

The Commission met on **Thursday, March 27, 2014**, with Chair Heydinger and Commissioners Boyd, Lange, and Wergin present.

The following matters came before the Commission:

ENERGY AGENDA

G-008/CI-04-2001 and G-008/M-14-134

In the Matter of CenterPoint Energy's Request for Cold Weather Rule Script Revisions

Commissioner Boyd moved to approve CenterPoint Energy's requested changes to its Cold Weather Rule script, with the clarifying modifications proposed by the Minnesota Department of Commerce (the Department).

The motion passed 4 – 0.

E-002/CN-12-1240

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

Commissioner Lange moved to do the following:

1. In order to meet reliability and adequacy requirements, to comply with Minnesota energy policy statutes, and to address uncertainty within Minnesota and the footprint of the Midcontinent Independent System Operator, Inc. (MISO), regarding aging infrastructure and pending environmental regulations, direct Northern States Power Company d/b/a Xcel Energy (Xcel) to separately negotiate power purchase agreements with Geronimo Wind Energy, LLC, d/b/a Geronimo Energy (Geronimo) and Calpine Corporation (Calpine) to address the overall Xcel system needs identified in this record and the March 5, 2013 Integrated Resource Plan Order.¹
2. Find that negotiated terms that shift risk or unknown costs to ratepayers are not likely to be reasonable. Find that bidders shall be held to the prices and terms used to evaluate each bid for purposes of cost recovery from Xcel ratepayers. Ratepayers will not be at risk for costs that are higher than bid or for benefits assumed in bids that do not materialize. If actual costs are lower than bid, the bidders should be allowed to keep those savings.

¹ *In the Matter of Xcel Energy's 2011-2025 Integrated Resource Plan*, Docket No. E-002/RP-10-825, Order Approving Plan, Finding Need, Establishing Filing Requirements, and Closing Docket (March 5, 2013).

3. Require that power purchase agreements provide terms that sufficiently protect ratepayers from risks associated with the non-deliverability of accredited capacity or energy from the project(s) as proposed.

Commissioner Wergin proposed amending paragraph 1 as follows:

1. In order to meet reliability and adequacy requirements, to comply with Minnesota energy policy statutes, ~~and to address uncertainty within Minnesota and the footprint of the Midcontinent Independent System Operator, Inc. (MISO), regarding aging infrastructure and pending environmental regulations,~~ direct Northern States Power Company d/b/a Xcel Energy (Xcel) to separately negotiate power purchase agreements with Geronimo Wind Energy, LLC, d/b/a Geronimo Energy (Geronimo) and Calpine Corporation (Calpine) to address the overall Xcel system needs identified in this record and the March 5, 2013 Integrated Resource Plan Order.²

Commissioner Lange accepted Commissioner Wergin's amendment, and proposed further amendments as follows:

1. In order to meet reliability and adequacy requirements, and to comply with Minnesota energy policy statutes, direct Xcel to separately negotiate power purchase agreements with Geronimo Wind Energy, LLC, d/b/a Geronimo Energy (Geronimo), ~~and~~ Calpine Corporation (Calpine), and Invenergy Thermal Development, LLC (Invenergy), and develop pricing terms for Black Dog Unit 6 to address the overall Xcel system needs identified in this record and the March 5, 2013 Integrated Resource Plan Order,³ and to be reviewed by the Commission to determine which projects best meet these needs.
2. Find that negotiated terms that shift risk or unknown costs to ratepayers are not likely to be reasonable. Find that bidders shall be held to the prices and terms used to evaluate each bid for purposes of cost recovery from Xcel ratepayers. Ratepayers will not be at risk for costs that are higher than bid or for benefits assumed in bids that do not materialize. ~~If~~ If actual costs are lower than bid, the bidders should be allowed to keep those savings.
3. Require that power purchase agreements provide terms that sufficiently protect ratepayers from risks associated with the non-deliverability of accredited capacity and/or energy from the project(s) as proposed.

The amended motion passed 4 – 0.

Commissioner Wergin moved to do the following:

² *Id.*

³ *Id.*

4. Find that the Environmental Report and the record address the issues outlined in the Department's Scoping Decision.

The motion passed 4 – 0.

