

PUBLIC VERSION

**STATE OF MINNESOTA
BEFORE THE PUBLIC UTILITIES COMMISSION**

Katie Sieben	Chair
Joseph Sullivan	Vice-Chair
Valerie Means	Commissioner
Matt Schuerger	Commissioner
John Tuma	Commissioner

In the Matter of Minnesota Power’s Petition
for Approval of the Acquisition of Solar Power
to Support Economic Relief and Recovery

DOCKET NO. E-015/M-20-828

**COMMENTS OF THE OFFICE OF
THE ATTORNEY GENERAL**

INTRODUCTION

The Office of the Attorney General—Residential Utilities Division (“OAG”) respectfully submits the following Comments in response to the February 4, 2021 petition of Minnesota Power (“Company”) for approval of a power purchase agreement (“PPA”) for 20 megawatts (“MW”) of energy and capacity from three solar facilities to be constructed by its affiliate. The Company argues that the high price of the PPA is justified because of the economic stimulus benefits the projects may bring to the region. But because the bill impact to ratepayers would dwarf any economic benefit these projects may have, the Commission should find that the PPA is not in the public interest, decline to approve it, and require Minnesota Power to conduct an open, competitive procurement process for solar generation.

BACKGROUND

I. PROCEDURAL HISTORY

On May 20, 2020, the Commission opened an investigation into utility investments that may assist in Minnesota’s recovery from the COVID-19 pandemic. The Commission asked utilities to identify “ongoing, planned, or possible investments” that:

- Provide significant utility system benefits;

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- Are consistent with approved resource plans, approved natural gas distribution infrastructure or pipeline safety plans, triennial conservation plans, and existing Commission orders;
- Reduce carbon or other pollutant emissions in the power sector or across economic sectors;
- Increase access to conservation and clean energy resources for Minnesotans;
- Create jobs or otherwise assist in economic recovery for Minnesotans; and
- Use woman, veteran, or minority owned businesses as much as possible and provide documentation of these efforts.¹

On November 13, 2020, Minnesota Power notified the Commission of its intent to pursue approximately 20 MW of utility-scale solar projects to support economic recovery. The Company requested that the Commission process its forthcoming petition on an expedited schedule to allow for a commercial operation date by the end of 2021.

On February 4, 2021, Minnesota Power filed a petition seeking Commission approval of a PPA and related lease agreements that would allow the Company to obtain energy and capacity from three solar projects to be constructed and operated by its affiliate.

On February 16, the Commission issued an order finding that four months would be a reasonable period to review the Company's proposal.

II. MINNESOTA POWER'S PROPOSAL

Minnesota Power proposes to develop, through its affiliate ALLETE Enterprises, Inc., three solar facilities with a combined capacity of 21.2 MW, for a total investment of approximately \$40 million. Figure 1 lists the three solar projects, their location, and their proposed capacities:

¹ Docket No. E,G-999/CI-20-492, Notice of Reporting Required by Utilities (May 20, 2020).

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Figure 1: Minnesota Power’s Proposed Solar Projects

<u>Name</u>	<u>Location</u>	<u>Capacity</u>
Laskin Solar Project	Hoyt Lakes	9.6 MW
Sylvan Solar Project	Near Brainerd	10.0 MW
Duluth Solar Project	Duluth	<u>1.6 MW</u>
		21.2 MW

Two of the projects—Laskin and Sylvan—would be located on Minnesota Power property, but the Company would not own any of the projects. Instead, they would be built and operated by ALLETE Enterprises, who would sell their output to the Company under a 25-year PPA, while leasing the Laskin and Sylvan sites from the Company at no cost.²

Both individually and collectively, the levelized cost of the proposed projects is well above the prices of competitively procured solar projects. Minnesota Power estimates that the cost to ratepayers of all three projects would be [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS] per megawatt-hour (“MWh”) on a levelized-cost basis.³ The individual projects’ estimated costs vary, with Sylvan at the low end and Duluth at the high end. Specifically, the levelized cost by project are [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS].⁴

Minnesota Power seeks approval of the PPA and the two leases under the affiliated-interest statute, Minn. Stat § 216B.48. Moreover, in apparent acknowledgment that the PPA price reflects a substantial premium, the Company asks the Commission to find that the projects are “a reasonable and prudent way for the Company to continue to work towards meeting its obligations”

² The Duluth site would be leased from the City of Duluth at the market rate.

