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July 30, 2015

— Via Email and Federal Express —

Mr. Darrell Nitschke, Executive Secretary
North Dakota Public Service Commission
State Capitol Building – 12th Floor
Bismarck, North Dakota 58505

Re: APPLICANT'S PROPOSED ORDER AND LATE FILED EXHIBITS
REQUEST FOR APPROVAL OF AN ADVANCE DETERMINATION OF PRUDENCE
(ADP) FOR A POWER PURCHASE AGREEMENT WITH AURORA SOLAR, LLC FOR
UP TO 100 MW OF SOLAR GENERATION (CASE NO. PU-15-095)

Dear Mr. Nitschke:

Northern States Power Company, doing business as Xcel Energy, submits to the North Dakota Public Service Commission in the above-referenced matter, the Company's Proposed Order and the following late filed exhibits:

NSP-LF1 – MISO Cost Benefit Analysis

NSP-LF2 – Minnesota Law and Goals, Dates – cheat sheet

*NSP-LF3 – How Does Solar Cost Flow to Wisconsin Company
(Wisconsin Interchange Agreement Whitepaper)*

*NSP-LF4 – Table 1, p. 10 update – (ND view of table 10)
(Fall 2014 Forecast, 2016-2030 Resource Plan Charts)*

NSP-LF5 – Advanced Determination of Prudence Issue Timeline

*NSP-LF6 – Minnesota Competitive Bid Process Overview
(force or impact of ND law)*

Darrell Nitschke
July 30, 2015
Page 2 of 2

An original and four (4) copies of the Proposed Order and late filed exhibits are being provided via Federal Express. Please contact me if you have any questions regarding this filing.

Sincerely,

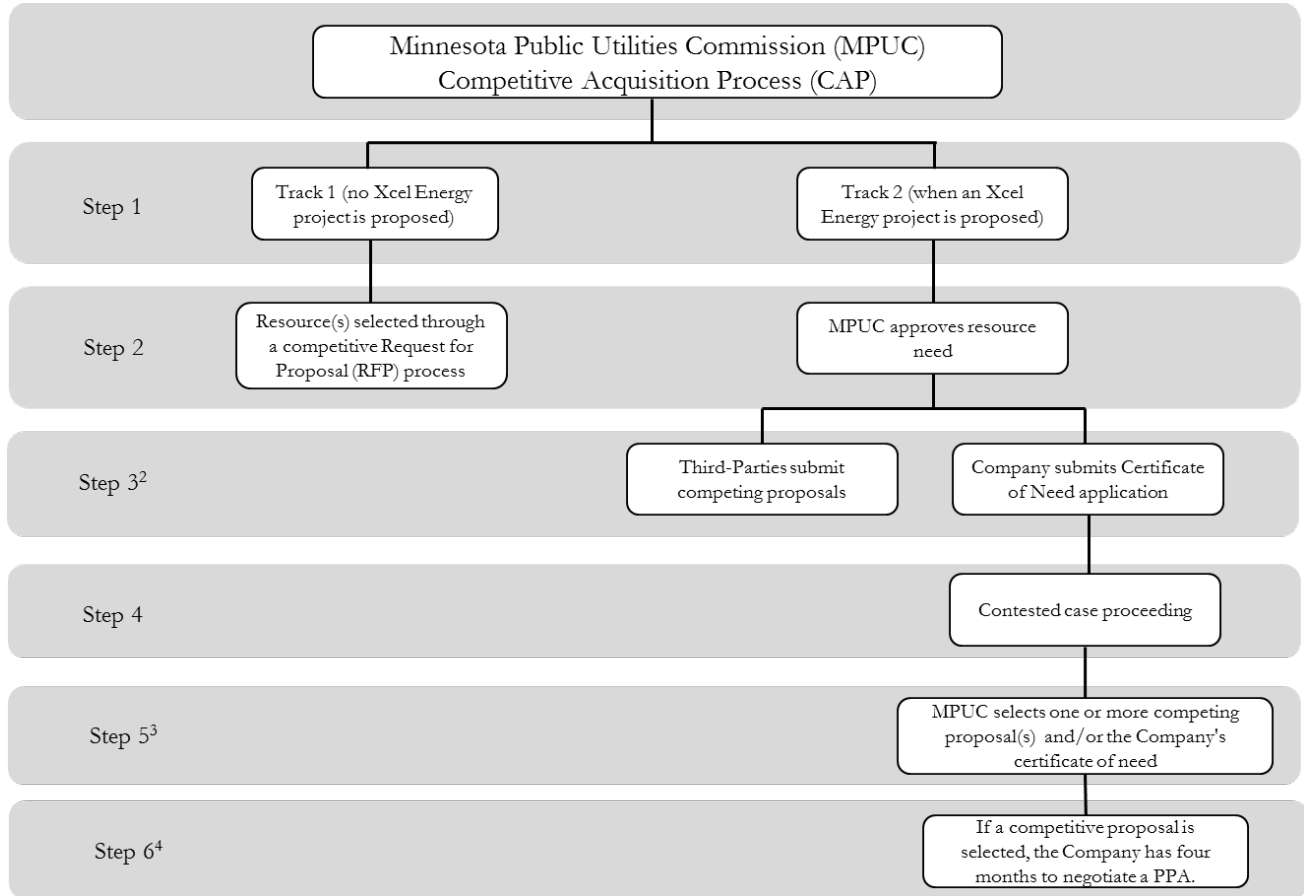


DAVID H. SEDERQUIST
Sr. Consultant, Regulation & Finance

Enclosures

cc: Mike Diller
Illona Jeffcoat-Sacco
Victor Schock
Jack Schuh
Jerry Lein

Northern States Power Company
 Case No. PU-15-95
Overview of the Minnesota Competitive Acquisition Process (CAP)¹



¹ Minn. Stat. § 216B.2422, subd. 5; *See also*, Attachment 1, *In the Matter of Northern States Power Company d/ b/ a Xcel Energy's Application for Approval of its 2004 Resource Plan*, Docket No. E002/RP-04-1752, ORDER ESTABLISHING RESOURCE ACQUISITION ORDER ESTABLISHING RESOURCE ACQUISITION PROCESS, ESTABLISHING BIDDING PROCESS UNDER MINN. STAT. § 216B.2422, SUBD. 5, AND REQUIRING COMPLIANCE FILING (May 31, 2006).

² *See generally*, Docket No. E002/CN-12-1240.

³ *See* Attachment 2, *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*, Docket E002/CN-12-1240, ORDER DIRECTING XCEL TO NEGOTIATE DRAFT AGREEMENTS WITH SELECTED PARTIES (May 23, 2014).

⁶ *See* Attachment 3, *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*, Docket E002/CN-12-1240, *In the Matter of a Draft Purchase Power Agreement with Geronimo Wind Energy, LLC, d/ b/ a Geronimo Energy, LLC*, Docket No. E002/M-14- 788, and *In the Matter of Draft Power Purchase Agreements with Calpine Corporation and Inenergy Thermal Development, and Proposed Price Terms for Black Dog Unit 6*, Docket No. E002/M-14-789, ORDER APPROVING POWER PURCHASE AGREEMENT WITH CALPINE, APPROVING POWER PURCHASE AGREEMENT WITH GERONIMO AND APPROVING PRICE TERMS WITH XCEL, (Feb. 5, 2015).

Northern States Power Company
Case No. PU-15-95

Attachment 1

Order Establishing Resource Acquisition Process, Establishing Bidding Process Under Minn. Stat.
§ 216B.2422, subd. 5, and Requiring Compliance Filing

Docket No. E002/RP-04-1752

May 31, 2006

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

LeRoy Koppendrayer
Marshall Johnson
Ken Nickolai
Thomas Pugh
Phyllis A. Reha

Chair
Commissioner
Commissioner
Commissioner
Commissioner

In the Matter of Northern States Power
Company d/b/a Xcel Energy's Application for
Approval of its 2004 Resource Plan

ISSUE DATE: May 31, 2006

DOCKET NO. E-002/RP-04-1752

ORDER ESTABLISHING RESOURCE
ACQUISITION PROCESS, ESTABLISHING
BIDDING PROCESS UNDER MINN. STAT.
§ 216B.2422, SUBD. 5, AND REQUIRING
COMPLIANCE FILING

PROCEDURAL HISTORY

On November 1, 2004, Northern States Power Company d/b/a Xcel Energy (Xcel) filed its 2004 resource plan, covering the fifteen-year planning period from 2005 through 2019. On November 17, 2005, after several rounds of stakeholder comments and extensive discovery, the Commission issued an interim order seeking more detailed proposals on how to improve the effectiveness of the Company's program for competitive procurement of generation.¹

Specifically, the interim order requested a detailed report from Xcel on how it would select new generation resources from the pool of competing alternatives, a detailed description from the Department of Commerce on its proposal that Xcel use a certificate-of-need-like process to select new baseload resources, and comments from interested persons on both filings.

