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EPA Docket Center (EPA/DC)
U.S. Environmental Protection Agency
Mail Code 28221T
1200 Pennsylvania Avenue, NW.
Washington, DC, 20460

Attention Docket ID No. EPA-HQ-OAR-2013-0602

Re: Proposed Rule: Carbon Pollution Emission Guidelines for Existing Stationary Sources; Electric Utility Generating Units

Dear Sir or Madam:

Xcel Energy Inc. is pleased to submit the following comments on EPA's proposed Clean Power Plan.

In our comments, we describe Xcel Energy's environmental leadership and emission reduction strategy and how that strategy should serve as a model for state compliance plans under the proposed rule. We also discuss the failure of EPA to recognize state clean energy leadership actions (such as those that have driven our emission reduction programs) in the design of the Clean Power Plan and suggest some narrow changes to the proposal that would help provide adequate credit for clean energy leadership. Finally, we discuss our broader legal and policy concerns with the rule, as well as some specific additional concerns with the rule design.

Xcel Energy appreciates EPA's consideration of these comments and its unprecedented effort to take feedback on the proposed Clean Power Plan. We look forward to working with the Agency, our states and other stakeholders to develop workable, cost-effective climate policy.

Please contact me at 303-294-2108 or Jack Ihle, Xcel Energy's director of Environmental Policy at 303-294-2262 if you have any questions about the issues addressed in these comments.

Sincerely,

Frank P. Prager
Vice President, Policy and Strategy
Xcel Energy Inc.

cc: Jack Ihle, Xcel Energy

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I. Executive Summary

Xcel Energy is a public utility holding company headquartered in Minneapolis, Minnesota. We serve approximately 3.4 million electric customers and 1.9 million natural gas customers in the eight states of Colorado, Minnesota, Texas, New Mexico, Wisconsin, North Dakota, South Dakota, and Michigan. The company has been the nation's number one utility wind provider for a decade. We have some of the nation's leading clean energy programs and, through programs like our Metro Emissions Reduction Program in Minnesota and the Colorado Clean Air-Clean Jobs Act, have been on the cutting edge of coal plant retirement and fleet modernization efforts.

We describe our clean energy strategy in detail in Section II below. Because of our clean energy leadership efforts, Xcel Energy is on track to reduce its carbon dioxide emissions by 31% by 2020, ten years before the target established by the Obama Administration in the Clean Power Plan. We are proud of this achievement, but we are equally proud of the fact that we have been able to achieve this result while maintaining reasonably-priced, reliable electric service to our customers.

We believe that our approach to clean energy, created in collaboration with our customers, state policy-makers, the environmental community and other stakeholders, should serve as a model for EPA's efforts to regulate CO_2 under Section 111(d) of the Clean Air Act. We also believe it is critical that EPA's rule recognize the billions of dollars that we and our customers have invested and continue to invest in clean energy and early emission reductions.

For this reason, we are pleased that EPA recognizes the importance of state leadership and flexibility in the development of the Clean Power Plan. However, the company shares the

concerns of our states that the proposal would ignore – and in fact punish – clean energy leadership. As set forth in Section III of the comments that follow, the proposed rule sets more stringent targets for states that, prior to the 2012 baseline year, retired coal plants, invested in renewable energy ("RE"), and implemented customer energy efficiency programs.

Fortunately, there are several simple, targeted changes to the rule that can improve the proposal's treatment of early action. In particular, as discussed in detail in Section IV of these comments, the final rule should:

- Recognize the retirement of coal plants occurring prior to the 2012 baseline;
- Account for the effect of renewable energy on the dispatch of natural gas combined cycle plants;
- Grant states the flexibility to establish their own emission reduction glide paths for the 2020 to 2030 time period;
- Allow leading renewable states to bank renewable energy for use in meeting their 2030 compliance obligations; and
- Fix technical problems in the rule that harm clean energy leaders.

These narrowly designed changes would help address the failure of the proposal to recognize early action. EPA could incorporate these changes into the proposed rule without significantly affecting national emissions outcomes or altering the fundamental structure of the rule.

As our environmental leadership record demonstrates, we share with EPA the goal of producing a workable, cost-effective and legally defensible strategy to address greenhouse gases. The targeted changes we propose in these comments would help move the rule in the right direction.

However, we are concerned that, beyond the issues addressed in our targeted proposals, the Clean Power Plan has more fundamental legal and policy flaws that could undercut the purpose of the rule and stand in the way of creating a viable greenhouse gas emission reduction program. As discussed in Section V of these comments, the proposed rule would stretch Section 111(d) to the breaking point. Contrary to Section 111(d), the rule would regulate electrons and the electric system rather than emission sources. Relying on this little used provision of the Clean Air Act, EPA would assume unprecedented power to oversee the nation's energy infrastructure, a task that it is neither legally nor institutionally prepared to undertake. Moreover, the proposal is constructed on four clean energy "Building Blocks" that are in many respects arbitrary and infeasible. At the same time, as indicated in the comments of NERC, SPP and the other reliability regions, the rule has implications for the reliability of the electric system, especially at the onset of the interim target period in 2020.

We discuss these concerns in detail below. In Section VI and VII, we also provide feedback to EPA regarding various aspects of the rule, including among other things, the inappropriateness of a "potential" approach to setting state RE targets. We hope that the comments below will provide EPA with information that will improve the rule and help enhance the success of EPA's carbon reduction program.

II. Xcel Energy's Clean Energy Leadership Story

Xcel Energy is a major U.S. electricity and natural gas company with regulated operations in eight Western and Midwestern states (Minnesota, Wisconsin, North Dakota, South Dakota, Michigan, Colorado, Texas and New Mexico). We provide a comprehensive portfolio of energy-related products and services to 3.4 million electricity customers and 1.9 million natural gas customers. Xcel Energy's generating units are capable of producing over 17,000 megawatts ("MW") of electricity, using a variety of fuel sources including coal, natural gas, oil, nuclear, renewables and hydropower.

For the past decade, Xcel Energy has pursued a clean energy strategy that reflects the desire of our customers and the communities we serve to protect the environment, reduce risk and promote clean energy, all while maintaining reliable service at an affordable price. Our clean energy strategy serves as an example of how states and utilities can work together to significantly reduce emissions at the lowest cost to customers.

Through our clean energy strategy, Xcel Energy is on track to achieve EPA's overall emission reduction target of 30 percent by 2030 from 2005 levels; in fact, we are on track to reach those levels by 2020. Equally important, these improvements have occurred at prices that have kept energy affordable for customers and in a manner that has maintained reliable utility service.

We have worked proactively with states to develop comprehensive emission reduction programs to modernize an aging fleet of generating plants. Under these programs, we continue to retire, convert and refurbish coal-fueled units to reduce emissions and prepare for more stringent

environmental requirements. From 2005 to 2018, we will have retired or converted seven coal plants capable of producing 2,240 megawatts, about 25% percent of our coal fleet's capacity.

With the state of Minnesota, we implemented the Metro Emissions Reduction Project, a $1.3 billion effort completed in 2009 that significantly reduced emissions from three Twin-Cities area plants while increasing electricity output by about 300 megawatts. Similarly, pursuant to Colorado's Clean Air-Clean Jobs Act adopted in 2010, we are implementing a $1.1 billion plan to retire six aging coal units in the state and replace them with a new, highly efficient natural gas plant. In addition, we are converting a seventh coal unit to natural gas and upgrading three remaining coal units with state-of-the-art emission controls.

All of Xcel Energy's operating states have renewable standards or objectives, including Colorado and Minnesota, which have some of the most aggressive renewable portfolio standards in the country. We acted early to meet, and in some areas exceed, these standards. We now manage more than 5,000 megawatts of wind energy, more than any other U.S. utility, and by the end of 2015 we expect to have 7,000 megawatts of wind on our system. For a decade, we have been ranked the country's No. 1 utility wind power provider and are also ranked among the top-ten U.S. utilities for solar power, with 320 megawatts of solar capacity on our system.

Through our energy efficiency programs, customers also play an important role in our clean energy strategy. With support from our states and customers, we have built one of the largest energy saving portfolios in the country. Xcel Energy currently offers more than 90 programs to help customers manage electricity consumption and more than 45 programs to manage natural gas. Last year our customers saved nearly 985 gigawatt hours of electricity and 1.5 million dekatherms of natural gas, enough electricity to power about 121,000 homes and natural gas to

fuel 17,000 homes annually. We estimate our customers have saved enough electricity to avoid building about 16 power plants since 1992.

III. The Proposed Clean Power Plan does not Recognize Early Action Taken by Leading States

In this proposal, EPA faced a task unique in the history of regulation under the Clean Air Act. Despite the flaws we see in the rule design (discussed below), we believe that some important aspects of the proposed Clean Power Plan are consistent with our own experience in creating workable and cost-effective clean energy programs. Above all, we support the flexibility EPA intends to provide to states in drafting their 111(d) implementation plans and identifying the most appropriate mix of strategies to comply with the rule. The Agency appropriately defers to the states to design plans that meet the Agency's goals. Only states truly understand their own energy systems, and EPA has appropriately given states broad latitude to use all the tools available to them to reduce emissions.

Unfortunately, even within this flexible framework, the proposed rule fails in one important aspect: it would provide very little credit to existing state clean energy programs. It ignores the billions of dollars invested in clean energy by leading states throughout the nation. In fact, the proposal would give an easier compliance path to states that resisted clean energy in the past. Even worse, the Clean Power Plan actually punishes states that are clean energy leaders.

The Clean Power Plan fails to recognize early action in several different ways. First and foremost, it sets a 2012 baseline for the calculation of future emission reductions. By doing so, it ignores the emission reductions achieved from 2005 to 2012. In Minnesota, our Xcel Energy affiliate spent $4 billion between 2005 and 2012 to reduce emissions by 21%. Almost all of those dollars and the associated reductions were swept away by the proposed rule.

However, the proposed rule does more than just ignore pre-2012 emission reductions. It penalizes clean energy leadership. For example, in Minnesota between 2007 and 2009, we retired two aging coal plants and replaced them with natural gas combined cycle facilities. As discussed in more detail below, the decision to do so actually resulted in a more stringent Clean Power Plan target for the state of Minnesota. Moreover, the proposed rule punishes states that have led the way in RE policy. Block 3 establishes renewable targets based on the regional average of renewable portfolio standards (RPS). Thus, states unknowingly increased the stringency of their Clean Power Plan emission targets by passing RPS laws that ironically were designed to help address the states' contribution to global greenhouse gas emissions. Even within an individual region, Block 3 also imposes a lesser standard for states that have low levels of existing

How the Clean Power Plan Punishes Early Action in Minnesota: The Numbers

Had Minnesota not been a clean energy leader:

1. Minnesota would have a lower regional RE generation target. Without Minnesota's RPS, the regional RE generation target for the North Central region would have been 11.5% rather than 15%.

