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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 Xcel Energy's 2020–2034
Upper Midwest Integrated Resource Plan

DOCKET NO. E-002/RP-19-368

SUPPLEMENTAL COMMENTS OF THE
OFFICE OF THE ATTORNEY GENERAL

INTRODUCTION

The Office of the Attorney General – Residential Utilities Division (“OAG”) respectfully submits these Supplemental Comments in response to the Commission’s July 28, 2021 Second Notice of Extended Supplemental Comment Period regarding the Xcel Energy’s (“Xcel” or “the Company”) 2020–2034 Upper Midwest Integrated Resource Plan (“IRP”).

Xcel’s Reply Comments provided a new preferred plan—the “Alternate Plan”—that differs markedly from the resource plan included in the Company’s June 30, 2020 Resource Plan Supplement. In one major way, the Alternate Plan is an improvement, as it does not include a new combined cycle gas plant (“the Sherco CC”), which would have significantly and needlessly increased costs for customers.

However, in place of the Sherco CC Xcel proposed to build a large new gen-tie line and enormous amounts of Xcel-owned renewable generation. The proposed Sherco gen-tie line alone would cost customers nearly [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS] billion dollars. Moreover, the Company itself acknowledged that Xcel-owned solar generation would be significantly more expensive than “generic” solar procured through a competitive

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bidding process. Thus, the requirement that Xcel own the lion's share of the new generation along the gen-tie lines could end up costing customers billions of dollars more.

Xcel defended its Alternate Plan using its capacity expansion modeling. This modeling, however, was systematically biased in favor of Xcel's preferred plan. The flaws in the Company's modeling are so rampant and so severe that its results cannot be relied upon to determine whether its Alternate Plan is in the public interest.

For these reasons and as further explained in these Comments, Xcel's Alternate Plan is not in the public interest. In lieu of the proposed Sherco gen-tie line, the OAG continues to recommend that the Commission require Xcel to complete an open, competitive bidding process to procure solar-plus-storage projects. Open, competitive bidding processes have routinely resulted in pricing far below utilities' resource plan projections. Harnessing competition will ensure that customers are getting the best possible value for their money.

ANALYSIS

I. XCEL'S PROPOSED SHERCO GEN-TIE LINE WOULD ENTAIL SIGNIFICANT COSTS AND RISKS FOR CUSTOMERS.

The most significant difference between Xcel's Alternate Plan and the preferred plan included in its Resource Plan Supplement is the Alternate Plan's replacement of the Sherco CC with "gen-tie" lines that would allow the Company to reuse the existing interconnection rights when its Sherco and King coal units retire. This section focuses on the largest proposed gen-tie line, the Sherco gen-tie, which would run approximately 140 miles between the existing Sherco interconnection point near Becker, Minnesota and Lyon County in southwestern Minnesota. Subsections A and B discuss the costs and risks inherent in the proposed Sherco gen-tie, and subsection C describes a recent Xcel filing that provides a cautionary tale of the potential harm that could befall Xcel's customers if its Sherco gen-tie were approved.

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A. The Sherco Gen-tie Line Would Be a Major Capital Investment.

In its Reply Comments, Xcel claimed that the cost of its proposed Sherco Gen-tie would be lower—on a per kW basis—than the interconnection costs for other new wind or solar projects in the region. According to Xcel, the Sherco gen-tie’s cost would be “under \$140/kW” of new generation on the line, which is significantly lower than Xcel’s interconnection cost estimates for generic wind and solar projects.¹ However, this comparison is misleading, as Xcel both understated the cost of the Sherco gen-tie and overstated the interconnection costs for new wind and solar projects.