The Company and the Department of Commerce made the filings required under the November 17, 2005 Order, and the following parties filed comments on those filings:

- Izaak Walton League of America – Midwest Office, Minnesotans for an Energy-Efficient Economy, Union of Concerned Scientists, and Minnesota Center for Environmental Advocacy, filing jointly (“Environmental Intervenors”)
- LS Power Associates, L.P. (LS Power)
- Excelsior Energy Inc.
- Gascoyne Project
- North Dakota Industrial Commission

¹ Order Seeking More Detailed Proposals, this docket.

On April 25, 2006, the matter came before the Commission. Having reviewed the entire record and having heard the arguments of the parties, the Commission makes the following findings, conclusion, and order.

FINDINGS AND CONCLUSIONS

I. Introduction

A. The Resource Planning Process

The resource planning statute and rules are detailed, but they basically require utilities to file periodic reports on (1) the projected energy needs of their service areas over the next 15 years; (2) their plans for meeting projected need; (3) the analytical process they used to develop their plans for meeting projected need; and (4) their reasons for adopting the specific resource mix proposed to meet projected need. Minn. Stat. § 216B.2422 and Minn. Rules Chapter 7843.

These requirements are designed to strengthen utilities' long term planning processes by providing input from the public, other regulatory agencies, and the Commission. They are also designed to ensure that utilities give adequate consideration to factors whose public policy importance has grown in recent years, such as the environmental and socioeconomic impact of different resource mixes.

B. The Resource Acquisition Process

Historically, electric utilities have been vertically integrated; that is, they have themselves provided all three of the major services – generation, transmission, and distribution – required to ensure reliable service to retail customers. Over the past fifteen to twenty years, however, state and federal policies have encouraged or permitted utilities to outsource at least some of their generation and transmission functions, on the theory that competition in the generation sector and centralized operations in the transmission sector could result in greater efficiency and lower costs.

Xcel has outsourced many of its transmission functions by joining the Midwest Independent System Operator, Inc. (MISO), a regional transmission organization that serves as a neutral, third-party administrator of member utilities' transmission facilities. The Company has also committed to outsourcing many of its generation functions – at least as to *new* generation – through competitive bidding or other market-based procurement processes.

The Company has been using an “All-Source Bidding” process, in which it does not specify a need for specific increments of generation or, in most cases, for generation from specific technologies. Instead, it uses the resource planning process to determine how much new supply it needs and then invites potential suppliers to submit proposals based on the published results of that process.

Despite this market-based approach to acquiring new generation, the Company is still both the supplier of last resort, since it retains the duty to serve regardless of the outcome of the All-Source Bidding process, and a potential competitor in that process, since it remains engaged in the generation business.

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,² which produced the filings under consideration today.

II. Positions of the Parties

A. Xcel and the Department

1. Xcel

Both Xcel and the Department proposed separate processes for procuring baseload generation and procuring other generation.

In its initial filing Xcel proposed that it use a formal, competitive bidding process to acquire peaking, intermediate, and renewable generation resources. It proposed to identify the size, type, and in-service date for each facility required in these categories and to include this information in each Request for Proposals issued under the formal bidding process.

To acquire baseload generation, the Company proposed to use a less structured, more complex, and more evaluative approach. Baseload needs would be determined in the public, resource-planning process, which would alert potential baseload providers of the need. The Company would then examine all reasonable baseload options, weighing the myriad factors that determine baseload choices, which include but are not limited to construction time lines and costs, fuel costs, reliability, environmental and socioeconomic impacts, transmission interfacing, and adaptability to future changes in load characteristics and service area demographics.

Once the Company selected an option and submitted it for Commission approval, supporters of competing options could intervene, challenge the Company's choice, and urge the Commission to order negotiations with the challenger.

2. The Department

In its initial filing the Department concurred in the use of a formal, competitive bidding process for peaking, intermediate, and renewable generation, but recommended specific refinements to the Company's proposal. These included requiring an independent auditor's report each time the bidding process was used, using a standard contract as the starting point in each bidding process, and disclosing the Company's contingency plan for a failed bidding process at the start of each bidding process.

² In the *Matter of the Application of Northern States Power Company (d/b/a Xcel Energy) for a Certificate of Need for a Large Electric Generating Facility*, Docket No. E-002/CN-04-76, ORDER GRANTING CERTIFICATE OF NEED AND REQUIRING DISCUSSION WITH THE DEPARTMENT (June 25, 2004); ORDER SEEKING MORE DETAILED PROPOSALS, this docket (November 17, 2005).

For baseload procurement, the Department recommended conducting a contested case proceeding on any Company request for approval or certification of new baseload resources and to use that proceeding to fully develop baseload alternatives not chosen by the Company. If the Commission found an alternative to be superior to the baseload resource chosen by the Company, the Commission would deny the request for approval or certification and the Company would enter into good-faith negotiations to obtain its baseload needs from the superior alternative.

3. The Convergence of the Two Positions

The Company initially opposed the Department's proposal for baseload acquisitions, citing legal concerns about issuing certificates of need for alternative projects that were not the applicants in certificate of need proceedings. The Company also had reservations about the Department's refinements to the bidding process for non-baseload generation, citing concerns about the time and expense required to use independent auditors and about the loss of flexibility that might result from introducing standard contracts early in the bidding process.

After further discussion, however, the Company's and the Department's positions essentially converged.

The Department revised its baseload procurement process to require certificate of need applications from competing baseload suppliers, to be consolidated with the Company's filing in a single contested case proceeding. And the Company stated its willingness to incorporate into the structured, bidding process the refinements proposed by the Department, including the use of independent auditors, standard contracts, and contingency plans.

Both parties supported or acceded to Commission approval of the Department's revised resource acquisition process.

B. The Environmental Intervenors

The Environmental Intervenors opposed categorizing new generation needs into peaking needs, intermediate needs, and baseload needs, arguing that the regional electricity markets resulting from MISO's centralized transmission operations made these distinctions obsolete. They argued that resource acquisition should begin with an analysis of what is available in the market and should avoid using these arguably outmoded categories.

They also argued that the procedural framework for baseload acquisition recommended by the Company and the Department would favor self-build options, especially if the Commission, in acting on the resource plan proper, adopted the Company's time frame for baseload acquisition.

C. LS Power

LS Power, a non-utility company engaged in the production and wholesale provision of electricity, emphasized that its effective participation in the competitive procurement process required "a fair, transparent, well-defined competitive bidding process featuring independent oversight for the procurement of all generation."³ It stated at hearing that it considered the process proposed by the Company and the Department workable and would participate in such a process, other things being equal.

³ January 13, 2006 Comments of LS Power, page 5.

D. Excelsior Energy Inc.

Excelsior argued that the Company's proposed resource acquisition process, even as modified by the Department, failed to adequately factor in the special status of the Mesaba Project, a coal-fueled Integrated Gasification Combined Cycle power plant it is developing in northern Minnesota.

The project has received a \$36,000,000 start-up grant from the United States Department of Energy, \$9,500,000 in loans from the Minnesota Iron Range Resources and Rehabilitation Board, and a five-year, \$10,000,000 engineering and development grant from the Renewable Development Fund.⁴ More directly relevant for current purposes, the project also has a statutory entitlement to special consideration as a potential baseload resource for Xcel.⁵

F. Gascoyne Project

The Gascoyne Project is a 500-megawatt coal-fired facility being developed in North Dakota by Westmoreland Power, Inc., a wholly owned subsidiary of Westmoreland Coal Company. The Project argued that the Company's original proposal for baseload acquisition was structured in a manner that would inevitably and consistently result in choosing the self-build option.

Gascoyne recommended a traditional bidding process for baseload acquisition. In the alternative, it recommended the Company's process as modified by the Department, which it believed would "ensure fairness and transparency and guarantee that Minnesota ratepayers receive the most reliable, lowest cost option . . ."⁶

F. North Dakota Industrial Commission

The North Dakota Industrial Commission was established by the North Dakota Legislature to promote North Dakota industries, utilities, enterprises, and business projects, including the State's lignite industry. The North Dakota Industrial Commission filed comments to support careful consideration of lignite-based generation technologies and projects, including the Gascoyne and Great Northern projects, to meet future Minnesota baseload needs.

⁴ *In the Matter of the Request of Northern States Power Company d/b/a Xcel Energy for Approval of Selected Projects for the Second Funding Cycle of the Renewable Development Fund*, Docket No. E-002/M-03-1883, ORDER APPROVING AND DIRECTING FUND EXPENDITURES, GIVING GUIDANCE ON THE TREATMENT OF INNOVATIVE ENERGY PROJECT, REQUIRING CONSULTATIVE PROCESS, AND REQUIRING COMPLIANCE FILINGS (February 23, 2005).