³ Minnesota Power’s Petition for Approval of 20 MW of Solar Projects at 31 (Feb. 4, 2021) (hereinafter “MP Petition”).

⁴ *Id.*

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under the renewable-energy standard, Minn. Stat. § 216B.1691. And it requests that the Commission “authorize Minnesota Power to recover the PPA and lease costs through Commission-approved methods for solar resources.”⁵

ANALYSIS

Under Minn. Stat. § 216B.1645, the Commission is tasked with approving or disapproving utility PPAs used to satisfy the renewable energy objectives and standards in section 216B.1691.⁶ Additionally, because the PPA counterparty in this case is an affiliate of Minnesota Power, the Commission’s approval of the PPA is governed by the affiliated-interest statute, Minn. Stat. § 216B.48. Under that statute, the Commission may only approve a utility’s contract with an affiliated interest “if it clearly appears and is established upon investigation that [the contract] is reasonable and consistent with the public interest.”⁷

The Commission should find that the proposed PPA, and underlying projects, are not in the public interest for two reasons. First, the PPA is priced well above the market rate for similarly sized projects, and if approved would impose a hefty bill impact on ratepayers over the life of the projects. Second, although the projects are likely to bring some economic benefits to Minnesota Power’s service area, the amount of these benefits is dwarfed by the price premium. It would be unreasonable to burden ratepayers with greatly overpriced solar projects for a relatively small stimulus benefit. Therefore, if the Commission wants Minnesota Power to proceed with a solar acquisition, it should require the Company to conduct an open, competitive procurement process to ensure that the Company obtains stimulus benefits at the lowest possible cost to ratepayers.

⁵ *Id.* at 1.

⁶ Minn. Stat. § 216B.1645, subd. 1.

⁷ Minn. Stat. § 216B.48, subd. 3.

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I. THE PROPOSED PPA IS NOT IN THE PUBLIC INTEREST.

The affiliated-interest statute requires Minnesota Power to establish that the proposed PPA is in the public interest. For two reasons, the Company has failed to do so. First, the PPA is priced much higher than comparable PPAs for small solar projects. Second, the substantial bill impact of the PPA premium far outweighs any economic benefit that these projects would bring to Minnesota Power's service territory. For these reasons, the Commission should find that the proposed PPA is not in the public interest.

A. The PPA Is Priced Well Above the Market Rate for Small Solar.

The first reason that the proposed solar projects are not in the public interest is that they cost significantly more on a levelized-cost basis than competitively priced projects. The proposed PPA price is [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS] in the first year, escalating at [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS] per year.⁸ Minnesota Power states that this pricing structure yields a levelized cost of [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS] over the life of the PPA. It appears, however, that the levelized cost is substantially higher than the Company's estimate. Using the first-year price and the escalation factor provided by the Company, the OAG calculates a levelized cost of [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS],⁹ almost nine percent higher than the Company's estimate.

Whichever figure is used, the projects' levelized cost compares unfavorably with competitively priced solar PPAs. The 25th-percentile price of solar PPA offers for projects in

⁸ MP Petition at 36.

⁹ See Attachment A to these Comments.

