STATE OF MINNESOTA

BEFORE THE PUBLIC UTILITIES COMMISSION

In the Matter of the Petition of Xcel Energy
For Approval of the Acquisition of the 375 MW
Mankato Energy Center and the 345 MW
Mankato Energy Center II

PUC Docket No. IP6949, E002/PA-18-702

**Comments of Clean Grid Alliance, Fresh Energy,
Minnesota Center for Environmental Advocacy, the Union of Concerned Scientists
("Clean Energy Organizations" or "CEOs"), and
Center for Energy and Environment (collectively, "the CEOs and CEE")**

Introduction

On May 12, 2019, scientists announced that for the first time in nearly 3 million years, rising carbon dioxide in the earth's atmosphere reached 415 parts per million.[1] The last time atmospheric concentrations were above 400 ppm, humans had not yet evolved from earlier hominids, temperatures were 2-3 degrees (Celsius) warmer than today, sea levels were 10-20 meters above modern day levels, and forests grew 500 km from the south pole.[2] Because it takes time for the global climate to settle after changes in atmospheric CO_2 concentrations, the climate of the Pliocene is well-understood as an analog of earth's future climate, should carbon emissions remain unchecked.[3] The effects of such a change would be catastrophic to our modern economy and standard of living.[4]

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[1] U.S. Dep't of Commerce, Nat'l Oceanic & Atmospheric Administration, *Trends in Atmospheric Carbon Dioxide*, available at https://www.esrl.noaa.gov/gmd/ccgg/trends/monthly.html (last accessed May 16, 2019).

[2] Alan Haywood, *et al.*, *Integrating Geological Archives and Climate Models for the Mid-Pliocene Warm Period*, 7 Nature Communications 10646 (2016), available at https://www.nature.com/articles/ncomms10646 (last accessed May 16, 2019).

[3] *See* Jonathan Amos, *Climate Change: Warning from 'Antarctica's Last Forests',* BBC News, April 3, 2019, available at https://www.bbc.com/news/science-environment-47806440 (last accessed May 16, 2019).

[4] *See, e.g.*, The World Bank, *New Report Examines Risk of 4 Degree Hotter World by End of Century*, Nov. 18, 2012, available at http://www.worldbank.org/en/news/press-release/2012/11/18/new-report-

Fortunately, this challenge is solvable. To stabilize or lower atmospheric concentrations of CO_2, emissions need to rapidly decline, and that decline must be initiated today.[5] The most significant step that can be taken today to get on a path to avoiding the most serious impacts from global climate change is to eliminate coal-fired power.[6] The CEOs and CEE believe that the proposed acquisition of the Mankato Energy Center ("MEC") will make significant progress towards this goal for our state by greatly reducing coal-fired electricity generation. To that end, the CEOs and CEE, along with the Sierra Club and the Laborers District Council of Minnesota and North Dakota ("LIUNA Minnesota"), have reached an agreement to offer to the Public Utilities Commission a broadly supported proposal to: (1) retire the Allen S. King and Sherco 3 coal plants by 2028 and 2030, respectively, (2) reduce operations at the Sherco 2 coal plant by operating on a seasonal basis, (3) commit to record levels of energy savings, (4) propose the acquisition of at least 3,000 MW of solar generation before 2030, and (5) commit to an RFP process for those solar projects that maximizes local job creation and participation in apprenticeship programs.[7] The CEOs and CEE believe that this proposal, if approved by the Commission, will economically and reliably secure massive reductions in carbon emissions for the state.

The acquisition of the MEC plant is a critical component of this carbon reduction strategy, and the CEOs and CEE urge the Commission to approve the acquisition as consistent with the public interest.

I. The Proposal to Acquire the MEC Plant Will Facilitate Early Retirements of Coal-Fired Generation, Enabling Large Reductions in Carbon Emissions

A. Retiring Coal-Fired Generating Plants is Critical to Achieving Minnesota's Greenhouse Gas Reduction Goals

It is the well-known goal of the state to reduce statewide greenhouse gas ("GHG") emissions to a level at least 15 percent by 2015, 30 percent by 2025 and 80 percent by 2050.[8] These goals were enacted as part of the Next Generation Energy Act in 2007, which also require state agencies to

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examines-risks-of-degree-hotter-world-by-end-of-century (last accessed May 19, 2019) (noting that business as usual emissions will trigger "cataclysmic changes that include extreme heat waves, declining global food stocks and a sea level rise affecting hundreds of millions of people.").