⁵ Minn. Stat. §§ 216B.1693 and 216B.1694.

⁶ January 13, 2006 Comments of the Gascoyne Project, page. 9

III. Commission Action

A. New Competitive Procurement Process Required

The Commission concurs with stakeholders that Xcel's resource procurement process must be overhauled if the Company is to continue using a competitive process to acquire new generation.

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

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

The Commission finds that the two-track, competitive procurement process described in the Department's comments of January 30, 2006, acceded to by the Company, provides much more certainty, predictability, and accountability than the current process. It will be instituted, as adapted below to require certificate-of-need-like proceedings whenever Xcel participates in the competitive procurement process as a bidder.

Finally, the Commission notes that Excelsior's statutory right to special consideration as a potential baseload resource is being examined in a separate, contested-case proceeding, making it unnecessary to examine those issues here.⁷

B. Certificate of Need Framework Applied to all Competitive Procurement Processes in which Xcel Submits a Proposal

The Department and the Company recommended using the framework of the certificate of need process to procure baseload generation. The Environmental Intervenors argued that distinctions between baseload, peaking, intermediate, and renewable resources were increasingly outdated and arbitrary, and that using these categories tended to divert analysis away from new possibilities created by emerging regional energy markets.

The Commission concurs with the Company and the Department on the value of using a certificate-of-need-like process to compare competing resource options. Certificate of need filing requirements

⁷ In the *Matter of a Petition by Excelsior Energy, Inc. for Approval of a Power Purchase Agreement Under Minn. Stat. § 216B.1694, Determination of Least Cost Technology, and Establishment of a Clean Energy Technology Minimum Under Minn. Stat. § 216B.1693*, Docket No. E-6472/M-05-1993, NOTICE AND ORDER FOR HEARING AND ORDER GRANTING INTERVENTION PETITION (April 25, 2006).

and decision criteria are clear, comprehensive, directly relevant to resource procurement, and easily transferrable to the resource procurement process.⁸

Further, the process is familiar and credible to stakeholders. It has the proven ability to produce an intelligible and trustworthy record from the examination of voluminous, complex, and contested facts. In short, the process is substantively, procedurally, and pragmatically well suited for adaptation to competitive resource procurement.

For all these reasons, the Commission concurs with the Company, the Department, and other stakeholders on the value of the certificate of need framework for evaluating competing resources. At the same time, however, the Commission shares the Environmental Intervenors' discomfort at the prospect of reserving that process for baseload generation alone.

That limitation not only carries the risk of implying, falsely, that selecting non-baseload generation is less complex or important than selecting baseload, but it jeopardizes accountability, fairness, and credibility in procurement processes in which Xcel is a bidder. While an independent auditor's report might minimize or neutralize the first concern through careful explication, it is unlikely to minimize or neutralize the second.

The Commission is convinced that the heightened scrutiny and rigorous factual development of the certificate of need process are required whenever Xcel competes in its own competitive procurement process. The Commission will therefore require the use of the certificate of need procedural framework whenever Xcel proposes a self-build option in the competitive resource procurement process.

The Company simply – and necessarily – has too much control over resource selection to use the standard process when it is a bidder. It has much more reliable and complete information about its needs than its competitors. It also has superior information about its existing generation portfolio, the configuration of its transmission system, and any synergies that would result from adding different resources to the mix.

All these advantages, combined with a clear and unavoidable conflict of interest, point to a need to use the more stringent, certificate-of-need-like process whenever the Company submits its own proposal in the competitive resource procurement process.

C. Refinements to Formal Bidding Process Adopted

The Department recommended refining the formal bidding process, which will be used for competitive procurement when Xcel does not submit a proposal, to improve its effectiveness, transparency, and accountability. Its three main recommendations – ultimately acceded to by the Company – were requiring an independent auditor's report on every bidding process, using a standard contract as the starting point in every bidding process, and preparing a contingency plan for a failed bidding process at the start of every bidding process.

⁸ The Department and the Company noted that some filing requirements in the certificate of need rules are not directly applicable to non-utility entities. They recommended exempting non-utilities from those requirements, delineated in the Department's January 30, 2006 comments. The Commission has exempted non-utility entities from these requirements in the past and will adopt the recommendation of the Company and the Department.

The Commission agrees that these are valuable improvements. Whether or not they affect the outcome of any given bidding process, they add clarity and accountability to every bidding process and to the competitive procurement enterprise as a whole.

Using an independent auditor saves time in after-the-fact challenges to bidding processes. It also adds credibility to the process by assuring potential and actual bidders that Xcel is accountable for the choices it makes and that it must demonstrate defensible factual bases for those choices as they are made.

Using a standard contract is an effective tool for clarifying, at the beginning of the process, what the Company actually wants, and at the end of the process, what the bidders actually are offering. While standard contracts are adaptable, with explanation, to the specific circumstances of specific bidders, the use of a uniform starting point helps ensure meaningful comparison of competing proposals.

Finally, preparing and disclosing a contingency plan early in the bidding process – at least before the opening of the bids – works to ensure and demonstrate precision and good faith in the Company's articulation of what is minimally required of each bidding process.

None of the stakeholders opposed the competitive bidding process on which the Department and Company agreed, and the Commission concurs that it holds every appearance and promise of fairness, transparency, accountability, and efficiency. It will be approved.

D. Two-Track Process Approved or Established Under Minn. Stat. § 216B.2422, subd. 5

Under Minn. Stat. § 216B.2422, subd. 5, utilities are authorized to select resources to meet needs identified in their resource plans, or to satisfy certain wind power and biomass mandates, through a bidding process approved or established by the Commission. Generating facilities chosen under these circumstances are exempt from certificate of need requirements.

The Commission hereby clarifies that the two-track competitive resource acquisition process approved in this order – using the framework of the certificate of need process when Xcel submits a self-build proposal and using a formal, competitive bidding process when Xcel does not – is a bidding process approved or established by the Commission under Minn. Stat. § 216B.2422, subd. 5. The operational details of both tracks of this process, which are too voluminous to set forth here, are set forth in the comments of the Department of Commerce dated January 30, 2006, which are hereby approved, adopted in their entirety, and incorporated by reference.

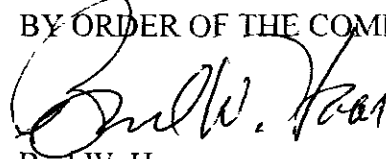
The Commission will so order.

ORDER

1. The Commission hereby approves and establishes under Minn. Stat. § 216B.2422, subd. 5, the two-track competitive resource procurement process described above.
2. Within 30 days of the date of the Order acting on the merits of the resource plan, Northern States Power Company d/b/a Xcel Energy shall make a compliance filing implementing the decisions set forth above, including a proposed standard contract for the formal, competitive bidding process.

3. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION



Burl W. Haar
Executive Secretary

(SEAL)

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Northern States Power Company
Case No. PU-15-95

Attachment 2

Order Directing Xcel to Negotiate Draft Agreements with Selected Parties

Docket No. E002/CN-12-1240

May 23, 2014

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger
David C. Boyd
Nancy Lange
Dan Lipschultz
Betsy Wergin

Chair
Commissioner
Commissioner
Commissioner
Commissioner

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

ISSUE DATE: May 23, 2014

DOCKET NO. E-002/CN-12-1240

ORDER DIRECTING XCEL TO
NEGOTIATE DRAFT AGREEMENTS
WITH SELECTED PARTIES

PROCEDURAL HISTORY

On March 15, 2011, Northern States Power Company d/b/a Xcel Energy (Xcel) filed a proposal to renovate and increase the capacity of its Black Dog Generating Plant, and requested that the Commission grant a Certificate of Need for the project under Minn. Stat. § 216B.243.¹ Xcel later petitioned to withdraw its application, arguing that subsequent events and new data demonstrated that Xcel would not need additional capacity until after 2014.²

On November 21, 2012, the Commission issued an order granting Xcel's petition to terminate its Certificate of Need docket -- but also initiating the current docket to solicit proposals from project developers, and to determine which would best meet Xcel's needs and fulfill the requirements for a Certificate of Need.³ The Commission took administrative notice of the record in the prior Certificate of Need docket.⁴

On March 5, 2013, in the context of reviewing Xcel's 2011 resource plan under Minn. Stat. § 216B.2422, the Commission issued an order declaring that Xcel had demonstrated the need for an

¹ *In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for a Certificate of Need for Approximately 450MW of Incremental Capacity for the Black Dog Generating Plant Repowering Project*, Docket No. E-002/CN-11-184, Xcel Petition (March 15, 2011).

² *Id.*, Xcel Motion to Withdraw Application (December 7, 2011).