Chair Heydinger moved to do the following:

5. Adopt the ALJ Findings with staff recommended modifications to A-1, J-1, 8-1, 12-1, 15-2, 16-1, 20-1, 21-1, 28-2 (staff), 30-1, 63-1, 65-1, 67-1, 112-1, 115-1, 151-1, 153-2 (staff), 156-1, 171-1, 174-1, 179-1, 180-1, 181-1, 182-2 (staff), 183-2, 187-1, 192-1, 193-1, 219-1, and 233-1 as shown in Attachment A, below.

The motion passed 4 – 0.

Commissioner Wergin moved to do the following with respect to Xcel's next resource plan:

6. Require status updates from Xcel in October 2014 and October 2015.
7. Delay Xcel's July 1, 2014 Resource Plan deadline to January 2, 2015.

The motion passed 4 – 0.

Chair Heydinger moved to do the following:

8. Adopt Finding of Fact 267 amended as follows --

267. A reasonable and prudent purchaser of energy resources would not risk incurring project cancellation costs when other, reasonably-priced and scalable alternatives exist.⁴ However, delay and cancellation provisions are appropriate considerations for power purchase agreement negotiations which would ultimately be reviewed by the Department and the Commission.

The motion passed 4 – 0.

Commissioner Lange moved to reconsider adoption of Motion Paragraph 1.

The motion passed 4 – 0.

Commissioner Lange moved to approve the following:

1. In order to meet reliability and adequacy and to comply with Minnesota's energy policy statutes, direct Northern States Power Company d/b/a Xcel Energy (Xcel) to negotiate a power purchase agreement with Geronimo Wind Energy, LLC, d/b/a Geronimo Energy (Geronimo), which will be reviewed by the Commission to ensure that the negotiated terms are consistent with the public interest. Xcel shall

⁴ See generally, Hearing Transcript, Vol. 1 at 126-27.

also negotiate power purchase agreements with Calpine Corporation (Calpine), and Invenergy Thermal Development, LLC (Invenergy), and develop price terms for Black Dog Unit 6, to be reviewed by the Commission to determine which natural gas project(s) best address the overall Xcel system needs identified in this record and the March 5, 2013 Integrated Resource Plan Order.⁵

Commissioner Boyd proposed amending the motion as follows:

1. In order to meet reliability and adequacy and to comply with Minnesota's energy policy statutes, direct Northern States Power Company d/b/a Xcel Energy (Xcel) to negotiate a power purchase agreement with Geronimo, which will be reviewed by the Commission to ensure that the negotiated terms are consistent with the public interest. Xcel shall also negotiate power purchase agreements with Calpine Corporation (Calpine), and Invenergy Thermal Development, LLC (Invenergy), and develop price terms for Black Dog Unit 6, to be reviewed by the Commission to determine which natural gas project(s), if any, best address the overall Xcel system needs identified in this record and the March 5, 2013 Integrated Resource Plan Order.⁶

Commissioner Lange accepted the proposed amendment

The amended motion passed 4 – 0.

Chair Heydinger moved to do the following:

9. Adopt Finding of Fact 118 amended as follows as reflecting the Commission's analysis of the record:

118. Great River Energy's proposal offered accredited capacity from its generation assets to meet a portion of Xcel's need.⁷ GRE offers to sell capacity credits for select years. As such, GRE offers no actual capacity or energy to the system and no longer-term solution to fill Xcel's need. Nonetheless, both Xcel and the Department included GRE in the Strategist modeling, to determine if this capacity credit offer had sufficient value to warrant consideration, for example, by delaying the need to actually add resources to the system. However, the value of delaying other resource additions was outweighed by the costs of the GRE proposal.⁸ Thus, the record demonstrates that it is neither reasonable nor prudent for Xcel to pursue a capacity credit purchase from GRE.

The motion passed 4 – 0.

⁵ *In the Matter of Xcel Energy's 2011-2025 Integrated Resource Plan*, Docket No. E-002/RP-10-825, Order Approving Plan, Finding Need, Establishing Filing Requirements, and Closing Docket (March 5, 2013).