2. Minnesota would have a lower state RE generation level. Minnesota's final renewable target in 2029 would have been only 5.3% of 2012 total generation, rather than 15%.

3. Minnesota would receive a less stringent target under Block 2. With no renewables, we estimate that Minnesota would have had a natural gas combined cycle capacity factor of 39% in 2012, rather than the actual capacity factor of 24%. Moreover, if Minnesota had not completed the coal to gas conversions under MERP, the NGCC capacity to redispatch would have been 2,116 MW, rather than 2,768 MW. For both reasons, Block 2 would have had much less impact and the state's goal would be much less stringent.

We estimate that, without clean energy leadership, Minnesota's final goal would have been **1,233 lb/MWh** instead of 873 lb/MWh.

Assumptions:

- *In step 1, the revised regional RE target was calculated based on the average of remaining RPS targets in North Central region states.*
- *In step 2, Minnesota's 2012 RE generation was assumed equal to the lowest RE generation in the North Central region. We assumed the North Central region growth factor remains at 6%.*
- *In step 3, we have not accounted for the fact that absent the MERP coal retirements, Minnesota would also have had a higher 2012 fossil emission rate before application of any of the Blocks. Accounting for this would make the state's goal less stringent than the 1,233 lb/MWh estimated here.*

renewables. The RE target in those states may never get close to the renewable generation of their neighbors. Renewable leaders, who already have taken advantage of the most cost-effective RE opportunities, are expected to do more than the states who delayed action and still have more low hanging fruit in RE.[1]

Further, the interaction of the building blocks exacerbates the adverse impact of the rule on leading RE states. Many states with high levels of RE generation used their natural gas combined cycle plants ("NGCCs") to balance intermittent RE. As a result, the capacity factors of NGCCs in 2012 were lower than they would have been absent RE leadership, and the NGCCs have more "headroom" below the 70% capacity factor target in Block 2. When EPA applies the Block 2 redispatch modeling to these NGCCs, the resulting emission reductions are greater, and the states consequently have more stringent state goals. This too penalizes early action in RE.

The proposed rule's failure to recognize early action is bad policy on every level:

- It tells states that they are better off fighting EPA rather than leading the way to cleaner energy.
- It tells companies that the value of a proactive clean energy strategy may be swept away by future regulation.
- It tells customers that they will pay twice if they commit early to clean energy leadership.

[1] Similarly, under Block 4, states and utilities that have taken a leading role in offering energy efficiency programs well before the proposed rule should be given a fair opportunity to take credit for these early actions. EPA seems to agree with this statement based on sections VIII.F.2.d of the proposed rule and on page 5-34 of the *GHG Abatement Measures* TSD. This is the only reasonable policy for customers and utilities that have taken a leading role in establishing the energy efficiency industry.

- It tells the public that the most beneficial emission reductions – those that have already occurred – are environmentally irrelevant.

IV. Simple Changes to the Clean Power Plan Would Help Recognize State Clean Energy Leadership

As discussed in more detail in Section V below, Xcel Energy has significant concerns about the proposed rule. These concerns go to both legal and policy choices implied by the rule, and they reflect serious flaws in the rule design that, if not corrected in the final rule, could undercut the viability of the Clean Power Plan.

However, despite the importance of the issues discussed in Section V, EPA need not discard the entire structure of the rule to address the narrower issue of its failure to provide credit for early action. A few simple changes to the Clean Power Plan will help credit early emission reductions without significantly altering the structure or environmental benefits of the rule. We have already provided these proposed changes to EPA in the form of a presentation provided to the Agency on August 28, 2014. A copy of that presentation is attached to these comments as Exhibit A. A detailed discussion of our proposed changes is set forth below.

The simplest approach to recognizing early reductions, considering EPA's stated goal of a 30% reduction from 2005 levels by 2030, would be to use a more flexible baseline that would directly credit emissions reductions since 2005. In fact, EPA has suggested in its recent Notice of Data Availability ("NODA") that an earlier baseline year may be appropriate under the rule (79 Fed. Reg. at 64,553). Although the NODA implies that EPA is considering a baseline only as far back as 2010, a more appropriate baseline is the EPA reference year of 2005.

If EPA does not adopt an earlier baseline year, however, the more targeted changes described below provide some credit for early reductions without changing the basic structure of the Proposed Rule.[2]

A. Exempt NGCC plants built to replace coal plants from Block 2

In the last few years, Xcel Energy and other utilities have retired coal plants and replaced them with NGCC facilities at the same site, achieving the emission reductions and clean energy goals that the Clean Power Plan seeks. The NGCC capacity associated with any such retirement and replacement projects prior to the release of the Proposed Rule should receive an exemption from the target-setting redispatch methodology under Block 2. For example, between 2007 and 2009, Xcel Energy's Minnesota affiliate Northern States Power Company retired 652MW of coal units at the High Bridge and Riverside plant sites and replaced them on-site with 1,080MW of NGCC. According to our research, this change would have minimal impact on the rule's outcomes as only a handful of examples of onsite NGCC-for-coal replacement projects exist: In Wisconsin, five coal units at Port Washington, totaling 320 MW, were replaced with 1,150 MW of natural gas combined cycle capacity in 2005-2008. In North Carolina, 522MW of coal units at two plants were replaced with 2,185MW of natural gas combined cycle in the 2012-2013 timeframe. Similar examples exist in Tennessee.

As seen in these cases, the utilities proactively replaced high carbon intensity generation with lower carbon intensity resources, directly lowering carbon emissions and in some cases increasing flexibility to better manage variable renewable generation. The

[2] Even if EPA does not adopt all of these targeted changes, Xcel Energy is committed to continue to work with EPA and other stakeholders to find approaches that can ensure adequate credit for clean energy leadership.

retirement/replacement projects would count toward compliance if they had occurred after 2012. Despite the fact that they occurred prior to EPA's baseline year, they should be exempt from Block 2.

This exemption would provide value for those companies and states that took proactive steps to shift to a lower carbon resource prior to the proposal's baseline year. While some of these projects also increased the overall capacity of the fleet, we propose that only the amount of NGCC capacity that replaced previously operating coal plants (i.e. 652MW in the case of Minnesota) should be exempt from the 2012 NGCC capacity assumed able to redispatch in Block 2. Providing this exemption only to on-site, coal-to-NGCC replacements and to the capacity of coal retired (not necessarily the full capacity of NGCC installed) will provide appropriate credit to the handful of states and companies who conducted these projects, without significantly changing the overall reductions achieved nationally under Block 2.

B. Correct the renewable/NGCC offset penalty in the rule

As EPA is aware, NGCCs are an important resource for balancing high levels of intermittent RE. In fact, because of the flexibility and dispatch characteristics of NGCCs, wind often tends to displace NGCC generation. Studies by MISO, ERCOT and NREL demonstrate that a significant portion of wind generation displaces NGCC generation - from 32.6% in the MISO region up to 83% in the West and 87% in ERCOT. An internal analysis conducted by Xcel Energy using historical data from four representative months showed that wind displaces NGCC about 39% of the time on the system of Xcel Energy's Colorado affiliate, Public Service of Colorado (PSCo).

These wind/NGCC "displacement factors" demonstrate that NGCCs in states with high wind penetration have a lower capacity factor due directly to the operation of wind generation in those states and their utility systems. Therefore, the 2012 baseline NGCC capacity factors used in EPA's Block 2 methodology were lower in states with significant RE than they would have been absent these pre-2012 RE investments. Because the amount of NGCC generation assumed to displace coal and oil/gas steam generation depends on the difference between actual 2012 capacity factors and the 70% capacity factor target, this leads to more stringent Block 2 calculations and emissions targets in states with high renewables. A reasonable national estimate of the wind/NGCC displacement factor is 50% based on the studies cited above. Assuming a wind/NGCC displacement factor of 50%, we have re-calculated the 2012 baseline NGCC capacity factors for the states we serve that have NGCCs. We see significant changes in capacity factors in these cases, as shown in Table 1.

Table 1. NGCC capacity factors under 50% wind/NGCC displacement assumption.

State	EPA's 2012 NGCC Capacity Factor	"But for wind" NGCC Capacity Factor (50% displacement factor)
Colorado	30%	41%
Minnesota	24%	39%
Texas	45%	50%
Wisconsin	39%	42%
New Mexico	39%	48%
Michigan	42%	43%

EPA should consider the impact of high levels of wind penetration and recalculate the baseline NGCC capacity factors for each state. The calculations would still be based on 2012 generation data, but the baseline NGCC generation would be adjusted by the method we suggest here to account for what NGCCs in each state would have generated were it not for high levels of RE

penetration. In this way, the EPA could provide credit to states that have both been RE leaders and built high-efficiency NGCCs.

C. Grant states the authority to build a credible interim target pathway

As EPA has heard from many parties, the Proposed Rule's interim targets present a significant challenge for overall cost, economic disruption, stranded assets, and potentially electric system reliability. The interim targets are based on the assumption that Blocks 1 and 2 can be fully implemented in 2020, which for many states is not realistic. Even under its current, very aggressive schedule, EPA will likely approve most state plans by 2017 to 2019 at the earliest, yet the plans will likely require states and utilities to undertake permitting changes, investments in new gas and transmission infrastructure, procurement of significantly greater amounts of firm gas supply, and other actions that will take several years to implement. Moreover for some states – including Minnesota, North Dakota and South Dakota – Block 3 is also fully phased in by 2020, giving no gradual ramp-in. For these and other reasons, NERC and several reliability regions (entities primarily responsible for ensuring electric system reliability) have studied the Clean Power Plan and found that stringent interim targets would likely have an adverse impact on reliability.[3]

In addition, states with clean energy leadership histories have received more stringent final targets, and therefore more stringent interim targets. We note that the three states in which Xcel

[3] See for example:

- North American Electric Reliability Corporation, *Potential Reliability Impacts of EPA's Proposed Clean Power Plan.* November 2014.
- Southwest Power Pool, *SPP's Reliability Impact Assessment of the EPA's Proposed Clean Power Plan*. October 2014.
- Midcontinent Independent System Operator, *Comments to EPA on Proposed Clean Power Plan*. November 2014.

Energy owns coal plants, Minnesota, Texas, and Colorado, have much more stringent final targets – 41%, 38% and 35% below EPA's 2012 adjusted emission rate respectively – than the national average rate reduction of 19%. The interim targets in turn are strongly related to the final targets. Minnesota, Texas and Colorado's interim targets are 38%, 34%, and 32% below their 2012 baselines. These required reductions to interim targets are dramatic, and in some cases unworkable.