[5] Nat'l Research Council, *Climate Stabilization Targets: Emissions, Concentrations, and Impacts Over Decades to Millenia* 59-63 (Nat'l Academies Press 2011).

[6] John Anasis, *et al.*, *Optimal Energy Resource Mix for the US and China to Meet Emissions Pledges*, 238 Applied Energy 92 (2019).

[7] Attachment A ("MEC/IRP Settlement Agreement").

[8] Minn. Stat. § 216H.02, subd. 1.

provide biennial reports on progress toward these goals.[9] The most recent iteration of that biennial report informed the Legislature that the 2015 GHG reduction target was missed, and that the state is on track to also fall well short of both the 2025 and 2050 reduction goals.[10]

Although the transportation sector has now eclipsed electricity as the largest emitter of GHGs in the state, electricity-associated emissions remain high, and constitute more than the industrial, residential and commercial sectors combined.[11] Decarbonizing the power sector will involve a combination of changes, the most readily achievable of which are increased energy efficiency and the substitution of coal-fired electricity.[12] But perhaps more importantly, the decarbonization gains made in the power sector are critical to unlocking similar gains across the economy. Decarbonizing the industrial sector, for instance, depends most heavily on the availability and affordability of zero-carbon renewable electricity.[13] Similarly, decarbonizing the transportation sector with accelerated adoption of electric vehicles is dependent on an increasingly decarbonized power grid to achieve GHG reductions.[14]

B. As a Standalone Proposal, Acquisition of the MEC Plant Will Not Have Significant Impacts on Greenhouse Gas Emissions

Because this docket only involves the ownership of an existing power plant, the direct carbon emission impact from the acquisition proposal is minimal. Figure 5 of the initial petition in this docket demonstrates the emissions impact of the acquisition as compared to a reference case where the

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[9] Minn. Stat. § 216H.07, subd. 3.

[10] Minn. Pollution Control Agency & Minn. Dep't of Commerce, *Greenhouse Gas Emissions in Minnesota: 1990-2016*, at 5, (2019), available at https://www.pca.state.mn.us/sites/default/files/lraq-2sy19.pdf (last accessed May 16, 2019).

[11] *Id.* at 6.

[12] Ashley Lawson, *Decarbonizing U.S. Power*, (Center for Climate and Energy Solutions 2018), available at https://www.c2es.org/site/assets/uploads/2018/06/innovation-power-background-brief-07-18.pdf (last accessed May 16, 2019).

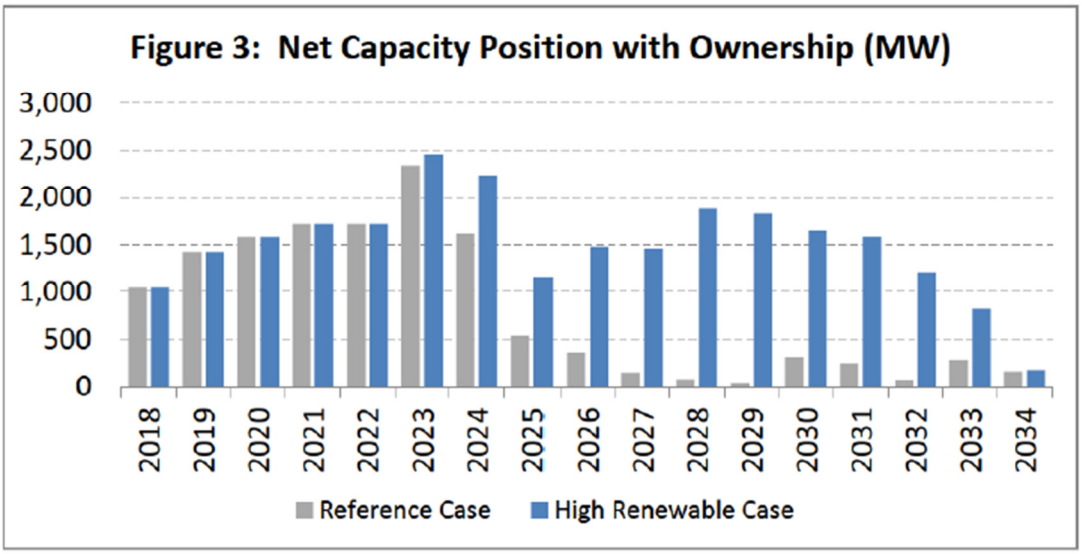
[13] McKinsey & Co., *Decarbonization of Industrial Sectors: The Next Frontier*, at 7-9 (2018), available at https://www.mckinsey.com/business-functions/sustainability/our-insights/how-industry-can-move-toward-a-low-carbon-future (last accessed May 16, 2019) (noting that "industrial decarbonization will require increased investment in industrial sites and has to go hand in hand with an accelerated build-out of zero-carbon electricity generation").

