA will respect agreements regarding this credit as long as there is no double-counting of the renewable generation for 111(d) compliance. EPA's final 111(d) rules do not need to anticipate and provide for the wide variety of situations involving renewable generation that is located in one state but used for compliance in another state.

In the proposed rules, EPA requests comment on whether the final rules should set a renewable generation floor equal to the amount of the state's actual 2012 renewable generation for states such as Iowa that exceed the regional average. **EPA should not adopt this alternative because it would penalize Iowa's early action in adopting renewable energy policies and its utilities' investment of billions of dollars in wind generation.<sup>4</sup> Iowa utilities and other early actors should be appropriately rewarded for taking a leadership role in installing renewable generation.**

In footnote 30 to Section II.C of the proposed rule, EPA refers to the new generating capacity of the following renewable power generating technologies – “solar, wind, hydro, geothermal, landfill gas, and biomass.” Iowa seeks further clarification from EPA on whether actual generation from all six of these technologies, plus energy generated from wastewater treatment, can be included in the total annual generation number the state uses to demonstrate compliance with its emission goal. **Iowa believes that generation from solar, wind, hydro, geothermal, landfill gas, and biomass should all be counted as renewable generation in the denominator of the state's compliance calculations.**

Iowa also seeks clarification from EPA on how CO<sub>2</sub> emissions from the co-firing of biomass at electric generating units (EGUs) should be calculated. Iowa understands that EPA intends to provide this clarification in its upcoming revisions to its biogenic CO<sub>2</sub> accounting framework. Iowa encourages EPA to publish the revisions to the framework for public comment as soon as possible. The revisions should clearly explain how both the CO<sub>2</sub> emissions and generation from the combustion of biomass should be calculated and credited in demonstrating compliance with state-specific emission goals.

### **EPA Alternate Proposals to Calculate the Renewable Generation Baseline**

In the Section VI.C.3 of the proposed rule, EPA requests comment on an alternative methodology that would use a state-by-state assessment of renewable energy technical and market potential to calculate the state's goal. **Iowa supports the current method that EPA**

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<sup>4</sup> The IUB thinks it is important to note that Iowa utilities' customers have paid for this renewable generation, and setting a floor based on Iowa's 2012 renewable generation would not appropriately reward them for their early investments.

uses to calculate the renewable generation goal in the proposed rule, and finds the following issues with the alternative methodology:

- **Iowa has achieved the highest percentage of wind generation in the country.** Under the alternative renewable energy calculation, Iowa would have to double the amount of renewable energy it currently produces, up to 54% percent of its 2012 generation.<sup>5</sup> **The reliability and infrastructure issues associated with this unprecedented growth in a variable energy resource are not addressed by EPA and must be considered as an integral part of the construction of renewable energy generation.**
- For some states, EPA's alternative approach results in increases in renewable energy generation that exceed the total amount of all electricity generation reported in that state in 2012. This is not plausible, and if the alternative method is used in the final rule, the method should be modified so this result is not possible.
- **The alternative methodology relies on complex technical and economic analyses which depend on highly subjective input values that have not been fully vetted yet.**
- **It is unnecessary for EPA to use this alternative methodology for a state like Iowa,<sup>6</sup> because Iowa has already started on the trajectory to meet its 1,301 lbs/MWh goal due to its early action in renewables and energy efficiency.** Iowa believes that if given additional time for thoughtful planning and implementation, Iowa and its utilities will voluntarily achieve reductions above and beyond its 1,301 lbs/MWh goal.

EPA also recently proposed additional alternatives for calculating the renewable energy goal in Section III.B.2 of the October 30<sup>th</sup> Notice of Data Availability (NODA) for the Proposed 111(d) Carbon Standards. Again, Iowa supports the current method that EPA uses to calculate the renewable generation goal in the proposed rule, and does not support any alternate calculation that does not allow Iowa to receive credit for its early action and billions of dollars of investments in renewable energy.