Xcel’s Sherco gen-tie cost estimate understates costs in at least two ways. First, the per-kW gen-tie cost stated by Xcel includes the replacement generation for all three Sherco units, which is inappropriate considering the gen-tie will only be used for replacement generation for the Sherco 1 and 3 retirements.² When only the Sherco 1 and 3 replacement generation is included, the Sherco gen-tie’s capital cost would be roughly \$170 per kW. Second, in order to arrive at its per-kW cost estimate, Xcel assumes an unrealistic amount of new generation will be allowed to utilize the line. Sherco 1 and 3’s combined interconnection rights are under 1,300 MW, yet Xcel’s modeling included over 3,100 MW of replacement generation on the Sherco gen-tie, including 1,600 MW of generic wind in the 2030s.³⁴ It is highly speculative to claim that this much new generation will be able to be added to the line, and even if it is technically possible, it will likely result in significant curtailments and/or capacity accreditation derates. If this 1,600 MW of generic wind is unable to be interconnected on the gen-tie, the per-kW cost of the Sherco gen-tie would increase to nearly \$350.

¹ Xcel Energy Reply Comments at 117.

² As proposed, Sherco 2’s replacement generation would be located near the existing Sherco point of interconnection and would not utilize the new gen-tie line. Further, the Sherco gen-tie line’s proposed in-service date (2027) would fall outside of Sherco 2’s “replacement resource window” as stated by Xcel on page 109 of its Reply Comments.

³ Xcel Energy Reply Comments at 109 tbl.4-8.

⁴ Xcel Energy’s response to OAG Information Request 14 (Sept. 22, 2021) (eDocket No. [20219-178189-01](#)).

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Xcel also overstated the interconnection cost for new generic renewables. In its capacity expansion modeling, Xcel added an interconnection cost of \$500 per kW for new wind projects and \$200 per kW for solar projects. However, Xcel’s own analysis of the interconnection costs of the most recently completed MISO West renewable projects found interconnection costs of just \$157 per kW for wind projects and \$97 per kW for solar.⁵

Taken together, these two facts suggest that Xcel’s proposed Sherco gen-tie would be more expensive than simply procuring solar from third parties through an open bidding process. Moreover, comparing purely on a \$/kW basis understates the potential price premium of the Sherco gen-tie. If Xcel were to own the gen-tie line, as proposed, customers would have to repay not just the initial capital costs, but also Xcel’s rate of return, ongoing O&M expenses, and new capital spending throughout the life of the project. When combined, the full revenue requirements over the life of the Sherco gen-tie would total [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS].⁶ By contrast, when developers bear interconnection costs, they are able to utilize lower-cost capital, and customers do not bear the risk of higher than projected O&M expenses and ongoing capital spending. Thus, even if the total capital cost per kW were the same, the customer impact would likely be lower if the interconnection costs were borne by the developer instead of Xcel.

B. The Sherco Gen-tie Would Also Expose Customers to Significant Risk.

The proposed Sherco gen-tie line would not only cost customers nearly [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS] billion dollars, but also expose them to significant risks. Xcel acknowledged several risks associated with the project, including that the

⁵ Xcel Energy Reply Comments at 147 tbl.4-19. Moreover, Xcel’s analysis shows that the concerns raised by the Company—i.e., high interconnection costs, a large percentage of projects dropping out between Phases 2 and 3, and Energy Resource Interconnection Service designation—are primarily issues for new wind projects, not solar.

⁶ Xcel Response to OAG Information Request 8 (Aug. 9, 2021) (eDocket No. [20218-177263-01](#)). Total revenue requirements are included on line 20 of the “Regulated Model” tab of each attached spreadsheet, with the cumulative total revenue requirements following the formula: Attachment A – Attachment B + Attachment C (per Xcel’s response to OAG Information Request 8A).

length of the line may need to be increased—which could increase the cost of the line by over twenty percent—and that there may be need for additional VAR support.⁷ As noted above, if the gen-tie line’s O&M expenses or capital costs were higher than projected, Xcel would likely attempt to collect these costs overruns from customers. Moreover, as detailed in Section III.C, below, Xcel’s load forecasts have systematically overestimated both energy use and peak demand; if Xcel’s energy and capacity needs are lower than projected in this IRP, some of the generation included in Xcel’s Alternate Plan will not be needed. This is a major risk for customers, because the cost of the line itself will be roughly the same regardless of the amount of generation that is added along it. Thus, if Xcel is overestimating the amount of new generation that will be added to the line, then the actual cost per kW could be much higher than Xcel’s estimate.