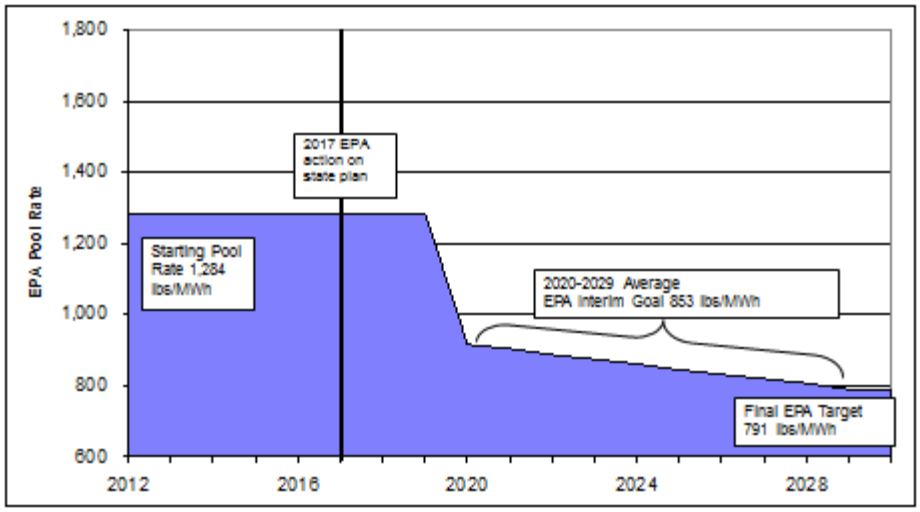
While it is true that the interim targets incorporate flexibility by allowing a ten-year averaging period, the flexibility is in reality quite limited. Under the proposal, emissions in the early years cannot be much above the interim target value, or the later interim years would actually have to be well below the final target, effectively creating an interim target that is more stringent than the final target. In addition, there are not many significant, cost-effective CO_2 reduction opportunities outside the four Blocks that comprise BSER. In some states, the only viable way to achieve the interim targets may be premature retirement of much or all coal capacity, which will have implications for cost, stranded assets, and reliability.

It is true that ongoing emissions reduction efforts prior to 2020 will reduce emissions rates and reduce the gap between 2012 rates and the interim targets. In fact, Xcel Energy has one of the most robust ongoing emissions reduction trends in the U.S. by, for example, adding 40% additional wind capacity from 2014 to 2016 on top of our nation-leading wind portfolio. However, our current plans are not nearly enough to achieve the interim targets.

Our Southwestern Public Service system in Texas vividly illustrates the significant timing problem with the interim targets. The in-state Texas 111(d) equivalent emissions rate of our Southwestern Public Service (SPS) operating subsidiary is currently about 1,780 lb CO_2/MWh.

While we are adding 450 MW of additional wind energy in Texas by the end of 2015 and also shifting dispatch to newer, more efficient natural gas units, by 2020 our emissions rate will be 1,670 lb/MWh, nowhere close to the Texas interim target of 853 lb/MWh. In fact, achieving that 853 lb/MWh rate, or anything close to it, is all but impossible for our SPS system in Texas in the few years before 2020. This challenge is compounded by the very short timeline between a final EPA-approved state compliance plan (or federal plan) in 2017-2019 and the first binding target year of 2020.

Figure 1. Texas CO_2 emission reductions required under Clean Power Plan.



To fix this interim target problem, Xcel Energy supports the proposal of the Coalition for Innovative Climate Solutions (CICS). Put simply, the CICS proposal would grant states the authority to build a credible interim target pathway to the final 2030 target levels. This option would replace the proposed interim target structure, which is not rooted in any requirement of the statutory language of Section 111(d).

Under the CICS proposal, states would build a credible, workable, enforceable glide path to their final target based on existing or new state policies, programs, and procedures covering the power sector. The state would propose this glide path to EPA as part of their state compliance plan. States would rely on existing policies such as integrated resource planning, renewable portfolio standards, efficiency programs, plant retirement plans, nuclear uprate programs, and any other credible programs that reduce emissions and are state-enforceable.

EPA would have the ability to accept or reject the plans based on the credibility of the proposal, but would not have the authority to mandate specific interim target levels, as long as the final target level is reached. Please see the comments of the Coalition for Innovative Climate Solutions for more details.

EPA would secure many benefits to U.S. electricity consumers by deferring to the states and allowing greater interim target flexibility. First and foremost, reliability of the U.S. power sector would be maintained, as states would not be scrambling to meet an arbitrary and too-short deadline. Second, costs would be much better managed under this approach, as states could account for stranded costs better, and utilities would be able to optimize the timing of their emissions reductions. This may allow, for instance, more time to invest in new RE rather than a potentially more expensive gas re-dispatch compliance pathway. Third, if states had greater discretion over their states' interim glide paths, they may be better positioned to contemplate regional cooperation in their state compliance plans.

Moreover, states and utilities often exceed the goals of environmental regulations, so greater interim target flexibility should not be assumed to carry with it a loss of environmental benefits. As but one example, Xcel Energy is now far beyond its renewable standard requirements in

several states. Those state renewable standards allowed us the flexibility to buy RE when the time is right, and we have done so. Given the right tools, including flexibility, states can drive tremendous environmental outcomes.

We appreciate EPA's acknowledgement in the October 30 NODA (79 Fed. Reg. at 64,543) of the challenges created by the stringent interim targets, and efforts towards creating a smoother and less disruptive "glide path." This is moving in the right direction. While we urge EPA to consider the CICS proposal of allowing states to create an enforceable glide path, if EPA does instead establish a federally enforceable glide path – e.g. by ramping in Blocks 1 and 2 as suggested in the NODA – it is critically important for EPA to design this glide path to address the reliability concerns identified in these comments and by NERC and RTOs.

D. Establish a bank for RE to recognize early action and ease planning in later years

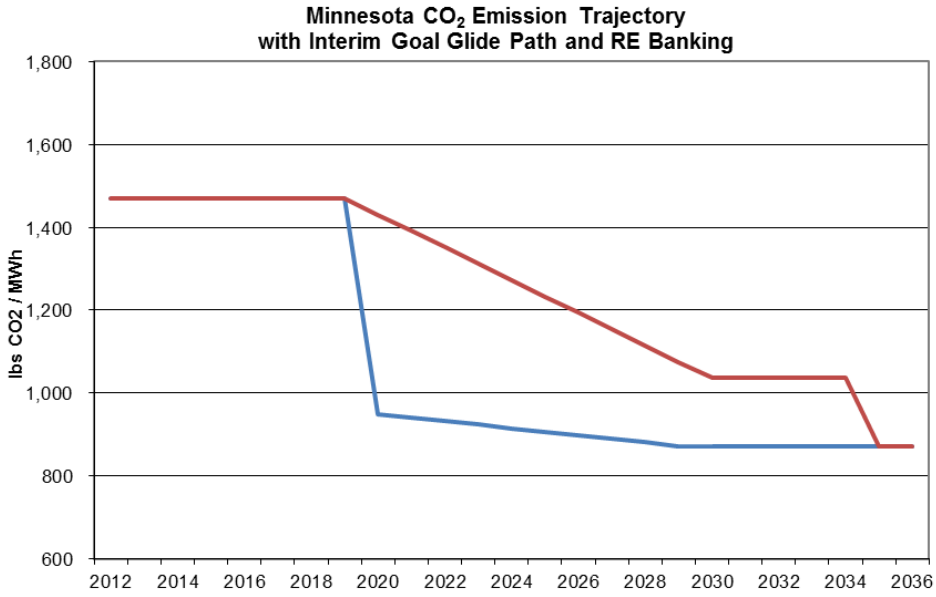
We have pointed out elsewhere in these comments that leading RE states have received more stringent, more expensive state emissions mandates under the Proposed Rule. The proposed structure tends to punish states that have passed renewable standards, built RE, and used NGCC plants to integrate RE.

To fix this problem, while working within the basic parameters of EPA's proposal, we propose a banking concept to credit early and ongoing RE development. The design set forth in these comments is only one among several possible designs for RE banking. Under our concept, EPA would first set a floor for banking eligibility of 1.5 times the national average renewable generation in 2012. The national average in 2012 was 5.6%, so this floor would be 8.4%. Only states that had renewable generation above that level would qualify for banking. These states

would be allowed to bank all renewable generation that is above the 2012 leadership floor percentage for the years of 2017-2019.

States would be able to realize the value of the bank in later years of the program. We propose that, working in conjunction with the state-determined interim target period concept discussed above, states would have the option to "spend" their bank in the form of adding the banked renewable MWh into the denominator of their final targets from 2030-2034. After the bank is depleted, or by 2035, states would then be required to achieve the final target established in the Clean Power Plan. Thus, banking rewards renewable leadership by deferring investments in the last increment of emissions reductions necessary to meet the final goal, but states would ultimately still be required to meet the same final goal. [4]

Figure 2: Interim Target Fix and RE Bank Working Together to Create More Workable Targets for Leading Clean Energy States.



[4] However, if EPA does not allow states to propose their own glide path to the 2030 target, banking becomes still more important as a means to alleviate some of the cost and other impacts of the interim targets.

The renewable banking concept offers many benefits. First, it would restore the message to states that early action on renewables will not be ignored. In fact, it would do so in a way that explicitly recognizes that the early reductions made by RE long before 2020 have real value under the program. Second, it would more fairly treat the utility customers who have funded proactive RE development. Third, the banking concept would create a new incentive for implementation of new renewables prior to 2020. This may be critical for ongoing renewable development, especially if the current set of federal tax subsidies for solar and wind is not renewed.

Banking accomplishes these objectives while maintaining the same total carbon loading to the atmosphere as required under the proposed rule; it provides relief only to the extent that equivalent reductions occurred prior to the commencement of the program. It recognizes early reduction actions taken long before the proposed rule would become binding. Finally, the general concept of early reduction banking, and renewable banking in particular, enjoys the support of a broad set of stakeholders across the utility industry, environmental advocates, and renewable trade groups, and is raised by EPA as an alternative in the proposed rule (79 Fed. Reg. at 34918-19).

E. Technical fixes

1. Baseline Data Issues

The single year of baseline data used by the EPA for the goal calculations does not consistently reflect the actual operational and technical realities faced by system operators. Many states see discrepancies in their operations in 2012 that directly impact their goal calculation and their

ability to meet the targets. For example, the largest coal unit in Minnesota, the 900 MW Sherco 3, did not run at all in 2012 due to a major equipment failure in 2011. This anomaly skews the state's 2012 emissions baseline downward and makes Minnesota's emissions goals more stringent. The EPA can solve this issue by adding back into the 2012 fossil rate a proxy (e.g. 2010 emissions and generation) for how Sherco would have operated in 2012. This would increase Minnesota's goal by 83 lb/MWh. In the alternative, we support EPA's suggestion in the NODA to adopt a multi-year baseline or allow states to choose baseline year(s) (79 Fed. Reg. at 64,553).