### **Cost and Reliability Safety Valves**

There is no provision in the proposed rules for either a cost or a reliability safety valve. **The final rules should include provisions for suspension or modification of compliance requirements in the event that unforeseen circumstances threaten system reliability or produce cost impacts that would significantly harm customers.** No one can predict all of the events that could lead to significant unanticipated cost or reliability problems. Prudence dictates the inclusion of reliability and cost safety valves. There is a precedent for this in EPA's December 16, 2011, Enforcement Memorandum regarding the Mercury and Air Toxics Standard (MATS), which gives reliability critical units the opportunity to obtain a fifth year to comply, available at: <http://epa.gov/mats/pdfs/EnforcementResponsePolicyforCAA113.pdf>. A cost safety valve would demonstrate a commitment to EPA to prevent undue energy cost burdens on Iowa families.

### **State Plans and Reporting**

**A one-year period of time with possible one-year extension is not a sufficient amount of**

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<sup>5</sup> EPA Technical Support Document: Alternative Renewable Energy (RE) Approach, Table 1.2, p. 10.

<sup>6</sup> Iowa recognizes that not all states are in such a position.



**time for development of a comprehensive state plan that includes the twelve components required in § 60.5740.** EPA should allow two years, until June 30, 2017, for development of state plans, plus a possible one year extension. EPA should allow three years, until June 30, 2018, for development of multi-state plans, plus a possible one year extension. The compliance dates for the interim goal and final goal should be moved back at least one year, from 2020-2029 to 2021-2030 for the interim goal (if the suggestions to change the interim goal discussed above are not adopted), and from 2030 to 2031 for the final goal. **Compliance reports should be due no earlier than December 31 of each year for the previous calendar year.**

**The requirements in § 60.5760 for an initial submittal in lieu of a complete plan are too prescriptive and burdensome.** The proposed rule currently requires ten components for an initial plan versus twelve components for a complete state plan. Many of the ten components are items that the state will need an extension of time to develop. This is an area where states should be given more flexibility and Iowa proposes that the initial plan be limited to the following four components:

- A description of the plan approach and progress made to date in developing each of the plan elements in § 60.5750.
- A commitment by the state to maintain existing programs and measures that limit or avoid CO<sub>2</sub> emissions from affected entities.
- Justification of why additional time is needed to submit a complete plan.
- A commitment to submit a complete plan by the due date.

Proposed § 60.5740(a) (3) requires states to include identification of the state emission performance level for affected entities that will be achieved through implementation of the plan, and § 60.5740(a)(4) requires a demonstration that the plan is projected to achieve each of those levels. Iowa seeks clarification on what EPA envisions for the “demonstration.” Does EPA mean for states to include modeling inputs and/or outputs? If so, many states do not have the resources available to conduct their own IPM or utility dispatch modeling. EPA should provide assistance to states to help conduct their modeling, or allow states to use modeling conducted by third parties. **Without Federal assistance, this would equate to an unfunded mandate on the states.**

In addition, **EPA should clearly allow states and entities the flexibility to modify plans with minimal difficulty and as many times as needed.** It is impossible to predict the circumstances that may cause a state to need to modify its plan, but examples of when a modification may be necessary include:

- Entities may plan to contract for the purchase of renewable energy, but they may not be able to come to terms with a counter party.
- Gas prices may fall or rise, making fuel switching a more or less attractive option.
- When transmission upgrades are needed to install a utility’s new renewable energy, the timing may be outside of the utility’s control due to requirements of the regional transmission organization (RTO), and may need to be modified.
- New technology may emerge that was not envisioned when the plan was initially filed.

#### **Dates for Credit for Early Action**

**The proposed rules do not clearly give credit for actions taken between the baseline year and 2020. EPA should explicitly reward early action in its final rules.** Given that EPA's goal is the reduction of CO<sub>2</sub> emissions, it should provide an incentive for states and utilities to

undertake compliance activities as soon as possible. If EPA does not give appropriate credit for early action, it motivates entities to delay implementation until they know the actions and any reductions achieved will receive credit.

**States and utilities should be able to obtain credit for all actions taken subsequent to the baseline that reduce CO<sub>2</sub> emissions or reduce the carbon intensity of a state's or utility's generation.** For example, states and utilities should be able to include in their compliance calculations any reductions attributable to the addition of renewables, efficiency improvements currently being made by utilities as part of their MATS compliance, end use energy efficiency programs, the addition of new natural gas combined cycle (NGCC) units, improvements made to transmission and distribution systems, and any actions taken to comply with other environmental requirements, as long as the state includes the actions in its compliance plan and can show the activities reduced CO<sub>2</sub> emissions or reduced the carbon intensity of the state's or utility's electric generation.