C. Sherco Solar: A Cautionary Tale

In addition to the considerable expense and risk of the Sherco gen-tie, the requirement that Xcel own replacement generation along the gen-tie could increase costs dramatically. Xcel’s recently filed Sherco Solar proposal illustrates this risk. Xcel proposed the Sherco Solar project—a 460 MW solar farm near the existing Sherco Generating Station—as a way to reuse interconnection rights upon retirement of Sherco 2. The proposed project is exorbitantly expensive, primarily as a result of the failure of Xcel’s competitive bidding process.

The proposed Sherco Solar project has a levelized cost that is dramatically higher than recent utility-scale solar projects in the region. Xcel’s projected levelized cost of energy (“LCOE”) for the project is [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS].⁸ This price is [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS] that of the average solar power purchase agreement (“PPA”) price in MISO

⁷ Xcel Energy Reply Comments at 151, 106.

⁸ *In the Matter of Xcel Energy’s Petition for Approval of the Sherco Solar Project*, Docket No. E-002/M-20-891, Xcel Petition at 5 (Apr. 12, 2021) (eDocket No. [20214-172812-02](#)).

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in 2019 (\$35.43/MWh⁹) or the 25th percentile solar PPA in the Minnesota Hub of MISO in Q2 2021 (\$36.50/MWh).¹⁰

Further, Xcel itself acknowledges that Xcel-owned solar will be significantly more expensive than third-party-owned solar. In its Reply Comment modeling, Xcel developed separate cost forecasts for utility-scale solar that would be interconnected to the Sherco and King gen-tie lines, one for generic—i.e., non-Xcel-owned—solar and one for Xcel-owned solar. Importantly, the projected cost of Xcel-owned solar was at least [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS] higher than generic solar in each year of the planning period, and it was as much as [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS] higher in some years.¹¹ This bears repeating: Xcel’s own modeling recognizes that the same solar generation will be significantly more expensive if owned by the Company than if owned by a third party.

The Sherco Solar project is just the tip of the iceberg; it is just 460 MW of Xcel’s proposed 2,400 MW of new Company-owned renewables in the 2020s.¹² Sherco Solar alone would cost customers hundreds of millions more than a generic solar project. If this cost premium were expanded to 2,400 MW of new generation, the resulting rate increases would be severe. The Sherco Solar case makes clear that customers simply cannot afford that amount of Xcel-owned renewables.

D. Conclusion: Sherco Gen-tie

The proposed Sherco gen-tie would be a major expense, with projected revenue requirements approaching [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS]

⁹ Bolinger et al., Lawrence Berkeley National Laboratory, [Utility-Scale Solar Data Update: 2020 Edition](#) at 31 (Nov. 2020).

¹⁰ LevelTen Energy, [PPA Price Index: Q2 2021](#) at 3, 26 (Apr. 13, 2021).

¹¹ The generic utility scale solar cost assumptions are included on Table 24 of Appendix A to Xcel’s Reply Comments. The cost assumptions for Xcel-owned solar on the gen-tie line is included in Xcel’s response to OAG Information Request 16 (Sep. 29, 2021) (eDocket No. [20219-178341-01](#)).

¹² Xcel Energy Reply Comments at 116 fig.4-7.

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billion dollars over the life of the project. The project would also expose customers to significant risks, many of which could increase the cost of the project significantly. More importantly, the proposed gen-tie would require Company ownership of nearly all of the generation added in the 2020s, and the path of the line would restrict the location of potential new resources. As detailed in the next section, the ownership and geographic limitations Xcel placed on the Sherco Solar procurement undermined the competitive bidding process and led to an exorbitantly expensive solar project.

The record is clear: the proposed Sherco gen-tie line is not in the public interest, and, as a result, Xcel's Alternate Plan should not be approved. Instead, the OAG continues to recommend that the Commission require Xcel to complete a competitive bidding process to procure solar-plus-storage projects, as described in the OAG's Reply Comments. The next section highlights the importance of using open, competitive bidding processes to ensure that customers are paying a fair, reasonable price for new generation.