2. NGCC Capacity Ratings

The data that EPA used for Building Block 2 NGCC redispatch overstates available operational capacity, further penalizing states with significant amounts of NGCC capacity. In the goal calculation, EPA used NGCC nameplate capacity, which does not reflect actual deliverable capacity to the grid, because it does not take into account capacity lost due to high altitude, power consumed onsite to run the plant, and other real-world factors. EPA overstates the NGCC capacity available for redispatch by an average of 13% across the country, and up to 25% in our states. Fortunately, a more accurate capacity rating is available to EPA: the average of the summer and winter net dependable capacity provides a more reliable estimate of the available capacity. This net dependable data is publicly available from the EIA website (http://www.eia.gov/electricity/data/eia860/index.html). Generating units also report net dependable capacity data to the North America Electric Reliability Corporation (NERC) to support its work to develop and implement reliability standards. If EPA continues to use the Block 2 component in the final rule, it should use the average of the summer and winter net dependable capacity.

3. NGCC Unit Configuration Issues

EPA should correct errors in its unit-level data for NGCCs used for both existing and new constructed units. The NGCC data set has several inaccuracies for units in our system or states: For our Brush unit in Colorado, the Brush 1-3 "GT2" unit was erroneously included while the Bush 4 "GT4" and "GT5" units erroneously excluded. The net result is an increase in NGCC capacity of 25MW.

In Minnesota, EPA used a nameplate capacity for Mankato Energy Center of 530MW, reflecting a planned configuration of two combustion turbines (CTs) and one steam turbine. However, the second CT is planned for 2018 and does not yet exist. Because the second CT does not exist, and the heat recovery steam turbine (HRST) was oversized in anticipation of the second CT, the available nameplate capacity in 2012 for Mankato was actually 375MW, made up of the 295MW from the single CT and 80MW of additional power from the HRST, rather than 530 MW. Further, the net summer dependable capacity recorded by the EIA would bring down the capacity to 300MW. Thus, EPA has overstated the capacity of the Mankato Energy Center by 230 MW.

EPA should clarify the units included as "under construction" for Colorado. The data indicates that there is 200MW of new NGCC considered "under construction" in Colorado in 2013; however, we have not seen this new construction in any resource plans for major Colorado actors. We believe this may be a duplicate entry (inclusion as both existing and "under construction") for the Pueblo Airport facility with 200MW built and online in 2012.

4. NGCC Air Permit Restrictions

In re-dispatching the NGCC fleet to 70%, the EPA also ignores the fact that many NGCC units have air permit limits that legally restrict them from running at these high levels. In Colorado, for example, our Brush 1-3 unit is limited by its air permits to 37% annual capacity factor, Brush 4 is limited to only 18% annual capacity factor, and Arapahoe at 30% annual capacity factor. Further information on these technical fixes can be found in Section VII.

The anomalies in the baseline year, overstatement of the available NGCC capacity, conflicting air permit restrictions, and configuration errors skew the resulting emissions targets, and tend to hurt leading states with a large NGCC fleet.

V. The Clean Power Plan Has Significant Legal and Policy Shortcomings

Above, we propose a series of targeted "fixes" to the rule that would help address what we see as its biggest flaw: its failure to credit early action. However, the proposed Clean Power Plan has significant, fundamental legal and policy shortcomings. By failing to address these shortcomings, EPA risks the failure of the entire Section 111(d) program and the credibility of its climate strategy. We encourage EPA to address the shortcomings discussed in this section.

A. The Proposed Existing Source Standard for GHG Emissions from Power Plants Violates the Requirements of Section 111 of the Clean Air Act

EPA's proposed identification of the Best System of Emission Reduction ("BSER") for existing power plants is not permissible under the legal standards that apply to Section 111 rulemaking under the CAA. Xcel Energy agrees with the detailed analyses of this issue contained in the comments filed by the CICS, the Edison Electric Institute (EEI) and the Class of '85, and incorporates them by reference into these comments.

At the most fundamental level, EPA lacks authority to establish standards that apply to activities beyond the "stationary source." Section 111 defines an "existing source" as "any stationary source other than a new source."[5] In turn, "stationary source" means "any building, structure, facility or installation which emits or may emit any air pollutant."[6] EPA's proposal seeks to define a "source" as the entire interconnected electric grid of the United States, including the devices that the grid powers. In so doing, EPA proposes to assert authority over non-emitting activities such as end user energy efficiency and RE generation (Blocks 3 and 4). This approach is not consistent with the reach of Section 111.

[5] CAA Section 111(a)(6).
[6] *Id*. At 111(a)(3).

EPA's proposal is also illegally asymmetric with how EPA proposes to regulate new sources in this source category under Section 111(b). EPA's proposal seeks to regulate far more activities than those proposed to be regulated under Section 111(b), when regulation under Section 111(d) is only authorized for sources that would be regulated under Section 111(b) "if such existing source were a new source."[7] Since the existence of a standard for new sources is one of the requirements for EPA's authority to adopt standards for existing sources, the proposed broader sweep of EPA's proposal exceeds EPA's authority.

In seeking to regulate the electric grid, EPA is proposing to exercise the broadest possible authority through one of the most little-used, narrow provisions of the CAA. In a recent opinion evaluating EPA's GHG New Source Review rules, the Supreme Court cautioned EPA about statutory interpretations that "would bring about an enormous and transformative expansion in EPA's regulatory authority without clear congressional authorization. … We expect Congress to speak clearly if it wishes to assign to an agency decisions of vast 'economic and political significance.'"[8]

In addition to proposing regulation of activities beyond its statutory authority to regulate "existing sources," EPA's proposal also goes well beyond its statutory authority to identify a "standard of performance." The BSER must be both "adequately demonstrated" and the emissions limitation "achievable." In its legal memorandum in support of the proposal, EPA announces that the term "system" in the phrase "best system of emission reduction" is limitless: "the 'system of emission reduction' may include anything that reduces emissions … including measures that replace production of generation at the affected source and thereby reduce

[7] *Id.* At 111(d)(1)(ii).
[8] *UARG v EPA*, 134 S. Ct. 2427, 2444 (2014).

emissions…"[9] This proposal thus asserts, uniquely in the history of Section 111, authority not only to determine what controls or work practices a source must employ to reduce its emissions, but to decide whether and how much a source can operate at all. In order to achieve this result, EPA contravenes the CAA by including in the BSER requirement activities that are not subject to regulation under the CAA (Blocks 2, 3 and 4).

EPA cannot cure the internal inconsistencies in its proposed BSER by stating that even if the BSER and state goals are not achievable by application of the four building blocks, EPA will not change the BSER because there may be other things that can be done to reduce emissions.[10] In making this argument, EPA turns the NSPS program on its head. Section 111 requires EPA to determine controls that are adequately demonstrated and emission limitations that are achievable. This means that a source needs to be able to install the designated system and be able to use it to meet the resulting emission limitation. Because the emission limitation is representative of what BSER can achieve, sources have always been free to select alternate controls that meet the BSER limit. It is contrary to the CAA, however, for EPA to select an unachievable BSER.

States, not EPA, must consider the specific circumstances of their existing sources to derive the lb/MWh goal for their state. By proposing to establish state goals that states will not be allowed to change through their state plans, EPA disregards the critical distinction between existing and new sources. The group of existing sources were sited and constructed at different times, reflect different boiler technologies, have differing existing control systems, have been operated and maintained in different ways and have different remaining useful lives. New sources are built after an NSPS takes effect, and the source can be designed and built to comply with a known

[9] Legal Memorandum for Proposed Carbon Pollution Emission Guidelines for Existing Electric Utility Generating Units, at 52 (2014). See also 79 Fed. Reg. at 34885, hereafter "Legal Memorandum.".
[10] See for example 79 Fed. Reg. at 34875, 34891, 34902; 34925 on the CAA provision allowing states to consider remaining useful life of sources; etc.

standard. This is precisely why Section 111(d) focuses on state planning and allows states to consider remaining useful lives and other factors in determining what emission reductions to require of various sources.[11] EPA must let states develop the standards of performance applicable to their sources, considering cost, nonair quality health and environmental impacts, energy requirements, and, among other factors, the remaining useful life of the sources.

EPA cannot bolster its proposed BSER with an extra-statutory assertion that it can choose a technology or technologies in order to achieve "meaningful" or "appropriate" reductions.[12] The amount of reductions that may be achievable is unrelated to a determination that a technology has been adequately demonstrated. EPA must set an emission limit at the level that is achievable by demonstrated technology, not a limit that would result in GHG reductions that EPA deems "appropriate."

B. EPA should not abuse its authority under Section 111(d) to become a national energy regulator.

Under the proposed Clean Power Plan, EPA has entered into energy policy decisions that are beyond both its CAA authority and its expertise. Among other things, the Clean Power Plan implies that EPA has the authority to oversee state decisions regarding power plant dispatch, RE development and energy efficiency. These decisions have traditionally been left to state regulators (or to the market) for good reason: State public utilities commissions are uniquely situated to make decisions regarding the electricity policies within a state. PUCs are subject to the authority of and constraints imposed by the state legislatures and are accountable to the

[11] *See* CAA Section 111(d)(1), referring to state plans and to the factors states may consider in making their plans. In contrast, CAA Section 111(b) requires EPA to directly promulgate national standards for new sources.

[12] *See* Legal Memorandum at 39, incorporating by reference EPA's legal analysis of BSER requirements from the January 2014 proposal related to a 111(b) GHG standard for power plants.

legislature and the people of the state for the wisdom of their decisions. EPA, whether acting from a distant office in Washington or a regional office, has no such accountability.

The Clean Power Plan implies that EPA will (1) judge resource planning decisions made by state public utilities commissions; (2) enforce those decisions once a plan is approved; and (3) impose its own resource planning decisions if it finds the state decisions unsatisfactory. In the final rule, the Agency should recognize that it lacks the expertise and authority to do any of these things and, consistent with Section 111(d), should clearly limit its authority to the control of emissions.

As Section 111(d) makes clear, states have broad latitude to design their own emission control plans, and should be encouraged to do so. EPA should not second guess those decisions nor attempt to enforce them. EPA's oversight of state processes should ensure that state processes contain appropriate procedural protection and consider substantive environmental and energy policy criteria, but it should not substitute its judgment for that of the state.[13]

C. The Proposed Clean Power Plan Rests on "Building Blocks" That Are Unachievable and Arbitrary.

Despite its admirable commitment to flexibility, the Clean Power Plan cannot establish emission targets for any state based on policies or programs that would be unachievable if they were directly enforceable. Many aspects of the Blocks are not technically and economically feasible, either on an individual basis or when interactions among the building blocks have been adequately considered. In addition to our comments below, we join the comments of CICS, EEI,

[13] In fact, Section 111(d) requires that states prepare plans to develop BSER for their systems. Among the factors states may consider are cost, nonair quality health and environmental impacts, energy requirements, and, among other factors, the remaining useful life of the sources (*see* CAA Section 111(a)(1) and 111(d)(1)(B)). If, after appropriate consideration of these factors, a state concludes that it cannot meet EPA's emission rate goal, Section 111(d) implies that EPA must defer to this decision.