### **Treatment of New Natural Gas Combined Cycle (NGCC) Units**

**From a practical standpoint, the addition of NGCC units is one of the most impactful and cost-effective methods for reducing CO<sub>2</sub> emissions available to utilities. Allowing new NGCC units to be counted for compliance incentivizes early action.** Therefore, EPA's rules should clearly state that states may include the addition of NGCC units in their compliance plans and count the resulting reductions in emissions and the carbon intensity of the states' generation in reaching the state's goal, as long as the new NGCC unit is added during any year after the baseline.

### **Impact on New Source Review (NSR)**

In the proposed 111(d) rules, EPA discusses the rules' impact on the New Source Review permitting program in *Section IX. Implications for Other EPA Programs and Rules*. As EPA correctly points out, a state may require (in its 111(d) implementation plan) or a facility may choose to make a physical or operational change to improve an EGU's efficiency, which may result in an increase in the EGU's dispatch and emissions. **If the increase in emissions exceeds the NSR thresholds, including netting, the changes may trigger NSR. This could be a disincentive for affected units to make improvements in efficiency. In addition, the time and resources required by both an affected facility and the IDNR to complete a NSR permitting project may limit the state's ability to meet its compliance goals on time.** Iowa recognizes that the NSR rules are critical to assuring that the National Ambient Air Quality Standards (NAAQS) and other air pollution standards that protect human health continue to be met.

EPA also says in Section IX. that EPA expects these situations to be few and that states have the flexibility to write their state implementation plans in such a way that affected EGUs would not trigger NSR. Iowa seeks clarification from EPA on why EPA expects these situations to be infrequent, given that increases in dispatch may lead to increases in emissions that may come close to the emission limits already established in the EGU's existing NSR permits.

### **The Relationship Between 111(b) and 111(d) Affected Units**

Iowa seeks clarification from EPA on scenarios where an affected unit in a state's 111(d) plan makes a modification that triggers the 111(b) requirements for modified and reconstructed sources (e.g. conversion from coal to natural gas). Will Iowa receive full credit in its 111(d) plan

for the resulting reductions in CO<sub>2</sub> emissions? **Providing such credit would appropriately incentivize states and utilities to invest in such conversions and Iowa thinks EPA should clearly state in the final rules that states may receive full credit for the resulting CO<sub>2</sub> reductions.**

### **Implementation Timeframe**

**EPA's assumptions regarding building blocks one, two, and four appear to be overly optimistic, as detailed below, and there may be problems for some smaller utilities with building block three.** The need to construct electric transmission lines and natural gas pipelines associated with building blocks two and three will require years to plan, permit, and construct. Iowa is not asking EPA to recalculate Iowa's baseline or final goal. However, EPA should recognize that the baseline calculations and goal computations EPA assumed using these building blocks do not appear to be feasible within the proposed timeframe, supporting Iowa's earlier request that the interim goal should be eliminated, or at the very least, start no earlier than the year 2025 with significantly less stringency compared to the final goal.

### **Best System of Emission Reductions (BSER) Assumptions**

The following discussion explains why Iowa believes EPA's assumptions regarding building blocks one, two, and four appear to be overly optimistic, and explains issues with building block three that are particular to some smaller utilities.

#### **Building Block 1 Heat Rate Improvements**

It appears that **a 6% heat rate improvement across all facilities is not feasible** for a number of reasons, including:

- Heat rate improvement opportunities depend on the original design of the unit, including space constraints. Some units may not be able to achieve a 6% heat rate improvement because of their inherent physical design considerations.
- Nearly all of Iowa's generating units operate within the MISO market and their owners have a strong economic incentive to improve their heat rate. Some Iowa utilities have already made significant heat rate improvements at many of their generating plants, including equipment upgrades that have improved plant efficiency, such as turbine upgrades and overhauls, installing more efficient fans, boiler work to improve the overall efficiency of plants, control system upgrades, and replacement of other equipment.
- Some affected facility owners have added pollution control equipment, such as scrubbers and baghouses to meet other emission standards, which consume station power when the unit is operating and have the effect of increasing heat rate.
- For example, one Iowa EGU owner/operator began a program of efficiency and emission control improvements at a coal generation plant in 2012, and the work is still in progress. Once these improvements are completed, the utility thinks that total heat rate improvement at full load could possibly achieve 6% compared to a 2011 reference point, including an offset for the impact of new emission control systems. However, realistically, the utility expects an achievable average improvement to be 3-5%. The utility has said that additional efficiency improvement at that plant is not achievable because it will have already implemented all currently identified opportunities to significantly improve heat rate. Additionally, the utility expects the plant improvements to degrade over time, which will require additional future investment just to restore the heat rate to near design conditions.

- The incremental cost of improving heat rates further may be significantly higher for generating units that have accomplished some heat rate improvements in the past. This may result in higher costs for customers of utilities that have implemented heat rate improvements in the past.

#### Building Block 2 – Increase natural gas capacity factor to 70%

Operating Iowa's natural gas combined cycle (NGCC) facilities at a 70% capacity factor would require a significant increase in the operation of these facilities. Iowa's 2012 NGCC capacity factor was 13%.<sup>7</sup> **While these facilities generally have the operational capability to operate at a 70% capacity factor, they are not currently operating at anywhere near this level, and several considerations affect whether a particular plant could do so, particularly within the timeframe provided in the proposed rules.**

- Some Iowa NGCC facilities have existing, available natural gas supply that would allow them to operate at a 70% capacity factor. However, there is some question whether adequate firm gas supplies will exist for other Iowa facilities.
- In addition, transmission system availability may affect whether certain NGCC plants will be able to operate at a 70% capacity factor. It takes several years to plan, permit, and construct additional transmission lines, which must be factored into EPA's consideration of the reasonable amount of time Iowa utilities would need to be able to operate their NGCC plants at a 70% capacity factor.
- Maximizing the dispatch of NGCC units will reduce the amount of ramp capability available to the electric system. Ramp capability becomes increasingly important with increased penetration of variable renewable resources.
- Iowa believes it is likely Iowa's NGCC units may be operated at a higher capacity factor than is currently being done, but the level and the impact on costs is difficult to quantify.

#### Building Block 2 - Alternate Approaches in the NODA

In Section III.B.1 of the NODA, EPA identifies a potential approach regarding additional use of natural gas under building block two, especially in states with little or no existing NGCC capacity. EPA says this approach would be to include an assumption about some minimum level of generation shift from higher-emitting to lower-emitting sources for all states with fossil steam generation in the state goals. EPA requests comment on whether to establish some minimum value as a floor for the amount of generation shift for purposes of building block two, whether that shift takes the form of re-dispatch from steam generation to existing NGCC units, re-dispatch to new NGCC units, or co-firing natural gas in existing coal-fired boilers. Under this idea, EPA would set a state's goal for building block two premised on a certain MWh of generation shifting from higher-emitting to lower-emitting NGCC generation, regardless of the actual amount of existing NGCC in the state, and even if the state had no NGCC generation.

In the same section of the NODA, EPA also highlights an alternative approach from the June 2014 proposal, in which regional availability of NGCC generation would be considered, rather than just in-state availability of NGCC generation, when setting building block two targets. EPA seeks comment on the appropriate regional structure to use in this approach and the appropriate manner in which the goals could be derived and allocated among states.

EPA states both these approaches are to address stakeholder concerns that building block

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<sup>7</sup> EPA "Data File: Goal Computation – Appendix 1 and 2.xls.

two as proposed creates significant disparities in state goals between those states with little or no NGCC generating capacity, and those with significant amounts of NGCC capacity not currently being used fully.

Iowa does not support either of these alternative approaches. Under EPA's proposed approach, a state's baseline and goals for building blocks one and two are based on that state's existing generation, which makes sense since the proposed rules are to regulate CO<sub>2</sub> emissions from existing power plants, not new ones. Given this, it does not seem reasonable or fair to set a state's goal for building block two premised on shifting generation to NGCC units that do not exist in the state based on the amount of NGCC generation in another state. It also does not seem reasonable or fair to base a state's goals on a theoretical potential to increase NGCC generation in other states over which Iowa and Iowa's utilities have no input or control.

