MPUC DOCKET NO. E002/CN-12-1240; OAH DOCKET NO. 08-2500-307-60

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE PETITION OF NORTHERN STATES POWER COMPANY TO INITIATE A COMPETITIVE RESOURCE ACQUISITION PROCESS

GERONIMO ENERGY, LLC'S REPLY BRIEF

DECEMBER 6, 2013

STATE OF MINNESOTA
BEFORE THE
OFFICE OF ADMINISTRATIVE HEARINGS

IN THE MATTER OF THE PETITION OF NORTHERN STATES POWER COMPANY TO INITIATE A COMPETITIVE RESOURCE ACQUISITION PROCESS	**GERONIMO ENERGY, LLC'S REPLY BRIEF**
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I. SUMMARY

Geronimo's Distributed Solar Energy Proposal (the "Solar Proposal") is the most reasonable and prudent alternative to meet Xcel's need in the 2017-2019 timeframe. It provides Xcel with needed capacity through a no-emission, renewable resource that has the lowest cost of all proposed resources and minimizes risks to ratepayers. The Solar Proposal is clearly in the public interest and, under Minnesota law, it must be selected first, before consideration of any nonrenewable resources.

Geronimo Wind Energy, LLC d/b/a Geronimo Energy, LLC ("Geronimo") submits this reply brief to respond to issues raised in the initial post-hearing briefs of Northern States Power Company d/b/a Xcel Energy ("Xcel") and the Minnesota Department of Commerce, Division of Energy Resources ("Department"). Specifically, this reply brief addresses why: (1) the Solar Proposal is the right size and type of resource to meet Xcel's need; (2) the Solar Proposal is the most reasonable and prudent resource for meeting Xcel's need in this docket; (3) the Solar Proposal is in the public interest; and (4) the Commission must ensure that the Track 2 process is followed.

II. ARGUMENT

A. THE SOLAR PROPOSAL FITS THE SIZE OF XCEL'S CAPACITY NEED.

The ultimate issue in this case is the identification of the most reasonable and prudent alternative to meet Xcel's need in the 2017-2019 timeframe.[1] Based on the initial briefs, there are a variety of views regarding the size of the need that must be filled. According to the Department, the Commission already decided that Xcel needs 150 MW in 2017, increasing to up to 500 MW in 2019.[2] Xcel indicates that changes to its forecast, MISO reserve margin requirements and solar energy standard requirements have decreased the size of its need to around 300 MW by 2019, but it notes uncertainty and suggests that future updates are warranted.[3] Geronimo identified a range of potential need from 26 to 443 MW.[4] Others question if there is a need at all.[5] It is not necessary, however, to determine the exact magnitude of Xcel's need to identify the most reasonable and prudent resources.

When it initiated this proceeding, the Commission was aware that Xcel's forecasts were changing.[6] The Commission nonetheless recognized sufficient evidence of a need for additional capacity to move forward with this proceeding, as the resources selected must be appropriate under a variety of forecast scenarios.[7]

All of the scenarios analyzed by Xcel and the Department added new capacity to Xcel's system in the 2017-2019 timeframe. In each of the scenarios, one of the underlying assumptions

[1] Notice and Order for Hearing, *In the Matter of the Petition of Northern States Power Company d/b/a Xcel Energy for Approval of a Competitive Resource Acquisition Process and Certificate of Need*, Docket No. E002/CN-12-1240 (June 21, 2013) ("Notice and Order for Hearing") at 5.
[2] Department's Initial Post-Hearing Brief ("Department's Brief") at 53.
[3] Xcel's Initial Post-Hearing Brief ("Xcel's Brief") at 9-12.
[4] Geronimo's Initial Post-Hearing Brief ("Geronimo's Brief") at 3.
[5] *See*, e.g. Xcel's Large Industrial Customers ("XLI") Comments at 12.
[6] Commission's Order Approving Plan, Finding Need, Establishing Filing Requirements, and Closing Docket MPUC Docket No. E-002/RP-10-825 (March 5, 2013) at 6.
[7] *Id*.

is that Xcel will add up to 300 MW of nameplate capacity, or between 72 and 200 MW of accredited capacity, from solar resources from 2017-2019.[8] For example, Xcel's "solar expansion plan" is highlighted in green in Table 2 taken from Mr. Wishart's Direct Testimony:[9]

Table 2 – September 2013 - Resource Need Assessment

	Resource Plan Docket			September 2013 Update			Change		
	2017	2018	2019	2017	2018	2019	2017	2018	2019
Peak	9,613	9,708	9,799	9,500	9,590	9,676	- 112MW	- 118MW	- 123MW
RM%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	0.0%	0.0%	0.0%
Total Obligation	**9,977**	**10,076**	**10,170**	**9,860**	**9,953**	**10,042**	**- 117MW**	**- 123MW**	**- 128MW**
Resources									
Coal	2,331	2,331	2,331	2,367	2,367	2,367	36	36	36
Nuclear	1,610	1,610	1,610	1,623	1,623	1,623	12	12	12
Gas	3,437	3,424	3,424	3,427	3,416	3,416	(9)	(8)	(8)
Wind, Hydro, Bio	1,280	1,229	1,202	1,238	1,189	1,162	(42)	(40)	(40)
Solar	9	10	11	49	66	83	40	56	72
Load Management	1,157	1,153	1,149	1,063	1,074	1,085	(95)	(79)	(65)
Total Resources	**9,824**	**9,758**	**9,728**	**9,768**	**9,735**	**9,735**	**(57)**	**(23)**	**8**
Long (Short)	**(153)**	**(318)**	**(443)**	**(93)**	**(218)**	**(307)**	**+60MW**	**+100MW**	**+136MW**

The Departments base case added 200 MW of accredited capacity from solar.[10] In addition, most scenarios identified *an additional* 26 to 443 MW of capacity needed from other resources.[11] Xcel's Large Industrial Customers ("XLI") aptly identified that, because Xcel is obligated under a different statute to acquire solar energy, selection of the Solar Proposal in this proceeding "virtually guarantees that resources are not overbuilt."[12] Geronimo agrees – under every scenario – the Solar Proposal is needed.

By selecting the Solar Proposal first, before any non-renewable resources, Xcel and its ratepayers are protected from building resources that may not ultimately be needed. At the same

[8] Ex. 46 at 7 (Wishart Direct) and Ex. 83 at 19 (Rakow Direct).
[9] Ex. 46 at 7 (Wishart Direct).
[10] Ex. 83 at 19 (Rakow Direct).
[11] Ex. 46 at 7 and 10 (Wishart Direct).
[12] XLI Comments at 15-16.

time, the Solar Proposal will deliver 71 MW of accredited capacity in time to meet Xcel's 2017 summer peak needs, thereby accelerating the number of megawatts of accredited capacity Xcel forecasted under its solar expansion plan.[13] If the Commission determines that additional resources will also likely be needed, it can select one of the other proposals offering a flexible in-service date. Based on Xcel's 2014 and 2015 need updates, the Commission can determine when that resource should come online. This outcome ensures that Xcel has the capacity needed to meet MISO reserve margin requirements and also protects ratepayers from unnecessary costs of overbuilding generation.

The record provides sufficient evidence to support a finding that additional generation resources are needed to provide capacity to meet Xcel's ongoing MISO reserve margin requirements and reliably serve its customers.[14] Selecting the Solar Proposal fills a need identified under all potential forecast scenarios and adds new capacity by 2017 to address Xcel's most immediate need. In addition, the Solar Proposal provides Xcel with the flexibility to add the generation in phases while providing additional time to determine when, if at all, additional non-renewable generation may be required.

B. THE SOLAR PROPOSAL PROVIDES THE TYPE OF CAPACITY NEEDED.

The Solar Proposal is the right type of resource to meet Xcel's needs. In Mr. Wishart's direct testimony, Xcel confirmed that the Solar Proposal can serve as a capacity resource.[15] No one disputes that it is MISO, not Xcel, that will determine how much accredited capacity will be assigned to the Solar Proposal. No one contests Geronimo's use of MISO's methodology for non-wind intermittent resources in calculating the Solar Proposal's accredited capacity. Once

[13] Ex. 46 at 7 (Wishart Direct).
[14] *See*, e.g., Ex. 1 at 3-1 – 3-10 (Xcel's Competitive Acquisition Proposal); Ex. 46 at 4-11 (Wishart Direct); and Ex. 86 at 3 (Rakow Rebuttal).
[15] Ex. 46 at 18 (Wishart Direct).

MISO has assigned accredited capacity to a resource, the accredited capacity serves the same purpose for Xcel (*i.e.*, complying with MISO's reserve margin requirements) regardless of whether it comes from combustion turbine units or solar units.[16] Therefore, the Solar Proposal can meet Xcel's need for additional capacity.

For the first time in its Initial Post-Hearing Brief, Xcel asserts that it needs capacity regardless of whether the "wind is blowing or the sun is shining."[17] This statement, however, is completely unsupported by the record, and Xcel provided no citation or reference in support of the assertion. The statement fails for several reasons. First, MISO assigns accredited capacity to generators annually,[18] which means that the Solar Proposal will provide capacity to Xcel regardless of day-to-day weather conditions. MISO's capacity factor method of calculating accredited capacity for non-wind intermittent resources already accounts for the variable production of solar resources, as reflected in the 71 MW of accredited capacity for a 100 MW (AC) nameplate capacity resource.[19]

Second, there is nothing in this record supporting an assertion that Xcel must add dispatchable resources that can provide energy whenever called upon. There are three concrete examples in this record showing this statement is not true. First, Xcel's Competitive Acquisition Proposal analyzes solar as a renewable alternative to its natural gas proposal.[20] Xcel addressed the variable nature of solar generation by assigning a discounted accredited capacity to the resource.[21] Xcel dismissed its solar alternative due to cost, <u>not</u> reliability or dispatchability

[16] *See*, Evidentiary Hr'g Trans., Vol 2, 22:14-23:15.
[17] Xcel's Brief at 34.
[18] Ex. 1 at 3-8 (Xcel's Competitive Acquisition Proposal); Ex. 46 at 5-6 (Wishart Direct); and Ex. 60 at 7 (Beach Direct).
[19] Ex.60 at 8-10 (Beach Direct).
[20] Ex. 1 at 5-5 – 5-6 (Xcel's Competitive Acquisition Proposal).
[21] *Id*.

concerns.[22] Second, GRE provided a proposal for plain "paper" capacity credits. The GRE proposal explicitly excluded any energy resources, and GRE stated that MISO will continue to dispatch GRE's generation resources exactly the same whether Xcel purchases capacity from GRE or not. [23] Xcel never asserted that GRE's proposal could not meet its needs from 2017-2019 because it did not provide energy that could be called upon by Xcel at any time. Third, Xcel adjusted the size of its identified capacity need by subtracting the accredited capacity it assumes will be provided by solar resources acquired to meet the Solar Energy Standard ("SES").[24] If capacity from solar projects truly cannot meet Xcel's needs, Xcel should not have reduced the size of its capacity need to account for the solar capacity it plans to acquire through a solicitation for intermittent renewable resources. Xcel's claims that the Solar Proposal cannot meet Xcel's capacity needs are not supported by the record and should be dismissed by the ALJ and Commission.