Class of 85 and the Electric Power Research Institute (EPRI) regarding concerns about the feasibility of the different building blocks.

1. Block 1

EPA proposes a Block 1 heat rate improvement target of six percent for every major U.S. coal plant. However, the ability of a plant owner or operator to improve the efficiency of a given unit is entirely dependent on unit-specific factors such as unit age, equipment condition, prior efficiency projects, current emissions controls and other factors.

EPA has also derived incorrect conclusions from the continuous emission monitoring system ("CEMS") data to support its Block 1 target. The CEMS data is limited in its usefulness in determining whether heat rates did or did not improve; for instance annualized CEMS data does not adjust for startups, shutdowns, degradations in heat rates following projects, cycling of coal plants to follow load or renewables, or other factors. But most glaringly, the CEMS data expresses heat rate in gross terms rather than net terms, meaning that CEMS data ignores increases in "house power" needed to run environmental controls. Partially due to this use of gross CEMS data, EPA incorrectly concludes that the heat rate of our A.S. King Plant in Minnesota has improved.[14] While we did undertake a number of heat rate improvements at A.S. King during a plant rehabilitation project from 2004-2007, we also added a number of power-consuming environmental controls such as a scrubber, SCR, and a baghouse. Our own net-basis testing shows that A.S. King's heat rate was 4.7% worse, not better, due to these changes to the plant. Put simply, A.S. King is now a far cleaner plant, but its heat rate is slightly worse. In

[14] A.S. King was one of sixteen coal EGUs that EPA cited as evidence of significant year-to-year efficiency improvements.

setting the Block 1 target, EPA should properly account for true net-basis heat rates, and should also factor in the widespread adoption of environmental controls taking place nationwide.

Moreover, yet again, the proposed rule punishes utilities that have taken early action to improve heat rates. Where heat improvement measures have been taken, such as at our A.S. King station, and for a new unit such as our company's Comanche Unit 3 which came online in 2010, significant additional improvements may not be possible. Credit for those improvements is swept away by the 2012 base year, and Block 1 applies a potentially unrealistic burden to newer plants and plants where improvements have been made.

EPA's approach to Block 1 assumes one level of heat rate improvement is universally achievable across all U.S. coal plans, and ignores the wide variations in the potential for efficiency improvements. A better approach is to allow states to set their own targets based on unit-specific information that accounts for differences in achievable heat rate improvements.

2. Block 2

As discussed in Section III above, Building Block 2 creates significant penalties for early action. In addition to this concern, by assuming that each NGCC unit in the nation can achieve a 70% capacity factor, Block 2's essence is arbitrary and capricious. Block 2 ignores the manner in which the utility industry, Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) make dispatch decisions.

In the utility industry, dispatch decisions are made based on two factors: reliability and cost. The system operator orders coal, gas and nuclear units to run first if they are necessary to assure

a reliable electric system. Many coal units provide voltage support to enable the transmission system to deliver electricity; other coal units must operate to enable the system to meet load in the event of sudden system changes, such as an unexpected outage of another fossil unit or the loss of a renewable resource (e.g. when the wind stops blowing). Yet, the Block 2 redispatch plan assumes that any coal unit, even those required for reliability, may back down when NGCCs increase their capacity factor.

Moreover, some NGCCs cannot achieve the Block 2 goals. Many NGCCs have air permit limits that restrict them from operating up to a 70% capacity factor. For example, as discussed above, one of our Colorado NGCC plants (Brush 1-3) is limited by its air permits to 37% annual capacity factor. Other units lack the gas infrastructure or firm gas supply[15] necessary to support a 70% capacity factor or were never designed to run at that level. EPA should not presume that all NGCC units in any given state can achieve the Block 2 targets.

Block 2 also ignores the manner in which dispatch decisions are made in the utility industry. EPA has arbitrarily chosen 70% as the redispatch target for NGCCs. Dispatch is not an arbitrary construct; where not demanded by reliability, dispatch decisions are made based on economics. The system operator will always dispatch the lowest marginal cost units first, and move up the "stack" to the higher cost units as customer demand increases.

Because the economics of unit dispatch vary dramatically from utility system to utility system, Block 2 would impose arbitrarily different cost of compliance on the different states.[16] Indeed, a

[15] For example, where gas pipelines supply electric generation only in summer, since they must serve heating needs in winter.

[16] In fact, in many parts of the country, dispatch decisions are not under the authority of state agencies or even incumbent utilities. Pursuant to FERC regulation, many states belong to RTOs or ISOs and have

mere glance at the different state targets shows the arbitrary impact of Block 2. Consider two similar, adjacent states: North and South Dakota. Despite the fact that they are in the same region of the country, North Dakota and South Dakota have very different targets. North Dakota is required to achieve an 11% reduction to 1,783 lb/MWh, while South Dakota must labor to achieve a 35% reduction to 741 lb/MWh. The primary reason for this difference is EPA's decision to use the arbitrary redispatch methodology to address NGCCs; North Dakota has none, while South Dakota has a single NGCC that was under construction in 2012 and thus had a very low capacity factor. With a difference in targets of more than 1,000 lb/MWh, the two states will face completely different compliance economics.

3. Block 3

Block 3 is flawed in two significant respects: it is beyond EPA's authority, and it fails to account for RE leadership. These shortcomings are discussed in detail elsewhere in these comments, especially in Sections III, V and VI.

4. Block 4

Xcel Energy has an extensive, lengthy (30+ years) and successful history of offering customers a broad choice of opportunities to reduce their energy consumption through energy efficiency and demand side management (DSM) programs. Our leadership gives us an experienced viewpoint on the proposed energy efficiency targets and associated policies included in Block 4 of the proposed rule, and our positions are backed by other technical experts. Based on our experience,

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turned their dispatch decisions over to these interstate bodies. These states could not order a redispatch of their plants even if they wanted to do so.

and in agreement with the detailed analyses filed by EPRI and EEI, Block 4 inappropriately assumes high rates of sustainable energy savings.

In Block 4, EPA assumes a national "best practice" target of 1.5% incremental annual energy savings. No state has seen utility program savings of this magnitude over the time period that EPA has estimated for this proposed rule. EPRI also indicates that the 1.5% target is higher than that identified in their study, "U.S. Energy Efficiency Potential Through 2025," where EPRI estimates that cost-effective economic potential for energy efficiency is 0.9% of retail sales.[17] The EPRI estimate even includes a broader set of measures which occur outside traditional utility or state-run energy efficiency programs, such as state energy building codes and more efficient federal and state appliance and equipment standards, while EPA's Block 4 methodology drove a higher target without these measures.

EPA's assumption that high rates of cost-effective energy efficiency development can continue through 2030 and beyond is optimistic. In a recent docket before the Colorado Public Utilities Commission to establish energy efficiency goals, Xcel Energy affiliate Public Service Company of Colorado presented a third-party potential study –the same study that EPA referenced in its GHG Abatement Measures TSD, Table 1- "Summary of Recent (20110-2014) Electric Energy Efficiency Potential Studies". Our potential study did not look out past 2020, and only one of the roughly dozen potential studies noted did. We do not believe that establishing a 1.5% is acceptable when little analysis was done much beyond the 2020 period. Furthermore, our study showed a one-third reduction in cost effective achievable energy efficiency potential from the years 2013 through 2020, again indicating that large potential may not be sustainable over time.

[17] Electric Power Research Institute. April 2014. *U.S. Energy Efficiency Potential Through 2035*. Available at http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=000000000001025477.

Our experience in Minnesota, where we have attained a savings rate among the highest of investor-owned utilities across the nation, similarly shows that achieving high rates of energy efficiency development over time will be increasingly difficult. Energy efficiency potential is a delicate balance of technological development, increasing energy codes and standards, and customer preferences. Based on our experience, we believe that these three variables are unlikely to move in a predictable and favorable fashion over such an extended time period. Like EEI and EPRI, we believe that EPA did not properly account for the lower energy efficiency potential that occurs with tightening building codes and appliance and equipment standards. States would be challenged to reach long-term Block 4 targets and sustain these annual energy savings levels indefinitely after 2017.

In a recent example, the roughly 30 percent increase in lighting standards due to the Energy Independence and Security Act of 2007 stimulated a dramatic short-term rise in new energy savings that has already peaked. Since the standard lighting efficiency baseline is now increased by 30%, there is less potential for lighting programs in energy efficiency programs; over half of our energy efficiency savings is associated with lighting programs. In addition, the potential for lighting-related savings is likely to decline further as newer lighting technologies will deliver lower savings on an individual bulb basis as the baseline becomes more efficient. In short, in states that have historically led on energy efficiency, the low-hanging fruit is already picked.

The Company appreciates EPA's recognition that the utility and DSM industries have built significant capacity to evaluate the certainty of energy savings realized through existing DSM programs. This acknowledgment emphasizes that prior investments in DSM will provide continued benefits to early actors and also gives assurance that rigorous evaluation, measurement, and verification (EM&V) practices established and implemented in partnership

with state commissions may need only minor modifications to meet EPA's guidelines. The Company urges EPA to take a flexible approach to EM&V. EPA should allow each state, especially those with established EM&V protocols, to tailor a plan that meets the needs of their unique stakeholders with the least disruption to existing policies and procedures. EPA has stressed the need for strict EM&V protocols but also acknowledges that newer programs may not have the established protocols desired. New programs are needed to meet aggressive DSM goals, and EPA should rely on the experience of the states to determine whether EM&V protocols are acceptable. The Company also strongly supports the states' option to use gross savings for compliance purposes, since all energy savings, whether influenced by state policies, utilities or local trade allies result in emission reductions.

VI. EPA Should Not Adopt a Renewable Potential Approach Under Block 3

In the Alternative RE Approach Technical Support Document, EPA has proposed an alternative approach, based on theoretical renewable potential, to develop RE targets under Building Block 3. EPA also suggests a "Regionalized RE Approach" concept in the October 30, 2014 Notice of Data Availability (79 Fed. Reg. at 64,543). As these comments discuss in other sections, EPA has at best questionable authority to apply renewable targets to states under the limited statutory authorities of Section 111(d). If EPA includes Block 3 in the rule, however, it should not adopt the proposed alternative described in the TSD because the approach (1) increases the disparity of state targets; (2) punishes states that have taken early actions to reduce emissions; (3) reduces the flexibility offered to states under the rule; and (4) is arbitrary. If EPA uses any other form of an alternative approach, it should avoid increasing the disparity between states under Block 3 or in the state emissions reduction targets.

The proposed alternative approach to Block 3 in the TSD would increase the disparity of targets between states. Under the rule as proposed, the emissions reductions targets already range from 11% to 72% from 2012 to 2030, a major issue that creates unfairness between states and may stymie regional compliance cooperation. The proposed alternative approach would exacerbate this issue by creating patently unfair and even unreachable levels of renewable generation in some states, such as New Mexico at 72% and South Dakota at 159%. Table 2 below shows how the proposed alternative approach would increase unfairness and disparity among states.