In addition, under EPA's proposed rules, application of all the building blocks has different impacts on different states, depending on their particular circumstances and opportunities to reduce CO<sub>2</sub> emissions. It does not seem reasonable to change only building block two just because application of that building block has varying impacts on states without taking a more holistic look at how all the building blocks have varying impacts on states.

#### Building Block 3 – Increased use of renewables

Since Iowa has already exceeded the amount of wind generation required for Iowa by Building Block 3, Iowa has no further comment on the feasibility of this building block for the state as a whole.

**Some of Iowa's smaller utilities do not have the same options to add renewables as the larger investor-owned utilities do, because of their smaller size.** For example, one Iowa municipal utility has coal generation, no NGCC plants, and some wind generation in Minnesota. The utility has tried to invest in Iowa wind generation without success, because the scale at which it can invest does not match the size of most wind generation projects. These smaller utilities also do not have large customer bases over which to spread costs as larger utilities. In addition, federal incentives such as production tax credits are not available to municipal utilities, and are thus not available to partially offset the cost of renewable generation for these utilities. **Some of Iowa's municipal utilities and rural electric cooperatives will need more time than the year 2020 to change their generation portfolio to include additional lower emitting and carbon-free sources. Granting these utilities additional time in which to make the required changes will allow them to spread the associated costs for their customers over a longer period of time and minimize the cost impact on Iowa families and businesses.** Too aggressively advancing the rules for these smaller utilities would have a negative impact on family expenses in the impacted communities. When thinking about what is a reasonable cost increase to impose on customers, EPA should also consider lower income utility customers.

#### Building Block 4 – 1.5% annual incremental savings rate due to energy efficiency from years 2020 to 2029

Iowa has a number of concerns and observations related to Building Block 4.

- Iowa has required its utilities to implement energy efficiency programs since 1990 and Iowa has already achieved significant savings from energy efficiency programs. For example, the numbers listed by EPA suggest a level of accumulated annual

electricity savings in Iowa equal to 7.80 percent of retail sales in 2012.<sup>8</sup>

- Iowa's utility energy efficiency programs are based on Iowa Code §§ 476.6(14) and (16). This statute requires all Iowa utilities to offer energy efficiency programs. One key parameter in Iowa's statute and rules is cost-effectiveness.

- **In recent years, Iowa utilities have achieved results close to one percent incremental savings, for both electric energy and natural gas. However, there are significant differences among various types and sizes of Iowa utilities in terms of energy efficiency results, as follows:**
  - Energy efficiency programs of the investor-owned utilities are approved by the Iowa Utilities Board, must be cost-effective, are approved for five years at a time, address all types of retail customers, and recover costs concurrently with expenses.
  - Energy efficiency programs and plans of Iowa municipal utilities and electric cooperatives are reported to the Board, but are approved by the local governing bodies, may be limited in scope or duration, and generally have only occasional participation by large non-residential customers. Part of the success of energy efficiency programs offered by investor-owned utilities is due to their size. **Larger utilities can support technically complicated programs for larger customers. Smaller utilities such as municipal electric systems may not have the resources to establish and support complex programs which would have infrequent participation.**
- However, for both investor-owned and consumer-owned utilities, much higher levels of savings implied by the EPA's Building Block 4 calculation may imply much higher utility and participant costs. In addition, **energy efficiency costs are incurred up front, while benefits arrive slowly over time. Dramatic cost increases could reduce public support for these programs.**
- The EPA methodology for Building Block 4 may create problems due to inadequate consideration of the interaction of state and utility energy efficiency measures with non-utility efficiency standards, as follows:
  - Manufacturers of key efficiency technologies in sectors such as lighting, motors, refrigerators, HVAC equipment and commercial appliances will be required to meet higher federal equipment standards. The effect of federal standards is to increase the threshold used to determine energy efficiency kWh and therm savings, reducing the kWh savings credited to state or utility energy efficiency programs.
  - Similar to the federal equipment standards, states (including Iowa) are making efforts to establish and enforce more stringent building codes. **EPA should further clarify how states or utilities can obtain credit by facilitating adoption of higher building standards and compliance with standards.** Similar to federal appliance standards, stricter codes mean higher thresholds and lower savings for programs that incentivize efficiency performance greater than codes. Further, it must be recognized that building code requirements, if not done in a measured way, can overly burden families and businesses.

