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December 6, 2013

Ms. Gina McCarthy, Administrator  
Ms. Janet McCabe, Acting Assistant Administrator, Office of Air and Radiation  
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Ms. Rebecca Weber  
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US EPA Region 7 Office  
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Re: EPA Regulation of Carbon Dioxide Emissions from Existing Power Plants

Dear Ms. McCarthy, Ms. McCabe, and Ms. Weber:

The Iowa Utilities Board (IUB) appreciates the opportunity to provide initial comments to the Environmental Protection Agency (EPA) regarding the EPA's plans to regulate carbon dioxide (CO<sub>2</sub>) emissions from existing power plants. In addition, we understand that Ms. Rebecca Weber and Mr. Mark Smith from EPA Region 7 will be coming to Iowa for a meeting on December 12, 2013, and we look forward to continuing conversations on these issues.

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 at reasonable prices for Iowa consumers. Therefore, the IUB has an interest in ensuring that the requirements EPA chooses to apply to existing electric generating plants be developed and implemented in such a way that they do not create disruptions in the provision of electric service to consumers and in a way that does not create significant, unnecessary increases in the cost of electric service to customers.

Reliable electric service at reasonable cost is critically important to Iowa's utility customers, utilities, and Iowa's economy. When EPA develops its regulations to reduce carbon dioxide emissions from existing power plants, the IUB encourages EPA to consider how the new requirements will affect customers who will be paying increased prices for electricity due to the new requirements. We also encourage EPA to consider the effects of the regulations on the reliability of the electric system, the ability of states and utilities to use diverse types of fuel to generate electricity, and the impact of the volatility of fuel costs on electric generation, particularly if electric generators are forced to become overly dependent on one source of fuel such as natural gas.

Iowa and Iowa's utilities will need enough time to plan for, and implement, necessary changes. State legislative and rulemaking changes that will be required take time to implement. It takes years for utilities to plan and construct different, less carbon-intensive sources of power. It takes months, sometimes years, to obtain necessary federal, state, and local permits for new generation.

EPA can choose to structure and time the new requirements so they would force closure of coal-fired generating plants, impose crippling price increases on customers, adversely affect reliability of the electric system, and impose restrictions on available fuel types. Alternatively, EPA can choose to develop reasonable requirements that provide maximum flexibility and adequate time for states and utilities so that necessary changes and cost increases can be imposed gradually and the reliability of the electric system is protected. The IUB urges you to follow this second path when developing requirements for existing power plants.

### **CREDIT FOR EXISTING POLICIES, PROGRAMS, AND EARLY ACTIONS**

The IUB has a variety of existing policies and programs that, while not created for the sole purpose of reducing CO<sub>2</sub> and other emissions from power plants, have had that effect. Some of these programs have been in place for many years and have resulted in significant energy savings and reductions in the carbon intensity of Iowa's generation fleet. The EPA should recognize the value of these programs and allow Iowa to include them as part of the best system of emission reductions.

EPA's program design should also recognize that the continued implementation of such programs will provide significant CO<sub>2</sub> emission reductions in the future.

When EPA designs its program for regulation of existing generating plants, it should also allow states and utilities to take credit for already implemented actions that have increased the use of proven, cost-effective energy efficiency, reduced the carbon intensity of the state's generation fleet, and reduced CO<sub>2</sub> emissions.

## **A. IUB and Iowa Utilities' Energy Efficiency Programs**

The IUB and Iowa utilities have had a long history of implementing energy efficiency and load management programs, with early versions starting in the 1980s. Programs and requirements have changed over the years, becoming more comprehensive, requiring increased investments and energy savings, and becoming subject to more stringent review. Iowa electric and gas utilities offer a number of energy efficiency programs, products, services, and training to residential, industrial, and commercial customers.

Iowa has four major investor-owned utilities (IOUs). Two of them sell both electricity and natural gas, and two sell only natural gas. Each IOU must submit an energy efficiency plan to the IUB for approval. Plans cover a five-year period of time. Iowa customers are also served by municipally-owned utilities and rural electric cooperatives. Municipal and cooperative utilities must develop energy efficiency goals and submit energy efficiency reports to the IUB every two years.

