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December 6, 2018

VIA E-FILING

Mr. Daniel P. Wolf, Executive Secretary
MN Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

Re: In the Matter of Minnesota Power's Petition for Approval of a 250 MW
Nobles 2 Wind Power Purchase Agreement
Docket No. E-015/M-18-545

Dear Mr. Wolf:

Minnesota Public Utilities Commission ("Commission") Staff requested Minnesota Power provide reply comments in response to the Minnesota Department of Commerce's ("Department") November 15, 2018 Supplemental Comments. Minnesota Power appreciates the Department's Supplemental Comments and provides the following brief response. In regards to the Department's recommendations regarding revising the Power Purchase Agreement ("PPA") language, Minnesota Power has begun discussions with Tenaska on an amendment and, subject to reaching an agreement, would submit changes and modifications ordered by the Commission to address remaining uncertainties through an amendment filing in this Docket. Minnesota Power is also fine with the Department's curtailment reporting recommendation.

Minnesota Power generally agrees with the Department's analysis of the transmission risk and uncertainty associated with Nobles 2. However, until the MISO interconnection study process is completed and Tenaska executes a generator interconnection agreement, Minnesota Power will not know the full extent of the transmission risk and associated customer impact as set forth in the PPA. Minnesota Power commits to keeping the Commission and the Department fully informed of any transmission developments and PPA milestones that may require further Commission review as that process will likely continue until late 2019.

In addition, Staff requested Minnesota Power remove any unnecessary trade secret redactions from the independent evaluator request for proposal ("RFP") report submitted with the Petition. Attached as Attachment A is an updated RFP report with limited trade secret redactions.

If you have any questions regarding this letter, please do not hesitate to contact me at the number above.

Yours truly,

A handwritten signature in black ink that reads "David R. Moeller".

David R. Moeller

DRM:sr

**CONFIDENTIAL
Attachment A
Offer Description and Evaluation Results**

Table A-1 presents a summary of the proposals that were received in MP’s 2016 wind resource solicitation. A total of 35 projects were proposed, many with mutually-exclusive options such as flat or escalating pricing alternatives, varying terms, and/or delivery alternatives. In all, 94 offers were received.

Table A-1 MP 2016 Wind Resource Solicitation Summary of Received Proposals					
	Participants	Number of Projects	Projects	State	Number of Offers
1	[TRADE SECRET DATA EXCISED]	3	[TRADE SECRET DATA EXCISED]	ND	6
2		1		SD	2
3		4		SD MN SD SD	14
4		2		MN	2
5		1		ND	2
6		1		MN	4
7		2		IA MN	16
8		1		MN	2
9		1		WI	1
10		2		MN SD	12
11		1		SD	1
12		1		MN	1
13		6		SD MN ND ND ND	6
14		1		ND	1
15		2		MN ND	4
16		2		MN	4
17		4		ND MN ND SD	16
	TOTAL	35			94

*This project was proposed at two different capacities (which are depicted in parentheses) and is counted as two projects in the project count column.

Disqualifications

There were several requirements for offer eligibility in MP's 2016 Wind Resource RFP. Two key ones, per RFP sections 2.1 and 2.4, were:

1. offer nameplate capacities could be no greater than 300 MW, and
2. projects' capacities had to be accreditable in Midcontinent Independent System Operator (MISO) Local Resource Zone (LRZ) 1 under current MISO resource adequacy rules.

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Offer Withdrawals

Following the submission of offers and during the course of the review and evaluation process, two bidders notified MP and Sedway Consulting that they wished to withdraw one or more of their projects. Specifically:

- On September 23, 2016, [TRADE SECRET DATA EXCISED] withdrew its [TRADE SECRET DATA EXCISED], leaving [TRADE SECRET DATA EXCISED] still under consideration.
- On September 29, 2016, [TRADE SECRET DATA EXCISED] withdrew its [[TRADE SECRET DATA EXCISED] and on October 26, 2016, its [TRADE SECRET DATA EXCISED] leaving its [TRADE SECRET DATA EXCISED] still under consideration.