⁶ *Id.*

⁷ Ex. 19 at 1 (GRE Proposal); Ex. 63 at 2-3 (Selander Direct).

⁸ Ex. 46, p. 24 (Wishart Direct).

Chair Heydinger moved to do the following:

10. Refrain from adopting the proposed Findings of Fact 253, 254 and 257.

Commission Wergin proposed amending the motion as follows:

10. Refrain from adopting the proposed Findings of Fact ~~253, 254 and 257~~ concerning the levelized cost of electricity, and instead adopt the following Findings of Fact as amended –

*253. In this circumstance, the evidence and long-standing Commission precedent is that capacity expansion modeling a levelized cost of electricity (LCOE) points to a better prediction of costs and impacts to ratepayers than a levelized cost of electricity (LCOE) analysis.*⁹

*254. LCOE 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. However, LCOE does not include any impacts on a utility's existing resources when another resource is added – such as avoided fuel costs, avoided variable costs, and avoided capacity costs of the existing facilities.*¹⁰

Chair Heydinger accepted the amendment.

The amended motion passed 4 – 0.

Commissioner Wergin moved to do the following:

11. Affirm Findings of Fact 257, and further find that on a system cost basis, a solar unit is also the highest cost standalone resource.¹¹

The motion passed 4 – 0.

Chair Heydinger moved to do the following:

12. Refrain from adopting Finding of Fact 255.

The motion passed 4 – 0.

Chair Heydinger moved to do the following:

13. Adopt the rationales set forth in the following Findings of Fact as amended below:

⁹ Ex. 47 at 2-3 (Wishart Rebuttal) ~~See generally, Ex. 52 at 7 (Hibbard Direct).~~

¹⁰ ~~Id. Ex. 52 at 6 (Hibbard Direct).~~

¹¹ See, Ex. 74 at 7 (Norman Rebuttal), referencing Dr. Rakow and Mr. Wishart's direct testimonies.

205. Based upon demand loss factors by voltage level, Geronimo indicates that its proposal will result in a four percent reduction in transmission line losses. Geronimo calculated that tThis reduction would results in a [present value of societal costs, or] PVSC savings of approximately \$9 million.¹²

263. A reasonable and prudent purchaser of energy resources would not have assumed that the value of [a] generation source [partially fulfilling the requirements of the Minnesota's Solar Energy Standards (SES)] was zero.¹³ However, all analyses assumed that Xcel would fully comply with Minnesota's SES by 2020.¹⁴ Further, as indicated in Section XI [of the Administrative Law Judge's Findings of Fact, Conclusions of Law, and Recommendation], Xcel cannot both use the [Solar Renewable Energy Credits, or] S-RECs to comply with Minnesota's SES and sell the S-RECs; as a result, the value of the credits is fully accounted for in the Department's analyses.

264. A reasonable and prudent purchaser of energy resources would not have assumed that the value of avoiding transmission line losses was zero.¹⁵ Thus, the Department analyzed the transmission-related issues attributable to each proposal and ensured that all transmission costs were included in each bid.¹⁶

265. A reasonable and prudent purchaser of energy resources, for Xcel's ~~stated~~ needs determined by the Commission, would not have relied upon Xcel's Fall 2011 sales forecast alone.¹⁷ As a result, the Department not only relied upon Xcel's Fall 2011 sales forecast but also employed a forecast uncertainty band wide enough to encompass Xcel's more recent (spring 2013) forecasts.¹⁸

266. A reasonable and prudent purchaser of energy resources, for Xcel's ~~stated~~ needs determined by the Commission would not have limited the evaluation to energy plants that produced 300 [megawatts (MW)] by 2019.¹⁹ Therefore, the Department analyzed combinations of plants less than 300 MW and analyzed all combinations of plants under deficits far smaller than 300 MW by 2019.²⁰

Commissioner Boyd proposed amending the motion to include the following:

¹² Ex. 13 at 31 (Distributed Solar Energy Proposal); Ex. 61 at 7 (Beach Rebuttal).

¹³ Compare, Ex. 83 at 8-10 (Rakow Direct); Hearing Transcript, Vol. 1 at 145 with Ex. 59 at 18-19 (Engelking Rebuttal).