[14] *See, e.g.,* Jeremy Hodges, *Electric Cars Are Cleaner Even When Powered by Coal*, Bloomberg News, Jan. 14, 2019, available at https://www.bloomberg.com/news/articles/2019-01-15/electric-cars-seen-getting-cleaner-even-where-grids-rely-on-coal (last accessed May 16, 2019).

Company merely purchases the electricity and capacity from the plant.[15] Under a Company ownership scenario, MEC I and MEC II would be operated at slightly higher capacities, which accounts for a very small increase in emissions for the ownership case as compared to the reference PPA case.[16] This slight increase in operations makes up for the small decline in emissions resulting from displaced energy as a result of the acquisition.[17] As described below, this very small increase in emissions resulting from increased operations in an ownership scenario is dwarfed by the commensurately large reductions that would be achieved by the joint proposal to retire coal units that is enabled by the MEC acquisition.

C. Acquisition of the MEC Plant Will Reduce System Costs Associated With Early Coal Retirements, Making Retirements More Feasible and Incentivizing Decarbonization in non-Electricity Sectors

By providing energy and capacity for the Company through the 2030s, acquisition of the MEC plant provides a pathway to early coal retirements that are critical to meeting state GHG goals. Figure 3 of the Initial Petition, shown below, provides an illustration of the Company's net capacity position in a MEC ownership scenario.[18]



[15] Petition, *In the Matter of the Petition of Xcel Energy for Approval of the Acquisition of the 375 MW Mankato Energy Center and the 345 MW Mankato Energy Center II*, Docket No. IP6949/PA-18-702, Nov. 27, 2018, at 33 [hereinafter "Initial Petition"].

[16] *Id.* This trend – a very minimal emissions difference between PPA and ownership scenarios - holds true through the 2050s as well. *See* Xcel Response to Sierra Club IR No. 2-6, Docket No. IP6949, E002/PA-18-702, Feb. 8, 2019.

[17] *Id.* at 32.

[18] *Id.* at 31.

In this scenario, the Company has excess capacity through a combination of MEC ownership and an accelerated deployment of renewable energy throughout the 2020s and 2030s. This surplus capacity allows the Company to retire large coal generators.[19]

The supplemental analysis in the Company's Reply Comments elaborates on this relationship between MEC ownership and early coal retirements, demonstrating that MEC ownership reduces the system costs of coal retirements dramatically. Instead of early coal retirements imposing a burden of large revenue requirements on ratepayers, the acquisition of the MEC plant turns those retirements into ratepayer savings. This is shown most clearly in Table 4 of the Company's Reply Comments, below.[20]

Table 4: MEC and Early Coal Retirement Cost/Savings ($000s)

	Markets Sales On		Market Sales Off	
Scenario	PVSC	PVRR	PVSC	PVRR
Base (Continuation of PPAs)	-	-	-	-
Base with Early Coal Retirement	($271)	$82	($147)	$89
MEC Ownership with Early Coal Retirement	($337)	($51)	($337)	($98)

From a revenue requirement perspective, early coal retirements in a status quo scenario imposes a burden of over $80 million on ratepayers. This burden would potentially make those early retirements much less likely to occur. With the economic acquisition of MEC, however, revenue requirements for an early coal retirement scenario become substantial savings. In a very direct way, then, the acquisition of the MEC plants turns early coal retirements into an affordable pathway to greatly reducing the carbon intensity of the power grid, without adding any new fossil fuel generation.

As noted above, decarbonizing the electricity sector is also a critical step in decarbonizing the transportation, industrial, residential and commercial sectors as well. Electrifying those sectors can only produce GHG reductions if the electricity sector is much less reliant on carbon intensive fuels. Acquisition of the MEC plant is an important step on that pathway, and its energy savings are increased in those scenarios involving greater decarbonization of non-electricity sectors. In their Reply

[19] *Id.* at 30 ("the capacity length in the High Renewables scenario can either be used to help mitigate the risk of premature retirement of baseload facilities or allow for an accelerated transition of the coal fleet which could yield additional customer savings.").

