NorthWestern® Energy
Delivering a Bright Future

December 1, 2014 Submitted Electronically

Environmental Protection Agency, EPA Docket Center (EPA/DC)
Mailcode 28221T
Attention: Docket ID No. OAR–2013-0602
1200 Pennsylvania Avenue, NW.,
Washington, DC 20460.

ATTN: **Docket ID No. EPA-HQ-OAR-2013-0602**

RE: Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Proposed Rule- EPA Docket ID No. EPA- EPA-HQ-OAR-2013-0602.

This rulemaking will fundamentally affect what the U.S. Department of Homeland Security (DHS) identifies as the one unique critical infrastructure platform upon which the fifteen other critical infrastructures all depend. According to DHS, the energy sector is unique because, "Without a stable energy supply, health and welfare are threatened, and the U.S. economy cannot function." Energy is "uniquely critical because it provides an enabling function across all critical infrastructure sectors."[1] As the EPA carries out its important mission and addresses significant environmental concerns, it should be mindful of the utility sector's essential infrastructure stewardship obligation.[2]

NorthWestern Energy is an investor-owned utility and one of the largest providers of electricity and natural gas in the northwest quadrant of the United States. We serve approximately 673,200 customers (403,600 electric and 269,600 natural gas) in Montana, South Dakota and Nebraska. Although a "mid-sized" corporation, our service territory is one of the largest in the country.

Our electric system includes 27,750 miles of electric transmission and distribution lines and serves 297 communities and surrounding rural areas covering two-thirds of Montana, eastern South Dakota, and Yellowstone National Park in Wyoming. Our natural gas system includes over 9,400 miles of natural gas transmission and distribution lines and serves 174 communities and surrounding rural areas in Montana, South Dakota and central Nebraska.

NorthWestern is honored to be the electric provider for over 344,000 Montana electric customers (roughly 75% of all Montana electric customers), and over 62,000 South Dakota electric customers. We are dedicated to our mission of "delivering safe, reliable innovative energy solutions that create value for customers, communities, employees and investors." These comments are offered in that spirit.

Although NorthWestern serves the great majority of Montana customers, we control only 8.8% of the coal generation capacity in Montana, as most of that generation is owned by non-jurisdictional utilities, a merchant operator, or a Qualifying Facility.

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[1] Other critical infrastructures include areas such as communications, education, health care, agriculture, transportation, and emergency services. U.S. Department of Homeland Security website, Energy Sector Overview, http://www.dhs.gov/energy-sector.

[2] Please include this letter with our comments.

NorthWestern Energy has a long history of leadership in reducing greenhouse gases. More broadly, NorthWestern practices a stewardship approach to its environmental and other responsibilities. Twenty-four years ago, in 1990, NorthWestern's predecessor company in Montana, the Montana Power Company, began a voluntary greenhouse gas reduction plan to reduce carbon dioxide emissions by using demand side management programs, improving hydroelectric generation at existing hydro plants, promoting renewable energy, reducing electrical losses from generation and transmission, and implementing a forest carbon management plan.

NorthWestern Energy is proud of the energy supply mix it has assembled over the past seven years. Because of a $900 million investment in purchasing run-of-the-river dams and hydroelectric facilities, which just closed on November 18, 2014, over 50% of our Montana electricity generation portfolio consists of renewable hydroelectric and wind energy resources. That is, over 50% of our electricity generation to serve our Montana customers comes from wind and water. As a result of that investment, our Montana carbon emissions will be reduced by 41%.

At the Big Stone Plant in South Dakota, NorthWestern Energy, Otter Tail Power Company and Montana-Dakota Utilities Company have nearly completed installation of a $400 million dollar air quality control system which will reduce nitrogen oxide, sulfur dioxide, particulate matter, and mercury, by about 90%. This project will help all of the owners balance cost-effective base load service and environmental responsibilities (NorthWestern's Montana and South Dakota systems are not electrically interconnected).

In Montana, NorthWestern Energy has invested approximately $2.2 billion in renewable resources and cost-effective demand side management. This includes the hydro acquisition, which will provide our Montana customers long-term price stability for a significant portion of the portfolio that serves them, from a clean, renewable and carbon-free resource. It also includes $46 million in efficiency; indeed, NorthWestern is responsible for nearly 80% of all the efficiency that has been achieved in Montana. NorthWestern also participates in organizations such as the Northwest Energy Efficiency Alliance (NEEA), of which it was a co-founder, to develop and implement the next generation of efficiency investments. NorthWestern has also made significant investments in facilities to integrate intermittent resources such as wind. For example, we constructed the Dave Gates Generating Station, a supply resource which is operated to provide transmission products, to provide reliability and integration services.[3]

Unfortunately, the proposed rule inadequately credits our customers for sound past and current resource decisions. Our investments in wind, wind integration, efficiency, and now hydro result in a Montana portfolio that in 2016 will be about 40% better than the EPA goal for all of Montana in 2030, with additional opportunities for improvement over the next decade. This portfolio

[3] As a result of a September 2012 Federal Energy Regulatory Commission (FERC) ALJ decision, which is now pending on rehearing, NorthWestern has reserved and potentially under-recovered approximately $27 million on the FERC-jurisdictional side of regulation service. From where we sit, the FERC, by denying NorthWestern approximately $27 million in costs associated with building and operating the Dave Gates Generating Station, which had to be constructed to meet the system's needs, including the increased wind generation in our service territory, is undermining the EPA's environmental initiatives. This highlights a key challenge under the proposed rule: The EPA must work with other federal and state agencies to ensure that policies are aligned and that parties subject to their jurisdiction are not whipsawed by inconsistent policies and decisions.

serves the great majority of all Montanans, but with less than 9% of the coal generation. Despite NorthWestern's investments that reduce greenhouse gas emissions, and its leadership in promoting energy efficiency, the rule ignores these achievements by, for example, failing to recognize early actions before 2012 to reduce emissions, failing to include existing hydroelectric power in state compliance plans, and by assuming that the existing coal-based fleet can improve its heat rate by an average of 6 percent. NorthWestern and its customers should be rewarded, not penalized, for its leadership in generating energy from non-carbon emitting resources.

Since the proposed rule was published in the Federal Register, NorthWestern Energy has been actively engaged with EPA, state agencies, state governments, utility regulatory commissions, utilities, business groups, the Edison Electric Institute, the Coalition for Innovative Climate Solutions and others, analyzing the proposed rule. We, along with others, have worked hard to understand the proposed rule, to identify opportunities and to identify areas where more work and analysis is required before states can draft implementable compliance plans. There are challenges, some of them very significant, and the EPA has a tremendous responsibility to ensure the final rule addresses the economical, technical and physical realities as well as the environmental factors associated with delivering electricity safely, reliably and securely.

Holistic solutions to the challenges associated with the proposed Clean Power Plan will involve careful analysis and the combined efforts of states, utilities, utility regulatory commissions, institutional consumer advocates, FERC, NERC, WECC and the other regional reliability entities, RTOs, the National Security Agency and other stakeholders. NorthWestern Energy looks forward to working with EPA and other stakeholders to form representative groups of experts so the cumulative impacts associated with the proposed rule for each state and region can be properly analyzed and modeled to ensure that the emission rate goals can be achieved without compromising the reliability and affordability of electricity. The Western States Comments (October 30, 2014) were a notable contribution by eleven disparate states cooperating to raise practical questions and address them pragmatically.

These comments do not address legal questions that have been raised. We do note that there are significant authority gaps and even conflicts between multiple federal and state entities that have differing jurisdiction, divergent mandates and even disparate philosophies. Economic regulators are guided by, for example the *Hope* and *Bluefield*[4] cases and the opportunity to earn a reasonable return, the just and reasonable rate standard, and the utility obligation to serve. Economic regulators also review utility supply portfolios and implement various portfolio requirements, along with reliability requirements, service quality requirements, and infrastructure investment and operational requirements.[5] State economic regulators generally do not have authority over public and cooperative electric providers or merchant generators, among other relevant actors. Environmental regulators, in this case, are concerned with a Best System of Emissions Reduction, and consider, for example, cost and feasibility. They do not regulate utilities *qua* utilities; however, decisions they make do affect utility operations, customer service

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[4] *Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923); *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944)

[5] On behalf of state economic regulators, the National Association of Regulatory Utility Commissioners (NARUC) has adopted several resolutions concerning framework issues for coordinating environmental and economic regulation, most notably including *Resolution on Increased Flexibility with Regard to the EPA's Regulation of Greenhouse Gas Emissions from Existing Power Plants* (NARUC, November 20, 2013).

and price. For an eventual version of the EPA proposal to work without significant service and price dislocations, Mars and Venus, and all of their siblings and progeny, need to talk.

In that spirit, NorthWestern Energy submits the attached constructive comments which are focused on some of the significant practical problems and challenges associated with the proposed rule, along with recommendations/requests numbered 1 through 9.

We appreciate the opportunity to provide our comments. We greatly appreciate the time EPA has taken to meet with stakeholders during the comment period. We are available at your convenience to answer any questions you may have.

