

MidAmerican Energy Company
Responses to the Iowa Utility Board's Questions on EPA Proposed 111(d) Rules

1. Is the EPA list of Iowa affected facilities correct? If not, what information needs to be changed?

The 2012 inventory of sources used to establish state goals appears to correctly list all MidAmerican units affected by the rule (i.e., MidAmerican's existing coal-fueled and combined cycle natural gas-fueled generation facilities).

2. Are the numbers EPA used to calculate Iowa's baseline and reductions and goals correct? If not, what are the correct numbers and why?

The 2012 generation and emissions data used by EPA to calculate Iowa's baseline, reductions and goals all appear to be accurate for MidAmerican facilities.

3. Are the types of generation EPA used to calculate Iowa's baseline and reductions and goal correct? If not, what should be included and why? (For example, should all existing nuclear and hydro be used?)

Based on the requirements of the proposed rule, the types of generation EPA used to calculate Iowa's baseline and reductions and goal are appropriate.

4. Did EPA give Iowa appropriate credit for Iowa's early actions between 2005 and 2012?

No. EPA's proposed rule does not provide any benefit for actions taken to reduce CO₂ emissions between 2005 and 2012. In fact, certain early actions will make it more difficult to comply with the proposed rule's requirements. For example:

- **Energy Efficiency:** States with robust energy efficiency programs, such as Iowa, have a higher energy efficiency target than other states without such aggressive programs.
- **Heat Rate Improvements:** There is no recognition of any actions taken by utilities to improve fossil unit efficiencies between 2005 and 2012, such as those undertaken by MidAmerican. EPA assumes that every unit can achieve a 6% improvement in efficiency regardless of whether those units have already undertaken such measures.
- **Renewable Energy:** States like Iowa who have already embraced renewable energy are generally required to install larger percentages of renewable energy as compared to those states without such initiatives. Kentucky, for example, is only assumed to have 2% of its generation be comprised of renewable energy by 2030, versus Iowa at over 15%. The proposed rule also does not provide any benefit from the generation from renewable energy between 2005 and 2020.

a) If not, how could and should this be remedied? (We will need to be specific regarding the early actions taken and what we need to be appropriately credited. Examples include such things as early actions constructing wind, energy efficiency

program savings, heat rate improvements at affected plants, plant closures, fuel switching.)

The following clarifications to the rule would help provide appropriate credit for early actions taken by states:

- Allow energy efficiency savings from 2012 forward to be utilized in the compliance calculation.
- Only require heat rate improvements for coal units with heat rates currently above the fleet average.
- Allow banked RECs generated between 2012 and 2020 to be utilized for compliance purposes.

b) Is 2012 the appropriate base year? If not, please explain why not and what year, or averaging over several years, would be appropriate and why.

MidAmerican understands that EPA selected 2012 emissions for use in baseline calculations and goal setting because 2012 was the most recent year for which generation and emissions data were available. However, this approach does not account for aberrations that may occur in any given year, such as significant unit downtime for maintenance or equipment installation outages. Accordingly, an average of three of the previous five years' generation and emissions data is more representative of long-term operating conditions on a unit-by-unit basis. A single-year baseline calculation will otherwise inherently create winners and losers due to unit operating conditions that may change from year to year.

5. For each Iowa affected coal facility: Is the 6% heat rate improvement achievable? If not, please explain specifically why not and what percent would be achievable.

An additional 6% heat rate improvement beyond the work MidAmerican has already completed is not achievable for any of the company's affected units. In the proposed rule, EPA assumes that approximately one third of the projected 6% heat rate improvement can be achieved by installing more efficient equipment at a facility; the remaining two thirds of the projected improvement would be achieved by implementing operations and maintenance best practices at a facility.

MidAmerican has already completed equipment upgrades at affected facilities that improve plant efficiency, including turbine upgrades, installing more efficient fans, and boiler work to improve overall efficiency of plants. Many of these upgrades have accompanied control system upgrades that are required to comply with other emissions rules; these projects have a net effect of increasing a plant's heat rate even with the efficiency improvement projects completed. Most notably, this has included the addition of scrubbers and baghouses that will consume station power during operation and have the effect of increasing heat rate. Those plants will be challenged to realize any further heat rate improvements.

Coal-fueled units are designed to operate in base-load conditions with high capacity factors and relatively low variability in load profiles. Building blocks two and three have the direct effect of decreasing the capacity factor and increasing the variability of existing fossil-fueled units. These

two measures alone will counteract any improvements achieved under building block one. In fact, EPA's analysis indicates that the negative impact to heat rate due to capacity factor reductions and load following variability is significant.

The Edison Electric Institute ("EEI") has prepared a white paper regarding issues associated with EPA's proposed 6% heat rate improvement for existing coal-fueled facilities. MidAmerican encourages the Board to review this white paper for additional industry-wide information and has attached it for reference.

6. For each Iowa affected gas unit: Is the 70% capacity factor achievable? If not, please explain specifically why not and what percent would be achievable.

MidAmerican has one affected combined cycle gas unit, the Greater Des Moines Energy Center ("GDMEC"). There are no operational or permitting constraints that would prevent operation of the unit at a 70% capacity factor. However, other factors, such as adequate firm gas supplies or transmission system congestion, may impact whether affected gas units such as GDMEC will actually achieve a 70% capacity factor.

The proposed rule's 70% capacity factor expectation essentially requires a change from economic dispatch to environmental dispatch. This fundamental dispatch change will likely result in increased electric rates for customers.