Table 2: RE Generation Under Building Block 3: The Renewable Potential Approach Greatly Increases Disparity Between States

Renewable Generation Requirement in 2030 as a Percentage of 2012 Total Generation Under Building Block 3	Proposed Regional RPS-based Approach	Renewable Technical and Market Potential Approach
Lowest State Requirement	2%	0%
Highest State Requirement	25%	159%

The proposed alternative approach would also further punish states that have been leaders in RE development. By enacting policies and working with their utilities to implement renewables at levels far above the national average, these states have shown the nation that RE is a viable and significant pathway to reduce carbon dioxide emissions. In fact, the single most significant factor in Xcel Energy's expected 31% reduction in CO_2 emissions between 2005 and 2020 is the RE that we source from seven different states. EPA should not punish the states leading national renewable development by further increasing the stringency of their reduction targets.

Table 3: Leading Renewable States That Would Be Punished Under the Alternative Renewable Approach to Building Block 3.
(Note: The 2012 RE generation for the states below is at least double the national average of 5.6% in 2012)

State	2012 Renewable Generation Percentage	Proposed Emissions Reduction Target (2012-2030)	Emissions Reduction Target under Renewable Technical and Market Potential Approach (2012-2030)
Colorado	12%	35%	42%
Minnesota	18%	41%	52%
New Mexico	11%	34%	54%
North Dakota	15%	11%	29%
South Dakota	24%	35%	84%

The proposed alternative renewable approach is also arbitrary. For many states, the proposed approach arbitrarily uses a carbon price to set the targeted amounts of renewable generation. EPA cross-analyzed the technical potential by state with an economically modeled assessment (IPM modeling) of likely renewable development if renewable costs were reduced by $30/MWh, which EPA claims is equivalent to an estimated $40 per ton of CO_2 emissions reduction. In fact, in the majority of states, EPA's alternative approach used this carbon price rather than the technical potential to set the Block 3 requirement.[18] Nowhere else in the Building Block structure of the proposed rule does EPA differentiate a state's emission reduction requirements based on a carbon price. For example, Block 2 requires a 70% capacity factor for NGCCs in every state regardless of what carbon price may be implied by that requirement. EPA should not

[18] In the alternative calculations, the binding result was more often the IPM economic runs than the technical potential. For solar, the technical potential figure was only used in 13 states; for wind, technical potential was used for 18 states; for geothermal, only 6 states.

arbitrarily apply a carbon price in Building Block 3 while holding the state requirements in the other building blocks constant regardless of their cost implications.

In other states, the targets were set by theoretical potential and not limited by the economic modeling step. In these states, EPA's approach is arbitrary because it is based on natural resource availability. This differs markedly from the other Blocks. EPA did not estimate re-dispatch potential under Block 2 based on available natural gas resources in a state, did not estimate potential nuclear growth under Block 3 based on uranium reserves, and did not estimate efficiency potential under Block 4 based on a state's natural resources available to build LED light bulbs or high-efficiency air conditioners.

The proposed alternative approach, by dramatically increasing the levels of renewable generation assumed in setting the state goals, could also effectively eliminate a key compliance flexibility mechanism in our states. Since, as described elsewhere in these comments, Xcel Energy and many other industry stakeholders believe that the other three building blocks significantly overestimate what is feasible and adequately demonstrated for coal plant heat rate improvement, NGCC utilization and energy efficiency, the ability to generate more RE than EPA assumed in Block 3 is a key flexibility mechanism to compensate for the infeasibility of the other three building blocks. If EPA increases the RE requirements in Block 3, making state goals more stringent, those states will have less flexibility to comply cost-effectively with the rule.

EPA raises in the NODA the possibility of a third approach to RE in Block 3, termed a "regionalized approach." This appears to be a technical potential-based approach in which RE technical potential would be evaluated at the regional level (based on the same regions EPA uses in the Proposed Rule, or other regions to be determined). EPA would then apportion to states the

overall RE target thus derived, based on *pro rata* share of 2012 regional electric sales or *pro rata* share of 2012 generation. EPA suggests this approach might help address the discrepancy in the Proposed Rule "between setting targets based on in-state renewable assets or resources while allowing other states that import renewable energy to count certain amounts of that generation toward their compliance" (79 Fed. Reg. at 64,545). EPA provides no numerical results, either on the new RE targets for regions or states or on the effect this third approach would have on states' interim and final targets. Xcel Energy cannot support this approach without further information, and we suspect it would create many of the same problems – arbitrary target setting, more stringent targets for our states, and punishment of renewable energy leaders – as the RE Alternative Approach EPA published along with the Proposed Rule.

EPA should not pursue the proposed renewable potential described in the TSD in the final rule. EPA's proposed approach based on state RPS targets is a better pathway. The flaws in the RPS approach, such as inadequately rewarding early action, can be largely resolved by the rule changes we propose in these comments. If EPA uses any other form of an alternative approach, it should in any case not increase the disparity between states under Block 3 or in the state emissions reduction targets.

VII. EPA Should Address Other Issues with the Proposed Rule

A. Interstate RE Issues

For goal-setting purposes, EPA's formula applies the regional RE growth factor to 2012 generation from all RE facilities physically located in a state, regardless whether some of this generation serves load in other states (GHG Abatement Measures TSD, chapter 3). However, for compliance purposes, EPA suggests that "consistent with existing state RPS policies, a state could take into account all of the CO_2 emission reductions from RE measures implemented by the state, whether they occur in the state or in other states. This proposed approach for RE acknowledges the existence of RE certificates (RECs) that allow for interstate trading of RE attributes and the fact that a given state's RPS requirements often allow for the use of qualifying RE located in another state to be used to comply with that state's RPS." (79 Fed. Reg. at 34,922). EPA states elsewhere that approvable 111(d) state plans must be non-duplicative, i.e. the emission reduction benefits of the same measure may not be counted in more than one state's plan.

Xcel Energy's position is that the state whose customers are paying for RE should receive compliance credit for that RE in its 111(d) plan. We urge EPA to take an approach for goal-setting that is consistent with the above principle, to avoid conflicts between states. While we do not disagree that RECs can be a useful tracking mechanism, the ownership of RECs should not take precedence over the fundamental principle that the state whose customers are paying for RE should receive compliance credit. In the event that the customers who paid for the energy did not acquire or no longer hold ownership of RECs, those who paid for the energy should receive compliance credit.

B. Nuclear Issues

EPA assumes 5.8% of the installed nuclear capacity in a state is "at risk" and could be preserved from retirement by this rule. As a result, EPA includes in the denominator of state goals the generation of that "at risk" portion, operated at an assumed 90% capacity factor. This makes the state goal more stringent for any state with existing nuclear capacity. If these nuclear units continue to operate, presumably a state may include generation from the "at risk" portion in its compliance demonstration after 2020 – though the proposed rule does not make this explicit.

Xcel Energy currently owns and operates 1,664 MW of carbon-free, baseload nuclear generation in Minnesota. Our nuclear units include Monticello (564 MW summer capacity, currently licensed to operate until September 2030), Prairie Island Unit 1 (550 MW summer capacity, licensed to operate until August 2033), and Prairie Island Unit 2 (550 MW summer capacity, licensed to operate until October 2034). These units appear as 1,819 MW in the formula – an apparent overstatement by about 155 MW – and the "at-risk" portion (106 MW) of this adds 840 GWh to the denominator of Minnesota's goal (GHG Abatement Measures TSD at 4-35).[19]

As written, the rule may not recognize our recent power uprate at Monticello, is unclear on how to calculate compliance credit for preserved nuclear, and provides very little incentive to maintain these carbon-free baseload resources. We believe EPA should:

[19] The reasons for the discrepancy between 1,819 MW and 1,664 MW are unclear. Our calculation, based on the summer capacity of the three units, would indicate: 1,664 MW * 5.8% considered at-risk * 8,784 hours in 2012 * 90% capacity factor assumption = 763 GWh that should have gone in the MN state goal denominator, not 840 GWh. We advise EPA to remove the 5.8% "at risk" nuclear component from goal setting; but if EPA retains this element of the state goals, at minimum EPA should correct the technical error for Minnesota.

- Remove the 5.8% “at risk” nuclear component from goal setting, but allow compliance credit for new nuclear and nuclear uprates. The “at risk” percentage is arbitrary, not well supported, and simply creates a penalty for prior investments in nuclear.
- Make clear in the final rule that any power uprate after 2005, or at very least after the 2012 base year – not after date of proposal – is treated the same as “new” nuclear and receives compliance credit for its full generation, from the time the nuclear unit begins to operate at its uprated capacity. Nuclear uprates should be credited because they will displace generation and emissions from affected fossil EGUs -- EPA’s goal.

Xcel Energy incorporates by reference the additional comments of EEI on ways EPA may appropriately credit nuclear generation in the rule.

C. Hydro Issues

The proposed rule did not include generation from existing hydro in the 2012 baseline used in Block 3, but allows state plans to give compliance credit to “incremental hydropower generation from existing facilities (or later built facilities)” (79 Fed. Reg. at 34867). Elsewhere, EPA proposes that any existing state requirement, program or measure implemented after date of proposal (June 18, 2014) can be counted for compliance, but only credited for its emission impacts starting at the beginning of the initial plan performance period (2020). EPA takes comment whether earlier or later dates should be considered, both for the first date when a measure is eligible for inclusion, and for when its emission impacts may begin to count toward compliance (79 Fed. Reg. at 34918-19).

The proposed approach suggests that if a utility adds incremental capacity to an existing dam, builds a new dam, or signs a new Power Purchase Agreement (PPA) for generation from a dam built after June 2014, those MWh could be included in the denominator of the state's compliance demonstration. EPA should credit such measures after 2005, or at minimum after the 2012 base year, rather than after the date of the proposal. Thus, we support EPA's alternative in which any such measure undertaken after the base year of 2012, or after 2005 should be eligible. Consistent with our advocacy of a renewable banking approach discussed in Section IV, we also support EPA's alternative in which the emissions impacts of any such measure could be counted and banked prior to 2020 – e.g, beginning in 2017.

We request that EPA clarify in the final rule that any qualifying hydro measure (incremental or new capacity) is eligible for compliance credit whether the dam in question is in or outside the United States. Xcel Energy's Minnesota affiliate contracts for power from Manitoba Hydro, and is considering whether to enter into new PPAs. If we enter into a new PPA with Manitoba Hydro, this will reduce our emissions from affected EGUs in the United States and should be creditable. EPA and the states should ensure that there is no double-counting of the same hydro capacity in more than one state's 111(d) plan, but as long as that condition is met, should make hydro in Canada eligible for compliance.

Finally, we request that EPA clarify in the final rule that new or incremental hydro is eligible for inclusion in a state's 111(d) plan even if large hydro is not defined as an eligible energy resource in the state's RPS. A state need not be asked to alter what is eligible for RPS compliance; any measure that reduces emissions from the affected EGUs should be eligible in 111(d) plans, regardless whether it is eligible for RPS compliance. Clarification on this point from EPA will give states greater clarity when they are drafting their 111(d) plans.