### Building Block Interactions

Overall, the EPA should consider the interdependency impacts of the building blocks. For example, NGCC units are currently used to balance variation in renewable generation. Building block two assumes a 70% capacity factor for NGCC units. Adding new renewables under

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<sup>8</sup> EPA Technical Support Document (TSD-7), GHG Abatement Measures, p. 5-17, or p. 134 (PDF version).

building block three would require the addition of even more new fast-ramp resources such as NGCC to balance the additional renewables. Therefore, the **issues presented by EPA's overly optimistic assumptions in building blocks one, two and four are compounded by these interdependency impacts.**

#### Conclusion Regarding Implementation Timeframe

**Iowa is not asking EPA to recalculate Iowa's baseline or final goal based on the assumptions in building blocks one, two, and four. Instead, Iowa requests that the interim goal be eliminated, or at the very least, be delayed to the year 2025, with significantly less stringency compared to the final goal.**

#### Reliability

**The impacts of the proposed rules on grid reliability are unknown at this point.** Given that the Midwest states' electric system operates under the control of independent system operators, the following issues must be considered when thinking about the impact of the 111(d) rules on the reliability of the electric system. These issues also show the **need for a reliability safety valve.**

In regions with organized wholesale electric markets, such as MISO and SPP, state and federal regulatory agencies have jurisdiction over different market segments. States have jurisdiction over retail markets, while FERC has jurisdiction over wholesale markets. However, both markets rely on the same generating units and transmission lines to serve their jurisdictional load requirements. Hoping to depend on the same resources, some vertically integrated utilities could retire units to comply with 111(d), potentially resulting in significant costs and reliability issues in certain areas. Quantifying all the impacts of these changes in market dynamics, and identifying potential reliability problems, can be difficult. For example, until a recent resource adequacy survey was completed in MISO, it was not known that multiple utilities were relying on the same resources in MISO to meet their resource adequacy requirements. Even after the issue was identified, it has been difficult to quantify the exact shortfall. These issues could be exacerbated in states with utilities participating in more than one regional transmission organization (RTO)/independent transmission organization (ISO).

If plant operators chose to comply with EPA regulations by retiring large amounts of base load capacity, system reliability issues could be triggered in certain areas. Retirements of larger units could result in reserve margins that are lower than acceptable levels. Integrating large amounts of variable resource renewable generation that is intended to replace retired generation presents operational challenges. Currently available technology is not sophisticated enough to effectively handle replacement of large base load firm resources with intermittent resources. **Base load units provide ancillary services, such as reactive power and voltage control, ramping capability, and black-start capability, many of which are location specific. Renewable generation does not support all of these ancillary services.** Any state implementation plan would need to be granular enough to recognize localized reliability issues, and would also need to be broad enough to recognize regional load balancing area requirements. This will create implementation challenges that need to be managed efficiently.

Utilities in Iowa currently use a diverse mix of fuels to operate their generating units. A properly developed utility resource plan contains a diverse mix of resources and technologies. Use of a diverse set of fuel resources for generating units and non-reliance on any specific fuel has created a reliable electric system for Iowans. Iowa's current plant siting process, advance

ratemaking principles proceedings, and policies regarding alternative fuel resources, provide for the appropriate selection of generation resources and fuel types under a reasonable cost effectiveness test. EPA's 111(d) rules need to recognize the importance of base load units in a diverse portfolio; the reality of a specific fuel's unavailability, or limited availability, at certain times and locations; and the impacts on system reliability due to unscheduled partial and/or full electric system outages.

### **Enforceability**

It is important that the final rules provide states with the flexibility to choose from a broad set of options to comply with its state emission goal. EPA's final rule should give state environmental regulatory agencies and state public utility commissions the flexibility to work cooperatively with each other and their stakeholders to develop the best state implementation plan possible while preserving the roles of EPA as the environmental regulator and FERC and the state public utilities commissions as the economic and reliability regulators.