Sincerely,

Robert C. Rowe
President and Chief Executive Officer

Enclosure: NorthWestern Energy Comments on the Proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units
Docket ID Number: EPA-HQ-OAR-2013-0602

NorthWestern® Energy

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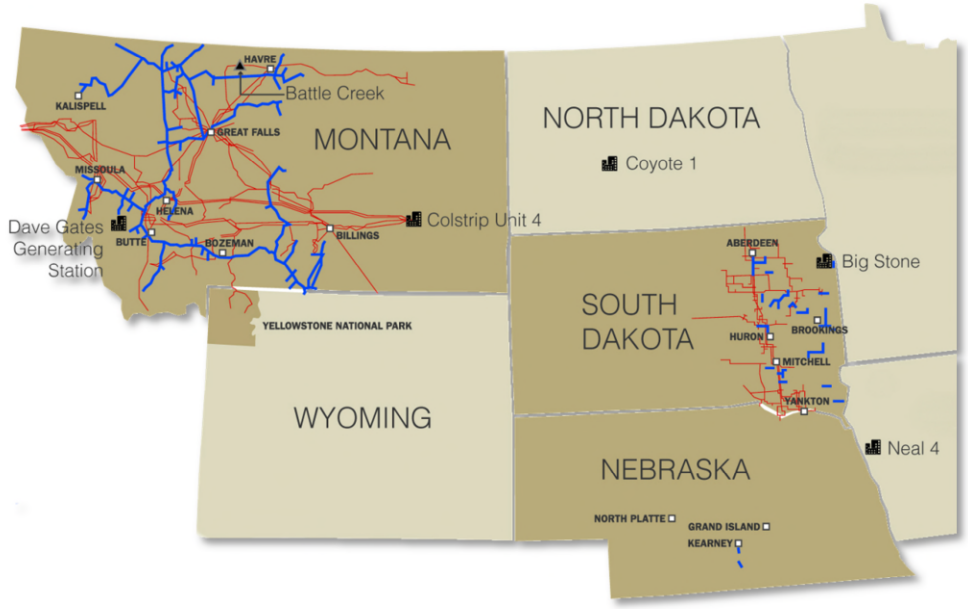


A. Hydropower

Northwestern Energy has reduced the carbon intensity of its Montana generation fleet by 41% as a result of an approximately $900 million investment in hydroelectric generation which closed in November, 2014. An important attribute of these hydro assets and one of the key reasons this acquisition made sense, is that they are carbon-free baseload resources. Indeed, hydropower is the only cost-effective, large-scale, carbon-free baseload renewable energy source available.

EPA must recognize the real and significant carbon benefits of hydropower and the critical role of this renewable, carbon-free resource in the nation's diverse energy supply mix. In an effort to create a one size fits all paradigm, EPA's proposal fails to adequately recognize the actual carbon intensity of states, utilities and, most importantly, customers, like those of NorthWestern Energy, using this carbon-free source of electricity. In fact, EPA's methodology appears to penalize states with existing hydropower by increasing renewable energy targets and has the potential to perversely create excess generation for a utility and therefore unnecessary higher costs for customers.

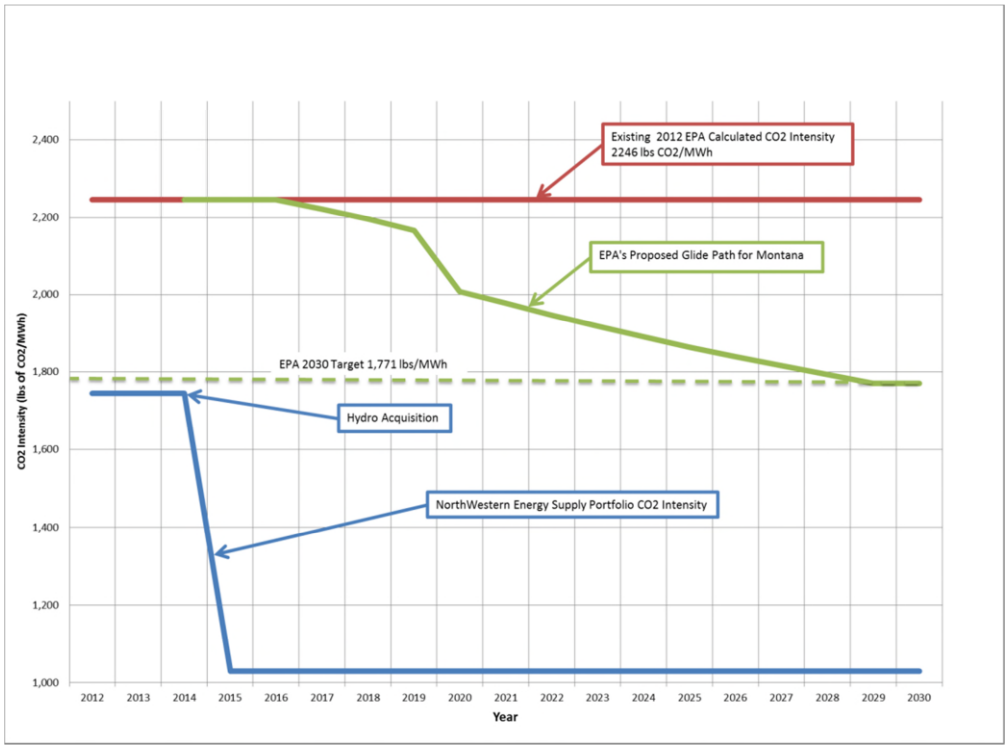
1. ***Recommendation/Request: NorthWestern Energy requests EPA recognize the importance of existing hydropower by: 1) supporting policies that recognize the many benefits of hydropower and promote its continued use, enhancement and expansion; 2) encouraging the relicensing of existing hydro facilities by allowing the carbon-free emissions from relicensed hydro plants to be used for compliance; 3) allowing states to use existing hydropower for compliance; and, 4) not penalizing states by using existing hydropower to increase renewable energy targets.***

In November 2014, NorthWestern Energy purchased 11 hydroelectric facilities from PPL Montana, including 633 megawatts of generation capacity, a storage reservoir and related assets. These existing hydroelectric facilities offer NorthWestern's Montana customers, a great majority of whom are served by NorthWestern Energy, long-term rate stability from a clean, carbon-free generation resource. Our customers are paying approximately $900 million to acquire these facilities which resulted in a 41% reduction to the carbon intensity of their portfolio. We project our customers' bills will increase approximately 5 % initially from the purchase. But in the long-term, the Montana hydro facilities will produce electricity at a predictable, stable price below the cost of buying electricity in a volatile regional market particularly as states and regions implement measures to comply with the proposed Clean Power Plan.

Our customers have already invested an estimated $1.25 billion in renewable energy since 1983 and $100 million in energy efficiency since 2004, not including the hydro acquisition. As a result of this acquisition, our Montana customers will benefit from an electric energy portfolio comprised of over 50% wind and water generation. The carbon intensity of our Montana customer's portfolio will be around 1,030 pounds of CO2 per MWh. This intensity is less than the proposed performance standard for a new natural gas combined cycle plant.

If we simply ignore the hydropower that actually serves our customers and for which they are paying, the denominator decreases and the carbon intensity of the remaining portfolio increases to about 1,870 lbs/MWh. The following figure compares EPA's calculated baseline carbon intensity for Montana, EPA's interim and final goal and the carbon intensity of NorthWestern Energy's supply portfolio before and after the hydro purchase. Clearly, ignoring the newly acquired hydropower does not fairly or accurately represent the carbon intensity of our customer's energy supply portfolio.

NorthWestern Energy Supply Portfolio Carbon Intensity



This information illustrates actual customer impacts resulting from ignoring existing hydropower in the proposed Clean Power Pan methodology of calculating and reducing carbon intensity. Asking our customers to acquire other forms of renewables or additional energy efficiency that is not cost effective to further decrease the already low carbon intensity of their energy supply will result in additional rate increases and will likely increase the overall mass of carbon dioxide associated with our portfolio. This is due to the regulation service, typically provided by natural gas units, required for the additional energy imbalance and frequency response associated with other forms of renewable energy.

NorthWestern Energy also provides electric service for about 61,000 customers in South Dakota. Nearly 75% of the energy production in South Dakota comes from renewable sources; 50% is hydropower and about 25% is wind power. However, EPA's methodology for calculating the baseline and interim carbon intensity target also penalizes South Dakota by not recognizing hydropower for compliance purposes as part of the fleet of generating sources. Additional

comments regarding the treatment of hydropower in South Dakota can be found in Section B - Renewable Energy.

As we discuss in Section B - Renewable Energy, because EPA included existing hydropower production in determining renewable energy and energy efficiency goals, EPA must not penalize states by using hydropower to increase their renewable energy and energy efficiency goals while at the same time not allowing existing hydropower to be used for compliance. If states cannot use hydropower to calculate a fair and accurate representation of their carbon intensity, EPA must develop alternatives allowing some credit for existing hydropower. One alternative NorthWestern Energy supports is the approach recommended by the state of South Dakota. South Dakota recommends following the procedure in EPA's Prevention of Significant Deterioration program where baseline emissions are established by the facility owner using a 24-month average over the previous 5 or 10 years depending on the source type. South Dakota recommends EPA allow states to use the previous 10 years to determine a baseline level of hydropower production. Hydroelectric production above the baseline would be eligible to use for compliance with the state's goals. If hydroelectric production falls below the baseline, there would be no credit for that particular year and a state would not be penalized for a low hydro year since any hydroelectric production decreases carbon intensity.