Thus, given the four project/offer disqualifications and three project withdrawals, the total number of projects eligible for shortlisting was 28.

Shortlisting

The selection of shortlisted offers/projects from this set of 28 (and 81 associated offers) was based on a combination of quantitative and qualitative considerations. On the quantitative side, as described in the main report, Sedway Consulting modeled all of the offers in its Renewable Bid Evaluation Model (RBEM). The model yielded Levelized \$/MWh Net Cost valuation metrics that were used to rank all of the offers based on their normalized economic value. The top-ranked projects/offers were then reviewed to assess their qualitative benefits or risks. The offers that were ultimately shortlisted had the best

combination of quantitative and qualitative characteristics and, in total, represented a sufficient number of counterparties and capacity to ensure that adequate competition would be maintained during the negotiation process.

Quantitative Evaluation Results

Table A-2 depicts the results of Sedway Consulting's base case evaluation, ranked by Levelized \$/MWh Net Cost. In those cases where a bidder provided multiple offer variations for a project, only a project's best offer is depicted. Thus, the table includes the best of the 28 projects¹ offered. The levelized calculations are described in the main report and were based on a discounting process that used MP's 8.18% discount rate.

Table A-2 depicts the following key information and modeling results:

1. *Capacity*: Nominal capacity of the project.
2. *COD*: Proposed Commercial Operation Date.
3. *Term*: Proposed term of the contract.
4. *Capacity Factor*: Proposed capacity factor based on the hourly wind generation profile provided by the bidder.
5. *Bid Price*: Proposed price of the project - levelized cost in \$/MWh over the term of the contract. For those proposals in which the offered pricing was flat, then the levelized price is that flat price, by definition. For escalating prices, the depicted values reflect that levelized price that would yield the same net present value of payments over the term of the contract.
6. *Debt Equivalence Adjustment*: The cost to MP of having to add additional equity to offset the debt of a long-term PPA to maintain MP's debt-to-equity balance.
7. *Project Energy Value*: The energy value of each project in levelized \$/MWh based on a project's expected hourly energy production and the long-term market energy price forecast for MP's region. A higher number means the project produces energy over more valuable hours in the market.
8. *Project Net Cost*: The overall levelized \$/MWh net cost of a project, with the more negative numbers being better. [TRADE SECRET DATA EXCISED BEGINS. . .

. . . TRADE SECRET DATA EXCISED ENDS]

As discussed below, the three shaded offers in Table A-2 were ultimately selected for MP's short list.

¹ In instances where different project capacities were offered, the size of the best offer for that project is included in the project name.

**Table A-2
Sedway Consulting Net Cost Ranking
MP's 2016 Wind Resource Solicitation**

						Levelized Values (\$/MWh)			
	Bidder/Project	Capacity (MW)	COD	Term (years)	Capacity Factor	Bid Price (A)	Debt Equiv. Cost (B)	Project Energy Value (C)	Project Net Cost [(A + B) - C]
1	[TRADE SECRET DATA EXCISED]								
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									

**Table A-2
Sedway Consulting Net Cost Ranking
MP's 2016 Wind Resource Solicitation**

						Levelized Values (\$/MWh)			
	Bidder/Project	Capacity (MW)	COD	Term (years)	Capacity Factor	Bid Price (A)	Debt Equiv. Cost (B)	Project Energy Value (C)	Project Net Cost [(A + B) - C]
19	[TRADE SECRET DATA EXCISED]								
20									
21									
22									
23									
24									
25									
26									
27									
28									
[TRADE SECRET DATA EXCISED BEGINS. . .									
. . . TRADE SECRET DATA EXCISED ENDS]									

Qualitative Evaluation Results

Sedway Consulting undertook a review of the top-ranked offers and assessed the qualitative benefits and/or degree of proposal development over the following categories:

- Site control
- Resource certainty, schedule, and construction and O&M plans
- Permitting status and ease
- Interconnection status
- Project team experience and financability.