³ This docket, Order Closing Docket, Establishing New Docket, and Schedule for Competitive Resource Acquisition Process (November 21, 2012).

⁴ *Id.*

additional capacity of 150 megawatts (MW) by 2017, increasing up to 500 MW by 2019.⁵

On April 15, 2013, the Commission received proposals from the following parties (bidders):

- Calpine Corporation (Calpine) proposed adding to its Mankato Energy Center a natural gas combustion turbine and a heat recovery steam generator to provide an additional 290 MW of intermediate capacity and 55 MW of peaking capacity.
- Geronimo Wind Energy, LLC, d/b/a Geronimo Energy, LLC (Geronimo), proposed erecting photovoltaic panels at approximately 20 sites adjoining substations along Xcel's transmission or distribution lines, each site with a capacity of 2 to 10 MW, for an aggregate capacity of up to 100 MW (or 72 MW of accredited capacity) fueled by solar power.
- Great River Energy (GRE) proposed two alternative packages of resource credits for capacity within the wholesale transmission grid operated by the Midcontinent Independent System Operator, Inc. (MISO), Zone 1 – that is, rights to transmit electricity throughout most of Minnesota as well as areas further east and west.
- Invenergy Thermal Development, LLC, (Invenergy) proposed three 178.5 MW natural gas combustion turbines, one in Cannon Falls and two in Dakota County or Scott County.
- Finally, Xcel's proposed three 215 MW combustion turbine gas generators. One turbine (Black Dog Unit 6) would be installed at Xcel's existing Black Dog Generating Station in Burnsville, and the other two would be built near Hankinson, North Dakota (Red River Units 1 and 2).⁶

On June 21, 2013, the Commission issued an order referring the matter to the Office of Administrative Hearings to conduct a contested case proceeding to develop the record, and to prepare a report and recommendation.⁷ The order also asked the Minnesota Department of Commerce (the Department) to prepare an environmental report considering each of the proposals, as well as the alternative of delaying or cancelling all the proposals, but varied some regulatory details governing the preparation of environmental reports.⁸

Administrative Law Judge (ALJ) Eric L. Lipman conducted contested case proceedings, receiving testimony, briefings, or both, from the following participating entities:

- Calpine, represented by Brian M. Meloy and Andrew J. Gibbons from the firm of Leonard, Street and Deinard.

⁵ See *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 If Xcel planned to have Black Dog Unit 6 operational by 2017, it would build it in 2016 and 2017. See Ex. 1 at 1-11 (Xcel Energy Proposal), Ex. 46 at 12 (Wishart Direct).

⁷ This docket, Notice and Order for Hearing (June 21, 2013).

⁸ *Id.*

- The Department, represented by Julia E. Anderson, Assistant Attorney General.
- Flint Hills Resources, LP; Gerdau Ameristeel Corporation; and USG Interiors, Inc.; (collectively, Xcel Large Industrials) represented by Andrew P. Moratzka from the firm of Stoel Rives LLP.
- Geronimo, represented by Christina K. Brusven from the firm of Fredrikson & Byron.
- Great River Energy, represented by Donna Stephenson, Associate Counsel, and Michael J. Bradley from the firm of Moss & Barnett.
- Invenergy, represented by Eric F. Swanson from the firm of Winthrop & Weinstine.
- Minnesota Center for Environmental Advocacy (MCEA), appeared on behalf of MCEA, Fresh Energy, Sierra Club, and Izaak Walton League - Midwest Office (collectively, the Environmental Intervenors), represented by Kevin Reuther, MCEA Legal Director.
- The North Dakota Public Service Commission Advocacy Staff (NDPSC Advocacy Staff), represented by Ryan M. Norrell, Special Assistant Attorney General for North Dakota.
- Xcel, represented by James R. Denniston, Assistant General Counsel, and Michael C. Krikava, Thomas Erik Bailey, and Kodi J. Church from the firm of Briggs and Morgan.

On July 18, 2013, the Department issued a decision identifying the scope of the environmental report it planned to prepare in this matter (Scoping Decision). The Department proposed to evaluate the option of building no new facility and pursuing any of the alternatives proposed by the bidders to assess each option's consequences for humans and the environment.

On October 14, 2013, the Department issued its environmental report to address the issues identified in the Scoping Decision.

On October 15, 2013, the ALJ convened a public hearing on this matter. And by November 22, the ALJ had received approximately 60 public comments.

On December 31, 2013, the ALJ filed his Findings of Fact, Conclusions of Law, and Recommendation. In response, the Commission received exceptions to the ALJ's report, replies to exceptions, or both, from all the participants other than the NDPSC Advocacy Staff.

On March 25 and 27, 2014, the Commission met to consider the matter. The Commission received comments from all participants other than the NDPSC Advocacy Staff.

FINDINGS AND CONCLUSIONS

I. Summary

Assuming Xcel and the selected bidders can agree to terms that are consistent with the public

interest, the Commission finds as follows:

- Geronimo’s proposal provides an appropriate choice for meeting a portion of Xcel’s reliability and adequacy needs, and to fulfill the state’s energy policies.
- Calpine’s proposal, Invenenergy’s Cannon Falls proposal, and Xcel’s Black Dog proposal may also provide appropriate choices for Xcel to meet a portion of its reliability and adequacy needs and to fulfill the state’s policies.

Consequently the Commission directs Xcel to finalize draft power purchase agreements with Geronimo, Calpine and Invenenergy, and to draft finalized cost estimates for Xcel’s Black Dog Unit 6 proposal that would be binding on Xcel, and to submit these finalized terms for Commission review.

The Commission also makes a number of findings in support of these conclusions.

Finally, as a procedural matter, the Commission directs Xcel to file annual progress reports and extends the filing date for Xcel’s next resource plan to January 2, 2015.

II. Background

A. Resource Planning

Minn. Stat. § 216B.2422 directs larger electric utilities to disclose both their plans, and the analysis underlying the plans, for selecting the resources necessary to meet customer demand throughout the next 15 years.

Planning begins with a forecast of the demand for electricity within the utility’s service area. In particular, a utility must forecast the maximum amount of electricity it must provide at any one time – that is, its peak demand. The utility must then design its system to ensure that it has enough resources to meet this maximum peak, plus some extra resources to address unanticipated circumstances – such as unexpectedly high demand, or unexpected resource outages.

The utility then evaluates resources it might use to meet its needs. The utility can supply electricity through a combination of generation and power purchases. The utility can also manage its customers’ demand by encouraging customers to conserve electricity or to shift activities requiring electricity to periods when there is less demand on the electric system. A resource plan contains a set of supply-side and demand-side resource options that the utility could use to meet the needs of retail customers. A utility considers the supply-side and demand-side resources together on an integrated basis. Through the process of creating an integrated resource plan, a utility can identify the least-expensive reliable combination of resources that will meet the utility’s requirements, consistent with state and federal law and public policy.

When identifying the optimal mix of supply-side resources, a utility considers the different benefits offered by the different types of generators. Baseload generators are designed to operate

almost continuously; they tend to have low operating costs but may be relatively expensive to build. Peaking generators are designed to operate only under rare periods of peak demand for electricity; these generators tend to be less expensive to build, but may have higher operating costs. And intermediate generators are designed to run more frequently than peaking generators but less frequently than baseload generators; intermediate generators tend to have lower construction costs than baseload generators and lower operating costs than peaking generators.⁹

B. Laws and Policies Influencing Resource Planning

Among the legal requirements and policies influencing Xcel's resource plan are the following:

- **Renewable Energy Standard:** Minn. Stat. § 216B.1691 directs Xcel to acquire electricity from renewable sources sufficient to meet 30 percent of the needs of its retail customers by 2020.¹⁰
- **Solar Energy Standard:** In 2013 the Legislature added the Solar Energy Standard, directing investor-owned utilities such as Xcel to acquire sufficient electricity from solar energy to supply 1.5 percent of the utility's total retail electric sales (excluding sales to certain industrial customers) by 2020.¹¹ Xcel estimates that by 2020 compliance would require 455,919 megawatt-hours (MWh) of solar energy,¹² or up to 200 MW of accredited capacity.¹³
- **Greenhouse Gas Regulation:** Minn. Stat. § 216H.06 directs the Commission to estimate the cost of complying with future regulation of carbon dioxide (CO₂), a greenhouse gas, and to use this cost for purposes of evaluating resource alternatives.¹⁴ And Minn. Stat. § 216H.02, subd. 1, declares the state's goal to reduce statewide greenhouse gas emissions relative to 2005 levels by at least 15 percent by 2015, 30 percent by 2025, and 80 percent by 2050. And Minn. Stat. § 3.8852 commissions a framework for making Minnesota the first state in the nation to use only renewable energy.
- **Environmental Externalities:** In addition to the CO₂ regulatory costs noted above, Minn. Stat. § 216B.2422, subd. 3, directs the Commission, "to the extent practicable, [to] quantify and establish a range of environmental costs associated with each method of electricity generation," and to use those costs for purposes of comparing resource alternatives.