Similar to increasing power output at existing hydro facilities, EPA's final guidelines should recognize the considerable commitment associated with the FERC relicensing process and the significant contribution existing hydropower facilities make toward reducing total U.S. carbon emissions. As currently proposed, the guidelines may negatively affect an electric utility's decision on whether or not to embark on the complicated, lengthy and resource-intensive commitment required to relicense an existing hydro plant. The final guidelines should recognize the value of hydropower relicensing by allowing generation from relicensed facilities to be used by states as a compliance tool.

EPA proposed an alternative that includes existing hydropower in establishing state goals and demonstrating compliance. However, EPA's alternative approach begins with a state's 2012 hydropower production percentage then adds in the renewable goal percentage. This alternative approach presumes a state's hydropower production remains constant at 2012 levels which is not a realistic presumption and we do not support this alternative as currently proposed.

NorthWestern Energy believes EPA should emphasize the importance of existing hydropower. Hydropower is the nation's largest source of renewable electricity and EPA should support policies that recognize the many benefits of hydropower and promote hydropower's continued use, enhancement and expansion. By ignoring the contribution from hydropower in reducing the nation's carbon intensity, EPA falsely inflates the United States' contribution to global carbon emissions

NorthWestern submits the following list as examples of the many benefits of hydropower:

- Hydropower is the only renewable energy resource capable of providing base load and required ancillary services such as load balancing and grid frequency regulation. Other forms of renewable generation are intermittent and non-dispatchable and require another associated source of generation, such as simple or combined cycle natural gas plants, to regulate grid frequency, increasing their carbon footprints. Regulation service will become increasingly important as states work to achieve the proposed renewable energy targets.
- Hydropower is used across the country, providing carbon-free renewable electricity to every state; its use is not limited to a handful of states. This is demonstrated by simply looking at the top ten hydropower producing states which include Washington, Alabama, California, South Dakota, Montana, Oregon, New York, Idaho, Tennessee and Arizona.
- Hydropower has no air emissions and does not require a large auxiliary load to operate air quality control equipment.
- Hydropower reduces carbon emissions by displacing other emitting forms of energy production more effectively than other forms of renewable energy because it can serve base loads.
- Hydropower is the only renewable energy resource that enhances and maintains the reliability, stability and security of the electric grid. Reliability, stability and security will become increasingly important as the nation's energy supply mix is changed and possibly more narrowly focused on natural gas.
- Maximizing the potential at existing hydropower facilities by adding capacity or improving efficiency will increase carbon-free generation while reducing the need for new electric and gas transmission lines, substations, compressor stations, etc.
- Maximizing the potential at existing hydropower facilities will also reduce or prevent facility siting issues associated with endangered species or species of special concern.

B. Renewable Energy

As noted previously, NorthWestern Energy has already made substantial investments in renewable energy including hydro and wind, integration of intermittent renewables, and transmission to enable renewable development. Much of this investment is not recognized in EPA's methodology.

EPA's methodology for developing renewable energy goals is not consistent and, as currently drafted, penalizes states with existing hydroelectric generation and states that have already taken actions to develop other renewable energy resources.

2. ***Recommendation/Request: EPA should recognize and not penalize states that have taken early action to develop renewable energy and recognize the many benefits hydroelectric generation. EPA should re-evaluate each state independently or allow the states to determine their own realistic renewable energy potential.***

NorthWestern Energy and our customers have already made substantial investments both in acquiring and in attempting to expand renewable energy. In 2006, NorthWestern Energy had approximately 5000 MW of new generation projects in its transmission interconnection queue in Montana, the vast majority of which were new wind generation projects seeking access to the transmission system to reach electricity markets outside Montana. In direct response to this demand for transmission service that would enable development of renewable energy projects in Montana, NorthWestern Energy, at its own risk, began development of the Mountain States Transmission Intertie (MSTI) project, a new 500kV transmission path from Montana to southeast Idaho. MSTI was intended to address the need for new electric transmission service to transmit electricity from generating sources like wind farms to loads and customers. NorthWestern halted the project in 2012, after investing $24 million and six years in the project, due to a lack of firm commitments for transmission capacity to reach markets and due to state and federal permitting processes that were daunting, expensive and without clear timelines. This example highlights a significant issue related to the Clean Power Plan renewable energy goal assumptions. Given our experience with MSTI, it is unclear to NorthWestern Energy who will finance and construct many of the new transmission lines that would be required to allow expansion of renewables, particularly on a timeline and scale contemplated in the Clean Power Plan, or who will be willing to purchase large amounts of renewable energy originating in Montana.[1]

Concerning its own supply needs, NorthWestern Energy's supply portfolio is already comprised of a substantial percentage of renewables – greater than 50 % – and has no need at this time for additional generation that cannot provide capacity, something intermittent resources are currently unable to provide.

NorthWestern Energy and its customers have invested approximately $1.25 billion in renewable energy (this does not include the recent investment in the hydroelectric facilities discussed in our Cover Letter and Section A - Hydropower) and should receive credit for these investments. EPA's use of 2012 as a base line for establishing state goals fails to recognize CO2 reductions achieved before 2012 and results in significant inequality among states. Customers should be credited, not penalized, for already building a progressive generation portfolio. EPA must consider investments made prior to 2012 and state-by-state assessments when determining renewable energy targets and allow states, companies and customers who have taken early action to use both new and existing renewable energy to comply with the proposed goals. EPA

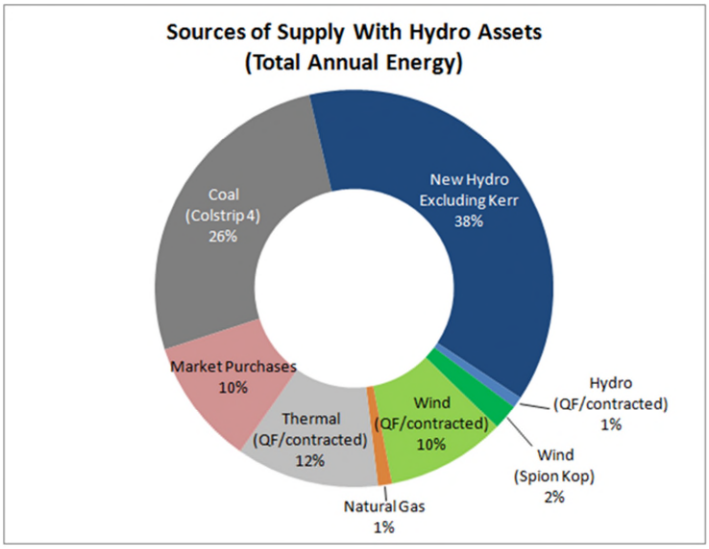
[1] To date, most western transmission projects that have moved beyond the initial development phase are enabled by connecting regulated supply to regulated load.

could use an earlier baseline year or allow states to accumulate a bank between 2012 and 2020 to use for compliance in subsequent years.

In Montana, about 95% of our normal retail load is currently served with existing resources, which includes 50% combined from hydroelectric and wind generation as is depicted in the NorthWestern Energy Montana Supply Portfolio figure below. We have limited need for additional power and only for specific types of power, peak and super peak which intermittent renewables cannot currently provide. This portfolio status will be the situation until the mid to late 2020s when some power purchase contracts expire, resulting in the potential for adding some combination of additional renewables or combined cycle natural gas generation.

In South Dakota, which is second in the country for percentage generation from wind, our portfolio includes approximately 30% wind generation. South Dakota legislation establishes a voluntary goal of 10% electrical generation from renewable energy sources by 2015 and NorthWestern Energy is pleased to have already exceeded that target. Requiring our customers to pay for additional renewables integration at this point will increase rates and not result in a significant reduction in carbon dioxide emissions, particularly since integrating additional intermittent generation requires significant investment in carbon-emitting ancillary equipment (e.g., simple cycle gas plants) for grid frequency and imbalance regulation.

NorthWestern Energy Montana Supply Portfolio



EPA's methodology is not consistent and is unintentionally punitive to states where existing hydropower is used to quantify renewable energy targets but cannot be used as a method of compliance. EPA states in the proposed rule, "Hydropower generation is excluded from this existing 2012 generation for purposes of quantifying BSER related RE generation potential." However, EPA's methodology actually uses net generation, including existing hydropower, to calculate (i.e. quantify) RE generation potential, thereby increasing goals for renewable energy.

In South Dakota, where 50% of energy production is from hydropower, EPA calculated an annual RE target of 1,818,150 MWh, twice what the target would have been by excluding hydropower to quantify BSER related RE generation potential. Due to the way EPA determined the RE targets, South Dakota's 2020 RE goal is the same as its 2029 RE goal, and South Dakota must meet its 2029 RE goal beginning in 2020 with no ramp up period. In Montana, where 41% of energy production is from hydropower, EPA calculated an annual RE target of 2,722,706 MWh. If hydropower were excluded in order to quantify BSER related RE, the annual RE target would have been 1,652,132 MWh.