Xcel needs to satisfy MISO's reserve margin requirements, and the Solar Proposal provides 71 MW of accredited capacity to meet that need. It is undisputed in this record that the Solar Proposal generates the most energy on the warm summer days when Xcel experiences its peak,[25] and MISO's capacity factor method of calculating accredited capacity for solar resources reflects its ability to "reliably contribute to meeting peak customer demand."[26]

[22] *Id*. at 5-6.
[23] Ex. 63 at 3 (Selander Direct).
[24] Ex. 46 at 7 (Wishart Direct)..
[25] Ex. 60 at 14-18 (Beach Direct).
[26] Ex. 46 at 6 (Wishart Direct).

C. THE SOLAR PROPOSAL MUST BE CONSIDERED AS AN ALTERNATIVE TO NONRENEWABLE RESOURCES IN THIS DOCKET.

Xcel and the Department assert that a large portion of the SES should not be filled by the Solar Proposal without an opportunity to compare the cost of the Solar Proposal to other solar energy projects that may be submitted in a future SES RFP.[27] Again, this assertion misses the mark. The Solar Proposal is offered as a capacity resource in response to this specific all-source solicitation, and it compares favorably to the natural gas proposals in this docket. The Solar Proposal was specifically designed to maximize capacity, and it will reliably provide capacity to Xcel over its peak demand periods.[28] Geronimo submitted the Solar Proposal into this competitive resource acquisition process *before* the Minnesota legislature adopted the SES. It did so because the technology, pricing, and environmental attributes of solar generation are superior to non-renewable alternatives regardless of whether Xcel uses the Solar Proposal to meet its SES requirements. Minnesota law contains numerous preferences for low-emission, renewable energy outside of the SES requirements.[29]

To the extent that Xcel issues an RFP and finds additional cost-effective opportunities to acquire solar energy to meet its separate SES obligations, it is free to do so. The SES does not cap Xcel's ability to acquire solar energy; in fact, the SES encourages Xcel to grow the amount of solar on its system from 1.5% in 2020 to 10% in 2030.[30] Additional opportunities to add low cost solar will only further offset any need Xcel might have to acquire non-renewable resources in the future, and all such acquisitions should be encouraged. The Commission should welcome

[27] Xcel's Brief at 35 and Department's Brief at 22-23.
[28] Ex. 60 at 14-17 (Beach Direct).
[29] *See, e.g.*, Minn. Stat. § 216B.243, subd. 3a; Minn. Stat. § 216B.2422, subd. 4; and Minn. Stat. § 216H.02.
[30] Minn. Stat. § 216B.1691, subd. 2f (a) and (c) (2013).

the fact that a large-scale renewable resource has presented a very competitive bid in this all-source solicitation.

Comments regarding how Xcel's fulfills its SES obligations are ancillary to the main issue in this docket. Xcel needs to add capacity resources, and the ALJ and Commission must decide the most reasonable and prudent alternative to fill this need, applying the certificate of need criteria and other Minnesota laws to the resource alternatives bid in this docket. The Solar Proposal delivers 71 MW of accredited capacity to meet Xcel's need, and it is clearly the preferred resource under Minnesota law.

D. THE PUBLIC INTEREST DETERMINATION REQUIRES SELECTION OF THE SOLAR PROPOSAL BEFORE NON-RENEWABLE RESOURCES.

This record clearly supports selection of the Solar Proposal over non-renewable resources. The legal standard for approving a non-renewable resource requires that the utility demonstrate that a renewable resource is not in the public interest.[31] This public interest determination must include whether the resource helps the utility achieve Minnesota's greenhouse gas emission reduction goals, renewable energy standards or solar energy standards.[32] Moreover, the Commission may not issue a certificate of need to a non-renewable facility unless "the applicant for the certificate has demonstrated *to the commission's satisfaction* that it has explored the possibility of generating power by means of renewable energy sources and has demonstrated that the alternative selected is less expensive (including environmental costs) than power generated by a renewable energy source."[33] Xcel bears the burden of meeting each of these standards.

[31] Minn. Stat. § 216B.2422, subd. 4 (2013).
[32] *Id.*
[33] Minn. Stat. § 216B.243, subd. 3a (2013) (emphasis added).

Xcel's evaluation of the Solar Proposal and the cursory discussion in its initial brief fall far short of its burden. As pointed out by the Environmental Intervenors, none of Xcel's witnesses addressed the public interest factors set forth in Minnesota Statute Section 216B.2422, and, instead, Xcel relied exclusively on the output of its Strategist modeling as evidence that the Solar Proposal is not in the public interest.[34] Xcel's Initial Post-Hearing Brief does not even mention Minnesota's greenhouse gas reduction goals, or the benefits of the Solar Proposal in meeting those goals, despite the fact that in Minnesota Statutes Section 216H.02 is one of the statutes that *must* be considered in making a public interest determination.[35] And, on the issue of compliance with the SES, the record shows that, if it is selected, Xcel will use the Solar Proposal to fulfill a portion of its SES obligations.[36]

Xcel asserts that "[t]o be favored over a nonrenewable resource pursuant to Minn. Stat. § 216B.243, subd. 3a, Geronimo's solar energy proposal had to be a least-cost alternative."[37] Xcel then exclusively references the Strategist modeling results to assert that Geronimo's proposal was not a "least-cost" resource.[38] Minnesota Statute Section 216B.243, subd. 3a does not require that a renewable resource appear as the least cost resource in the Strategist model in order to be selected. Instead, it requires that the utility demonstrate, to the Commission's satisfaction, that the alternative selected is less expensive (including environmental costs) than the renewable energy resource.[39] Here, the Commission should not be satisfied with Xcel's analysis, as Geronimo has provided compelling evidence that the Strategist modeling did not fully account for the benefits of the Solar Proposal and that, when the model results are properly adjusted,

[34] Environmental Intervenor's Initial Post-Hearing Brief ("Environmental Intervenor's Brief") at 5.
[35] Minn. Stat. § 216B.2422, subd. 4 (2013).
[36] Tr. Vol. 1 at 137:4-8.
[37] Xcel's Brief at 34.
[38] *Id.*
[39] Minn. Stat. § 216B.243, subd. 3a (2013).

Geronimo's Solar Proposal *is* the least-cost resource. Geronimo Witness Ms. Elizabeth Engelking provided extensive testimony explaining the benefits of the Solar Proposal that were not accounted for in the Strategist results and pointed out several Strategist assumptions that significantly favored large natural gas proposals over the smaller Solar Proposal.[40] Ms. Engelking also showed that the Solar Proposal is the least-cost resource under the LCOE analysis and that its proposed PPA minimizes risks to ratepayers.[41] Xcel did not provide any evidence disputing the adjustments that Geronimo made to its Strategist modeling results, and no party challenged that the Solar Proposal was the least-cost resource using the LCOE analysis.[42]

Xcel downplays the reliability of Calpine's LCOE analysis because Xcel states it analyzes "only the cost side of the equation and makes no attempt to analyze the relative benefits of the disparate proposals against their costs."[43] Ironically, this very statement could be used to characterize Xcel's and the Department's Strategist results with respect to the Solar Proposal. The manner in which Xcel and the Department both ran the Solar Proposal through the Strategist model effectively had the same result – analyzing the costs of the Solar Proposal while making little attempt to analyze its relative benefits. The Strategist model results ignored values attributable to the solar renewable energy credits ("S-RECs") generated by the Solar Proposal that lower its present value of societal costs ("PVSC") by between $10 million and $38 million.[44] They also ignored benefits of distributing the resource throughout the state, lessening the strain on the transmission system and reducing transmission capacity costs – benefits that the

[40] Ex. 59 at 6-13 and 17-20 (Engelking Rebuttal).
[41] Ex. 58 at 14-17 (Engelking TS Rebuttal).
[42] In fact, Geronimo's analysis was corroborated by Invenergy Witness Mr. R. Norman. *See* Ex. 73 at 6-7 (Norman TS Rebuttal).
[43] Xcel's Brief at 22.
[44] Ex. 59 at 18-19 (Engelking Rebuttal).

Legislature has recognized in statute.[45] These transmission line loss and avoided transmission capacity savings are substantial, reducing the PVSC for the Solar Proposal by $9 million and $33 million, respectively.[46]

While it is Xcel's burden to show that a renewable resource is not in the public interest, it is nonetheless surprising that the Department did not address the public interest determination (or any of the certificate of need decision criteria) in any way. The Department indicated that if the Solar Proposal had been "closer" under the Department's analysis, then the "state policy preferences regarding renewables may have been a consideration."[47] This statement is inconsistent with both the facts in this case and Minnesota law. Xcel's unadjusted Strategist modeling results showed that the Solar Proposal, when considered in addition to SES requirements, resulted in an increase of approximately 0.08% in Xcel's overall system costs.[48] Once adjusted, the record shows the Solar Proposal is the least cost resource. In any event, the public interest determination under Minnesota Statute Section 216B.2422, subd. 4 does not contain any sort of explicit exception based on costs, and it is unclear how much "closer" than 0.08% the Solar Proposal would have had to be, in the Department's view, for Minnesota's renewable energy preferences to apply.

In reaching its decision in this case, the Commission cannot look at the results of one software model to pick a "least-cost resource", but must determine what is in the public interest based on all of the evidence presented, including the considerable evidence on the limitations of the Strategist modeling. Looking at the record as a whole, the Solar Proposal is in the public interest, is the least cost resource and must be selected before nonrenewable alternatives.