⁹ See, for example, Public Hearing Transcript, Vol. 1 at 11-12 (testimony of Xcel witness Alders).

¹⁰ Minn. Stat. § 216B.1691, subd. 2a(b)(4).

¹¹ Minn. Stat. § 216B.1691, subd. 2f; see 2013 Laws of Minnesota, Ch. 85, Art. 10, § 3.

¹² ALJ's Report, Finding 14, citing Ex. 57 at 8 (Engelking Direct), citing Xcel 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 at 4 (August 15, 2013).

¹³ Ex. 83 at 19 (Rakow Direct).

¹⁴ See *In the Matter of Establishing an Estimate of the Costs of Future Carbon Dioxide Regulation on Electricity Generation Under Minnesota Statutes § 216H.06*, Docket No. E-999/CI-07-1199.

- Certificate of Need: To build a new large energy facility powered by nonrenewable fuels in Minnesota, generally a developer must demonstrate that the generator is needed, and that relying on a generator powered by renewable energy sources would result in higher cost – including environmental costs – and would not otherwise be in the public interest.¹⁵ In evaluating need, the Commission considers whether --
 - 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.¹⁶

C. The Midcontinent Independent System Operator, Inc. (MISO)

The Midcontinent Independent System Operator, Inc. (MISO), administers the wholesale electric transmission grid in 15 states plus Manitoba. It divides its operations into regional zones. Zone 1 includes nearly all of Minnesota, as well as parts of the states to the east and west.

MISO ensures the reliability of the electric system within its boundaries by guarding against the possibility of load-serving entities – generally, utilities -- having insufficient resources to meet the needs of their customers. As part of this effort, MISO considers both supply and demand.

MISO considers supply when it credits a generator's capacity. First, generators have *installed capacity* stating how much power the generator is designed to produce under optimal conditions. But conditions are not always optimal. For example, Xcel concedes that its proposed 215 MW combustion turbines would achieve a maximum output of only 208 MW during summer heat and humidity.

Further, MISO calculates the actual expected capacity of generators within its region – that is, the unforced accredited capacity. Under MISO's accreditation formula, neither intermittent, renewable generators nor dispatchable gas-powered generators would receive 100 percent accreditation of its installed capacity when determining resource adequacy. Using MISO's formula, Geronimo determined that the expected MISO accredited capacity of its solar resource would be 72 percent.

¹⁵ Minn. Stat. §§ 216B.2422, subd. 4; 216B.243, subd. 3a.

¹⁶ Minn. R. 7849.0120.

MISO considers demand in setting reserve requirements – that is, access to generation capacity that is in excess of that utility’s forecasted peak energy demand.¹⁷ Reserve requirements serve as insurance against the possibility of unanticipated customer demand (due to hot weather, for example) or unanticipated outages (due to a generator’s mechanical failure, for example).

In 2012 MISO set a utility’s reserve requirement equal to 3.79 percent – the planning reserve margin -- of the greatest level of demand that the utility’s customers put on its system.¹⁸ But starting in 2013 MISO changed this formula in two ways. First, the new formula no longer reflected a *utility’s* peak demand, but rather the level of demand on the utility’s system during the hour of *MISO’s* peak demand. Second, the new formula changed the planning reserve margin from 3.79 percent to 6.2 percent for 2013, and to 7.3 percent for 2014.¹⁹

In lieu of holding its own generator out of service to meet its reserve requirement, a utility may acquire Zone Resource Credits. These credits, such as the ones offered by GRE, count towards MISO reserve requirement but cannot be used to meet a utility’s energy demand.²⁰

D. Xcel’s competitive resource acquisition process

To help Xcel acquire the best resources at least cost, the Commission established a competitive resource acquisition process under Minn. Stat. § 216B.2422, subd. 5.²¹ The Department has summarized the operational details.²² But in general, when Xcel proposes to submit its own bid as part of the competition, the process includes the following steps:

- Under Commission direction, Xcel publicizes the amount of capacity it needs and the timeframe in which Xcel needs it, and solicits proposals for meeting that need.
- Project developers, including Xcel, file proposals for meeting some or all of Xcel’s need.
- The Commission determines which proposals to accept as substantially complete and suitable for evaluation.

¹⁷ See, for example, Ex. 46 at 5 (Wishart direct) (defining “reserve margin”).

¹⁸ ALJ’s Report, Finding 174, mistakenly attributes the source of this formula to Xcel rather than MISO.

¹⁹ Ex. 83 at 22 – 25, 39 (Rakow Direct); Ex. 44 at 7-11 (Wishart Direct); Environmental Intevenors’ Reply to Exceptions at 10 (noting results of MISO’s 2014 Loss of Load Expectations Study establishing 7.3 percent unforced capacity planning reserve margin).

²⁰ Environmental Report at § 3.5.

²¹ See *In the Matter of Northern States Power Company d/b/a/ Xcel Energy’s Application for Approval of its 2004 Resource Plan, Order Establishing Resource Acquisition Process, Establishing Bidding Process Under Minn. Stat. § 216B.2422, subd. 5, and Requiring Compliance Filing*, Docket No. E-002/RP-04-1752, Order Establishing Resource Acquisition Process, Establishing Bidding Process Under Minn. Stat. § 216B.2422, Subd. 5 and Requiring Compliance Filing (May 31, 2006).

²² *Id.*, Docket No. E-002/RP-04-1752, Department reply comments (January 30, 2006); see also this docket, Order Approving Notice Plan (January 30, 2013).

- If there are material facts in dispute, the Commission refers the matter to the Office of Administrative Hearings for a contested case before an ALJ. The ALJ conducts evidentiary hearings and prepares a report recommending a course of action.
- The Commission reviews the record of the case, including the ALJ's report. The Commission then identifies the resources that are best supported by the record.
- If the Commission selects an option not proposed by Xcel, then within four months Xcel must negotiate a power purchase agreement and submit it for Commission approval, or provide an explanation for its failure to do so and a recommendation for how to proceed.²³

The developer of a project chosen through a Commission-approved competitive resource acquisition process is exempt from the requirement to secure a Certificate of Need.²⁴ Nevertheless, when Xcel offers a proposal as part of its competitive resource acquisition process, the Commission subjects the proposals to the scrutiny of a Certificate-of-Need-like proceeding.²⁵

III. Environmental Report

When a party proposes to build a large energy generating facility requiring a Certificate of Need, Minn. R. 7849.1200 directs the Department to prepare an environmental report examining the project's potential consequences for humans and the environment, alternatives to the project, and potential measures for mitigating any anticipated harms. This rule was adopted to implement Minn. Stat. § 116D.04.

In preparing an environmental report, the Department proposes a scope of matters to address in the report, receives comments on this scope, and issues a final order establishing the report's scope. Then the Department drafts and issues a report consistent with its proposed scope.

On July 18, 2013, the Department issued a decision identifying the scope of the environmental report it planned to conduct in this matter. The Department proposed to evaluate the option of pursuing each of the alternatives proposed by the bidders, and the option of building no new facility at all, to assess each option's consequences for humans and the environment. And the Department identified 18 categories of consequences it would explore – for example, traffic, noise, and economic impacts.

On October 14, 2013, the Department issued its four-volume environmental report, comparing the alternatives to each other with respect to 18 types of environmental consequences.

²³ *Id.*, Docket No. E-002/RP-04-1752, Xcel compliance filing (August 28, 2006) at 5 – 6.

²⁴ Minn. Stat. § 216B.2422 subd. 5(b).

²⁵ Docket No. E-002/RP-04-1752, May 31, 2006 Order at 7; Xcel Compliance Filing at 5 (August 28, 2006).

IV. Analysis of Proposals

A. Establishing a “Level Playing Field”

Each bidding party completed a form identifying the relevant costs and benefits of its proposal. Next, the Department reviewed these forms to determine if the parties were making disclosures and estimates on a comparable basis. For example, the Department analyzed the transmission-related issues attributable to each proposal and ensured that all transmission costs were included in each bid.²⁶ At the Department’s request, Calpine disclosed that its proposal would require upgrades to the transmission system at a cost MISO estimated to be between \$650,000 and \$1.5 million. The Department calculated that this additional cost would translate into a present value of revenue requirement of \$1.55 million and adjusted the results of its analysis accordingly.

In this manner, the Department sought to ensure that the proposals would be compared on the merits of their proposals rather than on disagreements about the meaning of the data.

B. Analytical Models

1. Levelized Cost of Electricity Model

The Levelized Cost of Electricity 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.²⁷ Calpine relied on the Levelized Cost of Energy model in developing its case.