[20] Xcel Reply Comments, *In the Matter of the Petition of Xcel Energy for Approval of the Acquisition of the 375 MW Mankato Energy Center and the 345 MW Mankato Energy Center II*, Docket No. IP6949/PA-18-702, March 29, 2019, at 24 [hereinafter "Reply Comments"].

Comments, the Company ran sensitivities representing this non-electricity decarbonization – the High Electrification and Fuel Costs, and Low Technology Costs combination.[21] In this modeling scenario, the Company's load increases due to the electrification of the transportation sector and heating processes in homes and business. Because ownership of the MEC plant provides revenue requirement savings generally, these savings become magnified in a scenario where decarbonization of non-electricity sectors accelerates. These savings are shown in Table 6 of the Reply Comments, shown below.[22]

Table 6: Sensitivity Combinations with Early MEC Retirement

	Markets Sales On		Market Sales Off	
Scenario	High Electrification & Fuel Costs, Low Tech Costs	High Distributed Solar Deployment, Low Tech Costs and Fuel Costs	High Electrification & Fuel Costs, Low Tech Costs	High Distributed Solar Deployment, Low Tech Costs and Fuel Costs
Base (Continuation of PPAs)	-	-	-	-
Own	($459)	($76)	($459)	($76)
Own 2040	$18	$71	$18	$71
Own 2050	($264)	($29)	($264)	($29)

These savings are again magnified when these decarbonization scenarios are paired with early coal retirements on the Company's system. In these scenarios, where the loss of energy and capacity from coal plants is heightened by the increased load inherent in a decarbonized transportation and heating fleet, the savings that result from acquiring the MEC plant jump to over $600 million.[23]

For the CEOs and CEE, then, it is apparent that the Company's acquisition of the MEC plant – an asset that is already built and will be generating power for the market regardless of ownership – paired with early coal retirements and significant wind and solar deployment is an important step towards substantially reducing the carbon intensity of not only electricity generation in Minnesota, but for future decarbonization pathways outside the power sector.

[21] Reply Comments at 26. The Company notes that this sensitivity is similar to the MISO MTEP Accelerated Fleet Change Scenario. *Id.* at 23.

[22] *Id.* at 26 (also showing scenarios in which the MEC plant is retired early in either 2040 or 2050).

[23] *Id.*

II. The MEC Acquisition Will Displace the Need for Additions of Gas Generation in the 2030s and 2040s in Modeling

The Strategist modeling performed by the Company establishes that ownership of the MEC plant would reduce or delay the need for additional CC and CT generation in the future. Table 15 of Attachment F to the Initial Petition provides the Strategist expansion plan for a 2015 IRP Renewables and MEC PPA scenario.[24] When compared to Table 17, which provides an expansion plan for the same scenario but with Company ownership of MEC, the modeling shows that Company ownership would avoid the need for 321 MW of greenfield CT generation within the action period of the Company's next IRP.[25] Looking out a few years further, Company ownership of MEC would avoid the need for 523 MW of new gas generation by 2040.[26]

In the High Renewables scenario modeled in the Company's Reply Comments, ownership of MEC would displace the need for a 200 MW CT generator within the 2020-2034 action period for the next IRP.[27] In either case, it is clear that acquisition of the MEC plant displaces the need for additional gas generation in the near and middle modeling futures, providing the Commission and the Company with more flexibility to craft resource plans that continue to reduce carbon from the Company's portfolio while keeping rates low to incentivize further decarbonization in non-power sectors.

III. Xcel Ownership of MEC Will Put a Large Generator Under the Oversight of the Minnesota PUC, a Critical Step in Ensuring Beneficial Resource Planning for a Carbon-Free Future

In the Initial Petition for approval of the acquisition, the Company observed that "Company ownership of these plants will give the Commission greater oversight as to their future operation and planning lives compared to ongoing third-party ownership and continuation of the PPAs currently in effect."[28] The CEOs and CEE agree that this is an important consideration, not to be overlooked. The experience of the CEOs and CEE leads us to believe that meaningful, collaborative conversations about the future of the MEC plant are a very reasonable expectation if the acquisition is approved and

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[24] Initial Petition at Att. F, p. 19.

[25] *Id.* at 19, 21.

[26] *Id.* Ownership would avoid the need for the addition of 844 in new greenfield CC generation, but adds a need for 321 MW of greenfield CT generation, for a net reduction of 523 MW in gas generation avoided by 2040.