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MISO's Minnesota hub was \$35/MWh in the fourth quarter of 2020.¹⁰ This price reflects large projects whose economies of scale make them more cost-effective than smaller projects. To allow for an apples-to-apples comparison with Minnesota Power's proposal, the OAG calculated a small-solar inflation factor to account for the lower economies of scale of a small project. Specifically, the OAG used installed-cost data from Lawrence Berkeley National Laboratory that is provided in Table 4 of Minnesota Power's petition to determine that projects sized from 20 to 50 MW are 36.6 percent more expensive on a per-watt basis than projects sized from 100 to 200 MW.¹¹ Applying this inflation factor to the 25th-percentile offer price for the Minnesota hub yields a competitive small-solar offer price of \$47.81/MWh.¹²

The bill impact of Minnesota Power's proposal would be enormous. The OAG estimates that ratepayers would pay **[TRADE SECRET DATA BEGINS** **TRADE SECRET DATA ENDS]** more under the Minnesota Power's proposed PPA than under a competitively priced PPA over the lifetime of the projects.¹³ And this estimate is likely conservative considering offers Otter Tail Power Company received in a competitive procurement process that resulted in that company's 50 MW Hoot Lake solar project.¹⁴ Otter Tail's Hoot Lake site and Minnesota Power's Sylvan site are at the same latitude and less than 100 miles apart. These projects should have a very similar solar resource and, presumably, price. The fact that Minnesota Power's PPA price is dramatically higher suggests that it is a bad deal for ratepayers.

¹⁰ LEVELTEN ENERGY, NORTH AMERICA Q4 2020 PPA PRICE INDEX at 25 (Jan. 12, 2021), available at <https://perma.cc/3HRJ-MJJB> (fill out form to download report).

¹¹ $\$1.53/\text{watt} - \$1.12/\text{watt} = \$0.41/\text{watt}$; $\$0.41/\text{watt} / \$1.12/\text{watt} = 0.366$

¹² $\$35/\text{MWh} * 1.366 = \$47.81/\text{MWh}$

¹³ See Attachment A to these Comments.

¹⁴ See *In the Matter of Otter Tail Power Company's 2017–2031 Resource Plan*, Docket No. E-017/RP-16-386, Otter Tail Compliance Filing, Trade Secret Ex. 1 (July 1, 2020) (summarizing offers).

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Minnesota Power provides a “project cost comparison” that purports to show that the projects are “in line with the average cost” of recently installed solar projects in the United States.¹⁵ But the Company’s analysis overstates the costs of comparable projects in two ways, which understates the price premium of its own proposal.

First, Minnesota Power compares the cost of its proposal to that of smaller projects, which are typically more expensive on a \$/watt basis and therefore not appropriate comparisons. The Lawrence Berkeley National Laboratory (“LBNL”) data that the Company relies on includes four size groups: 5–20 MW, 20–50 MW, 50–100 MW, and 100–200 MW.¹⁶ Minnesota Power inappropriately compares the costs of its projects—which would have an installed capacity of 21.2 MW—with LBNL’s 5–20 MW group. It would be more appropriate to compare the cost of the Company’s project with the average cost of the 5–20 MW and 20–50 MW groups. The average of the two groups is \$1.64/watt, which is 18 percent below Minnesota Power’s proposal’s \$1.93/watt.¹⁷

Second, Minnesota Power compares the costs of its proposal—which has a commercial-operation date of 2022—to solar projects with 2019 commercial-operation dates. This is a misleading comparison because installed solar costs have fallen significantly over time. According to LBNL data, installed costs for 5–50 MW solar projects have fallen by nine percent per year on average over the past four years.¹⁸ Given this steady year-over-year decline in solar costs, it is not reasonable to compare Minnesota Power’s proposal with projects that are three years older.

¹⁵ MP Petition at 33.

¹⁶ *Id.* at 34 tbl.4.

¹⁷ *See id.* at 33–34.

¹⁸ *See* MARK BOLLINGER ET AL., LBNL, UTILITY-SCALE SOLAR 2016: AN EMPIRICAL ANALYSIS OF PROJECT COST, PERFORMANCE, AND PRICING TRENDS IN THE UNITED STATES at 17 fig.11 (Sept. 2017); MARK BOLLINGER ET AL., LBNL, UTILITY-SCALE SOLAR: EMPIRICAL TRENDS IN PROJECT TECHNOLOGY, COST, PERFORMANCE, AND PPA PRICING IN THE UNITED STATES – 2018 EDITION at 17 fig.11 (Sept. 2018); MARK BOLLINGER ET AL., LBNL, UTILITY-SCALE SOLAR: EMPIRICAL TRENDS IN PROJECT TECHNOLOGY, COST, PERFORMANCE, AND PPA PRICING IN THE UNITED STATES (Footnote Continued on Next Page)

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B. The Projects' Potential Stimulus Benefits Do Not Justify the PPA Premium.