In 2012, Iowa's IOUs spent \$109,900,000 (actual) on electric energy efficiency and load management programs. They spent \$41,500,000 (actual) on natural gas energy efficiency programs. The municipal utilities spent \$6,400,000 (estimated) on electric and gas energy efficiency programs in 2011. Iowa's rural electric cooperatives spent \$13,800,000 (estimated) on energy efficiency programs in 2011.

These energy efficiency programs have resulted in significant electric and gas savings. The following information includes only results from Iowa's IOUs. In 2012, electric energy (MWh) new "first-year" savings were 447,358 MWh. Total accumulated first-year electric savings for the years 1997-2012 reached a level of 3,556,292 MWh per year. First-year MWh savings as a percentage of retail sales were 1.4 percent in 2012 and total accumulated first-year MWh savings (1997-2012) reached a level of 10.9 percent as a percentage of annual retail sales for 2012.

Electric demand-response potential peak reductions (peak MW) for all load management programs reached a level of 577 MW in 2012. In addition to load management, peak MW impacts of electric energy efficiency programs reached a level of 816 MW in 2012.

New first-year natural gas energy savings in thousand cubic feet (MCF) were 965,995 MCF for 2012. First-year MCF savings in 2012 as a percent of retail sales were 1.08 percent. Total accumulated first-year MCF savings (1997-2012) reached a level of 12.9 percent as a percentage of annual retail natural gas sales by IOUs in 2012.

Additional information about the IUB energy efficiency programs and plans can be found on the Board's website at:

[http://www.state.ia.us/government/com/util/energy/energy\\_efficiency.html](http://www.state.ia.us/government/com/util/energy/energy_efficiency.html)

## **B. Significant Increase in Wind Generation in Iowa 2000-2012**

Iowa has significantly increased the amount of wind generation installed in the state and has reduced the CO<sub>2</sub> intensity of its electric generation between 2000 and 2012.<sup>1</sup>

In 2000, Iowa had 237.18 MW (nameplate capacity) of wind generation installed. Iowa's electric generation production was 84 percent from coal, 1 percent from wind, 1 percent from natural gas, 11 percent from nuclear, 2 percent from hydro, and minimal amounts from other sources such as petroleum and biomass. Total megawatt-hours (MWh) produced were 41,542,010. Total CO<sub>2</sub> emissions were 41,883,759 metric tons. Iowa's CO<sub>2</sub> intensity in 2000 was 2223 lbs/MWh.

By the end of 2012, Iowa had installed 5,083.20 MW (nameplate capacity) of wind. This was 29.40 percent of the nameplate capacity installed in Iowa. Iowa's electric generation production was 62.48 percent from coal, 24.5 percent from wind, 3.47 percent from natural gas, 7.64 percent from nuclear, 1.44 percent from hydro, and minimal amounts from other sources, including petroleum and renewables other than wind. Total MWh produced were 56,919,213. Total CO<sub>2</sub> emissions (in 2011) were 43,878,873 metric tons. By 2012, Iowa's CO<sub>2</sub> intensity had fallen to 1716 lbs/MWh.

Iowa currently generates a greater share of electricity from wind than any other state in the U.S.

MidAmerican Energy Company, the largest utility in Iowa, has recently begun work on constructing an additional 1050 MW of wind power. This additional wind is expected to be in service by the end of 2015 and will further reduce the CO<sub>2</sub> intensity of Iowa's generation.

Installation of significant amounts of wind generation results in substantial reductions of CO<sub>2</sub> emissions. In September 2013, the National Renewable Energy Laboratory (NREL) issued The Western Wind and Solar Integration Study Phase 2. Among other things, the study analyzed the CO<sub>2</sub> emissions avoided by wind and solar penetration and the changes in emission rates from cycling of fossil-fueled electric generation units resulting from the penetration of wind and solar generation in the Western Interconnection. The study found that CO<sub>2</sub> emissions are reduced by 29 percent-34 percent throughout the entire Western Interconnection (including the western United States and parts of Mexico and Canada) from scenarios with 24 percent-26 percent wind and solar energy penetration (corresponding to a 31 percent-33 percent wind/solar energy penetration within the US). The study stated that adding wind and solar affects