[45] Minn. Stat. § 216B.164, subd. 10(f) (2013).
[46] Ex. 59 at 19-20 (Engelking Rebuttal).
[47] Tr. Vol. 2, at 56:10-25.
[48] Tr. Vol. 1, at 146:3-12.

E. MINNESOTA'S PREFERENCE FOR DISTRIBUTED RESOURCES MUST BE CONSIDERED.

Xcel's Initial Post-Hearing Brief acknowledges that Minnesota Statute Section 216B.2426 requires the Commission to consider opportunities to install distributed generation, but Xcel's discussion of this requirement barely mentions the Solar Proposal.[49] Xcel only refers to its cost analysis in a different section of its brief and then discusses hypothetical distributed thermal generation units that were not proposed in this docket.[50]

Geronimo has shown that adding distributed generation brings significant benefits to Xcel's system. As discussed in Geronimo Witness Mr. Glen Skarbakka's Direct Testimony, the locations of the Solar Proposal were selected to maximize the efficient use of existing transmission and distribution infrastructure.[51] Both Mr. Skarbakka and Mr. Beach discuss the benefits of adding distributed generation to Xcel's system.[52] Xcel, however, fails to even mention the reliability, reduced transmission line losses, reduced transmission capacity constraints, and other benefits which distributed generation can bring to its system.[53]

Minnesota Statute Section 216B.2426 requires that the Commission consider opportunities to add distributed generation – it does not set a cost threshold for when adding distributed resources is appropriate. Cost analysis alone, particularly where there is a tight range of costs among the alternatives, should not be used to dismiss a distributed generation alternative. Nonetheless, Geronimo has demonstrated that adding the Solar Proposal, with its approximately 20 distributed sites, is cost-effective when the benefits to the transmission system are properly accounted for.

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[49] Xcel's Brief at 36.
[50] *Id.*
[51] Ex. 62 at 45 (Skarbakka Direct).
[52] Ex. 62 at 3-5 (Skarbakka Direct); Ex. 60 at 17 (Beach Direct); and Ex. 61 at 7-9 (Beach Rebuttal).
[53] Xcel's Brief at 36-37.

F. THE COMMISSION MUST SELECT A RESOURCE TO ENSURE A FAIR AND TRANSPARENT OUTCOME TO THIS PROCEEDING.

Xcel recommends that the Commission approve its Black Dog Unit 6 proposal and send Invenergy and Calpine to PPA negotiations, while holding the Red River Valley projects in reserve in case the PPA negotiations do not go well.[54] If followed, Xcel's recommendation gives Xcel, rather than the Commission, control of the final resources selected, and creates little incentive for Xcel to reach a successful resolution with either party. This outcome would take the resource acquisition process back full circle. The certificate-of-need-like process was adopted because of the Commission's recognition that Xcel held far too much control when it was allowed to select and negotiate with competitors. The Commission concluded:

> The All-Source Bidding process was approved by the Commission and appeared to hold great promise for attracting innovative and low-cost generation proposals. It fell short of expectations, however, in part because its open-endedness and flexibility tended to undermine the certainty, transparency, and accountability required in the commercial context. In fact, despite its commitment to using competitive, market-based strategies for securing new generation, Xcel ultimately constructed two peaking plants that the Department and interested stakeholders contended should and would have been secured through competitive bidding, but for deficits in the All-Source Bidding process.
>
> The Commission therefore required the Company to enter into discussions with the Department and interested stakeholders on how to improve its competitive procurement process, which produced the filings under consideration today.[55]

Based on the shortcomings of the prior process, the Commission determined that it was necessary to use a certificate-of-need like process when Xcel is also a bidder. The ALJ and Commission should not allow Xcel or the Department to stray from that process in the very first time it is used. It is fundamentally unfair to the other bidders, who committed resources to

[54] Xcel's Brief at 29 and 41-42.
[55] Commission's Order Establishing Resource Acquisition Process, Establishing Bidding Process Under Minn. Stat. § 216B.2422, subd. 5, and Requiring Compliance Filing, *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 (May 31, 2006) at 2-3 (citations omitted).

participating in this docket, to modify the process mid-stream, and it is important to the integrity of the Track 2 process that the Commission, rather than Xcel, selects the best resources.

The whole concept that Xcel needs flexibility should also be viewed with skepticism. While the resources selected must be flexible enough to work under a variety of scenarios, the Commission can identify a plan that will do just that. Xcel knew when it submitted its bid last April that, under the need scenario Xcel presented, flexible in-service dates would fare better in the Strategist model than fixed date proposals.[56] Just a few short months earlier, however, Xcel was advocating for specific need levels in each of the planning years.[57] It is worth repeating that Xcel, with its "more reliable and complete information"[58] about its own system, is in the best place to craft a plan that appears to best fit the identified need. The Commission should not select resources because they perfectly match Xcel's identified need; it should select resources because they are reasonable under a variety of presented scenarios. The Commission has a robust record upon which to make its decision and should not avoid selecting specific resources under some premise that Xcel needs the flexibility to get the "right" resource. The Solar Proposal meets Xcel's need under every scenario, and the record fully supports a finding that the Solar Proposal is in the public interest.

III. CONCLUSION

The record shows that the Solar Proposal can reliably meet a portion of Xcel's need at a competitive price, while also fulfilling the environmental, renewable and distributed generation preferences that Minnesota has set forth in statute. According to Minnesota law, the Solar

[56] Ex. 1 at 1-2, 1-3, and 1-8 (Xcel's Competitive Acquisition Proposal).
[57] Commission's Order Approving Plan, Finding Need, Establishing Filing Requirements and Closing Docket, *In the Matter of Xcel Energy's 2011-2025 Integrated Resource Plan*, Docket No. E002/RP-10-825 (March 5, 2013) ("March 5, 2013 Commission Order") at 4.
[58] *Id*. at 7.

Proposal must be selected ahead of non-renewable alternatives. Selection of a distributed, renewable resource in this docket provides a tremendous opportunity to move Minnesota towards its goals of reducing greenhouse gas emissions and obtaining 100% of its electricity from renewable resources. The Commission should consider additional, non-renewable resources only if it determines Xcel needs the additional capacity during the 2017-2019 timeframe.

With this reply brief, Geronimo provides proposed Findings of Fact, Conclusions of Law and Recommendations supporting a determination that selection of the Solar Proposal is in the public interest and represents most reasonable and prudent resource to meet Xcel's capacity needs in the 2017-2019 timeframe. For the reasons stated in its initial and reply briefs, Geronimo respectfully requests that the ALJ adopt the enclosed proposed Findings of Fact, Conclusions and Recommendations.

Date: December 6, 2013

Respectfully submitted,

/s/ *Christina K. Brusven*
Christina K. Brusven (# 388226)
Lindsey A. Hemly (# 0390347)
FREDRIKSON & BYRON, P.A.
200 South Sixth Street, Suite 4000
Minneapolis, MN 55402
Phone: (612) 492-7000
Fax: (612) 492-7077

Attorneys for Geronimo Energy

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OAH Docket No. 8-2500-307-60
MPUC Docket No. E002/CN-12-1240

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of the Petition of Northern States Power Company d/b/a Xcel Energy for Approval of Competitive Resource Acquisition Proposal

PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDATION

APPEARANCES

An evidentiary hearing was held before Administrative Law Judge Eric L. Lipman on October 22 and 23, 2013, in St. Paul, Minnesota. The following appearances were made:

Michael C. Krikava and Thomas Erik Bailey, Attorneys at Law, Briggs and Morgan, 2200 IDS Center, 80 South 8th Street, Minneapolis, Minnesota 55402, and James R. Denniston, Assistant General Counsel, Northern States Power Company, 414 Nicollet Mall, 5th Floor, Minneapolis, Minnesota 55401, appeared for and on behalf of Northern States Power Company.

Michael Bradley, Attorney at Law, Moss & Barnett, 4800 Wells Fargo Center, 90 South Seventh Street, Minneapolis, Minnesota 55402, appeared for and on behalf of Great River Energy.

Kevin Reuther, Attorney at Law, 26 East Exchange Street, Suite 206, St. Paul, Minnesota 55101, appeared for and on behalf of Minnesota Center for Environmental Advocacy, Fresh Energy, Sierra Club, and Izaak Walton League – Midwest Office.

Brian M. Meloy, Attorney at Law, Leonard, Street and Deinard, 150 South Fifth Street, Suite 2300, Minneapolis, Minnesota 55402, appeared for and on behalf of Calpine Corporation.

Eric F. Swanson, Attorney at Law, Winthrop & Weinstine, 225 South Sixth Street, Suite 3500, Minneapolis, Minnesota 55402, appeared for and on behalf of Invenergy Thermal Development, LLC.

Christina K. Brusven, Attorney at Law, Fredrikson & Byron, 200 South Sixth Street, Suite 4000, Minneapolis, Minnesota 55402, appeared for and on behalf of Geronimo Wind Energy, LLC, d/b/a Geronimo Energy, LLC.

Linda S. Jensen, Assistant Attorney General, 445 Minnesota Street, Suite 1800, St. Paul, Minnesota 55101, appeared for and on behalf of the Department of Commerce, Energy Environmental Review and Analysis.

Julia E. Anderson, Assistant Attorney General, 445 Minnesota Street, Suite 1800, St. Paul, Minnesota 55101, appeared for and on behalf of the Department of Commerce, Division of Energy Resources, Energy Regulation and Planning.

NOTICE

Pursuant to Minn. R. 7829.2700, subp. 1, exceptions to this Report, if any, by any party adversely affected must be filed within twenty (20) days of the filing date hereof with the Executive Secretary of the Minnesota Public Utilities Commission ("Commission"), 350 Metro Square Bldg., 121 Seventh Place East, St. Paul, Minnesota 55101-2147. Exceptions must be specific, relevant to the matters at issue in this proceeding, and stated and numbered separately. Proposed Findings of Fact, Conclusions, and Recommendations should be included, and copies thereof shall be served upon all parties.

The Commission will make the final determination on the matter of the competitive resource acquisition after the expiration of the period for filing exceptions as set forth above or after oral argument if such is requested and granted in this matter.

Further, notice is hereby given that the Commission may, at its reasonable discretion, accept, modify, condition, or reject the Administrative Law Judge's Recommendation and that said Recommendation has no legal effect unless expressly adopted by the Commission.