¹⁴ Ex. 83 at 9-13 (Rakow Direct)

¹⁵ See generally, Ex. 46 at 35 (Wishart Direct); Hearing Transcript, Vol. 2 at 45.

¹⁶ Ex. 81 at CJS-5 at 8 (Shaw Direct Attachments); Ex. 79 at 5 (Shaw Direct).

¹⁷ Hearing Transcript - Vol. 2 at 30.

¹⁸ Ex. 76 at 14 (Shah Direct).

¹⁹ Compare, Ex. 46 at 25-27 (Wishart Direct); Ex. 83 at 26 (Rakow Direct); Ex. 86 at 3 (Rakow Rebuttal); Hearing Transcript - Vol. 2 at 29-30 with Ex. 46 at 10 (Wishart Direct).

²⁰ Ex. 84 SR-3 and SR-4A (Rakow Direct Attachments); Ex. 84 SR-5A (Rakow Direct Attachments).

206. Xcel would incur any costs associated with transmission losses through the differential in locational marginal prices (LMP) between a generator and its load (called congestions charges). Xcel provided the Department with an analysis of the LMP differential for all bids except for the Geronimo proposal; for Geronimo, Xcel stated that “The Company will be responsible for congestion charges associated with ... any portion of the Geronimo Energy proposal that interconnects to the MISO transmission grid.²¹ acknowledges that, if accepted, Geronimo’s proposal will result in a reduction in transmission losses and that those avoided transmission line losses are not captured in either Xcel’s or the Department’s models. Xcel stated that Geronimo’s proposal was not evaluated due to insufficient information on the locations of the various solar sites.²² Based upon Xcel’s data, the Department concluded that no adjustment to any of the bids was necessary.²³ A \$9 million PVSC adjustment would not significantly change the Department’s Strategist modeling results.²⁴

Chair Heydinger accepted the proposed amendment.

The amended motion passed 4 – 0.

Chair Heydinger moved to do the following:

14. Adopt Finding of Fact 21 as amended below, noting that the finding addresses the level of demand on Xcel’s system at the time of the MISO system’s coincident peak:

21. Yet, the MISO system can, and frequently does, reach its system peak at a different hour than Xcel’s system. Between 2006 and 2012, for example, customer demand on Xcel’s system was, on average, 5 percent lower than during MISO’s peak times. The difference varied from zero percent (in 2006) to 14 percent (in 2007).²⁵

The motion passed 4 – 0.

Chair Heydinger moved to reconsider Motion Paragraph 5.

The motion passed 4 – 0.

Chair Heydinger moved to do the following:

²¹ Ex. 81 at CJS-5 at 4 (Shaw Direct Attachments).

²² Id.

²³ ~~Ex. 46 at 35 (Wishart Direct)~~ Ex. 81 at CJS-5 at 8 (Shaw Direct Attachments); Ex. 79 at 5 (Shaw Direct).

²⁴ See Ex. 84 SR-4A, SR-5A, and SR-5B (Rakow Direct Attachments).

²⁵ Ex. 46 at 8-9 and Table 3 (Wishart Direct); Ex. 83 at 23-24 (Rakow Direct).

5. Adopt the following ALJ Findings with staff recommended modifications to A-1, J-1, 8-1, 12-1, 15-2, 16-1, 20-1 as modified in Motion Paragraph 14, 28-2 (staff), 30-1, 63-1, 65-1, 67-1, 112-1, 115-1, 151-1, 153-2 (staff), 156-1, 171-1, 174-1, 179-1, 180-1, 181-1, 182-2 (staff), 183-2, 187-1, 192-1, 193-1, 219-1, and 233-1 as shown in Attachment A, below.

The motion passed 4 – 0.