For South Dakota, EPA's proposed methodology results in a 35% reduction in CO2 emission levels in a state that contributes just .15% of the total U.S. power sector carbon dioxide emissions. This equates to about a .05% reduction in U.S. power sector carbon dioxide emissions.[2]

EPA should either evaluate each state independently or allow the states to determine their own realistic RE potential. Of course, many states are already doing this valuable work, absent federal regulation and without the threat of enforcement action. Because EPA accounted for hydropower production by including it in setting renewable energy and energy efficiency goals, EPA should not penalize states with hydropower by not allowing them to use hydropower for compliance. Instead, EPA should give states the flexibility to use existing hydropower to demonstrate compliance with the state goal. An example of a method to use hydropower for compliance is discussed in Section A - Hydropower.

Assigning renewable goals informed by regional averages and 2012 generation does not ensure realistic goals based on transmission constraints and grid reliability. EPA should conduct rigorous state-specific renewable energy integration analyses, factoring in existing transmission capacity and reliability issues, environmental siting requirements, land use requirements and restrictions, endangered and species of special concern habitat and other factors to inform the renewable goals set for states. EPA should also consider the impact of neighboring states and regions attempting to significantly increase renewables integration within the same timeframe, which will also compound reliability and constructability related challenges.

Montana and South Dakota have great potential for wind energy, and NorthWestern has invested millions of dollars to support its development. However, planning and developing new wind projects is a complicated, time intensive process involving multiple integrated steps in order to ensure compliance with federal and state environmental regulations and land use restrictions; obtain transmission service agreements; plan and construct transmission facilities; and negotiate and finalize power purchase agreements.[3] EPA should allow states to determine

[2] http://www.eia.gov/electricity/annual/html/epa_09_05.html 2012 data

[3] In the non-organized western market, there is the classic chicken and egg scenario: power purchase agreements with load servers are needed by project developers in order for them to commit to transmission service agreements, thereby allowing transmission developers to proceed with their investments. Lenders require developers to show that they have firm transmission service to deliver the product to consumers. One is dependent on the other.

their own renewable potential, including transmission availability, and integration schedules based on thorough state specific and regional analyses and interest from renewable developers. As previously mentioned, NorthWestern Energy's very costly experience attempting to expand transmission in Montana to allow additional generation, much of it wind generation, ended in a $24 million write-off and failure. It did provide valuable lessons which we will apply when considering future projects.

C. Energy Efficiency

With the recent hydro acquisition, NorthWestern Energy has invested approximately $2.2 billion in renewable resources and cost-effective demand side management which includes $46 million in energy efficiency. NorthWestern is responsible for nearly 80% of all the energy efficiency that has been achieved in Montana. NorthWestern also participates in organizations such as the Northwest Energy Efficiency Alliance (NEEA), of which it was a co-founder, to develop and implement the next generation of efficiency investments.

EPA's methodology for developing energy efficiency (EE) goals is not consistent and penalizes states, companies and customers that have already made significant investments to develop and implement demand side management (DSM) energy efficiency programs

EPA should recognize that the pool of achievable, cost-effective EE is not infinite and that utilities that have been operating aggressive programs have much fewer opportunities. Continuation and expansion of DSM energy efficiency programs must be carefully evaluated because the value of the savings is measured primarily by avoided electricity costs, and determined by state economic regulators. Available cost-effective EE savings will change as cost effectiveness changes.

3. ***Recommendation/Request: EPA should recognize and not penalize states, companies and customers that have taken early action by allowing use of past and present programs for compliance purposes. The EPA should use state-specific information to establish realistic, cost-effective, state-specific energy efficiency savings rates taking into consideration past and existing efficiency programs as well expectations for future programs. As the following section explains, NorthWestern energy customers in Montana, the great majority of whom are served by NorthWestern Energy, have already made significant investments in EE and NorthWestern believes maintaining the current level of cost effective EE savings for its customers into the future is unlikely.***

NorthWestern Energy offers by far the largest suite of DSM energy efficiency programs in Montana and does not believe that its' efficiency programs can achieve and sustain the EPA proposed annual goal of 1.5% of retail sales. NorthWestern Energy and our customers have already made substantial investments in demand side management programs, investing over $100 million over the past several years.

NorthWestern Energy is a co-founder of the Northwest Energy Efficiency Alliance (NEEA) and is currently working to develop and implement the next generation of efficiency investments. NEEA is a voluntary alliance of all 142 utilities, consumer- and investor-owned, in the four Northwest states of Idaho, Montana, Oregon and Washington. In collaboration with its partners, NEEA leads regional market transformation efforts to accelerate adoption by 13 million residential, commercial and industrial electricity consumers of energy efficiency products, systems and practices. In the last 18 years, savings of 1,155 average megawatts - about 20 percent of energy savings in the four Northwest states, the equivalent of the output of two coal-fired plants - are attributable to the market transformation work of NEEA and its partners. [4]

NorthWestern, and its predecessor, the Montana Power Company (MPC), have a long history of implementing broad-based, successful DSM programs for the benefit of their customers, and have been the leaders in that regard among utilities in Montana, and across the country. Over the past 10 years alone, NorthWestern's programs have, on average, produced approximately 6 aMW (approximately equal to 1% of retail sales) of savings per year.

MPC commenced its DSM efforts in 1978 in response to the 1978 National Energy Conservation Policy Act with an on-site residential energy audit. A commercial program and additional residential programs were added in 1987. From 1990 through 1998, MPC's DSM activities were driven by least cost planning efforts in which the cost effectiveness of DSM savings was judged against MPC's avoided electric costs. MPC's suite of DSM programs was expanded and promoted to all MPC customers during that time.

During the mid to late 1990s the movement toward competitive electricity supply markets created uncertainty regarding the value of DSM from the utility perspective. In response, in 1997, Montana established funding for Universal System Benefits ("USB") programs, which included on-going financial support for the energy conservation programs that exist today.

So for NorthWestern, and its pursuit of energy efficiency savings from and for its customers, these types of programs have been actively in place for 36 years.

NorthWestern is required to operate cost effective DSM programs. That is, the value of the savings produced by the energy efficiency measures that are included in the programs, and the programs themselves, must be greater than their costs. The value of the savings is determined primarily by NorthWestern's avoided electricity costs which are established in the context of NorthWestern's electric procurement planning process. It is critical that this cost effectiveness criteria be met. Otherwise, customers would pay more for DSM savings than the alternative electricity supply option, resulting in electricity supply costs that are greater than they would otherwise be.

[4] In their comments to EPA regarding this docket dated November 26, 2014, NEEA explains how a market transformation program has gained solid acceptance in the Pacific Northwest. NEEA supports EPA's recognition of the important contributions that market transformation measures and codes and standards can make to energy efficiency and the use of such measures in compliance plans.

DSM program costs are paid for by customers as part of their overall electricity supply costs. Programs and costs receive a high-level of review and scrutiny before the Montana Public Service Commission ("MPSC") each year.

NorthWestern submitted its first electric Default Supply Resource Procurement Plan in 2004 ("2004 Plan") in accordance with governing statutes and MPSC administrative rules. The 2004 Plan identified approximately 100 aMW of achievable cost effective DSM and established annual DSM savings targets of 5 aMW starting in 2007 after providing for a three year ramp-up period to grow from the 2 aMW produced annually by the USB programs at the time. From the 2006-2007 tracker year through the 2009-2010 tracker year NorthWestern's USB and DSM programs produced almost 6 aMW of savings per year on average.

More recently, NorthWestern's 2009 Electricity Supply Resource Procurement Plan identified 84.3 aMW as the amount of remaining achievable, cost effective electric DSM and established NorthWestern's annual DSM acquisition goal at 6.0 aMW per year – approximately 1% of retail sales. NorthWestern has acquired approximately 32 aMW of cumulative DSM savings since the 2009 DSM plan was implemented beginning in 2010. Assuming it could all be acquired by 2030, the remaining 52.3 aMW of cumulative DSM savings (84.3 aMW – 32 aMW) represents about 7.6% of NorthWestern's current retail electricity supply sales.

NorthWestern has exceeded 6.0 aMW of savings for each of the past six tracker years, peaking in the 2011-2012 tracker period at more than 9 aMW. Since the 2011-2012 tracker year, however, year-over-year program savings have decreased markedly to approximately 7.5 aMW and 6.8 aMW in the 2012- 13 and 2013-14 tracker years respectively. Three reasons for this trend and why NorthWestern does not believe its DSM programs could achieve EPA's energy efficiency goals include: 1) the past successes of NorthWestern and MPC's long-standing DSM programs; 2) decreasing avoided costs; and, 3) federal legislative developments that continue to reduce the future contribution that energy efficiency lighting can make to annual DSM results.

The pool of achievable, cost effective DSM is finite (reference the 84.3 aMW of DSM identified in the 2009 Plan, for example). As customers implement EE measures due to our programs, the pool of remaining opportunities for efficiency improvements shrinks, making it increasingly difficult to continue to achieve constant year-over-year savings goals of 6 aMW.