STATEMENT OF ISSUES

The identification of a resource proposal or proposals that will provide the most reasonable and prudent strategy for Northern States Power Company d/b/a Xcel Energy ("Xcel") to meet the needs of its service area.

The Administrative Law Judge concludes that the Solar Proposal meets the certificate of need decision criteria applicable in this competitive resource acquisition process and that no party has demonstrated that a more reasonable and prudent alternative exists to meet Xcel's needs in the 2017-2019 timeframe. Additionally, the Administrative Law Judge concludes that no party has demonstrated that selection of the Solar Proposal is not in the public interest or that non-renewable resources should be selected over this renewable resource alternative.

Based upon the information presented in the proceedings herein, the Administrative Law Judge makes the following:

FINDINGS OF FACT

I. PROCEDURAL SUMMARY

1. On March 5, 2013, in Xcel's 2011-2025 Integrated Resource Plan docket (Docket No. E002/RP-10-815), the Commission found that Xcel had demonstrated the need for an additional 150 megawatts ("MW") of capacity by 2017, increasing up to 500 MW by 2019.[1]

2. In this docket, the Commission set an April 15, 2013 deadline for bidders to file proposals to meet some or all of Xcel's need.[2]

3. On April 15, 2013, the Commission received competitive resource proposals from five bidders, including Calpine Corporation ("Calpine"), Geronimo Wind Energy, LLC, d/b/a Geronimo Energy, LLC ("Geronimo"), Great River Energy ("GRE"), Invenergy Thermal Development, LLC ("Invenergy") and Xcel.[3] The competitive resource proposals consisted of four non-renewable resource proposals and one renewable resource proposal, including the following:

(A) Xcel's 215 MW Black Dog Unit 6 in Burnsville, Minnesota and the combined 430 MW Red River Valley Units 1 and 2 near Hankinson, North Dakota;[4]

(B) Calpine's 345 MW combined cycle gas plant at its existing Mankato Energy Center (the "Mankato facility");[5]

(C) Invenergy's proposals for three 179 MW combustion turbine natural gas plants, including a 179 MW plant in Cannon Falls, MN ("Cannon Falls) and two 179 MW plants near Hampton in Dakota County, Minnesota (the "Hampton Energy Center");[6]

(D) GRE's market capacity bid for the 2017-2019 timeframe;[7] and

(E) Geronimo's proposal for an up to 100 MW alternating current ("AC") nameplate capacity solar energy facility located on approximately 20 sites distributed across Xcel's service territory (the "Solar Proposal").[8]

4. By May 28, 2013, the Commission had received comments and supplemental filings from the following:

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[1] Commission's Order Approving Plan, Finding Need, Establishing Filing Requirements and Closing Docket, *In the Matter of Xcel Energy's 2011-2025 Integrated Resource Plan*, Docket No. E002/RP-10-825 (March 5, 2013) ("March 5, 2013 Commission Order"), at 7.
[2] Notice and Order for Hearing, (June 21, 2013), at 2.
[3] *Id*.
[4] *See* Ex. 1 (Xcel's Proposal).
[5] *See* Ex. 8 (Calpine's Proposal).
[6] *See* Ex. 24 (Invenergy's Proposal).
[7] *See* Ex. 19 (GRE's Proposal).
[8] *See* Ex. 13 (Geronimo's Distributed Solar Energy Proposal).

(A) the five bidders – Calpine, Geronimo, GRE, Invenergy and Xcel;

(B) Minnesota Center for Environmental Advocacy, Fresh Energy, Sierra Club, and Izaak Walton League – Midwest Office (collectively, the "Environmental Intervenors"); and

(C) the Department of Commerce, Division of Energy Resources, Energy Regulation and Planning (the "Department").[9]

5. On June 3, 2013, after the April 15, 2013 filing deadline had passed, Ecos Energy, LLC ("Ecos Energy"), petitioned for permission to submit a generation proposal.[10]

6. On June 6, 2013, the Commission met to consider the matter of Xcel's resource acquisition process.[11]

7. In the Commission's June 21, 2013 *Notice and Order for Hearing,* the Commission referred this matter to the Office of Administrative Hearings for a contested case proceeding,[12] and took the following actions:

(A) Denied the request of Ecos Energy for permission to submit a generation proposal more than two months after the deadline for project submissions;

(B) Found that the developer of a project chosen through this Commission-approved competitive resource acquisition process is exempt from securing a certificate of need under Minn. Stat. § 216B.243 prior to construction;

(C) Found that each proposal filed by Calpine, Geronimo, GRE, Invenergy, and Xcel was substantially complete.

(D) Regarding the Environmental Report to be prepared by the Department of Commerce, Energy Environmental Review and Analysis ("EERA") for the Commission:

(1) Authorized EERA to focus its analysis on the substantially complete alternatives, and on a no-build alternative for each of these alternatives;

(2) Requested that EERA prepare an Environmental Report sufficient to meet the requirements set forth in Minn. R. 7849, as varied, for all of the substantially complete alternatives;

[9] Notice and Order for Hearing, at 2.
[10] *Id*.
[11] *Id*.
[12] *Id.* at 4.

(3) Requested that EERA review Geronimo's Solar Proposal cumulatively for the up to 31 sites; and

(4) Requested that EERA treat the GRE capacity credit proposal as capacity only.

(E) Designated the following entities as parties to the contested case proceeding: Calpine, Geronimo, GRE, Invenergy, Xcel, the Department and the Environmental Intervenors.

8. ALJ Eric L. Lipman convened a prehearing conference on July 1, 2013, and established the following schedule for this proceeding:[13]

August 2, 2013 Intervention

September 27, 2013 Direct Testimony

October 15-18, 2013 Public Hearings

October 18, 2013 Rebuttal Testimony

October 21, 2013 Close of Discovery Period for Non-Government Parties

October 21-25, 2013 Evidentiary Hearing

November 1, 2013 Close of Public Comment Period

November 22, 2013 Initial Briefs

December 6, 2013 Reply Briefs

December 31, 2013 ALJ Report

9. Ecos Energy filed a Petition to Intervene on June 7, 2013.

10. Ecos Energy filed a Verified Petition to Intervene, on July 10, 2013.

11. The North Dakota Public Service Commission Advocacy Staff filed a Petition to Intervene on July 31, 2013.

12. On August 5, 2013, the Commission denied the reconsideration motion of Ecos Energy to submit a proposal out of time.[14]

[13] Second Pre-Hearing Order, July 17, 2013.
[14] Order Denying Intervention, August 5, 2013.

13. On August 21, 2013, having considered objections, the ALJ denied Ecos Energy's Petition to Intervene; the ALJ granted the unopposed Petition to Intervene of the North Dakota Advocacy Staff.[15]

14. On September 5, 2013, Ecos Energy filed with the ALJ a Motion for Reconsideration or, in the alternative, a Motion for Certification regarding its Petition to Intervene.

15. On September 27, 2013, the following parties filed Direct Testimony: Calpine, Geronimo, GRE, Invenergy, Xcel, North Dakota Advocacy Staff and the Department.

16. On October 1, 2013, having considered objections, the ALJ denied Ecos Energy's Motion for Reconsideration and its alternative Motion for Certification. [16]

17. On October 4, 2013, the Commission determined that Xcel's plans to acquire 750 MW of wind generation constituted a changed circumstance under resource planning rules, and ordered Xcel to file a Notice of Changed Circumstances in dockets including the present docket.[17]

18. On October 8, 2013, the Xcel Large Industrials ("XLI") filed a Petition to Intervene.

19. On October 10, 2013, the ALJ set the evidentiary hearing to begin on Tuesday, October 22, 2013.[18]

20. On October 14, 2013, EERA issued the Environmental Report.

21. On October 15, 2013, ALJ Steve Mihalchick convened a public hearing at the State Office Building, Basement Conference Room, in St. Paul, Minnesota.

22. On October 18, 2013, the following parties filed Rebuttal Testimony: Calpine, Geronimo, GRE, Invenergy, Xcel, and the Department.

23. On October 21, 2013, having considered objections, ALJ Lipman: (1) denied XLI's Petition to Intervene and (2) extended the public comment period by 21 days, from a deadline of November 1 to November 22, 2013.[19]

24. On October 22 and 23, 2013, ALJ Lipman convened an evidentiary hearing at the State Office Building, Basement Conference Room, in St. Paul, Minnesota.

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[15] Third Pre-Hearing Order, August 21, 2013.
[16] Fourth Pre-Hearing Order, October 1, 2013.
[17] Order Requiring Notice of Changed Circumstances and Granting Intervention, October 4, 2013, Dockets E-002/RP-10-825, E-002/CN-12-1240, E-002/M-13/603, E-002/M-13/716.
[18] Amended Seventh Pre-Hearing Order, October 10, 2013.
[19] Eighth Pre-Hearing Order, October 21, 2013.

25. On November 22, 2013, the public comment period closed. Approximately sixty public comments were filed with the Commission, including 17 from local government representatives, 30 from local landowners and individuals, 11 from organizations and companies interested in the proceeding (including XLI and Ecos Energy), and two from federal and state government agencies representatives. A majority of the public comments submitted supported the Solar Proposal.

26. On November 22, 2013, Calpine, Geronimo, GRE, Invenergy, Xcel, the Department and the Environmental Intervenors filed initial briefs.