Chair Heydinger moved to do the following:

15. Adopt only the remaining portions of the ALJ's report that are consistent with the Commission's decisions and the following findings:
 - A. The Department's analysis of its bids employed a forecast band wide enough to encompass Xcel's spring 2013 forecast.
 - B. When combined, Xcel and the Department used a wide range of assumptions, inputs, and considerations in each of the Strategist models and the results provide a reasonable range of uncertainties, futures, and reasonable outputs to consider.
 - C. The Commission has concerns with applicability of the new MISO planning reserve margin, including --
 - 1) The variability of Xcel's diversity factor relative to the MISO system's,
 - 2) Uncertainty about the availability of demand-side management at the coincidental peak,
 - 3) The changing reserve margin,
 - 4) Lack of long-term reserve margin, and
 - 5) The appropriateness of the use of that planning reserve as a state resource planning method.

The motion passed 4 – 0.

Chair Heydinger moved to do the following:

16. Clarify the record as set forth in Findings of Fact 208 and 210 as amended below:

*208. Using MISO's rate for network integration service on Xcel's system, Geronimo calculated the avoided transmission capacity benefits associated with Geronimo's proposal is to be approximately \$3.24 million each year beginning the first year Geronimo's proposal is in service.*²⁶

210. Geronimo further calculated that these \$3.24 million annual savings reduce the PVSC for Geronimo's project by \$33 million. However, Geronimo was unable to demonstrate any need for Xcel's transmission system to be expanded in the areas its

²⁶ Ex. 61 at 9-10 (Beach Rebuttal).

proposed project would be built. Therefore, potential savings, if any, are very speculative and no adjustment is proper.²⁷

The motion passed 4 – 0.

Chair Heydinger moved to do the following:

17. Find that the Commission’s decisions are compatible with socioeconomic and environmental requirements, and compliant with other applicable state law.

The motion passed 4 – 0.

Commissioner Wergin moved to do the following:

18. Adopt Finding of Fact 282 as amended below:

*282. The fourth criterion under Minn. R. 7849.0120 is whether the proposed resource will comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.*²⁸ All of the proposals in this record will comply with relevant policies, rules and regulations of other state and federal agencies and local governments. This criteria does not provide an advantage to any of the proposals.²⁹

The motion passed 4 – 0.

Commissioner Wergin moved to do the following:

19. Refrain from adopting Finding of Fact 289.

The motion passed 4 – 0.

There being no further business, the meeting was adjourned.

APPROVED BY THE COMMISSION: June 4, 2014



Burl W. Haar, Executive Secretary

²⁷ *Id.*; Ex. 59 at 20 (Engelking Rebuttal).

²⁸ Minn. R. 7849.0120 (D).

²⁹ *See generally* Ex. 38 at Sections 6 and 7 (Environmental Report).

E-002/CN-12-1240

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

Attachment A: Adopted Findings with Staff Recommendations

A-1. On March 5, 2013, the Minnesota Public Utilities Commission (MPUC or Commission) concluded that Northern States Power Company d/b/a Xcel Energy (Xcel) had demonstrated the need for an additional 150 megawatts (MW) of electricity generation by 2017. ~~The Commission further concluded that it was possible that this need could continue to increase~~ up to 500 MW by 2019.

J-1. Christina K. ~~Brusven~~ Brusven, Fredrikson & Byron, appeared on behalf of Geronimo Wind Energy, LLC, d/b/a Geronimo Energy, LLC (Geronimo).

8-1. The precise quantity of energy to be obtained through this process was not specified stated. The Commission stated:

In contrast, parties disagree about the magnitude of Xcel's needs. For example, the Environmental Intervenors and the Large Power Intervenors argue that the 500 MW figure may exceed customer demand. In contrast, Calpine and the Department argue that the 500 MW figure is justified, and may even be too low.

The idea that Xcel will need an additional 500 MW by 2019 is well-supported in the record. Indeed, Xcel has previously argued that it would need up to 600 MW of additional capacity – and Xcel generated this estimate before it cancelled plans to add 118 MW of new capacity to its Prairie Island plant.