II. THE COMMISSION SHOULD ENSURE FAIR COMPETITION FOR NEW RENEWABLE GENERATION.

Xcel's Sherco Solar proposal illustrates the importance of competitive bidding and the harm that can come to customers when a utility stifles competition. In that docket, the Company purported to use the Modified Track 2 procurement process, in which the utility is allowed to bid its own proposal into a competitive process overseen by a third-party evaluator. As the Commission has explained, this process is intended to spur competition and, ultimately, reduce costs for customers:

The purpose of the competitive process—getting the best overall price for ratepayers—cannot be achieved without robust competition. And robust competition cannot be achieved without two things: (1) a fair, predictable, and transparent competitive process; and (2) widespread agreement that the process is fair, predictable, and transparent.

Potential suppliers will not commit the resources necessary to compete effectively, and will not disclose the sensitive information often required to evaluate

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their competitive proposals, unless they have confidence in the objectivity, good faith, and predictability of the competitive process.¹³

Xcel, however, undermined the competitive process by placing two restrictions on its solar request for proposals (“RFP”). First, the Company included a geographic restriction, requiring projects to be interconnected at the existing Sherco interconnection point. Second, Xcel included an ownership restriction, limiting the RFP to Company-owned projects or “Build-Transfer (BT) projects, where ownership of the Project could be transferred to the Company before the Project was interconnected, or earlier.”¹⁴ Xcel acknowledged that this restriction “limited participation by potential bidders.”¹⁵

As a result of these restrictions, the response to Xcel’s RFP was dismal. Xcel estimated an open solar RFP would have received bids for **46 projects** totaling **over 7,000 MW** in capacity.¹⁶ Xcel’s restrictive RFP received third-party bids for a total of **2 projects** totaling **525 MW** in capacity.¹⁷ Moreover, both of the third-party bids Xcel received were “non-conforming” and eliminated early in the screening process, meaning the *only* project that actually received a full review was Xcel’s own submission. The result is a project with an exorbitant levelized cost of [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS].

In light of the excessive cost of the Sherco Solar project and the failure of Xcel’s RFP, the Commission should take steps to ensure Xcel’s customers do not overpay for new generation. In its Reply Comments, Xcel claimed that “the Modified Track 2 process has proven to be successful since

¹³ *In the Matter of Northern States Power Company’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) (eDocket No. [3131110](#)).

¹⁴ *In the Matter of Xcel Energy’s Petition for Approval of the Sherco Solar Project*, Docket No. E002/M-20-891, Xcel Petition at 30 (Apr. 12, 2021) (eDocket No. [20214-172812-02](#)).

¹⁵ *Id.* at 27.

¹⁶ *Id.*, attach. B (Guidehouse report) at 7.

¹⁷ For comparison, Minnesota Power’s 2016 solar RFP received 83 proposals from 26 developers (eDocket No. [20211-169735-05](#)), and Xcel’s own 2014 solar RFP received 111 proposals from 36 developers (eDocket No. [201410-104139-01](#) at 6).

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our last IRP” and that the process “ensures competitive resource procurements.”¹⁸ Sherco Solar incontrovertibly refutes Xcel’s claims. While the Modified Track 2 process has been effective in other instances, the Sherco Solar docket demonstrates that the process can be undermined. In other words, the Modified Track 2 process alone is not sufficient to ensure competition.

Xcel’s Reply Comments requested that the Commission approve the use of the Modified Track 2 process for all new wind and solar projects begun before the next resource plan, including for the replacement generation that would utilize the Sherco and King interconnections.¹⁹ While the OAG is generally supportive of the Modified Track 2 process, the Sherco Solar experience demonstrates that approval of the Modified Track 2 process alone does not provide adequate customer protection. It is imperative to include safeguards to prevent Xcel from undermining competition.

Specifically, the OAG recommends that prior to the issuance of an RFP to procure new generation through either a Track 1 or Modified Track 2 process, Xcel be required to provide a filing detailing its proposed competitive bidding process including, at minimum, the following components:

- A list of potential independent auditors to oversee the bidding process and evaluate the proposals;
- The criteria that the independent auditor will use to evaluate proposals;
- The proposed text of the request for proposals;
- The proposed timeline for the issuance of the request for proposals, the allowed response time, the date upon which Xcel will submit its self-build proposal (if applicable), and the date upon which the independent auditor will submit its report to the Commission detailing the bid results;

¹⁸ Xcel Energy Reply Comments at 28.