[27] *Id.* at 20, 22 (Tables 16, 18).

[28] *Id.* at 4.

the facility becomes an asset under consideration in future IRPs and rate cases before this Commission.

As but one example, the CEOs and CEE appreciate the Company's supplemental modeling efforts that provide analysis on the specific question of early retirement for the MEC plant, and should the acquisition be approved, we anticipate a continuation of this conversation before the Commission. None of those conversations would be possible under the continuation of third-party ownership. As organizations with footprints and interests that extend beyond our state's borders, we are keenly aware of the unique value to our state provided by our state's regulatory processes for utilities, which many states do not enjoy. We are loath to take that value for granted, and believe that Company ownership of the MEC plant allows for substantial flexibility in resource planning that would not otherwise exist.

IV. The MEC Purchase is Cost-Effective, and Becomes Increasingly Cost-Effective as More Coal is Retired from Xcel's System

The modeling and responses to IRs in this docket demonstrate that Company ownership of the MEC facility will result in long term revenue requirement savings.[29] Compared to the costs of extending the MEC PPAs over the expected life of the plant, Company ownership lowers revenue requirements by $255 million.[30] These savings persist throughout the bulk of modeled scenarios,[31] and greatly increase in the scenarios in which large coal generators are retired early.[32] Even in scenarios where both the MEC plant and coal generation are retired early, Company ownership of MEC returns a revenue requirement savings of $144 million.[33]

It is this last trend that is most salient for the CEOs and CEE: that the revenue requirement savings of Company ownership increase in a modeling future where coal generation is removed from service prior to the end of its economic life. These savings become magnified when decarbonization trends are accelerated – rising to savings of $624 million in an early coal retirement, high electrification scenario.[34]

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[29] Initial Petition at 27 (Tables 4, 5).
[30] Xcel Reponse to MN DOC IR No. 7, Docket No. IP6949/PA-18-702, Jan. 3, 2019.
[31] *See* Xcel Response to MN DOC Informal IR No. 1, Docket No. IP6949/PA-18-702, April 25, 2019.
[32] *Id.*; Reply Comments at 24 (Table 4).
[33] Xcel Response to MN DOC Informal IR No. 1, *supra*.
[34] Reply Comments at 26 (Table 7).

Conclusion

For these reasons, the CEOs and CEE respectfully request that the Commission find that the Company's proposal to acquire the MEC plant is prudent and in the public interest under Minn. Stat. § 216B.50.

Dated: May 20, 2019

Respectfully submitted,

/s/ Kevin P. Lee

Kevin P. Lee
Climate and Energy Program Director
Minnesota Center for Environmental Advocacy
1919 University Ave. W., Suite 515
St. Paul, MN 55104
(651) 287-4865
klee@mncenter.org

On behalf of Center for Energy and Environment, Clean Grid Alliance, Fresh Energy, Minnesota Center for Environmental Advocacy, & the Union of Concerned Scientists.

Attachment A

MEC/IRP Settlement Agreement

Northern States Power Company, doing business as Xcel Energy ("Xcel Energy" or "Company") filed a petition to acquire the two-unit combined cycle Mankato Energy Center in Docket No. E002/PA-18-702 on November 27, 2018.

Since filing that petition, the Company has been in discussions with Clean Grid Alliance, Fresh Energy, Minnesota Center for Environmental Advocacy, Union of Concerned Scientists, (collectively, the Clean Energy Organizations or "CEOs"), Sierra Club, Center for Energy and Environment ("CEE"), and Laborers District Council of Minnesota and North Dakota (LIUNA Minnesota) regarding a potential settlement involving the MEC docket as well as certain aspects of the Company's upcoming 2019 Integrated Resource Plan (IRP);

The CEOs, Sierra Club, Center for Energy and Environment, LIUNA Minnesota, and the Company have agreed in principle to a partial settlement of Docket No. E002/PA-18-702 and the Company's upcoming 2019 IRP that includes the following terms:

1. The CEOs and CEE will agree to provide written support for the Company's petition to acquire MEC in Docket No. E002/PA-18-702.

2. Sierra Club will withdraw its official March 5, 2019 comments in Docket No. E002/PA-18-702. Sierra Club is not obligated to join the CEOs in support of the Company's petition.