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<sup>1</sup> The following data is from the U.S. Dept. of Energy, Energy Information Administration (EIA) and the American Wind Energy Association (AWEA). 2012 numbers are preliminary results.

the operation of fossil-fuel fired power plants and adding high penetrations can induce cycling of fossil-fueled generators. The study found that CO<sub>2</sub> emissions impacts resulting from this wind and solar induced cycling of fossil-fuel fired generators are a small percentage of emissions avoided by the wind and solar generation and wind and solar induced cycling has a negligible impact on avoided CO<sub>2</sub> emissions. The study noted that this emissions analysis reflects aggregate emissions across the Western Interconnection, and any specific plant might have lower or higher emissions. The study is available on the NREL website at:

[http://www.nrel.gov/electricity/transmission/western\\_wind.html](http://www.nrel.gov/electricity/transmission/western_wind.html)

NREL is currently studying similar issues in the Eastern Interconnection in the Eastern Renewable Generation Integration Study. This study should be ready by mid-2015, and general information about the study is available at:

[http://www.nrel.gov/electricity/transmission/eastern\\_renewable.html](http://www.nrel.gov/electricity/transmission/eastern_renewable.html)

### **C. Advance Ratemaking Principles**

Iowa Code § 476.53 states it is the policy of Iowa to attract the development of electric generation and transmission in sufficient quantity to ensure reliable electric service for customers, provide economic benefits to the state, and encourage rate-regulated public utilities to consider altering existing generation to manage carbon emission intensity to facilitate the transition to a carbon-constrained environment. This statute allows utilities to seek IUB approval, in advance, of the ratemaking principles that will apply to qualified generation the utility proposes to build. The advance ratemaking principles approved by the IUB provide assurance to the utility that if it invests in the proposed generation, it will be able to recover the associated costs in regulated electric rates. This statute has been very effective in encouraging rate-regulated utilities in Iowa to invest in wind generation.

### **D. Emissions Plans and Budgets**

Iowa Code § 476.6(21) requires rate-regulated utilities that own coal-fired generation to develop multi-year plans and budgets for managing emissions from their coal-fired generation in a cost-effective manner and file them with the IUB. These plans and budgets are subject to approval by the IUB. As part of the process of review and approval by the IUB, the Iowa Department of Natural Resources states whether the plans meet applicable state environmental regulations for regulated emissions. The IUB cannot approve a plan that does not meet applicable state environmental regulations. Utilities' plans and budgets also may include reasonable, cost-effective actions to comply with reasonably anticipated future environmental requirements. The statute provides that once the IUB has approved the plan and budget, the utility may include the reasonable costs of the plan in its regulated electric rates. (Although there is no actual cost recovery until the utility brings a rate case to the IUB.) This statute, which

provides regulatory certainty for the recovery of costs, encourages rate-regulated utilities to plan for and manage their emissions from coal-fired generation, invest in emission control equipment, and improve plant efficiency.

#### **E. Other State Policies**

The IUB and Iowa have a number of other policies that have the effect of encouraging investment in renewable energy sources. These include such things as: a) a requirement for utilities to own or purchase a limited amount of electricity from alternate energy production facilities and small hydro facilities; b) a provision that allows the IUB to set rates to be paid to those facilities for their electricity; c) the establishment of an alternate energy revolving loan program; d) the requirement that utilities offer alternate energy purchase programs to their customers; e) the ability to form small wind innovation zones; and f) wind energy production tax credits. (See Iowa Code §§ 476.41-476.48 and Iowa Code Chapter 476B.) The EPA should allow these policies to be included as part of Iowa's compliance with the new requirements to the degree they can be shown to reduce the carbon intensity of Iowa's generation fleet or reduce CO<sub>2</sub> emissions from the state.

#### **F. Compliance with Other Environmental Requirements**

Iowa utilities have invested millions of dollars and significant effort complying with environmental regulations that apply to electric generation in Iowa. Iowa's electric customers have paid for these compliance activities. The IUB urges EPA to consider these investments when deciding how to regulate carbon dioxide emissions from existing plants, and when setting the timing of new requirements. Utilities should be given enough time to comply with new CO<sub>2</sub> requirements in ways that do not force premature closure or premature fuel-switching at these plants.