¹⁹ *Id.*

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- Confirmation that the request for proposals will be published publicly and open to any interested developer;
- Confirmation that there will be no geographic or ownership limitations on the proposals; and
- A contingency plan in the event of an unsuccessful bidding process.

This approach is a necessary customer protection: Harnessing competition ensures that customers are getting the best possible value for their investments. Open competitive bidding for renewables has routinely resulted in pricing far below utilities' resource plan projections.²⁰ Regular competitive bidding also gives the Commission greater insight into the solar market, which will aid its IRP and resource-acquisition evaluations.

Open competitive bidding is especially important for Xcel's proposed replacement generation that would use the King and Sherco 2 interconnection rights. In order to make an informed decision on a site-specific project, the Commission must know the cost of alternatives. In the Sherco Solar docket, Xcel undermined its competition and deprived the Commission of a basis of comparison for the Sherco Solar project. The process laid out above would prevent Xcel from repeating its past mistakes.

III. XCEL'S MODELING CONTINUES TO BE BIASED IN FAVOR OF ITS PREFERRED PLAN.

The OAG's Reply Comments highlighted several ways in which the capacity expansion modeling in Xcel's Resource Plan Supplement was biased in favor of its preferred plan. In its Reply Comments, Xcel purported to address some of these biases. However, Xcel's adjustments were far

²⁰ See, e.g., Xcel's response to PUC Staff Information Request 15 in this docket (Sept. 23, 2021) (eDocket No. [202110-178521-08](#)); Minnesota Power's 2016 solar RFP, as summarized in the Sedway Consulting Independent Evaluation Report (July 10, 2017) (eDocket No. [20211-169735-05](#)); Xcel Energy Colorado's 2017 all-source bidding solicitation, as summarized in Xcel's response to OAG Information Request 4 in this docket (July 7, 2021) (eDocket No. [20217-176294-05](#)). Even Otter Tail Power's recent solar RFP, which was not open to all developers, still resulted in much lower prices than forecasted in that utility's 2016 IRP (*In the Matter of Otter Tail Power Company's 2017-2031 Resource Plan*, Docket No. E-017/RP-16-386, Compliance Filing, ex. 1 (July 1, 2020) (eDocket No. [20207-164461-02](#)).

from adequate, and its Reply Comment modeling continues to be biased in favor of its preferred plan. While there are several ways in which the modeling is biased, this section highlights three of the most flagrant examples.

A. Solar Cost Forecasts

Of the multitude of biases in Xcel's Reply Comment modeling, its treatment of new solar generation costs was perhaps the most egregious. Xcel both overestimated the cost of generic solar and underestimated the cost of Xcel-owned solar that could be added at the Sherco or King interconnection points.

The OAG's Reply Comments showed that the modeling in Xcel's Resource Plan Supplement significantly overestimated the cost of generic solar generation and battery storage.²¹ Though Xcel acknowledged in Reply Comments that technology is evolving rapidly, it opted not to update its solar or battery storage cost forecasts for its Reply Comment modeling.²² Instead, Xcel claimed that the flaws in its solar cost forecast were addressed in its sensitivity analyses.

Even if this approach were reasonable in theory, Xcel's solar forecasts are so significantly flawed that even the lowest solar cost sensitivity overestimates solar costs. Xcel represents its solar cost forecasts to be based in the U.S. Department of Energy's Annual Technology Baseline ("ATB"). As documented by other parties, however, Xcel used the 2019 ATB—which is now two years out of date—and modified it to use an unreasonably low capacity factor²³ and interconnection costs that Xcel's own analysis shows are unreasonably high. Figure 1 compares the solar cost inputs used in

²¹ OAG Reply Comments at 6–7, 13–15 (June 25, 2021) (eDocket No. [20216-175432-01](#)).