D. Other Requested Clarifications

1. Recognition of coal plant retirements between 2012 and 2020

EPA should not require states to make, for any plant retirements between 2012 and 2020, a demonstration of "additionality" showing these emission reductions would not have occurred in the absence of the CAA 111(d) program. The Preamble hints that EPA may require states to make such a showing, stating "… total emissions to the atmosphere would likely be greater under this approach [of allowing emission reductions prior to 2020 to be applied toward meeting the required level of emission performance in a state plan], unless the pre-2020 emission reductions that can be counted toward the state goal are limited to reductions that would not have occurred in the absence of the CAA section 111(d) program" (79 Fed. Reg. at 34,919). This hints that a unit retirement that serves any purpose in addition to carbon reduction – e.g. MATS compliance, other environmental regulations, or a fleet modernization program designed in collaboration with a state legislature – may be considered to "have occurred in the absence of the CAA section 111(d) program" and not be creditable for 111(d) compliance.

In achieving EPA's Clean Power Plan objective of reducing CO_2 emissions, it is *whether and when* unit retirements happen, not *why* they happen, that matters. Xcel Energy strenuously objects to any dissection of utilities' intent, or disqualification of unit retirements that serve multiple purposes. Utilities always make the costly and complex decision to retire a plant in consideration of multiple factors, and it is unnecessary and subjective to distinguish plant retirements motivated by future carbon regulation from those that would have "occurred anyway." For years, utilities have made such decisions under the expectation of future GHG

regulations, whether under a legislative or CAA framework. Utilities have also considered the MATS rule and other environmental regulations making continued operation more costly, lower gas prices, and other economic, regulatory, social and political pressures. The coal plant retirements Xcel Energy has carried out, both before 2012 and those planned between 2012 and 2020, are designed in part to reduce future carbon compliance costs for our customers and in part to meet other environmental regulatory obligations. It would be difficult to identify which plant retirements would have occurred, and which would not have occurred, in the absence of carbon regulation that has been expected for years, and now takes the form of a CAA section 111(d) program. Creating uncertainty whether a coal plant retirement prior to 2020 would receive compliance credit only creates the perverse incentive to delay retirements.

EPA should make clear that CO_2 emission reductions due to unit retirements after the 2012 base year may be applied toward goal achievement after 2020, and may be banked prior to 2020 beginning on the date of retirement, without requiring states or utilities to make any demonstration that the retirement would not have occurred in the absence of the CAA section 111(d) program. This should include retirements that, in addition to CO_2 reduction, achieve compliance with MATS or other regulations, as well as retirements that are carried out in fulfillment of state legislative program such as the Clean Air Clean Jobs Act in Colorado.[20] EPA should specify in the final rule how such retirements will be credited, under both rate-based plans and in the event that a state elects to convert its rate target to a mass budget.

2. Ambiguous and asymmetrical treatment of biogenic CO_2 emissions

[20] Which EPA praises in the preamble (79 Fed. Reg. at 34,834 and 34,849 and 34,881).

EPA should provide greater clarity and consistency in the treatment of biomass power. Currently biomass MWh are treated as carbon-neutral in calculating state goals (since all biomass MWh eligible for state renewable portfolio standards are included in the denominator, with no CO_2 emissions in the numerator); this makes the interim and final goals more stringent for any state with existing biomass plants. The treatment of biomass for compliance however is unclear. EPA's November 19 guidance memorandum on biogenic CO_2 emissions appears to support the treatment of waste-derived feedstocks and certain forest-derived feedstocks as "having minimal or no net atmospheric contributions of biogenic CO_2 emissions, or even reduc[ing] such impacts, when compared to the alternate fate of disposal." [21] This is a positive step, but implies that CO_2 emissions may be assigned to biomass facilities utilizing other feedstocks. In addition, the revised *Framework for Assessing Biogenic CO_2 Emissions from Stationary Sources*, on which the guidance memorandum is based, remains a draft document subject to revision.

This inconsistency creates a penalty for states with existing biomass plants, since their goal is more stringent because of these plants, but they may be required to assign CO_2 emissions to at least some types of biomass used for 111(d) compliance. This will act as a significant disincentive to biomass use, due to the complexity and uncertainty of the *Accounting Framework*. Instead, EPA should clarify that biomass power and biomass co-firing in fossil plants are considered carbon-neutral when used for goal achievement. We support EPA's suggestion that sustainably-derived forest feedstocks may be considered carbon-neutral, but note that in defining what constitutes sustainably-derived forest feedstocks, EPA should not substitute its judgment for that of the responsible state forestry agency charged with setting such standards. EPA's guidelines should also recognize the methane avoidance associated with waste-derived

[21] Memorandum, *Addressing Biogenic Carbon Dioxide Emissions from Stationary Sources*. Janet G. McCabe, Acting Assistant Administrator, Office of Air and Radiation, to regional Air Division directors. November 19, 2014.

feedstocks, such as biogas and landfill gas, which can make such feedstocks better than carbon neutral.

3. Acceptability of out-of-sector GHG offsets in 111(d) plans

The proposed rule is unclear on the eligibility of out-of-sector GHG offsets for inclusion in states' 111(d) plans. Many states currently beginning to consider which measures to include in their plans are uncertain whether to use GHG offsets. EPA should clarify that states may use GHG offsets to achieve any emission reductions their state plan (e.g. under the "state portfolio" or "state commitment" approaches) does not assign to affected EGUs. GHG offsets are generally considered one of the most powerful cost-containment mechanisms available in existing cap-and-trade programs, and can deliver significant economic and environmental (wildlife habitat, water quality, etc.) co-benefits. Voluntary and regulatory offset programs have developed rigorous protocols and associated rules to ensure that GHG offsets represent real, additional, permanent, verifiable and enforceable reductions.

E. Preliminary Comments on October 30 Notice of Data Availability

As discussed above, on October 30, 2014, EPA published a NODA providing supplemental information and alternative policy designs addressing specific issues under the proposed Clean Power Plan. While we appreciate EPA's efforts to address some of the issues that have been raised by stakeholders since the proposal of the Clean Power Plan, the NODA includes very significant potential changes to the proposal and was released only one month before the comment deadline on this very significant and complex rule. Because of the complexity of the rule, numerical analysis is necessary to understand how the proposed changes might affect our

states and our customers. That analysis is lacking at this time. We therefore request that EPA provide more information and more time to comment on the implications of the NODA.

Nevertheless, we provide the following preliminary comments on the NODA:

- We appreciate EPA's constructive suggestions for comments on the proposal's treatment of early action and interim targets. These are the very issues that Xcel Energy has identified as concerns in these comments, and for which Xcel Energy has proposed constructive, workable changes that EPA can incorporate into its final rule. Our primary response to the NODA, and the proposed rule overall, is our set of proposed changes discussed in detail in Section IV of this document. Those changes would help improve early action credit and mitigate interim target concerns.
- EPA should not use any of the options discussed in the NODA to increase the disparity of targets among the states. Within the NODA, EPA discusses new methods by which state targets may be set differently than under the proposed rule. For instance, EPA discusses a broader set of options through which more natural gas might be incorporated into the U.S. utility system under Block 2, and also a "regionalized approach" to RE potential under Block 3. As we point out in Section III of these comments, our states' early action has in many cases resulted in state targets that are far more stringent than the national average, even as these states made considerable progress on reducing emissions before 2012. EPA should consider the implications for equity in state targets as it contemplates any changes to its target-setting methodology.
- The NODA proposes that EPA may modify Block 2 using a "holistic" set of options to increase natural gas generation in the power sector, such as new NGCCs and gas co-firing at coal plants, and a regional approach to NGCC redispatch potential. This

proposal is vague, and its implications are impossible to understand from the NODA itself. We are concerned that, depending on how it is implemented, this proposal could cause states with a diverse generation portfolio to end up with more stringent targets despite their effective clean energy leadership.

- As discussed in Section VI, a potential-based approach to renewable energy tends to increase disparity between state targets, punishes leading clean energy states, and is arbitrary. The NODA's discussion of a more regionalized approach to apply renewable technical potential to Block 3 leaves us with the same concerns.
- We oppose the revised methodology for Blocks 3 and 4 that assumes that renewables and energy efficiency will displace generation from coal and oil/gas steam. As the largest provider of wind energy in the country, managing the dispatch of three different wind-heavy utility systems every day, we believe this proposed assumption for EPA's target-setting is not supported by reality. In fact, as we discuss in Section IV of these comments, with supporting national and internal analyses, renewables tend to displace gas more often than not. Nationally, it is a reasonable estimate that wind energy displaces natural gas combined-cycle generation about 50% of the time, and wind displaces gas-fired combustion turbine plants in addition. While renewables displace some amount of coal-fired generation, this is true for a relatively small fraction of the total renewable MWh. EPA's current target-setting method, which essentially assumes that renewables displace generation at the system average emissions rate, is a reasonable approach. EPA should reject the assumption that renewables displace only coal or gas steam generation.
- As stated elsewhere in these comments, we:
    - support the "glide path" approach of phasing in Blocks 1 and 2 through increasing NGCC capacity factors as moving in right direction, but still believe that the best

approach is the CICS proposal of glide paths designed and proposed by states described in Section IV.

- support the alternative, stated in the original proposed rule and restated in NODA, of allowing crediting of "early" (2014-2020) reductions to compensate for higher emissions 2020-2029, i.e. banking. As discussed in Section IV, our own banking proposal centers on renewable energy leadership and the application of these banked credits to the final target years, but EPA's discussion of emissions reduction banking proposals is helpful toward crediting early action and mitigating interim target concerns.
- support the option to use a multi-year baseline as well as the option for states to choose any year(s) within this timeframe. Creating the option to look at more than one year, and earlier years, is helpful for baseline purposes. Looking further back to 2005 rather than 2010 would be more helpful still in more appropriately recognizing earlier emissions reductions.

F. Preliminary Comments on Rate to Mass Conversion Technical Support Document

Xcel Energy appreciates EPA providing an example of rate to mass conversion. It is useful to have an illustrative calculation, and we appreciate that EPA has noted this is not the only way states could create an approvable mass budget. The company supports allowing states the option to use a simple mass-based approach to developing their emission control plans. In some circumstances, a mass-based approach may allow states to avoid some of the implementation issues described elsewhere in these comments, including our concerns related to EPA's role in state energy planning and EM&V under an energy efficiency program.

However, it is challenging to digest a complex TSD released only 15 business days before comments are due. EPA should provide more time to review and comment on the proposed TSD. As a preliminary matter, any mass conversion approach should provide full credit to the same emission reduction initiatives that would help a state meet the rate-based target.