*For purposes of Xcel's competitive bidding docket, the Commission finds it appropriate to solicit proposals for an additional 150 MW in 2017, increasing up to 500 MW by 2019. This statement does not preclude Xcel from acquiring more than 150 MW of new resources by 2017.*³⁰

*~~Instead, the Commission identified a range of 150 MW in 2017, potentially increasing to 500 MW by 2019. Moreover, the Commission concluded that this description sufficed “to inform potential bidders of the scope of projects that the Commission will be considering.”~~*³¹

*12-1. Following the receipt of proposals, there ~~were have been significant~~ changes pertaining to energy resources on Xcel's system and potential changes in need estimated by Xcel; all factors were analyzed in this proceeding ~~regulatory and operational environment.~~*³²

³⁰ *Id* at 6.

³¹ *Id.* at 2 and 6.

³² Ex. 49 at 2-7 (Alders Direct) (The “September 6 2013 Update of the Company’s need indicates a capacity deficit of 93 MW in 2017, which grows to 307 MW by 2019. However, there are factors that create uncertainty and could materially affect our resource need assessment. The new need assessment is another data point that should be considered in analyzing which resource proposals should be selected to address the range of the Company’s potential need in the 2017-2019 timeframe”).

15-2. On July 16, 2013, Xcel filed a petition for approval of 600 MW of wind generation. While these projects are expected to be placed in service in 2015, depending upon the availability of transmission upgrades, Xcel forecasted that these wind generation resources would be placed into service between 2017 and 2019 will not provide accredited capacity until 2021.³³

16-1. On August 9, 2013, Xcel filed a petition for approval of an additional 150 MW of wind generation. Xcel projected that these wind resources would be operational and available to Xcel by 2015 but would not provide accredited capacity until 2021.³⁴

20-1. In the past, MISO has calculated reserve margins so that they ~~would be sufficient to meet MISO system peaks were applied to each utility's peak demand.~~ However, MISO recently proposed to apply the reserve margin to each utility's demand at the time of MISO's system peak.³⁵

28-2. The Department likewise asserts that only Xcel's Fall 2011 forecast, and not its most-recent estimates, has been approved by the Commission. It states further that it has not verified the accuracy of Xcel's spring 2013 sales forecast, nor relied upon its projections in this proceeding.³⁶ Nonetheless, the Department's analysis of the bids employed a forecast band wide enough to encompass Xcel's spring 2013 sales forecast.³⁷

30-1. The Department ~~joins~~ agreed with Xcel that flexible in-service dates could result in substantial cost savings in this recommendation, noting that delayed in-service dates for Invenergy's projects could result in substantial cost savings.³⁸ However, the Department did not take a position on cancelling projects.

63-1. Xcel proposes a Model F combustion turbine. This combustion turbine can generate 150 MW within ten minutes of a "cold start," and operates in a range between 50 to 100 percent load while meeting emission limits. The unit has faster ramp rates over the load range. During summer heat and humidity conditions, the maximum output of the unit is approximately ~~215~~ 208 MW.³⁹

65-1. The output of Black Dog Unit 6 depends upon ambient weather conditions (primarily temperature and humidity) and altitude. Nominal generating capacity will be approximately ~~215~~ 208 MW at summer ambient conditions of 95 degrees Fahrenheit and relative humidity of 30 percent, with an altitude of 720 feet above sea level.⁴⁰

³³ In the Matter of the Petition of Xcel Energy for Approval of the Acquisition of 600 MW of Wind Generation, Docket No. E-002/M-13-603.

³⁴ In the Matter of the Petition of Xcel Energy for Approval of the Acquisition of 150 MW of Wind Generation, Docket No. E-002/M-13-716.

³⁵ Ex. 83 at 22-24 (Rakow Direct).

³⁶ Hearing Transcript - Vol. 2 at 29-30.

³⁷ Ex. 76 at 13 (Shah Direct).

³⁸ Ex. 86 at 11-12 (Rakow Rebuttal); See, Hearing Transcript, Vol. 2 at 55.

³⁹ Ex. 1 at 1-10 (Xcel Energy Proposal); Ex. 46 at 12 (Wishart Direct).

⁴⁰ Ex. 1 at 4-6 (Xcel Energy Proposal); Ex. 46 at 12 (Wishart Direct).