27. The record was closed upon receipt of the final reply briefs on December 6, 2013.

II. THE SOLAR PROPOSAL

A. Project Characteristics and Performance

28. The Solar Proposal includes construction of up to 130 MW direct current ("DC") nameplate capacity (equivalent to 100 MW AC) of solar generation equipment at approximately 20 sites located across Xcel's service territory.[20] Geronimo will use nominal 300 watt solar photovoltaic ("PV") modules mounted on linear axis tracking systems with centralized inverters.[21] These PV modules produce electricity from sunlight, without combusting fossil fuels and without emissions or waste products of any kind.[22]

29. Each of the Solar Proposal's distributed sites will be sized between 2 MW and 10 MW and will have separate interconnection facilities.[23]

30. Geronimo has proposed a December 2016 commercial operation date for the project to ensure that it can qualify for the existing federal investment tax credits and be in-service prior to Xcel's 2017 summer resource needs.[24]

31. The Solar Proposal is designed to maximize its reliability as a capacity resource. The Solar Proposal will use tracking system technology that adjusts the tilt of each array such that the rays of sun remain perpendicular to the solar panels in at least one dimension throughout the day. This adjustment significantly increases the amount of solar energy produced by the panels relative to fixed system solar panels where the tilt does not change.[25]

32. The Solar Proposal is designed with a DC to AC ratio of 1.3 MW of solar modules to 1 MW of inverter nameplate capacity.[26] This DC to AC ratio exceeds the rating of

[20] Ex. 57 at 3 (Engelking Direct); Ex. 61 at 3 (Beach Rebuttal).
[21] Ex. 60 at 2 (Beach Direct).
[22] *Id*. at 3.
[23] Ex. 57 at 3-4 (Engelking Direct).
[24] *Id*. at 7.
[25] Ex. 60 at 5 (Beach Direct).
[26] Ex. 61 at 3 (Beach Rebuttal).

typical residential solar units and increases the relative reliability and accredited capacity of the Solar Proposal.[27]

33. The Solar Proposal's distributed nature increases its reliability and decreases the variability of project output relative to projects located at a single site by decreasing the impact of partly cloudy days, transmission constraints and equipment outages.[28]

34. The Midcontinent Independent System Operator, Inc. ("MISO") recognizes that solar can be used as a capacity resource. MISO has a methodology for calculating the accredited capacity for what it terms "non-wind variable generation, which applies to solar facilities."[29] MISO's accredited capacity calculation reflects the ability of a solar resource to reliably contribute to meeting peak customer demand. [30]

35. When calculating accredited capacity, MISO looks at the most recent consecutive 3-year historical average output of resources for the hours ending 1500-1700 Eastern Standard Time in the summer months of June, July and August. [31]

36. Using MISO's methodology, the Solar Proposal will deliver 71 MW of accredited capacity to Xcel.[32]

B. The Solar Proposal Power Purchase Agreement

37. Geronimo proposes selling the capacity, energy and environmental attributes (including solar renewable energy credits ("S-RECs")) to Xcel through a twenty-year power purchase agreement ("PPA").[33]

38. Geronimo offers two different pricing proposals. The first includes a fixed monthly payment per kilowatt ("kW") for capacity and an energy payment for all energy generated by the project.[34] The second pricing proposal is an energy-only payment that bundles all capacity, energy and environmental attributes into a $/MWh price.[35] Under both pricing scenarios, Geronimo bears all interconnection and any network upgrade costs associated with the project.[36]

[27] *Id*. at 3-4.
[28] Ex. 60 at 5 (Beach Direct); Ex. 62 at 4 (Skarbakka Direct).
[29] Ex. 60 at 10 (Beach Direct).
[30] Ex. 46 at 6 (Wishart Direct).
[31] Ex. 60 at 10 (Beach Direct).
[32] Ex. 57 at 2-3 (Engelking Direct).
[33] Ex. 13 at 19; 31 (Distributed Solar Energy Proposal).
[34] Ex. 57 at 5 (Engelking Direct).
[35] *Id*.
[36] Ex. 62 at 10-11 (Skarbakka Direct).

39. Fuel costs are not associated with the Solar Proposal, as the project uses sunlight to generate electricity.[37] The Solar Proposal is not subject to future fuel cost uncertainty or cost uncertainty associated with future carbon regulations.[38]

III. TRACK 2 COMPETITIVE BIDDING PROCESS REQUIREMENTS AND DECISION CRITERIA

A. Track 2 Competitive Bidding Process

40. In an order issued on May 31, 2006, the Commission established a specific framework, referred to as the "Track 2 process", for selecting resources in competitive bidding processes in which Xcel has proposed a self-build alternative to meet a need identified in its integrated resource plan ("IRP").[39]

41. In establishing the Track 2 process, the Commission stated that "[p]otential suppliers will not commit the resources necessary to compete effectively, and will not disclose the sensitive information often required to evaluate their competitive proposals, unless they have confidence in the objectivity, good faith, and predictability of the competitive process. In fact, to attract competitive proposals, it may matter less what the rules are – assuming fundamental rationality and basic fairness – than whether all potential players know the rules and know that they will be enforced evenhandedly."[40]

42. Under the Track 2 competitive resource acquisition process, the Commission, and not the utility, must make the final resource selection regarding the resource or resources that will meet Xcel's need, and the Commission's selected resource or resources must then proceed to PPA negotiations with Xcel.[41]

43. In its June 21, 2013 *Notice and Order for Hearing*, the Commission found that a developer of a resource selected through the Track 2 process is exempt from the requirement to obtain a certificate of need.[42]

44. Notwithstanding this exemption, the Track 2 process is a certificate-of-need-like proceeding[43] and must follow the data requirements, process and decision criteria standards set forth in Minn. Stat. § 216B.243.[44] The Commission stated that "[c]ertificate of need filing

[37] Ex. 13 at 19 (Distributed Solar Energy Proposal).
[38] *Id*. at 35-36.
[39] Commission's Order Establishing Resource Acquisition Process, Establishing Bidding Process Under Minn. Stat. § 216B.2422, subd. 5, and Requiring Compliance Filing, *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 (May 31, 2006) ("May 31, 2006 Commission Order"), at 6-7.
[40] *Id*. at 6.
[41] *See id*. at 6-7.
[42] Notice and Order for Hearing, at 3.
[43] *See* May 31, 2006 Commission Order, at 6.
[44] *See* Ex. 1 (Xcel's Proposal); Ex. 8 (Calpine's Proposal); Ex. 24 (Invenergy's Proposal); Ex. 19 (GRE's Proposal); Ex. 13 (Geronimo's Distributed Solar Energy Proposal); *see also* Initial Post-Hearing Brief of Xcel Energy, November 22, 2013, at 6; Initial Brief of Invenergy Thermal Development LLC, November 22, 2013, at 1.

requirements and decision criteria are clear, comprehensive, directly relevant to resource procurement, and easily transferable to the resource procurement process."[45]

B. Applicable Decision Criteria

45. Minn. Stat. § 216B.243 and Minn. R. 7849.0120 set forth the criteria which must be applied in the Track 2 competitive bidding process to select the most reasonable and prudent resource to meet Xcel's capacity need.

46. Minn. Stat. § 216B.243 provides that in assessing need, the Commission shall evaluate:

> (1) the accuracy of the long-range energy demand forecasts on which the necessity for the facility is based;
>
> (2) the effect of existing or possible energy conservation programs under sections 216C.05 to 216C.30 and this section or other federal or state legislation on long-term energy demand;
>
> (3) the relationship of the proposed facility to overall state energy needs, as described in the most recent state energy policy and conservation report prepared under section 216C.18, or, in the case of a high-voltage transmission line, the relationship of the proposed line to regional energy needs, as presented in the transmission plan submitted under section 216B.2425;
>
> (4) promotional activities that may have given rise to the demand for this facility;
>
> (5) benefits of this facility, including its uses to protect or enhance environmental quality, and to increase reliability of energy supply in Minnesota and the region;
>
> (6) possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation;
>
> (7) the policies, rules, and regulations of other state and federal agencies and local governments;
>
> (8) any feasible combination of energy conservation improvements, required under section 216B.241, that can (i) replace part or all of the energy to be provided by the proposed facility, and (ii) compete with it economically;
>
> (9) with respect to a high-voltage transmission line, the benefits of enhanced regional reliability, access, or deliverability to the extent these factors improve the robustness of the transmission system or lower costs for electric consumers in Minnesota;

[45] May 31, 2006 Commission Order, at 6-7.

(10) whether the applicant or applicants are in compliance with applicable provisions of sections 216B.1691 and 216B.2425, subdivision 7, and have filed or will file by a date certain an application for certificate of need under this section or for certification as a priority electric transmission project under section 216B.2425 for any transmission facilities or upgrades identified under section 216B.2425, subdivision 7;

(11) whether the applicant has made the demonstrations required under subdivision 3a; and

(12) if the applicant is proposing a nonrenewable generating plant, the applicant's assessment of the risk of environmental costs and regulation on that proposed facility over the expected useful life of the plant, including a proposed means of allocating costs associated with that risk.

47. Minn. R. 7849.0120 provides the primary certificate of need decision criteria applicable in this proceeding, which are as follows:

(A) the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states;

(B) a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record;

(C) by a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health; and

(D) the record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.

48. Substantial overlap exists between Minn. Stat. § 216B.243 and Minn. R. 7849.0120. Thus, these findings are structured around Minn. R. 7849.0120.

IV. THE SOLAR PROPOSAL MEETS THE CERTIFICATE OF NEED CRITERIA.

A. The Probable Result of Denial of the Solar Proposal Would Be an Adverse Effect Upon the Future Adequacy, Reliability, or Efficiency of Energy Supply to Xcel, Xcel's Customers, the People of Minnesota and Neighboring States.

49. The first criterion under Minn. R. 7849.0120 is whether the probable result of denial of the proposed resource would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states.

50. The current docket was established to find the best resource or resources to meet Xcel's need for an additional 150 MW of system capacity in 2017, increasing to up to 500 MW in 2019.[46]

51. In the Commission's March 5, 2013 Order, the Commission encouraged solicitation of a broad range of proposals from a broad range of resources. The Commission specifically declined requests to narrow potential resource options by updating Xcel's forecast or identifying Xcel's capacity needs in each year of the period in question.[47] Rather, the Commission provided that choices regarding when and how much capacity to add would be made in the context of the current docket, based on the proposals and the evidence adduced herein.[48]

52. Xcel's future capacity needs may be changing and remain uncertain due to: (1) lower overall demand in Xcel's 2013 spring forecast, (2) additional accredited capacity of between 72 and 200 MW from solar resources added to meet Minnesota's Solar Energy Standard ("SES"), and (3) MISO's new reserve margin requirements.[49]

53. After accounting for these changes, Xcel's expected remaining capacity need in 2017 may be less than 150 MW. In 2019, Xcel's remaining capacity need may range from as low as 26 MW to as high as 443 MW.[50]

54. The resources selected must provide accredited capacity to meet Xcel's MISO reserve margin requirements.[51]

55. The Solar Proposal is specifically designed as a capacity resource to meet Xcel's system capacity need and includes a number of features, such as tracking system technology,[52] appropriately-sized modules to inverters,[53] and distributed sites,[54] to ensure that the project reliably delivers Xcel's needed capacity. [55]

56. The record demonstrates that the MISO capacity factor methodology is the appropriate methodology to use in determining the capacity that the Solar Proposal will provide to Xcel.[56] Once MISO has calculated and assigned accredited capacity to a resource, each MW of accredited capacity allocated to a resource is equally applied to Xcel's reserve margin requirements, regardless of the type of resource from which the accredited capacity is obtained.[57]

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[46] March 5, 2013 Commission Order, at 7.
[47] March 5, 2013 Commission Order. at 5-6.
[48] *Id.* at 6.
[49] Ex. 46 at 7 (Wishart Direct); Ex. 83 at 19 (Rakow Direct).
[50] Ex. 46 at 7, 10 (Wishart Direct).
[51] Ex. 1 at 3-3 – 3-4 (Xcel Competitive Acquisition Proposal).
[52] Ex. 60 at 5 (Beach Direct).
[53] Ex. 61 at 3-4 (Beach Rebuttal).
[54] Ex. 60 at 5 (Beach Direct); Ex. 62 at 4 (Skarbakka Direct).
[55] Ex. 60 at 18-19 (Beach Direct).
[56] Ex. 60 at 8-11 (Beach Direct).
[57] *See* Evidentiary Hr'g Tr. ("Tr.") vol. 2, 22:14-23:15.