3. The Company will seek Commission approval to retire the Allen S. King plant in 2028 or earlier by including a 2028, or earlier, retirement date for the plant in its preferred resource plan in the July 1, 2019 filing and any updated preferred plan filings in the resource plan docket initiated with the July 1, 2019 filing. The CEOs and CEE will commit to supporting the Company's request to recover the undepreciated balance of the King plant as a regulatory asset through 2037.

4. The Company will include a 2030, or earlier, retirement date for Sherco Unit 3 in its preferred resource plan in the July 1, 2019 filing and any updated preferred plan filings in the resource plan docket initiated with the July 1, 2019 filing. The CEOs and CEE will commit to supporting the Company's request to recover the undepreciated balance of the Sherco 3 plant as a regulatory asset through 2035.

5. The Company will commit to offer Sherco Unit 2 into MISO on a seasonal basis until its retirement in 2023, subject to Commission approval.

6. The Company will include, at a minimum, the "Program Achievable Scenario" level of energy efficiency, which represents an average of 706.4 GWh of savings annually, for 2020-2029 in its preferred resource plan in the July 1, 2019 filing. The Company will consider and evaluate the "Optimized Scenario" level of energy efficiency, which represents an average of

767.7 GWh of savings annually, for inclusion in the preferred plan for the July 1, 2019 filing. The CEOs and CEE will commit to supporting future proposals by the Company to expand the current decoupling pilot to all customer classes or other, similar proposals to calculate rates on the basis of actual sales.

7. The Company will include in the preferred plan the acquisition of at least 3,000 MW of solar generation before the end of 2030.

8. The CEOs, Sierra Club[1], Center for Energy and Environment, and LIUNA Minnesota agree to support Company ownership for at least 50% of the new solar resources contemplated by paragraph 7 above, and Company ownership of renewable resources subject to an existing PPA, provided the Company can demonstrate that its ownership will result in customer benefits including consideration of environmental impacts including Commission-approved environmental costs.

9. To facilitate the acquisition of the new solar resources contemplated by paragraph 7 above, the Company, the CEOs, Sierra Club, Center for Energy and Environment, and LIUNA Minnesota agree to support an acquisition process where following the conclusion of a bidding process approved or established by the Commission, the Company or its affiliate can propose to build and own resources provided that the utility's proposal is cost-effective and competitive when compared to the prior RFP. The Company will consider local job impacts in the selection of proposed projects, and give preference to proposals that maximize the creation of high-quality construction employment opportunities for local workers, and participation in bona fide registered apprenticeship programs, consistent with the public interest. The CEOs, Sierra Club, Center for Energy and Environment, and LIUNA Minnesota will support the selection of proposed projects that maximize the creation of high-quality construction employment and apprenticeship opportunities, consistent with the public interest.

10. The Company agrees, as part of future IRP filings, to continue to evaluate the economics of MEC for purposes of making forward-looking planning decisions.

11. For all other elements of the preferred plan in the 2019 IRP, CEOs, Sierra Club, Center for Energy and Environment, and the Company agree to continue their work towards development of a consensus preferred plan.

[1] In Sierra Club's case, references to "support" mean the submission of formal written comments or Sierra Club's formal participation in hearings before the Commission and does not refer to actions by individual members or supporters.

12. Parties to this agreement reserve the right to take positions and advocate for outcomes in the Company's upcoming 2019 IRP that are not inconsistent with the terms specified in this agreement.

IN WITNESS WHEREOF, the Parties hereto have entered into this Agreement as of May 1, 2019.

Northern States Power Company

By: _____

Printed Name: Christopher B Clark

Title: President

Date: May 9, 2019

Clean Grid Alliance

By: _____

Printed Name: Beth Soholt

Title: Executive Director

Date: May 3, 2019

Center for Energy and Environment

By: _____

Printed Name: Mike Bull

Title: Director, Policy and External Affairs

Date: May 3, 2019

Minnesota Center for Environmental Advocacy

By: _____

Printed Name: Kevin Lee

Title: Climate and Energy Program Director

Date: May 3, 2019

Union of Concerned Scientists

By: _____

Printed Name: James Gignac

Title: Lead Midwest Energy Analyst

Date: May 3, 2019

Fresh Energy

By: _____

Printed Name: Allen Gleckner

Title: Senior Director, Regulatory Affairs

Date: May 6, 2019

Sierra Club

By: _____

Printed Name: S. Laurie Williams

Title: Staff Attorney

Date: May 6, 2019

LIUNA Minnesota and North Dakota

By: _____

Printed Name: Tim Malkey

Title: President and Business Manager

Date: May 3, 2019