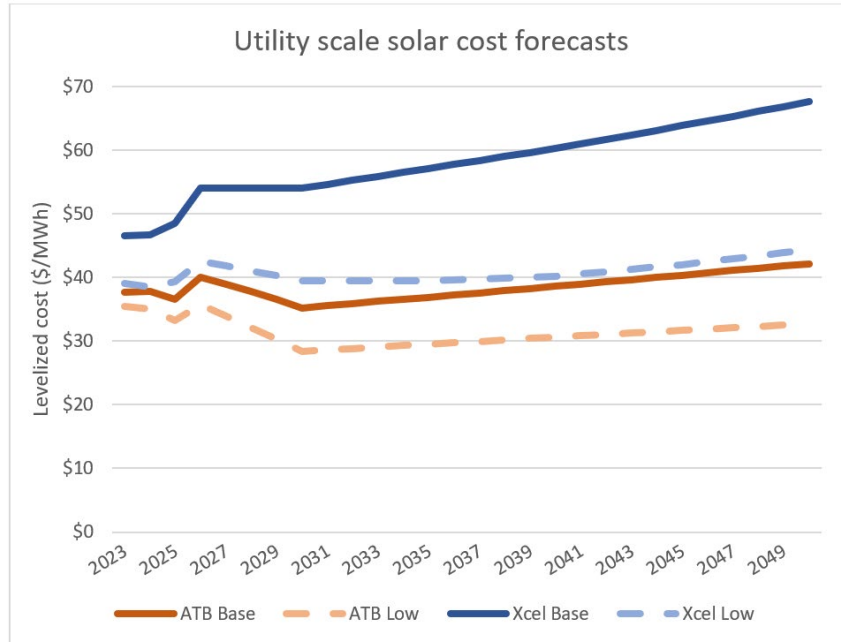
²² Xcel Energy Reply Comments at 95 ("While forecasts created at a specific point in time will become outdated, the industry is currently in the midst of particularly accelerated change and to say the landscape is evolving quickly would be an understatement.").

²³ Xcel's modeling assumes an average lifetime capacity factor for utility-scale solar of 20.7 percent. For comparison, Otter Tail Power projects that its Hoot Lake Solar project will have a capacity factor of 24 percent, and many of the bids Otter Tail received from third parties projected even higher capacity factors (*In the Matter of Otter Tail Power Company's Petition for Approval of the Hoot Lake Solar Project*, Docket No. E-017/M-20-844, Initial Filing at 5 (Nov. 25, 2021) (eDocket No. [202011-168617-01](#))).

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Xcel's modeling to what the inputs would be had Xcel utilized the updated ATB forecast without modification.²⁴

Figure 1. Xcel IRP and 2021 ATB solar cost forecasts



As the figure shows, Xcel's Base and Low solar cost forecasts are significantly higher than the ATB's.²⁵ More importantly, even Xcel's Low solar cost forecast is higher than the ATB's Base forecast. This means Xcel's approach—using sensitivity analyses to examine the impact of lower-than-forecasted solar costs—is invalid; its forecasts are so significantly flawed that even the “low” forecast is unreasonably high. As detailed in the OAG's Reply Comments, this is not an isolated incident: Xcel's IRPs have routinely overestimated the cost of new technologies.²⁶

In addition to overestimating the cost of generic solar, Xcel's Reply Comment analysis also *underestimated* the cost of the Xcel-owned solar that could be added at the Sherco and King interconnection points. Xcel's forecast for Company-owned gen-tie solar with a 2024 COD is

²⁴ “ATB Base” and “ATB Low” are calculated using the 2021 ATB, Utility PV Class 8—which includes southwestern Minnesota and most of Iowa and South Dakota—with an interconnection cost of \$150/kW. See National Renewable Energy Laboratory, [Annual Technology Baseline, Utility-Scale PV](#) (2021).

²⁵ The ATB uses the labels “Moderate, Advanced, and Conservative” rather than “Base, Low, and High.”

²⁶ OAG Reply Comments at 14–15 (June 25, 2021) (eDocket No. [20216-175432-01](#)).

[TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS], while the actual levelized cost of the proposed Sherco Solar project is [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS], meaning the actual cost of Company-owned solar is [TRADE SECRET DATA BEGINS TRADE SECRET DATA ENDS] higher than Xcel used in its modeling.²⁷

It is imperative to note that Xcel performed its Reply Comment modeling long after it filed its Sherco Solar petition. Thus, the Company knew that the values it was using in its modelling were incorrect, yet it used them anyway. Moreover, Xcel-owned gen-tie solar is a major part of the Company's Alternate Plan—totaling 2,000 MW by 2030—meaning the Company's modeling input manipulation will make the total cost of Xcel's Alternate Plan appear significantly lower. This is not simply a case of a utility being overly optimistic or pessimistic in its modeling; Xcel is using information it knows to be false in order to make its Alternate Plan appear to be less expensive than it ultimately would be.

B. Battery Storage Cost Forecasts

Xcel's battery storage cost forecasts are similarly flawed. Xcel's Base forecast for standalone four-hour battery storage with a 2022 COD is \$18.82/kW-month. For comparison, Xcel Colorado's 2017 all-source bidding solicitation received bids from multiple developers for four-hour battery storage at under \$10/kW-month, with the low bid coming in at \$8.61/kW-month, or *less than half* of Xcel's Base battery forecast.²⁸ Unlike with solar projects—which are dependent on the solar irradiance at the specific site—there is no reason to expect battery storage costs to be significantly different in Minnesota than in Colorado, much less more than twice as expensive. The Company also received—and ultimately selected—bids from the same developer for two solar-plus-storage hybrid

²⁷ Xcel Energy's response to OAG Information Request 16 (Sep. 29, 2021) (eDocket No. [20219-178341-01](#)).

²⁸ Xcel response to OAG Information Request 4, attach. A (July 7, 2021) (eDocket No. [20217-176294-05](#)).

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projects; the levelized cost of the storage component of these projects is presumably even lower, as the storage component of a solar-plus-storage hybrid project is eligible for the federal Investment Tax Credit.²⁹ As with Sherco Solar, Xcel had this information long before its Reply Comments, meaning the Company deliberately set its forecasts far above what it knew to be the actual cost of large-scale battery storage.

Xcel's battery cost manipulation is especially troubling considering that the low bid from the Colorado RFP has a lower levelized capacity cost than Xcel's Greenfield Combustion Turbine forecast for 2022, which suggests that battery storage is becoming competitive with traditional peaking plants. In this context, it is imperative that Xcel use accurate forecasts to determine whether its proposed combustion-turbine investments—which total 1,000 MW by 2029—are actually the lowest-cost option for customers.³⁰

C. Load Forecast

The Department of Commerce's Initial Comments detailed the systematic bias in Xcel's recent load forecasts. In its Reply Comments, Xcel attributed its systemic over-forecasting to four factors and then provided "adjusted" demand and energy forecasts accounting for the four factors.³¹ Even if one accepts the Company's strained³² analysis, the "adjusted" demand and energy forecasts still show a systematic bias. Moreover, Xcel's analyses only extend through 2018, despite the fact that its comments were filed halfway through 2021.

²⁹ The OAG was unable to confirm this presumption, as Xcel refused to disclose the levelized capacity cost for the storage component of those projects (*see* Xcel Energy's response to OAG Information Request 4, attach. A (July 7, 2021) (eDocket No. [20217-176294-05](#))).

³⁰ Xcel Energy Reply Comments at 66 tbl.3-1.

³¹ *Id.* at 162–69.

³² The OAG notes that two of these factors—customer investments in energy efficiency and self-generation—are the result of technology improvements that will likely continue in the future; thus, instead of retroactively adjusting its forecasts to account for these factors, Xcel should be proactively building technology advances into its future forecasts. If the Company does not learn from its past mistakes, it is bound to repeat them.