Eligible DSM measures, achievable cost-effective DSM potential, proper DSM program rebate/incentive levels, and expenditure levels for various other DSM program activities such as marketing and outreach must be evaluated against electricity supply avoided costs. In short, lower avoided costs translate to reduced achievable cost effective DSM potential and put downward pressure on DSM program savings results. The DSM plan developed in 2009 was based on the then current 20-year levelized avoided cost of approximately $70 per MWh. The 2013 Electric Resource Procurement planning cycle produced a 20-year levelized avoided cost of approximately $44 per MWh.

New federal regulations relating to compact fluorescent lamps (CFLs) and other lighting technologies began phasing in over a three-year period starting January 1, 2012. In certain

applications CFLs will continue as a cost-effective efficient replacement lighting technology for certain applications (e.g. for halogen lamps), but the amount of CFLs rebated through the DSM lighting programs will diminish significantly.

Because of the lack of additional cost-effective programs, NorthWestern has not forecast increasing its annual DSM savings goal. In fact, because of the issues just discussed, we are concerned that achieving 6 aMW per year of cost-effective DSM savings into the future is unlikely. In any event, we expect the recent trend of decreasing program savings to continue, at least in the near term, absent stabilized or increased avoided costs and/or the appearance of a "new" cost-effective energy efficiency technology or technologies.

In the broader context for the state of Montana, NorthWestern has no way of projecting the energy savings potential or pace of savings for large electric customers who are deemed "Choice customers". Most industrial customers on NorthWestern's delivery system purchase their electricity in the wholesale market and are not part of NorthWestern's annual retail sales. Additionally, NorthWestern has no way of projecting the energy savings of the other regulated utilities or the rural electric co-ops that serve large portions of the state. These two points are added because much of the remaining energy efficiency potential in Montana is beyond NorthWestern Energy's scope or control.

The Clean Power Plan should recognize and not penalize states, companies and customers that have taken early action by allowing use of past and present programs for compliance purposes. The EPA should use state-specific information from utility regulatory commissions and companies with significant experience like NorthWestern Energy, to establish realistic, cost-effective, state-specific energy efficiency savings rates taking into consideration past and existing efficiency programs.

Developing cost-effective energy efficiency is an area where coordination among the environmental regulator, the economic regulator and the institutional consumer advocate are essential. Utility programs are the largest provider of cost-effective energy efficiency. Too often, these efforts are not adequately supported by state policy, and the consumer advocate may even be hostile to necessary policies that support these essential programs.

D. Building Block 1 - Heat Rate Improvements

EPA's assumption that the existing coal-based EGU fleet can improve its heat rate by an average of 6 %, through a combination of improved operation and maintenance (O&M) and equipment upgrades is based on unreliable, inconsistent data and is not realistic.

4. ***Recommendation/Request: EPA must re-evaluate the methodology used to determine the target heat rate improvement (HRI) of 6%, specifically the proposed method of using historic heat rate data computed from continuous emissions monitoring systems (CEMS). EPA should use site-specific data to determine a particular unit's ability to further improve heat rate, including recognition of efficiency improvements already undertaken and the loss of efficiency gains from implementation of other environmental upgrades, rather than assumptions based on an analysis of heat rates calculated using stack flow data from CEMS.***

EPA must address the following issues and provide more situational specific heat rate improvements:

- Decreases in heat rates translate to decreases in cost of operation. It is common practice for owners and operators of coal-fired power plants to analyze and employ cost-effective measures to improve efficiency through both capital and O&M projects. Many power plants may already be operating at peak efficiency and may have already implemented many or all of the equipment upgrades, operations and maintenance procedures included in the 2009 Sargent & Lundy report.
- Each state should require coal-fired power plants to submit a HRI report to identify measures that have already been implemented and those that may still be accomplished and adjust their interim carbon intensity targets accordingly.
- Future technological advances may make additional HRI improvement possible and EPA should consider this while developing interim state carbon intensity targets and not assume that all HRIs will be implemented within the next few years.
- Implementing measures to ensure that New Source Review (NSR) concerns do not discourage heat rate improvements at existing coal-fired power plants. Capital projects designed to assist with unit efficiency improvements have historically been the subject of litigation filed by EPA and third party environmental groups against coal-fired electric utilities. In the Proposed Rule, EPA explains that a state could "develop conditions for a source expected to trigger NSR that would limit the unit's ability to move up in the dispatch enough to result in a significant net emissions increase that would trigger NSR (effectively establishing a synthetic minor limit)." In other words, EPA suggests that fossil fuel-fired units can avoid triggering NSR by limiting their utilization such that there is no increase in annual emissions. EPA's proposal that some sources could avoid NSR through synthetic minor limits is not a viable option.
- Increases in heat rate due to air quality control equipment installed due to other federal regulations. For example, it appears EPA did not consider the decrease in heat rate

efficiency resulting from power plants complying with the federal Regional Haze Program.

- The effect of shifting generation from coal-fired EGUs to NGCCs and to renewables will have on the heat rates. As coal fired EGUs are utilized less, heat rates will degrade, negating HRIs and possibly stranding the investments made to implement HRIs.
- Heat rate improvements do not remain constant, but degrade over time, ultimately increasing the rate and mass of CO2 emissions. EPA has falsely assumed heat rate improvements will remain constant.
- EPA should allow for recent efficiency projects at coal plants to be used for compliance.

The Association of Mechanical Engineers has specific Performance Test Codes (PTC) for steam turbine-generators which include test procedures that result in the highest level of accuracy consistent with the best engineering knowledge and practice in the steam turbine industry. A performance test conducted in accordance with the appropriate ASME PTC is the most accurate method of determining turbine-generator performance. Initial thermal acceptance tests can be performed using PTC – 6 "Steam Turbines" while periodic tests can be performed using PTC – 6S "Simplified Procedures for Routine Tests of Steam Turbines." PTC – 6 requires the use of calibrated instrumentation and controlled measurement procedures and PTC -6S aids in developing procedures to monitor performance. The Utility Air Regulatory Group (UARG) concluded in their report entitled "*CRITIQUE OF EPA's USE OF REFERENCE UNITS TO SELECT HEAT RATE REDUCTION TARGETS*" prepared by J. Edward Cichanowicz and Michael C. Hein:

> *"The takeaway from this experience is that CEMS-derived gross heat rate data are an inadequate basis from which to judge modest changes in heat rate. As noted, year-to-year changes can be highly variable. The numerous observations regarding the role of stack gas flow monitor calibration in what might appear to be heat rate changes – where major reductions in gross heat rate are reported co-incident with routine annual recalibration or a change in test methods used for calibration – support the conclusion that CEMS-derived heat rate data are significantly influenced by factors unrelated to actual changes in heat rate.* ***The most reliable way to gauge the payoff of heat rate improving investments is through thermal performance monitoring*** *[Emphasis added]."*

NorthWestern Energy concurs with UARG. Using CEMS-derived heat rate data is not an appropriate method to use to determine a fleet wide HRI average. Each coal-fired power plant is unique and each plant should be analyzed on a case-by-case basis to identify the measures that have already been implemented and realistic heat rate improvement goals.

Many power plants may already be operating at peak efficiency and may have already implemented the equipment upgrades and operations and maintenance procedures included in the 2009 study by Sargent & Lundy. Otter Tail Power Company submitted detailed comments regarding the 475-megawatt Big Stone Plant in South Dakota which NorthWestern Energy co-owns with Otter Tail and Montana-Dakota Utilities Company.

NorthWestern Energy supports the comments filed by the Otter Tail Power Company regarding the Big Stone Plant, a portion of which are summarized and highlighted in the following bulleted paragraphs.

- EPA asserts that it is possible under Building Block 1 to achieve overall HRIs of 6% (or 4% under the alternate goals) **on average** at existing coal-fired EGUs. Big Stone Plant is the only coal-fired EGU operating in South Dakota. Therefore, South Dakota's ability to attain the 6% (or alternate 4%) HRI required by the proposed rule depends entirely on the Big Stone Plant.

- Given EPA's building block 2, increasing output from natural gas fired combined cycle plants while correspondingly decreasing the output from coal plants, and the fact that Big Stone is South Dakota's only coal plant, obtaining heat rate improvements while decreasing plant efficiency through decreased generation output, is entirely unrealistic.

- Big Stone Plant has already made, or plans to make in 2015, all applicable HRIs identified in the Sargent & Lundy report and it should not now be penalized for early, proactive measures to improve plant efficiency and reduce emissions prior to EPA's announcement of the Clean Power Plan. The table on the following page compares the HRIs Big Stone Plant has already implemented, or plans to implement within the next year, to the HRIs identified in the Sargent & Lundy report.

- Big Stone Plant is currently installing a $384 million state-of-the-art air quality control system (AQCS) to comply with EPA's Regional Haze and MATS rules. The AQCS system is energy intensive using an estimated 8 or 9 MW of the energy produced by Big Stone Plant, increasing the plant's net heat rate by approximately 1.7%. In the best case scenario, the two remaining planned HRI projects at Big Stone Plant will merely offset this degradation and return Big Stone Plant to its baseline heat rate.