Each category was scored on a five point scale, and the scores were added together to yield a total development potential score (with a maximum value of 25). Through this process, all five categories were given equal weighting. However, in the evaluation team discussions, a project’s interconnection status became a primary qualitative factor, with those projects with executed interconnection agreements viewed significantly more favorably than those who were simply in the MISO interconnection queue.

Table A-3 provides the results of Sedway Consulting’s qualitative assessment for the top-ranked offers, with the three bidders/projects shaded that were ultimately shortlisted.

Table A-3 Sedway Consulting Qualitative Assessment of Top-Ranked Offers MP’s 2016 Wind Resource Solicitation								
	Bidder/Project	Cap. (MW)	Site Control	Resource and Plans	Permits	Interx Status	Team Exper.	Total
1	[TRADE SECRET DATA EXCISED]							
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

Sedway Consulting reviewed the quantitative and qualitative results with MP. The top-ranked offer from a quantitative perspective was [TRADE SECRET DATA EXCISED BEGINS. . .

. . . TRADE SECRET DATA EXCISED ENDS]

The second highest ranked project in the quantitative evaluation was Tenaska's 250 MW Nobles 2 offer. With attractive pricing [TRADE SECRET DATA EXCISED] over the 20-year term), a fairly high qualitative score, and a project location in southwestern Minnesota, this project represented a good option for MP and was shortlisted. [TRADE SECRET DATA EXCISED] Thus, the evaluation team chose to focus the Tenaska negotiation efforts only on Nobles 2 and [TRADE SECRET DATA EXCISED]

[TRADE SECRET DATA EXCISED BEGINS. . .

. . . TRADE SECRET DATA EXCISED ENDS]

The shortlisting of the 250 MW Tenaska Nobles 2 project [TRADE SECRET DATA EXCISED] However, the evaluation team realized that if any complications were encountered – especially in the Tenaska negotiations – this could leave MP well short of its target. Thus, the evaluation team decided it would be best to have a third shortlisted counterparty/project. [TRADE SECRET DATA EXCISED]

[TRADE SECRET DATA EXCISED BEGINS. . .

. . . TRADE SECRET DATA EXCISED ENDS]

Sensitivity Results

MP's Wind RFP stated a preference for proposals that provided for firm transmission service with delivery to MP's MISO load node (MP.MP) and indicated that one of the RFP's goals would be to evaluate the cost to deliver each project's energy to MP's native load. Prior to the receipt of proposals, Sedway Consulting asked MP to provide estimates of the likely differences in locational marginal prices (LMPs) between potential regional wind resource areas and MP.MP. The utility analyzed historical LMPs from the previous two years and provided annual average differentials. However, in discussions between Sedway Consulting and MP, it became clear that such historical differentials may not be representative of the actual differentials that may be experienced over the next 20 years or more. Actual future LMP differentials would be influenced by differences in the growth of specific area loads, the location of future generating resources, the location of existing generating resources that may be retired, and future reinforcements to the MISO transmission grid. Thus, Sedway Consulting decided not to include the LMP differentials in the primary quantitative evaluation, but instead include them in a sensitivity analysis. That analysis is depicted in Table A-4.

Several bidders provided prices for MP.MP physical and/or financial delivery. In those cases, they include "MP.MP" in the project descriptor in the table and there were no LMP adders. For all busbar offers, the LMP estimates were added to their Levelized Net Cost valuation metric. As with Table A-2, Table A-4 depicts the best offer for each project (which may have been the bidder's MP.MP offer with no adder or its busbar offer with MP's LMP estimate). In any case, the ranking depicted in Table A-4 supported the shortlisting of the three selected projects.

Negotiation Process

All bidders were notified of their shortlisting status on November 4, 2016. Negotiations were commenced with Tenaska Nobles 2, [TRADE SECRET DATA EXCISED] after those counterparties executed non-disclosure agreements with MP.