67-1. In the case of a 2017 in-service date, Xcel Energy proposes to construct Unit 6 in 2016 and 2017. Under its proposal, decommissioning, demolition and removal of the existing Unit 4 turbine, generator, boiler and related equipment would begin in the fall of 2014.⁴¹

112-1. Xcel could likewise market the Solar Renewable Energy Credits (S-RECs) to other utilities that need to meet solar-specific requirements in other states, but only to the extent that Xcel does not use the S-RECs to comply with a Renewable Energy Standard.⁴²

115-1. Geronimo submitted 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. The second pricing proposal is an energy-only payment that bundles all capacity, energy and environmental attributes into a dollars per megawatt hour price. Both pricing proposals include all renewable or solar energy credits and environmental attributes.⁴³

151-1. The \$1.55 million cost was reasonably included in a post-model Present Value ~~Rate of Return of Revenue Requirements~~ (PVRR) adjustment for all scenarios and contingencies evaluating Calpine's proposal.⁴⁴

153-2. The Department's modeling assumed that if Geronimo's proposal was selected by the Commission, there would be no reduction in capacity, energy, and costs to meet the Solar Energy Standard (SES). For the purposes of its evaluation of proposals, the Department assumed that the added value of Geronimo's proposal as a SES-qualifying generation source was zero. However, the Department explained how to interpret its modeling results assuming an offsetting reduction in the capacity and energy to meet the SES.⁴⁵

156-1. If the S-RECs were sold by Xcel, At a price of \$5 for each marketable S-REC, the Geronimo proposal will result in a PVSC reduction of \$10 million ~~annually~~, without considering degrading performance. At a price of \$20 for each marketable S-REC, the Geronimo proposal will result in a PVSC reduction of \$38 million ~~annually~~.⁴⁶

171-1. The Department included in its analysis different assumptions regarding the reserve ratio that is applied to the ~~amount of capacity that is reserved to serve load during periods of peak demand on the electrical system.~~ On the Department's behalf, Dr. Rakow considered two different methods: the reserve ratio used by Xcel in its 2010 IRP and a new reserve ratio to be used by MISO for its peak.⁴⁷ This reserve ratio does not reflect the higher percentage reserve requirement that MISO presented in October, 2013.⁴⁸

⁴¹ Ex. 1 at 1-11 (Xcel Energy Proposal).

⁴² Ex. 13 at 1 (Geronimo Proposal).

⁴³ Ex. 57 at 5 (Engelking Direct), Geronimo Solar Proposal, at 19.

⁴⁴ Ex. 83 at 7-8 (Rakow Direct).

⁴⁵ Ex. 83 at 8-11 (Rakow Direct); Hearing Transcript, Vol. 2 at 145.

⁴⁶ Ex. 59 at 18-19 and Table 2 (Engelking Rebuttal).

⁴⁷ Ex. 83 at 22-25 (Rakow Direct).

⁴⁸ Ex. 83 at 39 (Rakow Direct)

174-1. Xcel's MISO's prior peak reliability method (also known as "non-coincident peak" method) refers to the reliability method used during the analysis of Xcel's last Commission-approved resource plan – the 2010 IRP. Under this method a 3.79 percent reserve ratio was added to Xcel's forecast of the Company's peak demand – the peak demand that is non-coincident with any other entity's peak. With this capacity target in mind, the Strategist modeling software added resources until Xcel had sufficient capacity to cover both the Company's peak demand forecast and the required reserves.⁴⁹

179-1. Due to the uncertainties discussed above, the Department is not able to accurately forecast the amount of reserves that will be required under the new MISO requirements. For instance, it is not clear which diversity factor should be applied to discount non-coincident peak demand. There are several different alternatives that one may apply. Likewise, it is not clear to what extent demand side management (DSM)-measures will reduce Xcel's non-coincident peak demand. The amount of the hour-by-hour demand reduction from Xcel's Saver's Switch air conditioning interruption program, for example, can reduce hour by hour demand for energy vary by approximately more than 100 MW.⁵⁰

180-1. The forecasted amount of Xcel's needs varies depending upon whether one uses the previous reliability calculation method or MISO's new method. Moreover, the difference in forecasts is substantial. When the new MISO method of calculating reserves is used, there is a reduction in net peak demand of between about 275 MW and 290 MW each year. This calculation does not take into account any changes in DSM capability or changes in MISO's short-term reserve requirement percentages.⁵¹