The second reason that the PPA is not in the public interest is that the cost far outweighs any stimulus benefit the projects may bring. By Minnesota Power's own estimate, the projects will result in only \$15.4 million in regional economic benefits,¹⁹ or [TRADE SECRET DATA BEGINS] [TRADE SECRET DATA ENDS] of the PPA's price premium.²⁰ Moreover, Minnesota Power likely overestimates the local economic benefit of the projects. The Company modeled the economic impact of fabricated-metal-products manufacturing to "simulate purchases of racking piles."²¹ Yet, in response to information requests, the Company conceded that "the projects' racking piles, trackers, substation, and inverter skids will not be manufactured locally."²² When these components that Minnesota Power admits will not be manufactured locally are excluded from the model, the economic benefit falls to \$10.9 million, or only [TRADE SECRET DATA BEGINS] [TRADE SECRET DATA ENDS] of the lifetime PPA premium.²³

For all the foregoing reasons, Minnesota Power's proposed PPA is not a reasonable way to serve ratepayers or meet the Company's solar-energy-standard obligations: The price of the PPA represents a substantial premium over the market rate for similarly sized solar projects. Over the lifetime of the PPA, this price premium would yield increased costs that are far greater than the projected local economic benefits. And the burden of the higher bills that result from these projects

STATES – 2019 EDITION at 21 fig.11 (Dec. 2019); MARK BOLLINGER ET AL., LBNL, UTILITY-SCALE SOLAR DATA UPDATE: 2020 EDITION at 19 (Nov. 2020) (all reports available at <https://eta-publications.lbl.gov/>).

¹⁹ *Id.* App. B at 3 tbl.1.

²⁰ The timeframe the Company used for its economic-benefits analysis was 15 years, which is 10 years shorter than the PPA term. But Minnesota Power expects that most of the economic benefits will occur in the first two years, with the projected benefits in the later years being very small. By 2035, for example, the projected annual benefits represent only 0.6 percent of the total benefits under the Company's analysis. *Id.* Thus, even if Minnesota Power had examined economic benefits for the full PPA term, doing so would not have changed the conclusion that the projects are unreasonably overpriced for the stimulus benefit they are projected to deliver.

²¹ *Id.* App. B at 4.

²² MP Resp. to OAG Info. Request No. 8 at 1 (Attachment B to these Comments).

²³ *Id.* at 3 tbl.1.

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would fall disproportionately on residential ratepayers, including low-income customers who are least able to afford an increase in the cost of essential services.

II. MINNESOTA POWER’S FAILURE TO SOLICIT COMPETING BIDS MEANS THAT IT SHOULD PERFORM A NEW SOLAR PROCUREMENT.

The price premium of Minnesota Power’s proposed solar projects appears to be a direct result of the Company’s decision to preselect specific sites and award the contract to its affiliate rather than use an open, competitive process. At minimum, the Company’s failure to solicit competing bids by other developers for other locations has deprived the Commission of a full record on which to determine the reasonableness of the projects. Without that record, Minnesota Power cannot carry its burden to show that the projects are competitively priced or that their projected economic benefits would justify their price compared to competing alternatives. The Commission should therefore reject these projects and require the Company to initiate a competitive process for solar generation, as the Commission previously ordered it to do.

Utilities routinely use competitive procurement to acquire new generation. The purpose of a competitive process is to protect ratepayers by obtaining the lowest possible price for resources. The Commission has itself emphasized the importance of using open, competitive procurement—particularly when a utility is advancing its own proposal. For example, in establishing Xcel Energy’s two-track bidding process, the Commission stated, “The purpose of the competitive process—getting the best overall price for ratepayers—cannot be achieved without robust competition.”²⁴ The Commission further stated that the “clear and unavoidable conflict of interest”

²⁴ *In the Matter of Northern States Power Company d/b/a Xcel Energy’s Application for Approval of Its 2004 Resource Plan*, Docket No. E-002/RP-04-1752, Order Establishing Resource Acquisition Process, Establishing Bidding Process Under Minn. Stat. § 216B.2422, Subd. 5, and Requiring Compliance Filing at 6 (May 31, 2006).