- By applying this 6% average HRI to all EGUs in a state without consideration of unit-specific limitations, EPA violates its statutory obligation to allow states to conduct unit-specific assessments in establishing standards of performance for existing sources.

HRI Measures Identified in Table 2-13 of EPA's GHG Abatement Measures TSD

Practice/Project	Available at Big Stone Plant?	Comments
Condenser Cleaning	No	Big Stone Plant uses a cooling pond and also installed stainless steel tubes in 2007
Intelligent Soot Blowers	No	Installed in 2011
Electrostatic Precipitator (ESP) Modification	No	N/A to Big Stone Plant
Boiler Feed Pump Rebuild	No	Already overhauled as needed
Air Heater and Duct Leakage Control	No	Already routinely addressed
DCS Replacement	No	Already upgraded twice, most recently in 2011
SCR and FGD System Modification	No	N/A to Big Stone Plant
Cooling Tower Advanced Packing	No	N/A to Big Stone Plant
Economizer Replacement	Yes	Will be accomplished in 2015
Acid Dew Point Control	No	N/A to Big Stone Plant
Combined VFD and Fan	Yes	Will be accomplished in 2015
Turbine Overhaul	No	Already accomplished

Clearly, it is neither practical nor feasible to expect Big Stone Plant to attain the additional 6% HRI contemplated by the proposed rule. The lack of a site-specific evaluation of feasible HRI at this plant demonstrates that the EPA's across-the-board 6% HRI target is arbitrary and capricious.

E. Building Block 2 –Re-dispatch to NGCC

EPA assumes that, on average, each state's existing natural gas combined cycle (NGCC) fleet, including NGCC units under construction as of January 8, 2014, can increase utilization to 70 percent in order to reduce carbon dioxide mass emissions from higher-emitting EGUs by shifting generation to existing NGCC units.

The assumptions underlying building block 2 perhaps most clearly illustrate the problems associated with creating carbon reduction approaches based upon generic assumptions supposedly applicable to all states. For South Dakota the assumptions that existing NGCC units can increase generation to achieve a 70% capacity factor and that the increase in NGCC generation will displace generation from in-state steam units are not practical or reasonable or based on sound analyses. EPA did not analyze several critical unit, state and interstate specific information including but not limited to: grid stability and reliability, NERC critical infrastructure

protection, long term power supply contracts, contractual relationships between NGCC units and steam units including units owned by multiple parties, gas and electric transmission capacity, electric transmission rights, gas and electric transmission equipment upgrades and/or changes, natural gas availability, natural gas supply contracts, dependable unit capacity, and units dispatched by different RTOs.

5. ***Recommendation/Request: EPA should re-analyze Building Block 2 by involving plant owners, RTOs, Balancing Authorities, FERC, NERC, WECC, states and other stakeholders to determine the feasibility and limitations of Building Block 2 for each state including consideration of the interstate relationships between generation and loads.***

The basis of EPA's analysis regarding the feasibility of implementing Building Block 2 is not detailed, accurate or reasonable. As an example, NWE suggests considering the application of Building Block 2 in the state of South Dakota.

Otter Tail Power Company submitted detailed comments regarding the application of Building Block 2 in South Dakota and the Big Stone Plant. NorthWestern Energy co-owns the 475 MW Big Stone Plant with Otter Tail Power Company and Montana-Dakota Utilities Company. NorthWestern Energy supports the comments filed by the Otter Tail Power Company regarding Building Block 2 and the Big Stone Plant, a portion of which are summarized and highlighted in the following bulleted paragraphs.

- South Dakota has only one coal-fired unit, the Big Stone Plant, and one NGCC unit, the Deer Creek Station. Big Stone Plant generates a significant portion of the energy the co-owners use to serve customers in four states: Minnesota, North Dakota, South Dakota, and Montana. The 324 MW Deer Creek Station is owned by Basin Electric Power Cooperative who serves customers in nine states: Colorado, Iowa, Minnesota, Montana, Nebraska, New Mexico, North Dakota, South Dakota, and Wyoming.
- Big Stone Plant and Deer Creek Station were built for unique reasons by different owners and there is no contractual relationship between the owners of the two plants. Each plant is operated for the purpose of meeting each owner's own electric loads. EPA mistakenly assumes the energy generated by Deer Creek Station is available for use by the customers of Big Stone Plant.
- Big Stone Plant and Deer Creek Station are dispatched by different RTOs making redispatch of Deer Creek Station in place of Big Stone Plant infeasible. Big Stone Plant is interconnected to the Midcontinent Independent System Operator (MISO). Big Stone Plant co-owners offer or schedule the energy through the MISO market, giving MISO operational control of Big Stone Plant. Deer Creek Station is currently located within the Integrated System (IS) of the Western Area Power Administration, Basin Electric, and Heartland Consumers Power District. The Integrated System is expected to join the Southwest Power Pool (SPP) in 2015, at which time SPP will assume operational control over Deer Creek Station. RTOs commit and dispatch generation within their footprints to ensure reliable operations by balancing supply and demand and there is no current

method that allows an RTO to dispatch a unit located in a different RTO. EPA falsely assumes Deer Creek Station will be dispatched to meet the needs of the Big Stone Plant co-owners' loads.

- The transmission infrastructure was not designed to support the transmission of energy from Deer Creek Station to customers of the Big Stone Plant co-owners. Currently there is adequate transmission capability and infrastructure to support delivery of Big Stone Plant generation to its retail customers and Deer Creek Station generation to its customers. Detailed engineering studies and modeling would be necessary to determine transmission paths, adequacy of the transmission system, and any necessary additions and/or upgrades. Furthermore, Deer Creek Station would need to acquire transmission service to serve the retail customers of the Big Stone Plant located in Montana, South Dakota, Minnesota and North Dakota.

The complex nature of the bulk electric system and interaction between and among electric generation, load centers, wholesale electricity markets, and gas and electric transmission systems warrants a careful holistic analysis. EPA must re-analyze Building Block 2 involving plant owners, RTOs, Balancing Authorities, FERC, NERC, WECC, states and other stakeholders to determine the feasibility and limitations of Building Block 2 for each state including consideration of the interstate relationships between gas and electric transmission, electric generation and load centers.

F. Reliability and Security

NorthWestern Energy operates a transmission system and balancing authority area (BAA) in Montana under the mandatory reliability requirements of the North American Electric Reliability Corporation ("NERC") and the Western Electricity Coordinating Council ("WECC"). These mandatory reliability criteria require NorthWestern to operate within tight tolerances and operating levels regarding the transfer of power within its BAA and to other BAA's that are interconnected to our system. We are also required to balance, on a moment to moment basis, the available resources to meet the electrical demand within the BAA. These criteria are dependent upon and driven by, not only the transmission configuration and characteristics, but also on the type, size and variability of generation sources interconnected to the transmission system. The electrical reliability and security of transmission systems and BAAs can be greatly impacted by significant changes in the mix of generation facilities interconnected to the system. It is with these responsibilities and obligations in mind that we present the following comments.

Reliable and secure electric generation and transmission are essential to national security and the economy. EPA is proposing sweeping unprecedented changes to the interconnected power system, including the natural gas transmission system, yet has not conducted a baseline study of the cumulative interstate and intrastate effects of the proposed building blocks on stability, reliability and security.

6. ***Recommendation/Request: It is essential, prior to issuing a final rule, for EPA to undertake reliability analyses to assure that there is no disruption in the reliability and security of the interconnected power system. The proposed guidelines and compliance period do not adequately account for the complexity of the interconnected power system nor do they sufficiently address how the need to maintain reliability affects the timing of implementing such changes. Working with states, FERC, NERC, WECC, RTOs, the National Security Agency and other stakeholders, EPA must analyze and model proposed implementation plans and the cumulative effects of the building blocks and/or other proposed state compliance mechanisms, both interstate and intrastate, to ensure, to the extent possible, there will be no detrimental effects to the reliability and security of the interconnected power system. The electric and gas industry should be invited to provide electric and gas system modeling and expertise regarding the impact to reliability of proposed implementation. Without such modeling, stakeholders cannot appropriately evaluate the proposal and the complex interactions between states and regions.***

   Additional flexibility for states in implementing compliance plans is necessary. As plans are implemented, there will be unexpected and unintended consequences and EPA must allow states to address these by revising their compliance plans as necessary. States should not be locked in to a particular approach as there are simply too many variables associated with the interconnected power system and the proposed Clean Power Plan.

Under the Federal Power Act, FERC has jurisdiction to promulgate and enforce mandatory reliability standards for the bulk-power system, a power that FERC has delegated to the North American Reliability Council (NERC). Reliability standards are designed to ensure reliable operation of the bulk-power system. For example, in regions with RTOs, if a generation facility proposes to retire (or will close due to redispatch), the relevant RTO must determine whether the retirement of that facility will result in the violation of a NERC reliability standard or otherwise jeopardize the reliable operation of the bulk-power system. If a System Operator determines that retirement of a facility will jeopardize the reliable operation of the bulk-power system, the System Operator may require that the facility continue to operate.