In addition, EPA should recognize and allow states to include the CO<sub>2</sub> emission reduction impacts of other environmental requirements applicable to electric generating plants as part of any compliance plan. Iowa utilities have already closed or have plans to close several coal-fired plants in Iowa. They have plans to change the fuel source of some plants from coal to natural gas. This will reduce CO<sub>2</sub> emissions and the carbon intensity of Iowa's generation fleet. While not done or planned exclusively to reduce CO<sub>2</sub> emissions, consideration of potential CO<sub>2</sub> regulation of plants as well as compliance requirements of other regulations factored into the decisions to close or switch fuels of those plants. Utilities may decide to close coal plants or fuel switch in the future, even if they have no current plans to do so. States and utilities should be able to include these plant closings and fuel-switching as part of the best system of emission reduction because they have reduced or will reduce CO<sub>2</sub> emissions.

## **CONSIDERATIONS IN THE DESIGN OF EPA'S PROGRAM TO REDUCE CO2 EMISSIONS FROM EXISTING PLANTS**

The IUB encourages EPA to consider the differences between CO<sub>2</sub> emissions from existing plants and other emissions from such plants regulated under the Clean Air Act. While the IUB agrees with an overall goal to reduce harmful emissions, it seems difficult to place a specific numeric limit on CO<sub>2</sub> emissions from existing power plants at the plant level. It does not appear that CO<sub>2</sub> emissions cause adverse health and other effects locally near the plant or even within a particular state. Also the IUB does not know of a scientific finding on which to base a specific numerical limit for CO<sub>2</sub> emissions at the plant level. CO<sub>2</sub> emissions do not appear to be like other emissions, such as mercury, where the EPA has scientific evidence that shows emissions above a particular level or concentrations of a pollutant above a particular amount cause adverse health effects, therefore justifying setting emission limits on a specific numerical basis.

At the same time, it is important that EPA consider the importance of electricity as a basic need and the effects of new requirements for existing plants on the cost of electricity for consumers and the reliability of the electric system.

Therefore, the IUB encourages EPA to consider a more program-and-action-based system in which EPA facilitates the continuation of the evolution of the electric industry toward increased use of energy efficiency, resulting in more efficient use of energy and reductions in use and peak demand, and toward increased use of generation with reduced carbon intensity and lower overall CO<sub>2</sub> emissions. This evolution of the electric industry is already going on for many reasons, and in the case of CO<sub>2</sub> regulation, it appears that EPA can use this evolution when regulating CO<sub>2</sub> emissions from existing plants. Requiring states and utilities to implement programs and take actions that have the above results can fit within the requirements for standards of performance and the best system of emission reductions for existing sources under CAA Section 111(d). Using such an approach appears to be consistent with the requirements that standards of performance for existing sources must be achievable and take into account the cost of achieving reductions and any non-air quality health and environmental impacts and energy requirements, and that considers the remaining useful life of existing generation plants. The IUB also notes that Section 111(d)(1)(B) requires consideration of the remaining useful life of the existing plant "among other factors." The IUB thinks that consideration of the importance and necessity of electricity to customers is one of the "other factors" that should be considered when EPA sets its requirements for existing plants.

The IUB recommends that performance standards and the best system of emission reduction for CO<sub>2</sub> for existing plants under CAA Section 111(d) should be a series of programs and actions, such as those discussed above, that are implemented by the states and utilities and that are proven to achieve energy savings and reduce CO<sub>2</sub> emissions and the carbon intensity of electric generation over time. Ongoing monitoring

and reporting requirements will be necessary to show that energy savings, CO<sub>2</sub> emissions reductions, and reductions in the carbon intensity of generation are being achieved at meaningful and measurable levels. The IUB recommends that energy savings, emission reductions, and reductions in generation's carbon intensity not be measured at the plant, but instead, be measured overall on a statewide basis. Setting performance standards and the best system of emission reduction as a series of proven, effective programs and actions would provide continuing significant CO<sub>2</sub> reductions that will build over time on an ongoing basis.