57. The Solar Proposal's generation is highest on the sunny summer days when Xcel experiences its peak demand.[58] According to MISO's currently applicable methodology for calculating accredited capacity for solar facilities, the Solar Proposal will provide 71 MW of accredited capacity to meet Xcel's needs.[59]

58. The Solar Proposal will be in-service by December 2016, ensuring that it will be available to meet Xcel's summer 2017 capacity needs.[60]

59. Xcel acknowledged that the Solar Proposal can meet a portion of its capacity need and also satisfy a portion of its SES requirements.[61] None of the parties to this proceeding have disputed the technical ability of the Solar Proposal to meet Xcel's capacity or SES needs.

60. Using the Solar Proposal to fulfill both Xcel's capacity and SES requirements will meet Xcel's need under all forecast and resource scenarios. Further, if Xcel's capacity need falls on the low end of Xcel's forecast range, the Solar Proposal could meet nearly Xcel's entire need during the 2017-2019 timeframe.

61. The Solar Proposal is the superior resource for adequately, reliably, and efficiently meeting Xcel's capacity need, and the probable result of denial of the Solar Proposal would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply.

B. A More Reasonable and Prudent Alternative to the Solar Proposal Has Not Been Demonstrated

1. The Solar Proposal Has the Lowest Levelized Cost of Electricity

62. Calpine Witness Mr. Paul Hibbard provided a levelized cost of electricity ("LCOE") analysis comparing the costs of each natural gas proposal in this proceeding.[62] An LCOE analysis represents the net present value of the expected annual costs – including variable and fixed operations and maintenance costs, capital costs and the return on investment – divided by annual generation over the term of the proposal.[63] The analysis is an "accessible and useful representation of the ultimate impact to ratepayers."[64]

63. Mr. Hibbard's LCOE analysis did not include the Solar Proposal. Geronimo witness Ms. Elizabeth M. Engelking showed that when the Solar Proposal is added to Mr. Hibbard's LCOE analysis, it is the least cost resource.[65]

[58] Ex. 60 at 12-13, 15-16 (Beach Direct).
[59] Ex. 57 at 2-3 (Engelking Direct).
[60] *Id.* at 7.
[61] Ex. 46 at 18 (Wishart Direct).
[62] Ex. 52 at 2 (Hibbard Direct); Tr. vol. 1, at 65:21-24.
[63] Ex. 52 at 6 (Hibbard Direct).
[64] *Id*. at 7.
[65] Ex. 58 at 15 (Engelking TS Rebuttal).

64. Invenergy witness Mr. Ron Norman also analyzed the Solar Proposal using a LCOE analysis. Mr. Norman also concluded that, based on the LCOE analysis, "a solar unit with no fuel cost" is the lowest cost standalone resource on a per MWh basis.[66]

65. The record demonstrates that based on the LCOE analysis, the Solar Proposal is the lowest cost resource.

2. When Appropriately Modeled in Strategist, the Solar Proposal is the Lowest-Cost Resource.

66. The Strategist model is a resource planning software tool that uses multiple simulations to identify the lowest-cost combinations of resources based on their present value of societal costs ("PVSC").[67]

67. Both Xcel and the Department relied almost exclusively on Strategist modeling for support of their recommended resource alternatives. Based on its Strategist modeling results, Xcel identified the bid combinations of (1) Invenergy's Cannon Falls Facility in 2016 and Black Dog Unit 6 in 2018; and (2) Calpine's Mankato Facility in 2017 and Black Dog Unit 6 in 2019 as the lowest cost plans.[68] Mr. Wishart concluded that the two plans were separated by an insignificant margin, and he recommended that all three projects advance to negotiations.[69]

68. In discussing the Solar Proposal, Xcel concluded that the Solar Proposal is high cost.[70] Xcel stated that the least cost plan including the Solar Proposal consisted of Invenergy's Cannon Falls Facility and the Solar Proposal in 2016, and Black Dog Unit 6 in 2019. Xcel explained that these resources are the same as those contained in Xcel's identified least cost plan, except that the addition of the Solar Proposal delays the in-service date of Black Dog Unit 6 by one year.[71] Xcel's calculated PVSC for this bid combination, including the Solar Proposal, was $34 million higher than its least cost plan.[72]

69. The Department initially found that the combination of Calpine's Mankato Facility in 2016 and Black Dog Unit 6 in 2019 was the lowest cost plan.[73] Department witness Dr. Steve Rakow later testified that based on a third round of analysis, the Department agreed with Xcel that Invenergy's Cannon Falls Facility should also advance to negotiations.[74]

70. Dr. Rakow concluded that the Solar Proposal was "significantly below the top performing packages in terms of Strategist results."[75] He found that the Solar Proposal "would

[66] Ex.74 at 7 (Norman Rebuttal).
[67] Ex. 46 at 19 (Wishart Direct).
[68] *Id*. at 23.
[69] *Id*. at 24.
[70] *Id*. at 33.
[71] *Id*.
[72] *Id*. at 33-34.
[73] Ex. 83 at 34 (Rakow Direct).
[74] Ex. 86 at 15 (Rakow Rebuttal).
[75] *Id*. at 16.

not be a reasonable choice (on a cost basis) for the purposes (intermediate and peaking capacity) specified by the Commission, based on information available at this time."[76]

71. Ms. Engelking refuted Xcel's and the Department's dismissals of the Solar Proposal, and testified that the assumptions modeled in or omitted from Xcel's and the Department's Strategist models directly impact the results.[77] Ms. Engelking argued that the underlying assumptions, including both attributes added and omitted from the model, influence the modeling results. Ms. Engelking questioned the reliability of Xcel's and the Department's Strategist results given their failure to include several important attributes of the Solar Proposal and biases toward the natural gas proposals.[78]

72. Xcel's and the Department's Strategist results did not incorporate avoided transmission line losses. By locating the distributed sites in close proximity to load centers, the Solar Proposal will reduce transmission line losses that occur whenever energy is transmitted across the wires and transformers of an electric system.[79] Xcel acknowledged that the Solar Proposal will result in a reduction in transmission losses and that those avoided transmission line losses are not captured in Xcel's or the Department's models.[80] Based on an Xcel table showing Minnesota demand loss factors by voltage level,[81] the Solar Proposal will result in a four percent reduction in transmission line losses resulting in a PVSC savings of approximately $9 million under Geronimo's bundled pricing proposal.[82]

73. Because the Solar Proposal will generate electricity from sunlight, a renewable resource under Minnesota law, the energy produced by the Solar Proposal can be used by Xcel or other utilities to fulfill Minnesota's SES.[83] Both Xcel and the Department, however, modeled the Solar Proposal in addition to Xcel's obligations to acquire solar energy under the SES.[84] Thus, neither Xcel nor the Department evaluated the Solar Proposal's ability to fulfill a portion of Xcel's SES obligations. This modeling assumption does not reflect the fact that Xcel will use the Solar Proposal to meet its SES obligations, as Xcel witness Mr. James R. Alders testified will occur.[85]

74. If Xcel were to choose not to use the Solar Proposal to meet its SES obligations, as both Xcel and the Department assumed in their Strategist models, the models failed to account for the S-RECs value that Xcel will obtain. The project's S-RECs have an independent value within the market, in addition to the electricity produced. Based on S-REC values in other states that range from between $13/S-REC to over $200/S-REC, Geronimo estimated that the Solar

[76] Ex. 83 at 13 (Rakow Direct).
[77] Ex. 59 at 6-13 (Engelking Rebuttal).
[78] *Id.*
[79] Ex. 62 at 4 (Skarbakka Direct).
[80] Ex. 46 at 35 (Wishart Direct).
[81] Ex. 13 at 31 & n.16 (Distributed Solar Energy Proposal).
[82] Ex. 61 at 7 (Beach Rebuttal).
[83] Minn. Stat. § 216B.1691, subd. 2f (2013).
[84] Ex. 48 at 25 (Wishart Rebuttal); Ex. 83 at 9-10 (Rakow Direct).
[85] Tr. vol. 1, at 137:4-8.

Proposal will have an S-REC value of between $5/S-REC and $20/S-REC, resulting in a PVSC reduction of $10 and $38 million annually.[86]

75. Further, both the Department's and Xcel's Strategist results excluded the Solar Proposal benefits related to avoided transmission capacity costs. By selecting sites that will be interconnected on the distribution system, the Solar Proposal reduces the peak loading on Xcel's transmission system, making more existing transmission capacity available to meet future needs and allowing Xcel to avoid capacity-related costs otherwise needed to expand its transmission system.[87] The Minnesota Legislature, through the enactment of Minn. Stat. § 216B.164, subd. 10(f), recognized that distributed solar energy projects have the added benefit of avoiding transmission capacity costs.[88]

76. Using MISO's rate for network integration service on Xcel's system, the avoided transmission capacity benefits associated with its Solar Proposal equals approximately $3.24 million per year.[89] These savings reduce the PVSC for the project by $33 million.[90]

77. The record demonstrates that when all recognized values of solar are reflected in the Strategist modeling results, the Solar Proposal is the least-cost option available.