Sedway Consulting monitored the negotiation calls/meetings between MP and each of the shortlisted bidders and believes that MP treated all three bidders fairly. MP's positions on the basic terms and conditions of the wind PPA were consistent between the counterparties. The utility's initial focus was on the Tenaska and [TRADE SECRET DATA EXCISED] agreements, recognizing that these were the highest ranked shortlisted offers and that the combination of these two agreements would satisfy MP's 300 MW wind resource need. Therefore, [TRADE SECRET DATA EXCISED] negotiations were appropriately relegated to a back-up status and were not pursued as vigorously.

[TRADE SECRET DATA EXCISED BEGINS. . .

. . . TRADE SECRET DATA EXCISED ENDS]

Table A-4
Sedway Consulting Net Cost Ranking – LMP Sensitivity
MP's 2016 Wind Resource Solicitation

						Levelized Values (\$/MWh)				
	Bidder/Project	Capacity (MW)	COD	Term (years)	Capacity Factor	Bid Price (A)	Debt Equiv. Cost (B)	LMP Cost (C)	Project Energy Value (D)	Net Cost with LMP [(A + B + C) - D]
1	[TRADE SECRET DATA EXCISED]									
2	[TRADE SECRET DATA EXCISED]									
3	[TRADE SECRET DATA EXCISED]									
4	[TRADE SECRET DATA EXCISED]									
5	[TRADE SECRET DATA EXCISED]									
6	[TRADE SECRET DATA EXCISED]									
7	[TRADE SECRET DATA EXCISED]									
8	[TRADE SECRET DATA EXCISED]									
9	[TRADE SECRET DATA EXCISED]									
10	[TRADE SECRET DATA EXCISED]									
11	[TRADE SECRET DATA EXCISED]									
12	[TRADE SECRET DATA EXCISED]									
13	[TRADE SECRET DATA EXCISED]									
14	[TRADE SECRET DATA EXCISED]									
15	[TRADE SECRET DATA EXCISED]									
16	[TRADE SECRET DATA EXCISED]									
17	[TRADE SECRET DATA EXCISED]									
18	[TRADE SECRET DATA EXCISED]									

Table A-4
Sedway Consulting Net Cost Ranking – LMP Sensitivity
MP's 2016 Wind Resource Solicitation

						Levelized Values (\$/MWh)				
	Bidder/Project	Capacity (MW)	COD	Term (years)	Capacity Factor	Bid Price (A)	Debt Equiv. Cost (B)	LMP Cost (C)	Project Energy Value (D)	Net Cost with LMP [(A + B + C) - D]
19	[TRADE SECRET DATA EXCISED]									
20	[TRADE SECRET DATA EXCISED]									
21	[TRADE SECRET DATA EXCISED]									
22	[TRADE SECRET DATA EXCISED]									
23	[TRADE SECRET DATA EXCISED]									
24	[TRADE SECRET DATA EXCISED]									
25	[TRADE SECRET DATA EXCISED]									
26	[TRADE SECRET DATA EXCISED]									
27	[TRADE SECRET DATA EXCISED]									
28	[TRADE SECRET DATA EXCISED]									

[TRADE SECRET DATA EXCISED BEGINS . . .

. . . TRADE SECRET DATA EXCISED ENDS]

Sedway Consulting believes that the 250 MW Tenaska Nobles 2 contract represents the best resource from MP's customers that was offered in response to MP's 2016 Wind Resource RFP.

STATE OF MINNESOTA)
)ss
COUNTY OF ST. LOUIS)

AFFIDAVIT OF SERVICE VIA
ELECTRONIC FILING

SUSAN ROMANS of the City of Duluth, County of St. Louis, State of Minnesota, says that on the **6th** day of **November, 2018**, she served Minnesota Power’s Reply Comments in **Docket No. E-015/M-18-545** on the Minnesota Public Utilities Commission and the Office of Energy Security via electronic filing. The persons on E-Docket’s Official Service List for this Docket were served as requested.



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