These programs and actions will necessarily be different for different states, given variances such as the makeup of the state's existing and planned generation, whether the state's electric generation is provided by vertically-integrated and rate-regulated utilities, whether the state's utilities are part of a regional transmission organization, whether the state is a net energy exporting or importing state, and many other factors.

For example, the advance ratemaking principles and emission plan and budget programs discussed above work in Iowa, where the majority of electricity is produced by rate-regulated electric utilities that own generation. If states have utilities that are not rate-regulated, this type of approach may not work. EPA regulation of CO<sub>2</sub> emissions from existing plants must be flexible and allow states to include the programs and actions that will work best in their state as the best system of emission reduction.

The IUB urges EPA to consider only proven technologies that have been adequately demonstrated and that are commercially available when setting requirements. For example, the IUB does not believe that the efficacy of carbon capture and sequestration has been adequately demonstrated and, in any event, these technologies are not yet commercially available for existing power plants.

One way to provide credit to states for early actions would be to set a base year from which to measure increased use of energy efficiency and reductions in carbon intensity of generation and CO<sub>2</sub> reductions early enough so past actions can be included. The IUB thinks a base year in the range of 2000-2005 would be reasonable. EPA could require states to submit plans for approval that include the programs, policies, and actions the state and its utilities will use to increase energy efficiency, reduce the carbon intensity of generation, and reduce CO<sub>2</sub> emissions. In these plans, EPA should allow states to include programs and activities already in place and accomplished since the base year.

Finally, the IUB urges EPA to take reliability concerns into account in designing its program for existing facilities. If the EPA designs the program and provides the flexibility for states and utilities as discussed in this letter, implementation of the program should not adversely affect reliability for the most part. However, provisions should be made for waivers, extensions, and temporary changes to state programs in the event that compliance would adversely affect system reliability in a particular case.

## SUMMARY

In summary, the IUB recommends that EPA allow states to include a wide variety of state programs and actions as the best system of emission reduction. These include, but should not be limited to:

- Proven and cost-effective energy efficiency programs;
- Investments in renewable energy such as wind;
- Programs such as advance ratemaking principles and emission plans and budgets that encourage investment in renewables, emission control equipment, and increased plant efficiency;
- Other state policies that have the effect of encouraging investment in renewable energy sources, reducing the carbon intensity of the state's generation fleet, or reducing CO<sub>2</sub> emissions from the state;
- Actions to comply with other environmental requirements that have the effect of reducing CO<sub>2</sub> emissions or the carbon intensity of the states' generation;
- Any other actions taken by a utility within the state that reduces CO<sub>2</sub> emissions or the carbon intensity of the utility's fleet, such as voluntary CO<sub>2</sub> limits in Prevention of Significant Deterioration and Title V permits; and
- Any action, policy, or program that has the effect of reducing CO<sub>2</sub> emissions over time.

The IUB realizes a more program-and-action-based approach as suggested in this letter would be a change in the way EPA has traditionally regulated pollutants under the CAA. However, in the unique case of CO<sub>2</sub> emissions, it makes sense, is more defensible, can be implemented without major disruptions in the electric system, should not cause significant and unnecessary increases in cost for customers, and gets EPA where it wants to go with respect to reduction of CO<sub>2</sub> emissions just as effectively as a more traditionally-structured method of regulation.

Thank you very much for allowing us to provide initial comments on the possible design of EPA's program to reduce CO<sub>2</sub> emissions from existing power plants. We hope we have provided the kinds of information EPA requested in its September 23, 2013, "Considerations in the Design of a Program to Reduce Carbon Pollution from Existing Power Plants" document. The program-and-action-based approach suggested in this letter can be tailored to mesh with the requirements of the CAA. While it may be an approach not typically considered by EPA, the IUB believes this is an opportune time to

Ms. Gina McCarthy, Ms. Janet McCabe, and Ms. Rebecca Weber

Page 10

December 6, 2013

embrace a different way to address an important and longstanding issue in a meaningful way. The IUB looks forward to further conversation on these topics.

Sincerely,

Iowa Utilities Board

*/s/ Elizabeth S. Jacobs*

Elizabeth S. Jacobs, Chair

*/s/ Nick Wagner*

Nick Wagner, Board Member

*/s/ Sheila K. Tipton*

Sheila K. Tipton, Board Member

/ac

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