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that exists when a utility's own proposal is involved only increases the importance of a process that is open, transparent, and subject to rigorous oversight.²⁵

Moreover, the Commission has *specifically ordered* Minnesota Power to use a competitive process to obtain new solar resources. In 2015, the Company sought approval of the Camp Ripley project, a 10 MW solar facility to be built at the Minnesota Army National Guard base near Little Falls. The levelized cost for the Camp Ripley project was [TRADE SECRET DATA BEGINS

TRADE SECRET DATA ENDS], which was high even for that time.²⁶ One of the factors contributing to the high cost of the project was an above-market-value land lease. In approving the project, the Commission acknowledged the importance of siting the project at Camp Ripley but stated that “ordinary competitive processes to choose project sites help reduce costs, and will be expected in future solar projects.”²⁷ The Commission ordered that, “[a]s part of its next solar resource acquisition and for future acquisitions of solar generation, Minnesota Power shall use an open, competitive process, including consideration of numerous locations.”²⁸

Minnesota Power failed to follow the Commission's directive in advancing the proposed solar projects in this case, selecting both a developer and specific sites without using a competitive bidding process. The Company provides several reasons that it did not use a competitive process and belatedly asks the Commission to “waive” the Camp Ripley order's requirement to use competitive procurement. The Commission should decline to waive this requirement. Instead, it should direct Minnesota Power to undertake a competitive procurement so that the Commission

²⁵ *Id.* at 7.

²⁶ See *In the Matter of the Petition of Minnesota Power for Approval of Investments and Expenditures in the Camp Ripley Solar Project for Recovery Through Minnesota Power's Renewable Resources Rider*, Docket No. E-015/M-15-773, Comments of the Department of Commerce at 3 (Oct. 14, 2015). For comparison, the Commission had recently approved some larger Xcel Energy solar projects that had an average levelized cost of \$73.20/MWh. *Id.*

²⁷ Docket No. E-015/M-15-773, Order Granting Petition in Part and Requiring Reevaluation of Solar Energy Adjustment Rider at 6 (Feb. 24, 2016).

²⁸ *Id.* at 8.

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can be confident that the project, or projects, selected will bring the greatest possible benefits for ratepayers and society.

Minnesota Power paints competitive procurement and economic stimulus as irreconcilable goals. But there is no inherent conflict between ensuring that ratepayers receive the best possible price for solar generation and delivering economic benefits to Minnesota. And the Commission has recognized that stimulus projects should not be undertaken without regard to their cost. In opening the inquiry into utility investments that could aid recovery, the Commission specifically stated that stimulus projects should be “consistent with approved resource plans, approved natural gas distribution infrastructure or pipeline safety plans, triennial conservation plans, and *existing Commission orders*.”²⁹ The Commission thus signaled that it was not asking utilities to circumvent normal processes or existing requirements put in place to protect ratepayers.

Minnesota Power advances a series of arguments to justify its failure to conduct an open, competitive procurement process.³⁰ Every one of these arguments is misplaced. Perhaps the most obviously false argument is that a competitive process could not have been completed within an expedited timeframe. The Commission issued its request for information on potential stimulus projects in May 2020, and Minnesota Power had more than eight months to complete a competitive procurement process and file a responsive proposal in early 2021. Any delay in launching these projects, therefore, is not the fault of competitive bidding but of the Company disregarding the Commission’s prior order. While expediting these projects may be desirable from a stimulus perspective, ratepayers should not be punished for the Company’s error by being forced to pay for projects that are grossly uneconomical.

²⁹ Docket No. E,G-999/CI-20-492, Notice of Reporting Required by Utilities (May 20, 2020) (emphasis added).

³⁰ MP Petition at 25–27.