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Figure 2, below, provides an new version of Table 6-5 from Xcel’s Reply Comments, updated to include actual peak demand and energy data through 2020.³³ As the table shows, even after applying the four questionable adjustments included in its Reply Comments, the Company has consistently overestimated both peak demand and energy usage, with the forecast error increasing dramatically in the later years of the resource planning period. Moreover, contrary to Xcel’s claim that its “updated analysis generally results in variances within the Department’s ± 5 percent band” used for scenario analyses, the average forecast variance far exceeds the Department’s band for a significant portion of the planning period.

Figure 2, Average load forecast error (after Xcel’s adjustments) through 2020

Average Xcel load forecast error		
	Peak demand	Energy
Year 1	1.1%	-0.1%
Year 2	1.4%	0.1%
Year 3	1.8%	0.7%
Year 4	2.4%	1.4%
Year 5	3.4%	2.0%
Year 6	4.3%	2.6%
Year 7	5.0%	2.8%
Year 8	6.2%	3.7%
Year 9	7.1%	5.0%
Year 10	8.6%	6.7%
Year 11	10.8%	8.3%
Year 12	13.7%	9.9%
Year 13	19.4%	9.7%

This is especially important considering the nearly [TRADE SECRET DATA BEGINS ...
... TRADE SECRET DATA ENDS] billion dollar price tag of the Sherco gen-tie line. Xcel’s Alternate Plan includes over 4,600 MW of replacement generation at its Sherco and King interconnections.³⁴ Xcel’s claim that the Sherco gen-tie is cost-effective—which is dubious even under Xcel’s assumptions—is predicated on an extremely high utilization of the line. If it turns out

³³ Data source: Xcel Energy’s response to OAG Information Request 15 (Sep. 15, 2021) (eDocket No. [20219-178286-02](#)).

³⁴ Xcel Energy’s response to OAG Information Request 14 (Sep. 22, 2021) (eDocket No. [20219-178189-01](#)).

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there is not a need for this much new generation, the gen-tie's costs will be spread out over a smaller amount of generation, making the economics even worse.

D. Xcel Modeling Conclusion

The biases highlighted in this section are far from exhaustive, but they are enough to demonstrate the flaws in Xcel's capacity expansion modeling. These flaws are so severe that Xcel's modeling cannot be relied upon to determine whether its Alternate Plan is in the public interest. If these biases were corrected, the model would almost certainly identify a lower-cost resource plan, one which likely differs significantly from Xcel's Alternate Plan.

CONCLUSION AND RECOMMENDATIONS

Xcel's Alternate Plan is not in the public interest. The proposed Sherco gen-tie line would likely be more expensive than procuring new renewables through open, competitive bidding processes and would subject Xcel's customers to unnecessary risks. More importantly, the proposed gen-ties would necessitate Company ownership of nearly all of the generation added in the 2020s, and the path of the lines would restrict the location of potential new resources. The Sherco Solar docket demonstrates the exorbitant project costs and the chilling effect on competition that can result from bidding processes with ownership and geographic restrictions.

Rather than pursuing the Sherco gen-tie, the OAG continues to recommend the Commission require Xcel to complete a competitive bidding process to procure solar-plus-storage projects, as described in the OAG's Reply Comments. Harnessing competition ensures that customers are getting

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NOT PUBLIC DATA HAS BEEN EXCISED

the best possible value for their money, and open, competitive bidding processes have routinely resulted in pricing far below utilities' resource plan projections.

Dated: October 15, 2021

Respectfully submitted,

KEITH ELLISON
Attorney General
State of Minnesota

/s/ **Andrew Twite**

ANDREW TWITE
Rates Analyst

/s/ **Peter G. Scholtz**

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October 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 Xcel Energy's 2020–2034 Upper Midwest Integrated Resource Plan*
MPUC Docket No. E-002/RP-19-368

Dear Mr. Seuffert:

Enclosed and e-filed in the above-referenced matter please find both the PUBLIC and TRADE SECRET Supplemental 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**

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CERTIFICATE OF SERVICE

Re:*In the Matter of Xcel Energy's 2020–2034 Upper Midwest Integrated Resource Plan*
MPUC Docket No.E-002/RP-19-368

I, JUDY SIGAL, hereby certify that on the 15th day of October, 2021, I e-filed with eDockets both the ***PUBLIC and TRADE SECRET Supplemental 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

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