7. Is the 1.5% annual incremental savings rate due to energy efficiency from years 2020 to 2029 achievable? If not, please explain specifically why not and what percent would be achievable.

As of February 2014, 26 states have enacted energy efficiency programs.¹ EPA analyzed these programs in establishing the 1.5% annual energy efficiency savings goal. However, only 11 of these states are projected to meet or exceed a 1.5% savings under current state energy efficiency policies. Iowa is projected to meet a savings rate between 1.0% and 1.49% by 2020.² A 1.5% per year incremental savings will be difficult to achieve, particularly because utilities only have the ability to make the programs available, but have no control over whether such energy efficiency measures are ultimately adopted and/or maintained by customers.

8. Is the time allowed to develop the initial state plan feasible and reasonable? Is the level of detail required for the initial plan feasible and reasonable given the amount of time allowed to develop it? If not, please explain why it is not and the amount of time we need and why. This should probably include the steps required for the initial state plan and the amount of time we estimate it will take for each of the steps.

¹ American Council for an Energy-Efficient Economy. State Energy Efficiency Resource Standards (February 24, 2014). Available at <http://www.aceee.org/files/pdf/policy-brief/eers-02-2014.pdf>.

² U.S. Environmental Protection Agency. Technical Supporting Document for Carbon Pollution Guidelines for Existing Power Plants: GHG Abatement Measures (June 2014). *See* pages 5-32 and 5-33. Available at <http://www2.epa.gov/sites/production/files/2014-06/documents/20140602tsd-ghg-abatement-measures.pdf>.

While MidAmerican believes this question may be best answered by the Iowa Department of Natural Resources (“IDNR”), which will be responsible for developing the state’s 111(d) compliance plan, we note that the proposed rule will require an unprecedented level of effort and coordination among regulated sources, state agencies and other stakeholders. The IDNR has a finite number of resources that are taxed with the current set of regulations and programs to implement. The EPA has not provided any insights into additional support that will be provided to implement the proposed rule.

9. Is the time allowed to develop the final state plan feasible and reasonable? Is the level of detail required for the final plan feasible and reasonable given the amount of time allowed to develop it? If not, please explain why it is not and the amount of time we need and why. This should probably include the steps required for the final state plan and the amount of time we estimate it will take for each of the steps.

The timing for states to complete, submit and receive approval for final compliance plans will be challenging. Initial plans are due in 2016 with a possible one-year extension for single-state plans; states entering into a multi-state compliance approach will have until 2018 to submit plans. Under the proposed rule, EPA has one year to approve plans – as late as 2019 for some states – with compliance requirements beginning in 2020.

10. How do you anticipate the proposed rule will impact the operation of the MISO market? Is the rule workable within the current MISO market construct?

MidAmerican understands that MISO is working to develop analyses of the proposed rule, including each of the building blocks, to determine what type of reliability, economic, market rule, and transmission planning concerns may exist with the implementation of the proposed rule. These analyses are expected to be available late in the public comment period and should provide information on what the potential impacts may be and how the rule might be implemented within the MISO footprint.

11. What do you believe would be the impact on Iowa's target CO2 emissions rate if the EPA were to recalculate emissions targets based on non-Iowa entities' 2012 purchases of RECs or energy from Iowa based wind units?

Recalculating Iowa’s state goal by removing renewable generation that was sold to non-Iowa entities would likely increase the target rate. By recalculating emission targets to account for interstate transfers of electricity, the standard emphasizes energy at its delivery point rather than its point of generation. The full implications of this change should be carefully considered.

12. If Iowa’s utilities must use at least some of their wind generation to satisfy Iowa’s target CO2 emissions rate instead of selling the associated RECs to other states to satisfy the other states’ RPSs, will there be an impact on Iowa customers’ electric rates? If yes, do you know what the impact could be? Do Iowa utilities have current multi-year contracts to sell their wind RECs that will impact when their wind generation can be used to satisfy Iowa’s target CO2 emissions rate?

The impacts to the REC market are not clear from the proposed rule. EPA should clarify how it intends RECs to be utilized towards compliance. Thus, the full impact on the REC market, and customer rates, cannot be assessed until this guidance and the final rule are available for review.

MidAmerican does have several multi-year REC contracts, but they include provisions that allow MidAmerican to utilize the subject RECs for compliance purposes if needed. In addition, because the contracts expire prior to the proposed rule's 2020 compliance deadline, MidAmerican does not believe these contracts impact the company's ability to use its owned-wind generation to help satisfy Iowa's target emissions rate.

13. Have the other participants in the 111(d) collaborative identified any additional information that is needed?

MidAmerican has identified at least two issues, discussed below, in our initial review of the proposed rule.

- 1) The proposed rule does not adequately address how new natural gas combined-cycle ("NGCC") units will be treated under Section 111(d). General language in the proposal supports the use of any measure that will reduce greenhouse gas emissions in state compliance plans, but the proposal is vague and conflicting regarding the ability to use the entire output and emissions of a new NGCC unit in the compliance calculation. EPA should expressly allow states the option to utilize new NGCC units as a compliance measure to directly meet the emission standards.
- 2) Existing renewables installed prior to 2020 must be included in Iowa's emission reduction calculation, and EPA must allow Iowa to use existing renewables as part of its compliance plan. Iowa has made significant strides in the deployment of renewable energy, providing economic and environmental benefits to Iowans. Rather than increasing the stringency of the state's emission reduction target and penalizing Iowa for its early action, these actions should be recognized and built upon in Iowa's compliance plan.

MidAmerican looks forward to further discussions with the Board and stakeholders.