EPA currently does not regulate dispatch of NGCC plants, renewable energy, and energy efficiency; these are areas that are regulated by FERC and the state public utility commissions. **It is important that if a state chooses to include increased dispatch of NGCC plants, renewable energy, or energy efficiency in its compliance plan under 111(d), the jurisdiction over these activities remains with FERC and the state utility commissions.**

The IUB, as Iowa's utility regulatory authority, is particularly concerned about the jurisdictional issue as it applies to renewable energy and energy efficiency. **While the IUB agrees that allowing the use of these resources for purposes of complying with CO<sub>2</sub> emissions reduction goals is good public policy, enforceability by EPA is problematic, as it may usurp the authority of FERC and state public utility commissions over these activities.** In addition, state public utility commissions like the IUB have many years of experience overseeing energy efficiency and renewable energy programs. EPA's oversight could lead to unintended consequences in terms of costs and reliability issues.

Energy efficiency programs present an additional enforcement difficulty. **Energy efficiency programs, while run by utilities in Iowa, require actions by customers that are ultimately the customers' decisions.** The IUB reviews and approves Iowa utilities' energy efficiency plans. The IUB has the authority to require Iowa utilities to offer energy efficiency programs to their customers, but the utilities do not have the authority to require customers to implement and maintain energy efficiency activities. Meeting the state's goal with energy efficiency as a compliance option will be problematic if customers choose not to participate in energy efficiency programs.

### **Funding**

If this rule proceeds, EPA should provide adequate funding to the state environmental regulatory agencies from 2015 – 2033 for developing and modifying state plans, tracking progress with state goals, determining interim compliance, and writing annual compliance certifications. Insufficient Federal resources would equate to an unfunded mandate on the states.

### **Additional Questions for EPA**

Iowa seeks clarification on whether a state plan may limit some of its affected units using a rate-



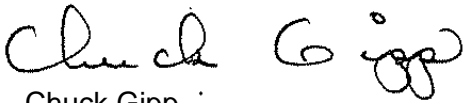
based standard, while limiting the remainder of its affected units using a mass-based standard, as long as the state can meet its compliance goal. Iowa recommends that EPA allow the states the flexibility to use this option in their compliance plans. Iowa also seeks clarification whether some affected units can be included in a state plan while other affected units participate in a multi-state plan, as long as the state can meet its compliance goal. Iowa also recommends that EPA allow the states to use this option in their compliance plans.

The State of Iowa appreciates the open dialog with EPA and expects and encourages EPA to continue open discussion even after the close of the comment period for further clarification and the full vetting of ideas. As a result, the State of Iowa may decide to submit further comments if additional guidance or information is provided by EPA.

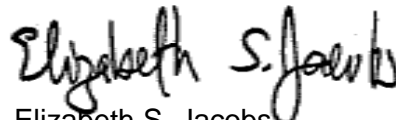
Further, the State of Iowa expects the EPA to take a balanced and thoughtful approach in promulgating the final rules. Our approach to developing workable solutions that provide sufficient time for making necessary changes will allow EPA to effectively achieve its goals without causing a firestorm of opposition that would be counterproductive. The State of Iowa will analyze the final rule and explore necessary further engagement as deemed appropriate.

Thank you very much for your consideration of Iowa's comments. If you have questions, please feel free to contact Marnie Stein at [Marnie.Stein@dnr.iowa.gov](mailto:Marnie.Stein@dnr.iowa.gov) or Amy Christensen at [Amy.Christensen@iub.iowa.gov](mailto:Amy.Christensen@iub.iowa.gov).

Sincerely,



Chuck Gipp,  
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Elizabeth S. Jacobs  
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Copy (with Enclosures) to:

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Enclosures:

Attachment A: IDNR Comments on EPA's 2018 Modeling Platform

Attachment B: IPM-Web-Ready\_Parsed\_File\_EPA5-  
13\_Base\_Case\_2018\_IowaDNRREview.xlsx

Attachment C: Alliant 2018 Comments