Calpine’s analysis found its proposal to be the least-cost gas-powered proposal. However, Calpine acknowledged the limitations of the Levelized Cost of Electricity model in choosing not to compare gas-powered generators to Geronimo’s or GRE’s proposals.

2. Strategist Capacity Expansion Model

The Strategist capacity expansion model identifies the set of resources for a given system that would provide the least cost method to meet increases in demand.²⁸ The Department, Invernergy, and Xcel argue that a capacity expansion model is the appropriate tool for comparing the proposals in this docket. Calpine cautions, however, that the mechanisms of this model are proprietary and thus not subject to scrutiny.²⁹

Employing the Strategist model, the Department conducted three rounds of analyses. In the first round the Department used data supplied by the bidders themselves to identify every possible combination of proposals that would provide less than 700 MW. This resulted in a total of 153

²⁶ Ex. 81 at CJS-5 at 8 (Shaw Direct Attachments); Ex. 79 at 5 (Shaw Direct).

²⁷ ALJ’s Report, Finding 254, citing Ex. 52 at 6 (Hibbard Direct).

²⁸ Ex. 52 at 5 and 14, n.4 (Hibbard Direct).

²⁹ *Id.* at 7.

packages of proposals, including the base case as a “no build” alternative.³⁰

The Department analyzed how each package would perform under a variety of circumstances.³¹ Through this analysis the Department identified the seven least-cost packages of proposals, with the lowest cost attributed to a combination of Calpine’s Mankato proposal with Xcel’s Black Dog Unit 6 proposal. Given the size of this package of generators, however, the Department also analyzed the effects of deploying smaller energy solutions and of changing the dates on which the generators would begin operations.³²

To compare proposals of very different sizes, the Department allowed Strategist to add generic generators to its modeling of particular bid packages; this technique permits the model to illuminate how the cost to Xcel’s system of any given package would compare to the cost of any other package over the generators’ useful lives. Xcel estimated the cost of a generic gas-powered or solar-powered generator based on the estimated current cost to build a particular type of generator, escalated over time for inflation.³³

The Department then performed a second round of analysis on the seven least-cost packages of proposals from the first round -- plus a Base Case package that involved adding no new capacity -- to evaluate these alternatives under a greater variety of scenarios.³⁴ This round again identified a least-cost package that included Calpine’s proposal with Xcel’s Black Dog Unit 6 proposal. Even when considering the high demand forecasts from Xcel’s resource plan, the Department estimated that these projects would meet Xcel’s power needs until 2023 – and even longer if the more recent demand forecasts prove more accurate.³⁵

In its third round of analysis, the Department considered how the various packages would perform under differing types of gas supply contracts, or if implementation dates were shifted. This final round of analysis also identified a package including Calpine’s Mankato proposal and Xcel’s Black Dog Unit 6 proposal as having least cost. But this analysis also identified Invenergy’s Cannon Falls proposal as a component of many of the top packages, depending on whether the model assumed this proposal would include the cost of a firm or interruptible gas supply.

Based on this analysis, the Department recommended that the Commission authorize Xcel to

³⁰ Ex. 83 at 17 (Rakow Direct).

³¹ ALJ’s Report, Finding 171, citing Ex. 83 at 22 – 25 (Rakow Direct). This analysis did not consider new planning reserve margin of 7.3 percent.

³² Ex. 83 at 36-37 (Rakow Direct). Contrary to the ALJ’s Report, Finding 219, the Department’s analysis was prompted by the combined size of both generators, not just of Black Dog Unit 6. See Department Exceptions.

³³ See, e.g., Hearing Transcript, Vol. 1 at 109-110.

³⁴ Ex. 83 at 36-40 (Rakow Direct). While the second round did not model the consequences of raising MISO’s reserve requirement to 7.3 percent, Dr. Rakow states that he considered this factor in reviewing the Strategist model outputs.

³⁵ ALJ’s Report, Finding 223, citing Ex. 83 at 40 and 43 (Rakow Direct); Ex. 84 SR-5A (Rakow Direct Attachments).

negotiate with Calpine, Invenergy, and Xcel to finalize terms, including terms regarding the type of gas supply contracts and in-service dates, and to approve contracts with two of the three. The Department did not find Geronimo's proposal to be cost competitive with these other three.

Xcel's Strategist modeling differed in certain respects from the Department's analysis, and identified its Black Dog Unit 6 as the least-cost resource.³⁶

V. ALJ's Report

After convening hearings and receiving briefs and reply briefs, the Administrative Law Judge issued his report on December 31, 2013.

A. Demand

In evaluating which source of electric capacity would best meet Xcel's needs, the ALJ started by examining the extent of that need. The Commission found that Xcel had demonstrated need for 150 MW by 2017, and potentially up to 500 MW by 2019 – but the Commission had reached this conclusion in 2013 based on Xcel's 2011 resource plan filing. The ALJ was prompted to reassess the Commission's conclusion based on more recent developments – including the following:

First, the Legislature adopted the new Solar Energy Standard.³⁷ While this statutory change does not alter Xcel's demand, it arguably reduces the portion of the demand that Xcel should seek to meet through sources other than solar power.

Second, in September 2013 Xcel issued a lower demand forecast based on new data. Rather than finding a need for an additional 150 MW in 2017, increasing up to 500 MW by 2019, Xcel found a need for only 93 MW by in 2017, increasing to 307 MW in 2019.

Third, MISO changed the manner in which it calculates reserve requirements. In 2012 MISO required Xcel to maintain a reserve margin calculated on the basis of Xcel's peak demand. But MISO recently changed its formula to require Xcel to calculate its reserve requirement on the basis of Xcel's demand *during the hour of MISO's system peak demand* rather than at the time of Xcel's peak demand.³⁸

Demand on the MISO system typically peaks at a different time than on Xcel's system; in other words, demand on Xcel's system during MISO's peak is typically lower than during Xcel's peak. The ALJ found that between 2006 and 2012, customer demand on Xcel's system was 5 percent lower than during MISO's peak times.³⁹ And the ALJ cited Xcel witness Steven Wishart for the proposition that MISO's formula reduced Xcel's reserve requirements by approximately 200 MW.

³⁶ ALJ's Report, Finding 218.

³⁷ Minn. Stat. § 216B.1691, subd. 2f.

³⁸ Ex. 83 at 22-24 (Rakow Direct).

³⁹ Ex. 46 at 8-9 and Table 3 (Wishart Direct).

The ALJ further found that the combined effects of various changes show that Xcel will not need additional capacity until 2019, when Xcel will need to add a mere 26 MW.⁴⁰

Given this degree of uncertainty, the ALJ found it prudent to pursue a flexible strategy of selecting one or more projects susceptible to delay and size changes. And rather than make irreversible investments to meet an uncertain demand, the ALJ recommended erring on the side of acquiring fewer or smaller resources now, and preparing to solicit bids for additional resources in the future.

B. Supply

Considering a variety of criteria, the ALJ ultimately recommended that the Commission direct Xcel to contract for Geronimo's proposed solar-powered generators and to prepare to solicit bids for generators needed in 2019 and later, pending the outcome of Xcel's next resource plan.

The ALJ found that Geronimo's proposal had a variety of advantages, including the following:

- The Geronimo project is relatively small, making it a good match for the modest demand needs revealed by Xcel's latest demand forecast.
- Applying two analytical models – Levelized Cost of Electricity and the Strategist capacity expansion model – and adjusting for relevant factors, the ALJ concluded that Geronimo's project provided electricity at the least societal cost.
- The Legislature has determined that Xcel must acquire more solar-powered electricity in any event.
- Future environmental regulations are unlikely to cause Geronimo's proposal to incur unforeseen costs or face unforeseen delays.
- The Certificate of Need statute directs the Commission to select generators fueled from renewable sources unless the Commission can find that doing so would be contrary to the public interest. Geronimo proposed the sole generator to be fueled from a renewable source. Given the factors listed above, the ALJ could not determine that selecting the Geronimo project would be contrary to the public interest.

The ALJ faulted the Department's analysis of Geronimo's proposal. According to the ALJ, the Department's analysis failed to acknowledge that the proposal would permit Xcel to avoid the cost of securing at least 72 of the megawatts required to fulfill the Solar Energy Standard.⁴¹ Alternatively, the Department failed to recognize that the proposal would supply Xcel with valuable solar renewable energy credits (S-RECs):

At a price of \$5 for each marketable S-REC, the Geronimo proposal will result in a PVSC [present value of societal costs] reduction of \$10 million annually. At a price

⁴⁰ ALJ's Report, Findings 24 - 25, citing Ex. 46 at 2, 10 (Wishart Direct).