In the western U.S. there are few RTOs. Instead there are 38 interconnected balancing areas (BAs), one of which is NorthWestern Energy, and each BA is responsible for continually balancing supply and demand (i.e., generation and load) in their respective areas. The Western Electricity Coordinating Council (WECC) is responsible for coordinating grid reliability of the Western Interconnection. Each BA in the Western Interconnection is responsible for matching net actual interchange and scheduled interchange for its interconnections with other BAs on a 4-second basis and complying with mandatory NERC performance standards. BAs are not

distinct geographical areas, which adds additional complexity to the process used to continually match supply and demand. For example, the Colstrip Plant in Montana is in 5 separate BAs because the generation from Colstrip is used for serving load centers in several states. As this example illustrates, Clean Power Plan compliance plans in one state can and will impact several states, highlighting the need for the EPA to work with WECC and all stakeholders to analyze and model the complex interaction of proposed state compliance plans.

In its Initial Reliability Review of the proposed guidelines, NERC affirms that the proposed guidelines will require major changes to the way the interconnected power system is planned and operated in order to ensure reliability while achieving emission reductions. NERC states that the proposed guidelines "introduce potential reliability concerns that are more impactful than prior environmental compliance programs due to the extensive impact to fossil-fired generation." In particular, NERC notes that the proposed guidelines do not recognize the need to expand and enhance the transmission grid and that the guidelines do not address grid reliability issues associated with increased variable resources and retirement of fossil-based generation:

> *Conventional generation (e.g., steam and hydro), with large rotating mass, has inherent operating characteristics, or ERS, needed to reliably operate the BPS. These services include providing frequency and voltage support, operating reserves, ramping capability, and disturbance performance. Conventional generators are able to respond automatically to frequency changes and historically have provided most of the power system's essential support services. As variable resources increase, system planners must ensure the future generation and transmission system can maintain essential services that are needed for reliability.*

It is important to note and as described above, replacement of thermal (coal) fired conventional plants with variable renewable resources does not, by itself, result in maintaining reliability in the interconnected transmission system. This is the case generally and holds true for NorthWestern Energy's system.

EPA is proposing sweeping unprecedented changes to the interconnected power system, which received a D+ from the American Society of Civil Engineers (ASCE) in its 2013 Assessment of America's Infrastructure report, without conducting a comprehensive reliability and system security assessment.

The ASCE states:

> *"Energy: America relies on an aging electrical grid and pipeline distribution systems, some of which originated in the 1880s. Investment in power transmission has increased since 2005, but ongoing permitting issues, weather events, and limited maintenance have contributed to an increasing number of failures and power interruptions. While demand for electricity has remained level, the availability of energy in the form of electricity, natural gas, and oil will become a greater challenge after 2020 as the population increases. Although about 17,000 miles of additional high-voltage*

transmission lines and significant oil and gas pipelines are planned over the next five years, permitting and siting issues threaten their completion. Thus, the grade for energy remained a D+."

"Conclusion: Infrastructure is the foundation that connects the nation's businesses, communities, and people, driving our economy and improving our quality of life. For the U.S. economy to be the most competitive in the world, we need a first class infrastructure system – transport systems that move people and goods efficiently and at reasonable cost by land, water, and air; transmission systems that deliver reliable, low-cost power from a wide range of energy sources; and water systems that drive industrial processes as well as the daily functions in our homes. Yet today, our infrastructure systems are failing to keep pace with the current and expanding needs, and investment in infrastructure is faltering."

It's also important to note that the U.S. power sector already faces serious cyber security threats. Recently, Admiral Michael Rogers, director of the National Security Agency and head of U.S. Cyber Command, testified before a House Intelligence Committee hearing on cybersecurity threats that other countries are currently capable of launching cyber-attacks that would shut down the electric grid. EPA must work with the NSA, Homeland Security and all stakeholders to ensure implementation of the Clean Power Plan, with its heavy reliance on natural gas, does not exacerbate this situation.

G. Remaining Useful Life

EPA proposes that the remaining useful life of affected EGUs should not be considered as a basis for adjusting state goals or the timelines to achieve the proposed goals. EPA proposes to prescribe how electric generating units are dispatched irrespective of remaining useful life or stranded costs and financial impacts. EPA's assessment "that the issue of remaining useful life will arise infrequently in the development of state plans to limit CO2 emissions from affected existing EGUs" is inaccurate. EPA has not adequately considered the impacts of forced closures of fossil-fired units with substantial remaining useful life, and the associated impacts on consumers and the economy related to stranded asset costs.

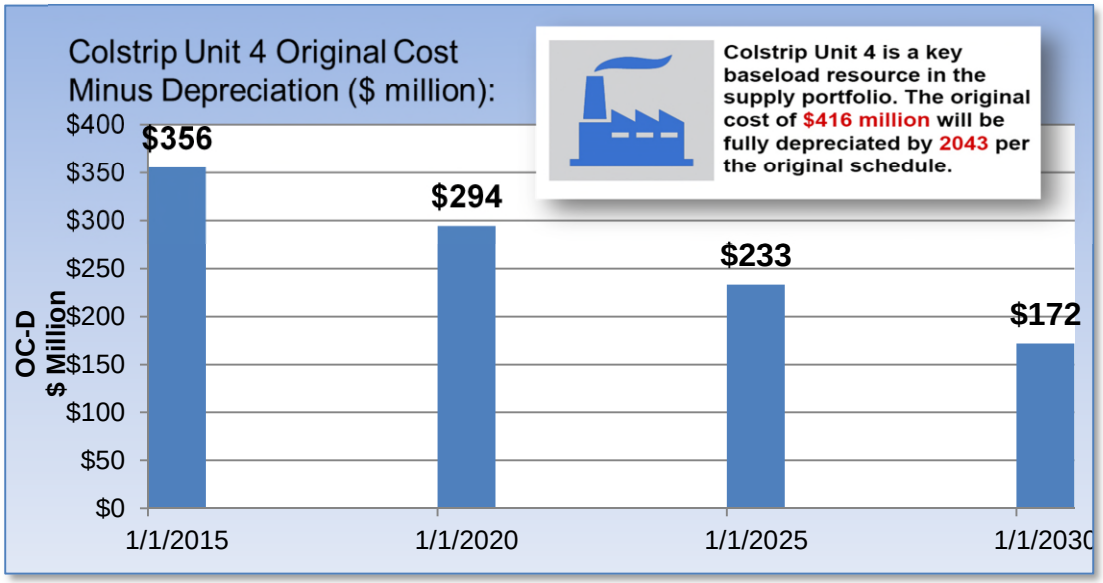
7. ***Recommendation/Request: EPA must recognize the remaining useful life of EGUs, including the effect on remaining useful life of recent upgrades and major pollution control installations, when setting standards of performance in order to avoid stranded asset problems. EPA must defer to state authority to determine the feasibility and timing of redispatch (Building Block 2) and integration of new generation considering, among other things, remaining useful life of existing EGUs.***

NOTE: EPA issued a Notice of Data Availability (NODA) that was published in the Federal Register on October 30, 2014. In the NODA, EPA seeks comment on considering the book life of existing generation assets including any major upgrades to the assets like pollution control retrofits. Since EPA published the NODA just one month before the deadline for submission of comments on the proposed rule, stakeholders have not had adequate time to fully understand the implications of the NODA in relation to the proposed rule. Issuing a NODA that late, particularly since the proposed rule is likely the most complex rulemaking ever undertaken by the EPA, does not appear to comply with EPA's obligation under the Administrative Procedures Act and Clean Air Act. EPA should allow additional time for stakeholders to fully assess the NODA.

EPA is required by statute to permit states to consider remaining useful life in setting and modifying standards of performance for individual units. EPA has no discretion to deviate from these clear statutory terms and eliminate or restrict state authority to consider remaining useful life. EPA takes an unprecedented approach in the proposed rule. Rather than preserving the state authority to consider remaining useful life, EPA "proposes that the remaining useful life of the affected EGUs, and the other facility-specific factors identified in the existing implementation regulations, should not be considered as a basis for adjusting a state emission performance goal or for relieving a state of its obligation to develop and submit an approvable plan that achieves that goal on time."

NorthWestern Energy has an ownership interest in Unit 4 at the 2100 MW Colstrip generating facility located in Colstrip, Montana. This resource is a key foundational baseload resource in our Montana Energy Supply portfolio. The original cost of our ownership interest in Colstrip Unit 4 was $416 million and will not be fully depreciated until 2043 per the original depreciation schedule (see Colstrip Unit 4 Depreciation Schedule figure on following page). Any scenario resulting in the need to replace our Colstrip generation with, for example, a combination of renewables and associated balancing/regulation requirement (i.e. simple cycle gas plant generation), would mean our customers would be paying for the remaining investment in Colstrip Unit 4 *and* the replacement generation. This would impose a substantial financial burden and is therefore unfair and unreasonable to our customers.