78. Moreover, the record demonstrates that both the Department's and Xcel's Strategist analyses were biased toward natural gas plants. Both the Department and Xcel only evaluated combinations of plants that exceeded 300 MW of need by 2019.[91] Mr. Wishart stated that when the Strategist model identifies a shortfall in generation, even a small shortfall of 1 or 2 MW, the model must select the next full plant to meet the need – even if the plant size is far larger than the shortfall.[92]

79. Xcel also used its 2013 updated spring forecast and MISO's 2011 reserve margins, despite the fact that MISO's 2013/2014 reserve margins differ significantly from its 2011 requirements. As a result, Xcel created a 307 MW need within the Strategist model.[93] Xcel then broke apart the natural gas plant bids submitted in this docket, so the model could select just one of the three plants submitted by Xcel, or Cannon Falls or Hampton Energy Center from Invenergy's three-plant bid package.[94] The identified need was also just larger than Calpine's Mankato Facility that was modeled with a 278 MW summer capacity.[95] Because no single plant could fill the entire 307 MW need, Xcel's Strategist model had to select at least two plants to meet Xcel's need.

[86] Ex. 59 at 18-19 (Engelking Rebuttal).
[87] *Id*. at 8.
[88] Minn. Stat. §216B.164, subd. 10(f) (2013).
[89] Ex. 61 at 9 (Beach Rebuttal).
[90] *Id*.; Ex. 59 at 20 (Engelking Rebuttal).
[91] Ex. 46 at 25-27 (Wishart Direct); Ex. 83 at 26 (Rakow Direct); Ex. 86 at 3 (Rakow Rebuttal).
[92] Tr. vol. 1, 105:1-9.
[93] Tr. vol. 1, at 106:19 – 107:9.
[94] Tr. vol. 1, at 105:10 – 106:6.
[95] Ex. 46 at 16 (Wishart Direct).

80. Xcel further included a modeling convention referred to as a "capacity credit" to equalize the size of plants that are larger than the identified need.[96] Specifically, Xcel assumed that all excess capacity had a value of $5.92/kW-mo.[97] When Xcel compared the two plans it determined to be least cost, it noted that the PVSC of the two plans differed by only $1.8 million.[98] However, that margin was bolstered by the $55 million credit that Xcel assigned to the Black Dog/Calpine plan to equalize the effects between the 358 MW Black Dog/Cannon Falls and 486 MW Black Dog/Calpine bid combinations.[99]

81. In his testimony, Mr. Wishart confirmed that Xcel has no plans to sell excess capacity, and that Xcel's ratepayers will bear the same costs for the Calpine PPA regardless of whether this excess capacity is sold or not.[100] Mr. Wishart also acknowledged that it would take an effort similar to that of GRE's bid in this docket to monetize Xcel's excess capacity.[101] Absent such effort, Xcel has the opportunity to sell into MISO's short term market, where the posted price from MISO's 2013/2014 planning resource auction was $0.03/kW-mo., far lower than Xcel's assigned capacity credit.[102] Xcel's sensitivity analysis shows that if the capacity credit value varies by as little as $1.00, the PVSC differences between the various plans change substantially.[103]

82. With regard to "generic units", both Xcel and the Department used the same base assumptions.[104] Generic units are the plants added in later years of the model to fill identified needs as other plants retire or PPAs terminate, and the costs of generic units added by the model are attributed to the overall bid packages selected. In this case, Xcel generated the modeled price of generic gas units based on internal information it had regarding plant costs.[105] This modeled generic gas unit price was higher than the price of the gas plants bid in this docket.[106] As a result, each of the gas proposals bid in this proceeding was comparably less expensive than the generic units, which benefited the gas proposals.

83. In contrast, Xcel generated a generic unit cost for solar that was lower than Geronimo's bid price, despite the fact that Xcel did not have accurate market information upon which to evaluate solar market prices.[107] As a result, the Solar Proposal was always comparably more expensive than the generic solar energy modeled for compliance with the SES.

84. The record does not support use of a lower-than-bid price for generic solar nor does it support use of a higher-than-bid price for generic gas.

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[96] Tr. vol. 1, at 115:14-16.
[97] Ex. 46 at 37 (Wishart Direct).
[98] *Id*. at 23.
[99] *Id*. at 32.
[100] Tr. vol. 1, at 115:13-16 & 114:10 – 115:2.
[101] Tr. vol. 1, at 115:17 – 116:15.
[102] Tr. vol. 1, at 116:8-15; Ex. 59 at 12 (Engelking Rebuttal).
[103] Ex. 46 at 39 (Wishart Direct).
[104] Ex. 59 (Engelking Rebuttal, Schedule EME-3).
[105] Tr. vol. 1, at 110:3-14.
[106] Ex. 83 at 30 (Rakow Direct).
[107] Ex. 59 (Engelking Rebuttal, Schedule EME-3); Tr. vol. 1, at 110:15-23; Ex. 46 at 36 (Wishart Direct).

3. The Solar Proposal Price is Defined and Poses Minimal Risk to Ratepayers.

85. Geronimo's proposed PPA has a defined price over its twenty-year term.[108] Under its proposed PPA, Geronimo bears the costs of all interconnection and any network upgrade costs associated with the project.[109] Because the Solar Proposal produces no emissions and uses sunlight to generate electricity, it poses few risks related to future environmental regulation and is not subject to future volatility in fuel costs.[110]

86. The costs ratepayers may bear for Xcel's self-build alternatives are subject to changes and risks that were not resolved in this record. Xcel's proposal assumed that Xcel will recover its actual, rather than estimated cost of construction, with an adjustment to its return on equity ("ROE") as an incentive to deliver the project within budget.[111] The Department, however, objected to Xcel's incentive mechanism, instead proposing that Xcel recover its budgeted costs and keep any savings it is able to achieve.[112] Department Witness Mr. Christopher J. Shaw argued that "[i]f the final costs to ratepayers were not considered to be firm or known when the Commission is evaluating bids, ratepayers would be at risk to incur some amount of unknown costs."[113]

87. The record demonstrates that all of the proposed gas plants subject Xcel's ratepayers to future risks related to volatility in the natural gas market. The Department's and Xcel's sensitivity analyses show that both high and low gas scenarios change the relative costs of each of the gas plants.[114] As it relates to the Invenergy proposals, a change from interruptible to firm gas increases the PVSC for the project by $31 million, just a $3 million PVSC difference from the unadjusted PVSC cost Xcel assigned to the Solar Proposal.[115] Xcel also noted issues related to the potential use of fuel oil at both the Invenergy and Calpine facilities.[116]

88. In addition, Xcel described a number of financial risks related to the PPA negotiations with Calpine and Invenergy.[117] These risks include issues related to counterparty default, security funds, CO_2 emission costs and allowances, capital lease determinations, and company credit worthiness, among other issues.[118] Xcel did not identify any similar issues related to the Geronimo PPA.

89. The record also shows that there are a number of unknown transmission- and pipeline-related cost risks to each of the natural gas proposals. The Department raised concerns

[108] Ex. 13 at 19 (Distributed Solar Energy Proposal).
[109] Ex. 62 at 10-11 (Skarbakka Direct).
[110] Ex. 13 at 19, 35-36 (Distributed Solar Energy Proposal).
[111] Tr. vol. 1, at 136:18 – 137:3.
[112] Ex. 82 at 2-3 (Shaw Rebuttal).
[113] *Id.* at 2.
[114] *See, e.g.,* Ex. 46 at 39 (Wishart Direct); Ex. 83 (Rakow Direct, SR-5A).
[115] Tr. vol. 1, at 97:1-6.
[116] Ex. 46 at 50-52 (Wishart Direct).
[117] *Id.* at 46-51.
[118] *Id.*

regarding estimated additional or uncertain interconnection costs for the Calpine and Invenergy facilities that the bidders propose that Xcel and its ratepayers bear.[119]

90. No party has shown that a more reasonable or prudent alternative to the Solar Proposal exists, and it would not be reasonable nor prudent for the Commission to choose any of the alternative resources proposed in this proceeding over the Solar Proposal.

C. The Solar Proposal Benefits Society and is Compatible with the Natural and Socioeconomic Environments.

91. The third criterion under Minn. R. 7849.0120 is whether, by a preponderance of the evidence on the record, the proposed facility, or a suitable modification thereof, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including public health.

92. EERA's Environmental Report found that carbon dioxide ("CO_2") and criteria pollutants, which include sulfur dioxide ("SO_2"), nitrogen dioxide ("NO_2"), carbon monoxide ("CO"), lead ("Pb"), and particulate matter ("PM"), are produced as a result of the combustion of natural gas.[120] All of the natural gas proposals would produce some level of criteria pollutants and CO_2 from combustion of the natural gas.[121]

93. Sulfur dioxide causes acid rain and human respiratory illness. Nitrogen oxides are greenhouse gases that cause ozone and related respiratory illnesses. Carbon monoxide is a colorless, toxic gas produced by incomplete burning of carbon-based fuels and reduces the blood's ability to provide sufficient oxygen to the body. Lead is a metal that is known to have adverse health impacts on the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system. Inhalation of particulate matter causes and contributes to human respiratory illness. [122]

94. The construction and operation of the Solar Proposal will not generate any CO_2 or criteria pollutants.[123]

95. The Solar Proposal will produce zero emissions of hazardous air pollutants ("HAPs") or volatile organic compounds ("VOCs"). Both HAPs and VOCs are known or suspected of causing cancer and other serious health effects.[124]

96. Because the Solar Proposal will not produce air emissions, Geronimo estimated that by offsetting other market electricity, the Solar Proposal will annually result in the reduction

[119] Ex 83 at 7 (Rakow Direct); Ex. 82 at 4 (Shaw Rebuttal).
[120] Ex. 38 at 34 (Environmental Report).
[121] *Id*.
[122] *Id*.
[123] *Id*. at 38.
[124] *Id*. at 39.

of 94,133 tons of CO_2, 115.98 tons of CO, 63.26 tons of NO_x, 27.08 tons of PM_{10}, 3.44 tons of VOCs, and 10.48 tons of SO_2.[125]

97. Geronimo's Solar Proposal will have minimal impacts on the environment.[126] The Solar Proposal will not require water for power generation and will not discharge wastewater containing heat or chemicals during operation.[127]

98. The Solar Proposal will also produce numerous socioeconomic benefits. Solar Proposal project development will diversify and strengthen the economic base of the host counties in which the solar facilities will be located.[128] The Environmental Report found that approximately 500 jobs will be created during the construction phase of the Solar Proposal project.[129] Work crews at each site are expected to range in size between 13 and 40.[130] Additionally, operation and maintenance activities will create up to 10 permanent positions at the facilities.[131] The wages and salaries paid as a result of these jobs will contribute to the total personal income in the region, and at least some of this income will circulate throughout the state.[132]

99. Geronimo determined that many of its expenditures for equipment, operating supplies, and other products and services will benefit businesses located in the host counties and the state, and landowners with solar panels or other project facilities located on their property will receive annual land payments.[133]

100. The record of this proceeding demonstrates that the Solar Proposal will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including public health.