⁴¹ *Id.*, Finding 153.

of \$20 for each marketable S-REC, the Geronimo proposal will result in a PVSC reduction of \$38 million annually.⁴²

The ALJ also concluded that the manner in which the Department and Xcel conducted their Strategist modeling biased the results they obtained. According to the ALJ, the Department and Xcel instructed the Strategist model to evaluate combinations of generators that could produce 300 MW by 2019, or 11 times the forecast demand of 26 MW.⁴³ This arbitrary choice had the effect of obscuring the benefits of smaller proposals that are well-designed to meet the lower demand level, the ALJ concluded. He further found that this threshold obscured the merits of Calpine's proposal. Calpine proposed a 278 MW generator. Because it failed to meet the 300 MW threshold, the Department and Xcel would only consider its performance when it was combined with another generator. This is because, as configured by the Department and Xcel, whenever the Strategist model identified a shortfall in generation, even as small as 1 or 2 MW, the model would select the next full plant to meet the added need.⁴⁴

The ALJ also found that GRE's proposed transmission capacity credits provided a reasonably-priced, flexible source of capacity. If the Commission were to find that Xcel would need more than 72 MW before the next round of generators could be selected and built, the ALJ would recommend authorizing Xcel to acquire GRE's credits.

C. Certificate of Need Criteria

Because the Commission had stated that this competitive resource acquisition process would use the analytical framework of the Certificate of Need process, the ALJ analyzed the proposals to identify the ones that best fulfill the criteria to receive a Certificate of Need.

1. Effect on Electric Supply's Future Adequacy, Reliability, or Efficiency

Minn. R. 7849.0120.A. addresses how the choice of resource might affect the future adequacy, reliability, or efficiency of energy supplied to the utility, its customers, and the people of Minnesota and neighboring states. While the Commission had identified Xcel's need for 150 MW by 2017 and up to 500 MW by 2019, the ALJ found that the record demonstrated the need for no new capacity in 2017 and 2018, and only 26 MW by 2019.⁴⁵

The ALJ then evaluated each party's proposals based on how efficiently the proposal would meet this limited need. The ALJ concluded that all of the proposed gas-powered proposals were too large for the identified need.⁴⁶

In contrast, the ALJ found that Geronimo's proposal has many advantages. Solar-powered generators tend to produce their maximum output during sunny daylight hours of summer – which

⁴² *Id.*, Finding 156, citing Ex. 59 at 18-19 and Table 2 (Engelking Rebuttal).

⁴³ *Id.*, Finding 181–183.

⁴⁴ *Id.*, Finding 184, citing Hearing Transcript, Vol. 1 at 105; *see also*, Ex. 83 at 16 (Rakow Direct).

⁴⁵ *Id.*, Finding 239, citing Ex. 46 at 8-10 and Table 4 (Wishart Direct).

⁴⁶ *Id.*

coincides with the period of peak demand for electricity.⁴⁷ Geronimo's proposal contains a variety of features designed to promote its reliability.⁴⁸ Moreover, 72 MW of distributed generation – that is, a fleet of generators disbursed throughout a service area – has advantages over a comparably-sized generator at a single, remote location: Reliability is enhanced, the ALJ found, because a technical failure is unlikely to affect more than a single generator at a time.⁴⁹ And because the generators would tend to be located in proximity to customers, Xcel would lose less electricity in transmission, and require less transmission and distribution capacity.⁵⁰

Additionally, the ALJ found that GRE's proposal – the sale of MISO capacity credits – has the advantage of making off-the-shelf capacity available on very flexible terms.⁵¹

2. Reasonableness and Prudence

Minn. R. 7849.0120.B. seeks to identify the most reasonable and prudent alternative demonstrated on the record. The ALJ concluded that the appropriate tool for identifying this alternative is a Levelized Cost of Electricity analysis.⁵²

Partially on this basis, the ALJ identified the Geronimo proposal – potentially supplemented with the GRE proposal -- as the most reasonable and prudent alternative.⁵³ The ALJ found that on a per MWh basis, Geronimo's proposed solar-powered generator is the lowest cost stand-alone resource.⁵⁴ And unlike other types of capacity, Geronimo's proposal helps Xcel meet its Solar Energy Standard obligation, reduces transmission capacity costs and transmission line-loss costs, and creates no cost for fuel or emission controls -- nor the risk of these costs increasing over time.⁵⁵

The ALJ rejected the analyses of other parties on the theory that they had 1) placed undue reliance on the demand forecast from Xcel's resource plan, 2) overlooked many of the benefits of the Geronimo proposal, and 3) failed to consider optimal strategies for meeting needs less than 300 MW. In addition, the ALJ concluded that other analyses failed to give sufficient value to the flexible scope of the Geronimo and GRE proposals. If Xcel were to commit to a project with a fixed generating capacity, and the anticipated level of demand did not materialize to justify a project of that size, Xcel would lack the option of scaling back the project – and would be stuck bearing cancellation costs instead.

⁴⁷ *Id.*, citing Ex. 60 at 12-13 and 15-16 (Beach Direct).

⁴⁸ *Id.*, Finding 241, citing Ex. 60 at 3-5 and 18-19 (Beach Direct); Ex. 62 at 4 (Skarbakka Direct).

⁴⁹ *Id.*, Finding 243, citing Ex. 62 at 3-4 (Skarbakka Direct).

⁵⁰ *Id.*, Finding 244, citing Ex. 13 at 31 (Distributed Solar Energy Proposal); Ex. 61 at 7 (Beach Rebuttal).

⁵¹ ALJ's Report, Findings 246-248, citing Ex. 63 at 2-3 (Selander Direct), Ex. 64 at 3 (Selander Rebuttal).

⁵² *Id.*, Findings 253-254, citing Ex. 52 at 6-7 (Hibbard Direct).

⁵³ *Id.*, Finding 259.

⁵⁴ *Id.*, Finding 257, citing Ex. 74 at 7 (Norman Rebuttal).

⁵⁵ *Id.*, Finding 256, citing Ex. 13 at 19 (Distributed Solar Energy Proposal).

3. Benefits Compatible with Nature, Society, and Health

Minn. R. 7849.0120.C. seeks to identify projects that would provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.

The ALJ found that the construction and operation of Geronimo's proposal, unlike the gas-powered proposals, would avoid generating a variety of pollutants, or even using much ground water.⁵⁶ The ALJ also found that Geronimo's proposal would generate a variety of temporary and permanent jobs, and other economic activity.⁵⁷

4. Compliance with Laws of Other Jurisdictions

Minn. R. 7849.0120.D. asks whether the record demonstrates that the design, construction, or operation of a proposed facility, even if suitably modified for the purpose of complying with all relevant policies, rules, and regulations of other state and federal agencies and local governments, would nevertheless fail to comply. Citing examples of federal and state policies seeking to reduce emissions of greenhouse gases such as carbon dioxide (CO₂), the ALJ reasoned that Geronimo's proposal – the only proposal that would generate electricity without generating greenhouse gases – would pose the least risk of violating these policies, or of incurring additional compliance costs.⁵⁸

D. Conclusions

Based on his findings, the ALJ concluded as follows: First, the record does not support the need for Xcel to acquire more than 26 MW by 2019 via this docket. Consequently the ALJ recommended selecting scalable projects to meet this near-term need, and addressing later resource needs via a later resource acquisition process.⁵⁹ Even a finding of much greater need in 2019 would not justify making those decisions in the current docket.

Second, as between the two scalable proposals – Geronimo's and GRE's – the ALJ concluded that Geronimo's proposal is cheaper, as reflected in both the Strategist and Levelized Cost of Electricity models when adjusted to incorporate all the desirable features of Geronimo's proposal (S-RECs, reliability, reduced transmission and distribution costs, etc.). Consequently the ALJ recommended selecting Geronimo's project to fulfill up to the first 72 MW of need, and initiating negotiations to finalize a power purchase agreement. If the Commission were to find additional need, the ALJ would recommend selecting GRE's proposal.

VI. Positions of the Parties and Participants

⁵⁶ Ex. 13 at 24, 34 (Distributed Solar Energy Proposal); Ex. 38 at 38 (Environmental Report).

⁵⁷ ALJ's Report, Finding 276, citing Ex. 38 at 31-33 (Environmental Report).

⁵⁸ *Id.*, Findings 283-289, citing, for example, Minn. Stat. § 216H.02, subd. 1; Ex. 13 at 24 (Distributed Solar Energy Proposal).

⁵⁹ *Id.*, Finding 249, citing generally Ex. 46 at 8-10 and Table 4 (Wishart Direct).

A. The Department

The Department took exception to various aspects of the ALJ's Report, and to its conclusion.