NorthWestern Energy Share of Colstrip Unit 4 Depreciation Schedule



As an additional example of the need for states to consider remaining useful life, consider the Big Stone Plant in South Dakota. By the end of 2015, NorthWestern Energy, Otter Tail Power Company and Montana-Dakota Utilities Company will have completed installation of an approximately $400 million air quality control system - in order to comply with a different set of EPA regulations - which will reduce nitrogen oxide, sulfur dioxide, particulate matter and mercury by about 90%. The assumptions in the proposed Clean Power Plan reduce the capacity factor of the Big Stone Plant to 23%, a level which would obviously result in stranding the $400 million air quality control system as well as the remaining unrecovered costs of each owner in the plant. Not only would customers be paying for an inoperable state-of-the art air quality control system, they would be paying for additional power for either market power purchases or the construction of a new gas-fired power plant. This, too, is unfair and unreasonable to customers.

EPA fails to consider the very real issue of stranded costs arising from the forced shutdown of coal-fired EGUs well before the end of their useful lives. EPA contends it is exercising discretion to interpret Section 111 to limit states' consideration of remaining useful life. However, the plain language in Section 111(d) precludes EPA from exercising any discretion with respect to restricting the states' ability to incorporate remaining useful life and other factors into standards of performance as guaranteed by Congress.

This outcome is especially perverse because under original cost minus depreciation ratemaking, as plants are depreciated on the books the cost to customers goes down. All other things equal, they should become more valuable to customers. This is another situation where economic and environmental regulators need to communicate better.

H. Timeline

EPA's proposed timeline for submittal and finalization of state and regional plans and the proposed timeline for compliance with proposed goals are completely unrealistic. EPA has not appropriately considered the time required to develop and coordinate state and regional compliance plans, draft and finalize necessary changes to state laws and policies, conduct transmission siting and reliability studies, conduct environmental impact assessments, coordinate development with other federal regulations such as the Endangered Species Act, and several other factors.

8. Recommendation/Request: EPA must allow states significantly more time to develop draft compliance plans and should eliminate the interim compliance targets.

The importance of a reliable, stable secure interconnected power system to deliver affordable electricity is unquestionable. This rulemaking will fundamentally affect what the U.S. Department of Homeland Security (DHS) identifies as the one unique critical infrastructure platform upon which the fifteen other critical infrastructures all depend. According to DHS, the energy sector is unique because, "Without a stable energy supply, health and welfare are threatened, and the U.S. economy cannot function." Energy is "uniquely critical because it provides an enabling function across all critical infrastructure sectors."[5]

EPA's proposed compliance timeline does not allow adequate time for the needed reliability assessments and system changes to be accomplished before 2020, by which time many states would need to have accomplished significant emission reductions. NERC, the entity responsible for ensuring the reliable operation of the Bulk Power System in North America, has concluded that "[t]he proposed timeline does not provide enough time to develop sufficient resources to ensure continued reliable operation of the electric grid by 2020. To attempt to do so would increase the use of controlled load shedding and potential for wide-scale, uncontrolled outages."

To the extent states desire to engage in multi-state emissions trading programs, the emission implementation timeline is simply inadequate. There is far too little time to allow states to engage neighboring states on the myriad, complex issues required for such plans. For example, states will need to coordinate receiving credit for renewable generation when renewable energy credits have been sold out-of-state, incorporating new generation sources and siting interstate gas and electric transmission facilities. States will also need to determine the effects of redispatch decisions between power plants in different states and generators that export their generation under existing agreements with out-of-state distribution utilities.

[5] Other critical infrastructures include areas such as communications, education, health care, agriculture, transportation, and emergency services. U.S. Department of Homeland Security website, Energy Sector Overview, http://www.dhs.gov/energy-sector.

Numerous factors support the need to eliminate the interim compliance period. EPA has not demonstrated that every state can increase utilization of existing natural gas combined cycle (NGCC) units to 70 % by 2020. EPA incorrectly assumes that current natural gas and electric transmission infrastructure is sufficient to support this dramatic increase, and EPA does not account for the fact that many natural gas units must back-up renewable generation. Increasing generation from existing NGCC units will likely require electric and gas transmission upgrades and expansions. As NERC recently has noted, these projects can take ten to fifteen years to plan, design, site, permit and construct. Further, the proposed interim compliance period does not allow sufficient time for regional transmission organizations (RTOs) and independent system operators (ISOs) to evaluate and potentially alter market rules to accommodate changes in dispatch.

In the West, the federal government owns vast portions of many states. The use of these lands will be paramount to increasing renewable generation and siting gas and electric transmission structures and EPA must allow ample time for states to work with other federal agencies.

EPA must also consider the impacts of other federal regulations involving listed and threatened species, species of special concern, migratory birds, eagles and other similar regulations and requirements when making assumptions about timelines, redispatch and particularly expansion of renewable energy generation. For example, Montana and ten other western states have significant core sage grouse habitat. Montana's Governor signed an executive order creating a habitat conservation plan for sage grouse. Montana is interested in managing sage grouse and their habitat rather than relinquishing control to the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act. The USFWS is to decide next year whether states' efforts to conserve sage grouse and their habitat will ensure survival or if the sage grouse must be added to the federal endangered and threatened species list. State and federal conservation plans will impact development and siting of wind farms, electric generating stations, gas and electric transmission lines, and all associated permanent and temporary infrastructure required to construct these facilities. Indeed, the Clean Power Plan, and the associated assumptions involving redispatch and renewables integration may affect whether or not sage grouse are listed as endangered.

For states to be able to create plans that can be successfully implemented, the rule will require unprecedented coordination of all aspects of government, the utility industry, utility regulatory commissions, institutional consumer advocates, FERC, NERC, WECC and the other regional reliability entities, RTOs, the National Security Agency, the U.S. Fish and Wildlife Service and other stakeholders. It is important to provide a realistic timeframe in order to work with all stakeholders and develop compliance and implementation plans based on sound policy and necessary engineering and economic analyses than it is to meet an arbitrary deadline.

I. Baseline Year

EPA established state emission rate goals using 2012 as a single baseline year which results in disparity among states and additional error in the calculation of baseline carbon dioxide emissions intensity. Using 2012 as the baseline year penalizing states and companies that have taken early action to reduce GHG emissions and address climate change.

9. ***Recommendation/Request: EPA should change the methodology for calculating carbon intensity in the proposed rule and expand the baseline period (e.g. from one year to five years) in order to minimize the impact and disparities associated with basing emissions targets on a single year.***

   EPA should also start with an earlier year (e.g., 2005) to address the punitive impact of the proposed rule on states and companies that have taken early action to reduce GHG emissions and address climate change.

   NOTE: EPA issued a Notice of Data Availability (NODA) that was published in the Federal Register on October 30, 2014. Since EPA published the NODA just one month before the deadline for submission of comments on the proposed rule, stakeholders have not had adequate time to fully understand the implications of the NODA in relation to the proposed rule. Issuing a NODA that late, particularly since the proposed rule is likely the most complex rulemaking ever undertaken by the EPA, does not appear to comply with EPA's obligation under the Administrative Procedures Act and Clean Air Act. EPA should allow additional time for stakeholders to fully assess the NODA. Notwithstanding the late issuance of the NODA, EPA should not modify the way it calculates state goals by imposing a minimum level of re-dispatch or redefine Building Block 2 by calculating it on a regional basis. Every state and region has unique generation portfolios that reflect specific energy demand requirements and resource availability.

Numerous anomalous events can occur during any one-year period as was the case in 2012. These anomalies include increased utilization of affected units due to extreme weather events, atypically low GHG emissions rates from coal-fired generation due to historically low natural gas prices, a changing portfolio (additions and retirements) of available units for dispatch, unit outages, and above normal levels of hydropower generation. Following are some examples:

- The unusually high hydropower production experienced in the Pacific Northwest during 2012 resulted in unusually low fossil power generation. Across the region, hydropower generation was 110 % of average in 2012. By mandating emission reductions from the 2012 baseline, EPA has proposed goals for states in the Pacific Northwest that are artificially skewed relative to states that rely more on thermal generation.

- South Dakota‘s total energy production in 2012 was one of the highest on record. Therefore, the mandate to increase renewable energy generation and decrease usage through energy efficiency mechanisms (goals that are tied to the state’s total generation in 2012) is more onerous than it otherwise would be had a multiyear approach been used or had another year been selected as the baseline.

- South Dakota’s one natural gas combined cycle plant was undergoing test firing in 2012. EPA considered it an existing unit under its proposal. Using data from an earlier year would reduce its impact on South Dakota’s state goal or eliminate it from being considered as an operational unit depending on what year is selected

- Wind generation in South Dakota increased significantly between 2008 and 2012 and, by EPA using 2012 as the baseline, is receiving no credit for this increase.

- The Colstrip Plant in Montana ran 23% less than what would be expected during a representative normal year.

In order to set realistic and equitable state goals, EPA must start with a baseline period that is statistically representative of generation and GHG emission levels. EPA must address certain anomalies that arose in 2012 to avoid the unfair and arbitrary impacts that penalize some states and/or companies. We note that EPA uses multiple years for baselines in other programs and for compliance purposes because of the variability issues associated with use of a single year. At a minimum, EPA must address corrections related to other data anomalies, such as affected units that were off-line for most or all of the baseline year.