We support EPA's approach of providing a pathway rate to mass conversion, while also providing states the ability to suggest other reasonable methods to convert their rate-based targets to mass targets. The states may be able to develop and propose other reasonable, and possibly improved, methods to translate rate targets to mass targets. This option may alleviate preliminary concerns we have with the proposed translation method, such as the assumption that energy efficiency and renewables displace only existing generation, and the assumption that new NGCCs ought to receive tons under a mass cap based on their state's allowed emissions rate, regardless of whether that rate is 500 lb/MWH or 1500 lb/MWH. Also, as EPA correctly notes in the Projecting EGU CO_2 Emission Performance in State Plans TSD, projecting generation and emissions over time requires reliance on often uncertain projections of future energy and economic conditions, including energy consumption, fuel prices and economic growth. In the mass conversion, EPA should provide states periodic opportunities to revise their generation forecasts and mass budgets in light of changed circumstances. Furthermore, the method should allow states to employ the degree of modeling sophistication they choose based on local conditions and state resources.

Finally, we encourage EPA to also consider the concerns regarding the rate to mass conversion TSD presented in the EEI and CICS comments.

Exhibit A

Recommended Changes to Section 111(d) Rule

Xcel Energy

August 28, 2014

Recommended Changes to Proposed 111(d) Rule

Xcel Energy Inc.
August 28, 2014

Problem with (and Solutions for) the Section 111(d) Rule

- Rule puts greater burden on states that are leaders in clean energy
  - Pre-2012 coal plant retirements
  - Renewable energy leadership
  - Interim targets
- Result:
  - Greater costs for leading states and utilities
  - Disincentive to pursue future clean energy leadership
- Simple, narrowly focused changes can help mitigate this burden without dramatically changing rule structure

Proposed Changes

1) Block 2: Exempt NGCCs built after 2005 to replace coal from the 70% capacity factor assumption
2) Block 2: Eliminate the Penalty for NGCC Generation Displaced by Renewables
3) Interim Targets: Increase Flexibility in Interim Goals
4) Block 3: Provide Early Action Credit for Renewables through Banking
5) Technical Corrections (e.g. Sherco 3, nameplate NGCC capacity, etc.)

Note: Changes Shown Individually Here are Cumulative

1. Block 2: Exempt NGCCs Built After 2005 to Replace Coal

- Problem: Proposed rule punishes pre-2012 state multi-pollutant emission reduction programs
  - Example: Minnesota's Metro Emission Reduction Program (MERP)
  - New CCs replaced coal, reducing CO_2 emissions
  - Because of Block 2 re-dispatch, MERP caused Minnesota to have a lower target
- Solution: Recalculate Block 2 excluding NGCC capacity that replaces coal retired under multi-pollutant programs
  - Exemption would apply to the lesser of the capacity of coal retired or the capacity of NGCC installed

1. Block 2: Exempt NGCCs Built After 2005 to Replace Coal

- MERP Example:
  - 652 MW High Bridge and Riverside coal plants replaced with 1,080 MW of NGCCs at same sites
  - Exempt 652 MW of this NGCC from Block 2 in Minnesota

	2030 Goal		
State	Proposed	Revised	*Change*
Minnesota	873	957	*84*

  - Other Affected States with Multi-Pollutant Retirement Programs:

	2030 Goal		
State	Proposed	Revised	*Change*
Georgia	740	843	*103*
North Carolina	992	1029	*37*
Tennessee	1163	1210	*47*
Wisconsin	1203	1230	*27*

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2. Block 2: Eliminate the Penalty for NGCC Generation Displaced by Renewables

- Problem: Intermittent renewable energy is predominantly balanced with NGCC generation
  - Wind generation drives down capacity factors of NGCCs
  - Block 2 creates more aggressive goals for states with renewables and NGCCs
  - Block 2 penalizes renewable energy leadership
- Solution:
  1. Estimate NGCC MWh displaced by wind in 2012 (roughly 50%)
  2. Add the displaced MWh to actual NGCC MWh in 2012; re-calculate capacity factor
  3. Re-calculate Block 2 with adjusted capacity factor

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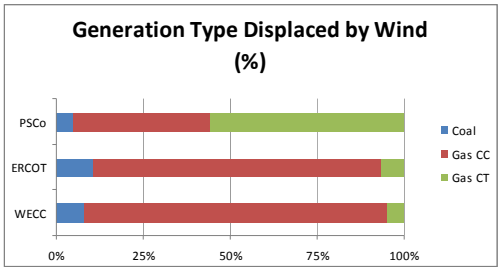
2. Block 2: Eliminate the Penalty for NGCC Generation Displaced by Renewables

Several studies in different regions indicate that 40 to 80% of energy produced by wind displaces NGCC generation



System	Study
Xcel Energy Colorado System (PSCo)	Xcel Energy Historical Analysis for 2013, based on four representative months
ERCOT	"Analysis of Wind Generation Impact on ERCOT Ancillary Services Requirements" March 2008
WECC	"The Western Wind and Solar Integration Study Phase 2, National Renewable Energy Laboratory", September 2013

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2. Block 2: Eliminate the Penalty for NGCC Generation Displaced by Renewables

Changes in Emission Targets from Elimination of NGCC Generation Displacement Penalty (Using 50% Displacement)

		2030 Goal
MN	proposed	873
	revised	977
	change	*105*
CO	proposed	1108
	revised	1155
	change	*47*
TX	proposed	791
	revised	831
	change	*41*

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2. Block 2: Eliminate the Penalty for NGCC Generation Displaced by Renewables

	Change in Final Goal		
State	40% displacement Factor	50% displacement Factor	60% displacement factor
Colorado	38	47	56
Idaho	69	84	98
Iowa	84	102	119
Minnesota	85	105	124
New Mexico	37	46	55
Oklahoma	38	48	57
Oregon	35	43	50
South Dakota	233	279	322
Texas	33	41	48
Washington	38	46	55

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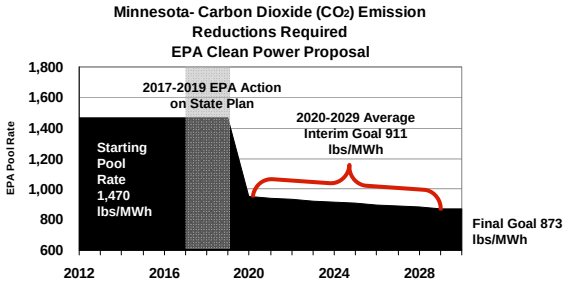
3. Interim Targets: Increase Flexibility in Interim Goals

- Problem: EPA's interim goals would require most reductions by 2020
- Greater burden on clean energy leaders; "low hanging fruit" is gone
- Potential for premature retirements, stranded costs, reliability impacts



- Solution: Allow states to establish own interim glide path based on emission reduction plans
  - Assures credibility
  - Protects clean energy states from disruption
  - Enables other "fixes"

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4. Block 3: Early Action Credit for Renewables Through Banking

- Problem: Leading renewable energy states have more stringent, more expensive mandates
  - More stringent mandates drive higher regional average target
  - Lagging states have lower starting point, have less stringent RE goal, and may never reach regional target
  - Cheapest renewables already built in leading states
- Solution: Create renewable energy bank to raise 2030 goal and allow more time for compliance with final state goal

4. Block 3: Early Action Credit for Renewables Through Banking

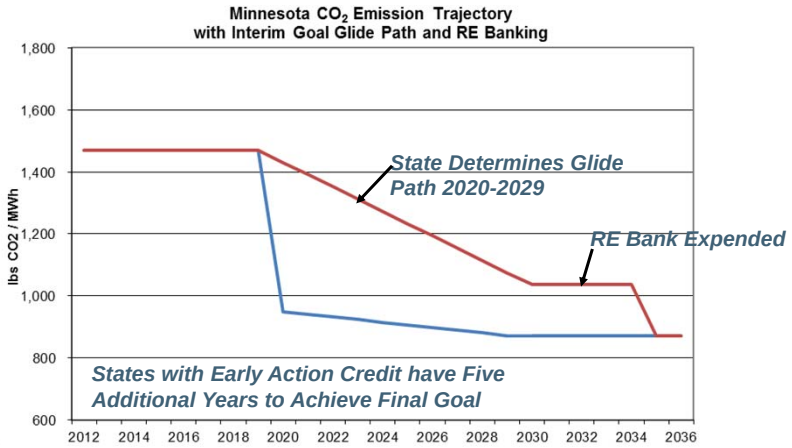
Potential Design:

- Only states with 2012 RE percentage above 1.5 x the national average are allowed to bank
- Bank = (state RE generation) – (1.5 x national average RE generation)
  - Rewards significant leadership
  - Limits impact on rule design
- Bank accumulates from 2017 – 2019
- State expends bank from 2030 – 2034
  - State target capped at 2012 emissions
- At 2035, state must meet final goal

		2030 Goal
MN	proposed	873
	revised	1036
	change	*163*
CO	proposed	1108
	revised	1203
	change	*95*
TX	proposed	791
	revised	874
	change	*83*

Note: States with early action credit have five additional years to achieve final goal

4. Block 3: Early Action Credit for Renewables Through Banking



4. Early Action Credit for Renewables Under Block 3 through Banking: Analysis

- Fifteen states have 2012 RE percentage above 1.5 x the national average
- Change in 2030 goal shown at right
- Where revised 2030 goal goes above 2012 adjusted emission rate, cap at 2012 adjusted emission rate
- 2035 goal remains same as per proposed rule

MANY OTHER EARLY ACTION DESIGNS ARE POSSIBLE

State	*Current 2030 goal*	*2030 goal with banking*	*Change in 2030 goal*
California	537	631	94
Colorado	1,108	1,203	95
Hawaii	1,306	1,540	234
Idaho	228	339	111
Iowa	1,301	1,552	251
Kansas	1,499	1,940	441
Maine	378	437	59
Minnesota	873	1,036	163
New Mexico	1,048	1,259	212
North Dakota	1,783	1,994	211
Oklahoma	895	1,032	137
Oregon	372	580	208
South Dakota	741	1,135	394
Texas	791	874	83
Wyoming	1,714	1,883	169

5. Technical Corrections

- Problem: Sherco 3 (900 MW) did not run in 2012, skewing the single-year baseline and raising Minnesota's emissions goal
- Solution: Add back proxy lbs and MWhs to 2012 MN fossil intensity rate
  - A simple add-back of 2010 Sherco 3's CO_2 emissions and MWh to the goal formula increases Minnesota's goal by 83 lbs/MWh
  - A multi-year baseline is another potential fix for this and other baseline anomalies nationwide
- Problem: EPA used nameplate capacity of NGCC units in Building Block 2, which does not reflect their actual capacity available for re-dispatch
- Solution: Use summer net capacity in place of nameplate

Capacity Correction

		Final Goal
MN	proposed	873
	revised	959
	change	*86*
CO	proposed	1108
	revised	1,155
	change	*47*
TX	proposed	791
	revised	815
	change	*24*

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