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Similarly misguided is the Company's argument that an open procurement would not allow the Company to "intentionally spread investment opportunities equitably across its service territory" or "specifically target local products and structure the proposed service agreements to maximize the potential for bids from local and diverse suppliers."³¹ Minnesota Power presents the Commission with a false dilemma. Factors such as locally sourced components or labor can be accounted for and prioritized in an open procurement process. Instead of crafting a bid invitation that (for example) assigns points to these factors, Minnesota Power simply awarded an overpriced project to its affiliate. In so doing, the Company deprived the Commission of the information necessary to make an informed decision about whether the projects' costs and benefits are reasonable when compared to competing proposals' costs and benefits.

CONCLUSION

Minnesota Power's decision to not to follow the Commission's order to use competitive bidding, and instead to ask for a "waiver" at this late date, puts the Commission in the difficult position of delaying a project that could bring economic benefits to the state. Minnesota law, however, guides the Commission in this situation. The Commission is only to approve an affiliated-interest agreement, such as the proposed PPA, if the utility clearly establishes that it is in the public interest. By failing to undertake a competitive procurement process, Minnesota Power has created a circumstance in which it cannot meet its burden. The Commission should therefore direct the Company to undertake an open, competitive procurement process to ensure that the paramount interests of ratepayers are protected.

For all the foregoing reasons, the OAG recommends that the Commission take the following actions:

³¹ *Id.* at 25–26.

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1. Find that the proposed PPA is not in the public interest; and
2. Require Minnesota Power to complete a competitive bidding process to procure up to 30 MW of solar PPAs, subject to the following conditions:
 - a. Minnesota Power shall employ an independent auditor to oversee the competitive bidding process;
 - b. The competitive-bidding process shall include a request for proposals that is posted publicly, open to any interested developer, and not limited to any specific location;
 - c. Minnesota Power's proposed bidding process, timeline, evaluation criteria, and request-for-proposals language shall be filed with the Commission at least one month prior to the issuance of the request for proposals; and
 - d. Following its review of the proposals, Minnesota Power shall make a compliance filing detailing the results of the competitive bidding process and its proposed next steps. The independent auditor's report shall be included as an attachment to the compliance filing.

Dated: March 15, 2021

Respectfully submitted,

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ATTORNEYS FOR OFFICE OF
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RESIDENTIAL UTILITIES DIVISION

Attachment A

MP's proposed solar project				Market rate PPA			
[TRADE SECRET DATA BEGINS ...							
Total energy (MWh)				Total energy (MWh)			
Total payments (\$)				Total payments (\$)			
Levelized cost (\$/MWh)				Levelized cost (\$/MWh)			
				MP Premium (\$)			
Year	\$/MWh	MWh	Payments	Year	\$/MWh	MWh	Payments
1				1			
2				2			
3				3			
4				4			
5				5			
6				6			
7				7			
8				8			
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				... TRADE SECRET DATA ENDS]			

OAG No. 008

**State of Minnesota
Office of The Attorney General
Utility Information Request**

In the Matter of Minnesota Power's Petition for Approval of the Acquisition of Solar Power to Support Economic Relief and Recovery **MPUC Docket No.** E-015/M-20-828

Requested from: Minnesota Power

Requested By: Andrew Twite

Date of Request:
Due Date:

February 19, 2021
March 3, 2021

Reference: MP's February 4, 2021 filing, Appendix B, pages 4-5.

In the "Materials and Equipment" section of Appendix B, the Company states it included in its economic analysis "Fabricated metal product manufacturing [...] to simulate purchases of racking piles." In addition, the company also includes an amount "to simulate purchases of trackers, substation, inverter skids, etc."

- A. Does MP expect the racking piles, trackers, substation, and inverter skids to be manufactured within its service territory?
- If yes, provide (separately for each component): the name of the company that MP plans to purchase the component from, the location of the manufacturing facility, and the projected contract price.
 - If no, explain why MP believes it is appropriate to include these costs in its regional economic impact analysis.
- B. Provide an updated version of "Table 1: Economic Impacts of three solar projects totaling 20 MW in 2021" that excludes "racking piles" and "trackers, substation, inverter skids, etc."