D. The Solar Proposal Complies with Applicable State and Federal Laws and Policies.

1. The Solar Proposal Must Be Selected Because it is the Only Alternative in this Proceeding that Satisfies Minnesota's Renewable and Distributed Energy Preferences.

101. There are a number of Minnesota statutory and rule provisions that identify additional Minnesota renewable and distributed energy preferences. These provisions include Minn. Stat. § 216B.2422, subd. 4, Minn. Stat. § 216B.2426, Minn. Stat. § 216B.243, subd. 3(6), and Minn. Stat. § 216B.243, subd. 3a. The Commission is required to consider Minnesota's

[125] Ex. 13 at 24 (Distributed Solar Energy Proposal).
[126] *Id*. at 21-25.
[127] *Id*. at 32.
[128] *Id*. at 32-33.
[129] Ex. 38 at 31 (Environmental Report).
[130] *Id*.
[131] *Id*.
[132] Ex. 13 at 32-33 (Distributed Solar Energy Proposal).
[133] *Id*.

renewable and distributed energy preferences when selecting a capacity resource in an IRP or certificate of need proceeding.

102. Minn. Stat. § 216B.2422, subd. 4, provides that the Commission "shall not approve a . . . nonrenewable energy facility in an integrated resource plan or a certificate of need . . . unless the utility has demonstrated that a renewable energy facility is not in the public interest." Section 216B.2422, subd. 4 further provides that the public interest determination must include whether the resource plan helps the utility achieve Minnesota's greenhouse gas reduction goals, renewable energy standard, or the solar energy standard.

103. Among the proposals in this proceeding, the Solar Proposal best supports Minnesota's goals to reduce greenhouse gas emissions across all emissions-producing sectors "to a level at least 15 percent below 2005 levels by 2015, to a level at least 30 percent below 2005 levels by 2025, and to a level at least 80 percent below 2005 levels by 2050."[134] The project will not produce greenhouse-gas emissions, and the Solar Proposal avoids 94,133 tons/year of CO_2 emissions, based on an average system mix at the time the project is expected to generate energy.[135] As a result, the Solar Proposal is consistent with and will help the state to achieve its greenhouse gas emissions reduction goal.

104. The 2013 Minnesota Legislature adopted a SES that requires Xcel and other Minnesota utilities to acquire 1.5% of its retail sales from solar energy by 2020, with a goal to increase this amount to 10% by 2030. [136] This standard is required over and above the renewable energy standard, which requires Xcel to meet 30% of its retail energy needs with renewable energy by 2020.[137]

105. The record demonstrates that if the Commission selects the Solar Proposal, Xcel will use the solar energy produced by the project to meet its requirements under the SES.[138] Xcel forecasts that it will need 455,919 MWh of solar energy annually to meet its solar standard in 2020.[139] Geronimo's project will provide approximately 200,000 MWh annually and help meet a substantial portion of Xcel's solar energy need.[140]

106. The Solar Proposal is in the public interest because, among other things, it will help Minnesota meet its greenhouse gas reduction goals and Xcel meet its SES obligations.

107. Minn. Stat. § 216B.2426 requires that the Commission consider opportunities for the installation of distributed generation in resource planning and certificate of need proceedings. Minn. Stat. § 216B.243, subd. 3(6) further states that the Commission must evaluate possible alternatives for satisfying the energy demand or transmission needs including but not limited to

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[134] Minn. Stat. § 216H.02, subd. 1 (2013).
[135] Ex. 13 at 24 (Distributed Solar Energy Proposal).
[136] Minn. Stat. § 216B.1691, subd. 2f (2013).
[137] Minn. Stat. § 216B.1691 (2013).
[138] Tr. vol. 1, at 137:4-8.
[139] Ex. 59 at 8 (Engelking Rebuttal) citing Xcel Energy Comments, *In the Matter of the Request for Filings From Electric Utilities on Customers Excluded From the Solar Energy Standard*, Docket No. E-999/CI-13-542 (August 15, 2013), at 4.
[140] Ex. 57 at 8 (Engelking Direct).

potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation.

108. The Solar Proposal has been designed to include approximately 20 different locations across Xcel's service territory that are between 2 MW and 10 MW and each served by separate interconnection facilities.[141] As demonstrated in the record, by distributing the sites across the state, the Solar Proposal will be able to reliably meet Xcel's need for peak energy resources while also avoiding costly transmission interconnection upgrades, reducing transmission line losses and lowering generation and transmission capacity costs.

109. Minn. Stat. § 216B.243, subd. 3(a) prohibits the Commission from issuing a certificate of need for a nonrenewable facility unless the applicant has demonstrated to the Commission's satisfaction that it has explored the possibility of generating power by means of renewable energy resources and has demonstrated that the alternative selected is less expensive (including environmental costs) than the renewable energy source.

110. The record in this proceeding indicates that the Solar Proposal, when properly analyzed using either a LCOE or the Strategist model, is the lowest cost resource proposed. This record has not demonstrated that Xcel's plans to acquire additional nonrenewable resources are less expensive than plans that include the Solar Proposal.

111. Based on the record, the Commission must select the Solar Proposal prior to selecting any of the alternative proposals because the Solar Proposal meets Minnesota's preferences for low-emission, renewable and distributed generation.

2. The Solar Proposal is Consistent with Federal Energy and Environmental Rules and Policies.

112. The EPA has proposed a Carbon Pollution Standard for New Power Plants.[142] Power plants represent the single largest source of industrial greenhouse gas emissions in the United States and account for approximately 40 percent of all U.S. anthropogenic CO_2 emissions.[143] EPA's proposed new source performance standard would set uniform national limits on the amount of carbon pollution new power plants can emit. EPA's proposed standards apply to fossil-fuel-fired boilers, integrated gasification combined cycle ("IGCC") units and stationary combined cycle turbine units that generate electricity for sale and are larger than 25 MW. The proposed standards would require covered units to achieve an emission rate of 1000 pounds of CO_2 per megawatt hour.

113. The resources selected by the Commission in this proceeding will not be placed in service for several years and are expected to be operational for decades. The selected resources

[141] Ex. 57 at 9 (Engelking Direct).
[142] Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, 77 Fed. Reg. 22392 (April 13, 2012).
[143] Table 2-1 from "Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2009," U.S. Environmental Protection Agency, EPA 430-R-11-005, April 2011.

will directly impact Xcel's ability to meet federal air quality requirements and the flexibility available to Xcel in doing so.[144]

114. The record shows that as an emission-free capacity resource, the Solar Proposal can help Xcel mitigate the regulatory risks associated with new EPA regulations.

Based on the foregoing Findings of Fact, the Commission makes the following:

CONCLUSIONS

1. Any of the foregoing Findings of Fact that are more properly designated as Conclusions of Law are hereby adopted as such.

2. The Administrative Law Judge and the Commission have jurisdiction over the competitive resource acquisition process under Minn. Stat. § 216B.2422, subd. 5, as interpreted by previous orders, and over the Certificate of Need process under Minn. Stat. § 216B.243 and Minn. R. Chapters 7849 and 7829.

3. All relevant substantive procedural requirements of law and rules have been fulfilled prior to the identification of resource proposal or proposals that will provide the most reasonable and prudent strategy for Xcel to meet the needs of its service area. The Commission provided legally sufficient public notice.

4. The forecasts, analyses, and cost analyses presented in these proceedings through the competitive resource acquisition process, bidder proposals, exhibits, and witness testimony were reasonably reliable and appropriate for determining the resource proposal or proposals that will provide the most reasonable and prudent strategy for Xcel to meet the needs of its service area.

5. Under the Track 2 process, it is the Commission's role to select the most reasonable, prudent resources to meet Xcel's need.

6. Failure to select the Solar Proposal as a capacity resource to meet the needs of Xcel's service area would adversely affect the future adequacy, reliability, safety, and efficiency of the energy supply to Xcel Energy, Xcel Energy's customers, and the people of Minnesota and neighboring states.

7. No more reasonable and prudent alternative to the Solar Proposal has been demonstrated by a preponderance of the evidence on the record.

8. The Solar Proposal will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.

[144] *See id*.

9. The record does not demonstrate that the design, construction, operation, or retirement of the Solar Proposal will fail to comply with the relevant policies, rules, and regulations of other state and federal agencies and local governments.

10. The record demonstrates that the Solar Proposal will generate power by means of a renewable energy source and that the Solar Proposal is in the public interest when compared to the alternative non-renewable resources proposed in this case.

11. The Solar Proposal will not contribute to statewide power sector carbon dioxide emissions and thus meets the greenhouse gas reduction goals of Minn. Stat. § 216H.02.

12. The Solar Proposal will help Xcel meet its SES obligations.

13. The Solar Proposal satisfies the criteria set forth in Minn. Stat. § 216B.243 and Minn. R. 7849.0120.

14. The Solar Proposal proposed by Geronimo is a renewable resource in the public interest and should be the first resource selected to meet Xcel's capacity need.

Based upon the foregoing Conclusions, the Administrative Law Judge makes the following:

RECOMMENDATION

IT IS RESPECTFULLY RECOMMENDED that the Commission select the Solar Proposal to provide up to 100 MW of AC nameplate capacity to meet Xcel's capacity need in 2017; that the Commission order that Xcel and Geronimo proceed to PPA negotiations for the Solar Proposal; that the Commission select a second non-renewable resource with a flexible in-service date to meet Xcel's capacity need; that, if applicable, the Commission order Xcel to enter into contract negotiations with the second-selected, non-renewable resource and that the negotiated contract contain flexible provisions allowing the resource to reach commercial operation in 2017, 2018 or 2019; that the Commission require Xcel to provide status report updates in 2014 and 2015 that reassess the timing of Xcel's capacity need; and the Commission require that Xcel's 2015 status report contain a recommendation regarding the in-service date for the second-selected resource.

Dated this ___ day of_____.

_____
Eric L. Lipman
Administrative Law Judge

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