181-1. Both the Department and Xcel only evaluated combinations of energy plants that produced 300 MW by 2019. In the first round of Strategist analysis the Department evaluated 24 different combinations of forecasts, solar accreditation, required reserve ratios, and wind additions. This analysis resulted in a wide variety of capacity deficits. In the second round of Strategist analysis, under base case conditions the Department's model has a deficit of about 300 MW by 2019. However, the Department also used four different forecast contingencies, again presenting Strategist with a variety of capacity deficits. Xcel's Strategist analysis evaluated the proposals assuming a deficit of about 300 MW in 2019.⁵²

182-2. The identified need minimum threshold used by Xcel was just larger than Calpine's Mankato facility rated summer capacity of 278 MW.⁵³

183-2. The minimum quantity was also more than 11 times Xcel's most recent projection of need for 2019 – 26 MW.⁵⁴

⁴⁹ *Id.* at 22-23.

⁵⁰ *Id.* at 24-25.

⁵¹ *Id.*

⁵² Ex. 46 at 25-27-10-11 (Wishart Direct); Ex. 84 SR-3 and SR-4A (Rakow Direct Attachments) Ex. 83 at 26 (Rakow Direct); Ex. 86 at 3 (Rakow Rebuttal).

⁵³ Ex. 46 at 2 and 16 (Wishart Direct).

⁵⁴ *Id.* at 10.

187-1. To affect comparisons between proposals of very different sizes, the Department allowed Strategist to added generic energy units to its modeling of particular bid packages so as to compare the life cycle costs to Xcel's system of a common the various packages across bidders. The price of a generic unit was provided by Xcel and was based upon the estimated current cost to construct a particular type of energy generation unit, escalated over time for inflation.⁵⁵

192-1. The generic gas unit price that Xcel developed was higher than the prices of the gas plants bid in this docket. As a result, each of the gas proposals bid in this proceeding was comparably less expensive than the generic units; a fact that benefited the gas proposals in proportion to their size during the Department's evaluation process (the larger the proposal the less it relies upon the more expensive generic units). Since Xcel locked-in the expansion plan in Strategist this issue did not impact Xcel's modeling.⁵⁶

193-1. ~~The generic solar unit price that Xcel developed was lower than the prices of the solar plant bid in this docket. As a result, Geronimo's proposal was evaluated as comparably more expensive than the generic units in the Department's modeling; a fact that disadvantaged its proposal during the evaluation process. Geronimo's proposal was also the smallest among the bids submitted. Therefore, Geronimo's proposal actually relied more upon the (lower cost) generic units and also benefitted. Again, since Xcel locked-in the expansion plan in Strategist this issue did not impact Xcel's modeling.~~⁵⁷

219-1. Importantly, however, the Black Dog ~~Unit 6~~ combined with Calpine's CC unit is a large ~~unit~~ package. To broaden and deepen the Department's analyses, Dr. Rakow analyzed the effects of deploying smaller energy solutions (and covering the deficits for a shorter period of time) and adjusting the proposed in-service dates of energy generation sources.⁵⁸

233-1. Importantly, however, Minn. Stat. §§ 216B.2422, subd. 4 and 216B.243, subd. 3a, places a limitation on the Commission's powers to confer a certificate of need. The statute 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." and "may not issue a certificate of need under this section for a large energy facility that generates electric power by means of a nonrenewable energy source, . . . 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."⁵⁹

⁵⁵ See, e.g., Hearing Transcript, Vol. 1 at 109-110.

⁵⁶ Ex. 46 at 36 (Wishart Direct); Ex. 83 at 30 (Rakow Direct).

⁵⁷ Ex. 46 at 36 (Wishart Direct); Ex. 59 (Engelking Rebuttal, Schedule EME-3); Ex. 83 at 30 (Rakow Direct); Hearing Transcript, Vol. 1 at 110.

⁵⁸ Ex. 83 at 36-37 (Rakow Direct).

⁵⁹ Minn. Stat. § 216B.2422, subd. 4; see also, Minn. Stat. § 216B.243, subd. 3a.