Company Response:

- A. No, the projects' racking piles, trackers, substation, and inverter skids will not be manufactured locally; however, it's entirely appropriate to include these costs in its regional economic impact analysis for two interrelated reasons:

First, modeling increased demand within the Minnesota Power region for racking piles, trackers, substation, and inverter skids within REMI does not mean they're assumed to be manufactured within the region. The REMI model can discern between general categories

of goods that can be produced domestically and goods that must be imported. The REMI model is customized to Minnesota Power’s regional economy using publicly available economic data from the Bureau of Labor Statistics and Bureau of Economic Analysis (among others), and the model uses this information on to map local industry composition and ability to produce and supply specific goods.

Minnesota Power chose to model the materials and equipment associated with this project as an increase in regional demand for Fabricated Metal Products and Electrical Equipment, Appliance, and Components. REMI was allowed to discern what impact this had on domestic production and imports of final and intermediate goods required to meet the modeled increase in regional demand.

The table below compares the model inputs representing equipment purchases during procurement and construction (2020 & 2021) to the model’s estimated change in imports. The results of simulating “PV Modules & Equipment” costs show REMI is correctly inferring a significant portion (about 40%) of all module, equipment, and materials value is imported, and about 60% is produced within the region. This 60% is not equal to the share of costs related to PV Modules, which represent about 50% of material costs, but it’s a reasonably close approximation. The same cannot be said for the results of a simulation where equipment costs are excluded and only PV Module costs are simulated, which highlights the second reason Minnesota Power included equipment costs its regional economic impact analysis.

Equipment Spend vs Simulated Imports in 2020 and 2021 (Nominal Dollars)

	PV Modules & Equipment*	Just PV Modules
Model Input: Plant PV Module Procurement	9,704,373	9,704,373
Model Input: Other Equipment and Materials Procurement	9,794,283	-
Modeled Increase in Import of Manufactured Goods**	7,925,126	3,973,870
Inferred Value of Domestically Produced Equipment	12,031,622	5,988,747

*Racking piles, trackers, substation, inverter skids, all other equipment

**Closely related goods such as machinery, fabricated metals, and electrical equipment

Secondly, the REMI model is not granular enough to model procurement from a specific local PV Module manufacturer, and will infer a significant portion of the PV Modules’ value is actually imported if PV Module costs are the only modeled input. The REMI model still assumes about 40% of all module, equipment, and materials value is imported, and about 60% is produced within the region. By not simulating an increase in demand for *all* equipment and materials, the REMI model will underestimate the regional economic impacts by understating domestic production. Also, by excluding the equipment spending, the model will infer a smaller overall capital project requiring fewer imports, less transportation resources, and less taxable economic activity.

The Company recognizes real-world conditions will differ considerably from detailed model specifications or assumptions, and will always review results for reasonableness when there’s a possible discrepancy. In this case, the simulated economic impacts are

reasonable since the model is inferring roughly the correct mix of imports and domestic product.

- B. Per the OAG request, Minnesota Power re-ran the economic impact simulation in REMI, but excluded any increased regional demand for ‘racking piles’ and ‘trackers, substation, inverter skids, etc.’

Appendix B, Table 1 revised to exclude spending on all equipment other than PV modules

20 MW of New Solar in 2021		Construction					Operating										
Category	Units	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Total Employment (Individuals)	Individuals (Jobs)	6	64	5	4	2	1	1	1	1	1	1	1	1	1	1	1
Gross Domestic Product (\$1000)	Thousands (Nominal \$)	1,889	6,190	214	175	93	54	38	34	38	43	50	56	60	63	64	63
Population (Individuals)	Individuals	2	23	18	15	12	10	9	8	7	6	6	5	5	5	4	4
Local Government Spending (\$1000)	Thousands (Nominal \$)	114	489	293	183	123	90	71	61	54	50	47	45	43	41	39	37
Empl. - Natural Resources	Individuals (Jobs)	0	0	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	-
Empl. - Construction	Individuals (Jobs)	0	40	1	0	0	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	0
Empl. - Manufacturing	Individuals (Jobs)	1	1	0	0	(0)	(0)	(0)	(0)	(0)	0	0	0	0	0	0	0
Empl. - Retail and Wholesale	Individuals (Jobs)	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Empl. - Transport and Utilities	Individuals (Jobs)	0	1	0	0	0	(0)	-	0	0	0	0	0	0	0	0	0
Empl. - Finance, Insurance,...	Individuals (Jobs)	0	1	(0)	0	0	0	-	0	0	0	0	0	0	0	0	0
Empl. - Services	Individuals (Jobs)	2	11	0	1	0	0	0	0	0	0	0	0	1	1	1	1
Empl. - Government	Individuals (Jobs)	1	5	3	2	1	1	1	1	1	1	1	1	1	1	1	1
Empl. - Farm	Individuals (Jobs)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Economic impact modeling is a balance of art and science, and Minnesota Power recognizes results may vary depending on modeling assumptions and techniques. The results above in the revised Table1 are plausible, and simply excluding the added regional demand for ‘racking piles’ and ‘trackers, substation, inverter skids, etc.’ associated with these projects is a valid approach to modeling economic impacts when the expectation is that all equipment will be imported.

However, the detailed model results discussed in part A of this response suggest this approach would likely underestimate the solar projects’ economic impacts since the model inherently assumes much of the PV Module’s value will be imported and not produced domestically.



The Office of
Minnesota Attorney General Keith Ellison
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March 15, 2021

Mr. Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

Re: *In the Matter of Minnesota Power's Petition for Approval of the Acquisition of Solar Power to Support Economic Relief and Recovery*
MPUC Docket No. E-015/M-20-828

Dear Mr. Seuffert:

Enclosed and e-filed in the above-referenced matter please find Public and Trade Secret Comments of the Minnesota Office of the Attorney General—Residential Utilities Division.

By copy of this letter all parties have been served. A Certificate of Service is also enclosed.

Sincerely,

/s/ Peter G. Scholtz

PETER G. SCHOLTZ

Assistant Attorney General

(651) 757-1473 (Voice)

(651) 296-9663 (Fax)

peter.scholtz@ag.state.mn.us

Enclosure

CERTIFICATE OF SERVICE

Re: *In the Matter of Minnesota Power's Petition for Approval of the Acquisition of Solar Power to Support Economic Relief and Recovery*
MPUC Docket No. E-015/M-20-828

I, JUDY SIGAL, hereby certify that on the 15th day of March, 2021, I e-filed with eDockets *Public and Trade Secret Comments of the Minnesota Office of the Attorney General—Residential Utilities Division* and served a true and correct copy of the same upon all parties listed on the attached service list by e-mail, electronic submission, and/or United States Mail with postage prepaid, and deposited the same in a U.S. Post Office mail receptacle in the City of St. Paul, Minnesota.

/s/ Judy Sigal
JUDY SIGAL

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Elizabeth	Brama	ebrama@taflaw.com	Taft Stettinius & Hollister LLP	2200 IDS Center 80 South 8th Street Minneapolis, MN 55402	Electronic Service	No	OFF_SL_20-828_M-20-828
Matthew	Brodin	mbrodin@taflaw.com	Taft Stettinius & Hollister LLP	2200 IDS Center 80 South Eighth Street Minneapolis, MN 55402	Electronic Service	No	OFF_SL_20-828_M-20-828
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1400 St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_20-828_M-20-828
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No	OFF_SL_20-828_M-20-828
David	Moeller	dmoeller@allte.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	Yes	OFF_SL_20-828_M-20-828
Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes	OFF_SL_20-828_M-20-828
Anne	Rittgers	arittgers@mpower.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	OFF_SL_20-828_M-20-828
Will	Seuffert	Will.Seuffert@state.mn.us	Public Utilities Commission	121 7th Pl E Ste 350 Saint Paul, MN 55101	Electronic Service	Yes	OFF_SL_20-828_M-20-828