Demand forecast: While the ALJ developed his analysis on the basis of Xcel's 2013 demand forecast, the Department developed its analysis based on Xcel's 2011 forecast. Justifying this choice, the Department states that it has not verified the accuracy of Xcel's spring 2013 forecast and had significant concerns about how to interpret the results. Moreover, the Department argues that the Commission relied on the 2011 forecast as the basis for soliciting proposals from the parties, and the parties relied on this forecast in fashioning their proposals.⁶⁰ In any event, the Department notes that its analysis explored how the proposed resources would perform under a variety of demand levels – including the level of demand indicated by Xcel's 2013 forecast. Consequently the Department argues that the scope of its analysis encompassed the new data, even if it was not specifically designed around that data.

Level playing field: As previously discussed, the Department strove to ensure that the proposals would be compared on an equivalent basis. This task is complicated by the fact that much of the information about a proposal comes from the party proposing it. One way to promote a fair outcome, the Department argues, is to ask parties to bear the consequences of their statements. If a bidder stated that its proposal would provide certain benefits or avoid specified costs, and the Commission selects that proposal, the Department reasons that the bidder should bear any economic consequence of failing to conform to the terms of its bid. Consequently the Department plans to oppose a power purchase agreement for any project that would shift more costs to ratepayers than were reflected in the Department's analysis of the project.⁶¹

While Geronimo claims that its proposal would produce valuable S-RECs, or would help offset transmission congestion, Geronimo did not put those claims into its initial bid. Consequently the Department has not included those considerations in its modeling. Moreover, the Department and Xcel elected to exclude transmission interconnection-related factors from the analysis of each of the proposals, so the Department declined to consider Geronimo's claims related to transmission costs.

Capacity expansion model vs. Levelized Cost of Electricity model: While the ALJ relied primarily on a Levelized Cost of Electricity analysis, the Department favors reliance on the Strategist capacity expansion model.

Modeling details: Many of the Department's exceptions pertained to the ALJ's review of the Department's Strategist model.

For example, the ALJ's Report criticizes the Department for excluding consideration of generators, and combinations of generators, that produced less than 300 MW in 2019, an amount more than 11 times as large as the forecasted need of 26 MW, thus adding an additional generator to any package of generators that produced less than 300 MW – even if the package produced 299 MW. The Department identifies a variety of flaws in this analysis.

⁶⁰ Ex. 76 at 8 - 14 (Shah Direct).

⁶¹ Ex. 82 at 4 -5 (Shaw Rebuttal).

As an initial matter, the Department rejects the forecast suggesting that Xcel will not need more than 26 MW by 2019, and thus rejects the conclusions that flow from it.

Moreover, while this part of the ALJ's Report may accurately characterize aspects of Xcel's modeling, it fails to reflect the complexities of the Department's. In its first round of Strategist analysis the Department considered 24 different combinations of forecasts, solar accreditation, reserve margins, and wind additions, resulting in varying levels of need. In its second round, the Department's *base case* conditions resulted in an analysis of a 300 MW need by 2019. However, this round also analyzed various contingencies, again resulting in the consideration of a variety of levels of need.⁶² Thus it is not accurate to say that the Department's modeling failed to consider combinations of generators producing less than 300 MW.

However, the Department acknowledges that it directed Strategist to develop packages of generators that are sufficient to meet the need demanded within any given scenario, and not a MW less. This practice is consistent with long-standing Commission decisions regarding how to use the wholesale market to ensure that utilities are able to provide reliable service.⁶³

According to the Department, the ALJ's Report erred in adopting Geronimo's claim that Xcel and the Department used the same base assumptions regarding the cost of generic generators. The Department clarified that it and Xcel employed different assumptions regarding the modeling of solar generators, and how they induced the Strategist model to reflect the requirements of the Solar Energy Standard.⁶⁴

The ALJ found that the Department's practice of comparing generators by packaging them with generic generators entails some risk of biasing the results of the analysis, especially if the estimated costs of the generic generators are too high or low.⁶⁵ The Department acknowledges this risk, but explains that the risk is managed through analyzing packages under a variety of assumptions about capital costs.⁶⁶

Because the cost of the bidders' gas-powered proposals were lower than the estimated costs of comparable generic generators, whereas the cost of Geronimo's solar-powered proposal was higher than the estimated cost of generic solar-powered generators, the ALJ found that the Department's analysis advantaged gas-powered proposals and disadvantaged Geronimo's proposal.⁶⁷ The Department argues that this finding reflects a misunderstanding of its model.

⁶² Ex. 46 at 10-11 (Wishart Direct); Ex. 84 SR-3 and SR-4A (Rakow Direct Attachments).

⁶³ Hearing Transcript, Vol. 1 at 105; *see also*, Ex. 83 at 19 (Rakow Direct). While MISO is in the process of establishing a wholesale capacity market, the Department and Xcel excluded this option from their modeling.

⁶⁴ Ex. 59 (Engelking Rebuttal, Schedule EME-3); Hearing Transcript, Vol. 1 at 110; Ex. 83 at 19 (Rakow Direct).

⁶⁵ ALJ's Report, Findings 190 and 191.

⁶⁶ Ex. 83 at 36-37 (Rakow Direct).

⁶⁷ ALJ's Report, Findings 192 and 193.

Rather, the Department emphasizes that the Strategist model ranked *packages* of generators. Smaller proposals – such as Geronimo’s proposal – would be packaged with relatively more generic generators. If these generic generators had lower costs than the proposal, they would tend to bring *down* the average cost of the package, and thus *boost* the package’s ranking in the Strategist model.⁶⁸

The ALJ’s Report faults the Department’s analysis for ignoring the value of the solar renewable energy credits that Geronimo’s proposal would generate. These credits would permit Xcel to fulfill part of its obligations under the Solar Energy Standard – or simply provide a valuable asset to sell, according to the ALJ:

At a price of \$5 for each marketable S-REC, the Geronimo proposal will result in a PVSC reduction of \$10 million annually. At a price of \$20 for each marketable S-REC, the Geronimo proposal will result in a PVSC reduction of \$38 million annually.⁶⁹

The Department denies that it simply overlooked the option of incorporating into its model the idea that Geronimo’s proposal would permit Xcel to avoid certain capacity, energy, or costs needed to comply with the Solar Energy Standard. Rather, the testimony of Dr. Steve Rakow sets forth the Department’s reasons for declining to include these factors in its modeling. Dr. Rakow also described how to interpret the Department’s modeling results to impute to Geronimo’s proposal the benefits of reducing the capacity and energy costs of complying with the Solar Energy Standard. In any event, the Department built its analysis around the assumption that Xcel would comply with the Solar Energy Standard by 2020; because Xcel cannot sell a given S-REC and also use it to comply with the Solar Energy Standard, the Department’s analysis fully accounts for the value of these credits.⁷⁰

Regarding the value of the S-RECs to be generated by Geronimo, the Department clarified that the figure cited by the ALJ reflected estimates of the *total* value of credits generated by the project over its lifetime, not the *annual* amounts. Moreover, the Department noted that these estimates were generated assuming that the generating capacity of solar cells remain constant throughout their service lives. In contrast, the record shows that their generating potential degrades over time.⁷¹

The ALJ’s Report accepted Geronimo’s claim that, when the Department and Xcel calculated the present value of the societal cost of Geronimo’s proposal, they should have reduced this figure by approximately \$9 million to reflect the fact that Geronimo proposes to generate electricity near to

⁶⁸ Ex. 59 (Engelking Rebuttal, Sch. EME-3); Ex. 83 at 30 (Rakow Direct); Hearing Transcript, Vol. 1 at 110. This dynamic did not apply to the manner in which Xcel conducted its Strategist analysis. Ex. 46 at 36 (Wishart Direct).

⁶⁹ ALJ’s Report, Finding 156, citing Ex. 59 at 18-19 and Table 2 (Engelking Rebuttal).

⁷⁰ Ex. 83 at 9-13 (Rakow Direct).

⁷¹ Ex. 59 at 18-19 and Table 2 (Engelking Rebuttal).

customers' locations, thereby reducing the amount of energy lost in transmission.⁷² But the Department explains that Xcel could not verify Geronimo's calculation due to Geronimo's failure to identify the proposed locations of its generators.⁷³ Consequently the Department declined to make this type of adjustment for any of the proposals. In any event, the Department noted that Geronimo's proposal exceeded the cost of rival proposals by substantially more than \$9 million, and thus this adjustment would not have altered the Department's assessment.

The ALJ's Report found that some of Geronimo's proposed generators would connect directly to Xcel's distribution system, thereby freeing up some of Xcel's existing transmission capacity to meet future needs and permit Xcel to avoid costs to expand its system.⁷⁴ By Geronimo's calculation, this feature would save Xcel \$3.24 million in transmission costs per year, or \$33 million in present value of societal cost.⁷⁵ But the Department explains that, because the record demonstrated no need to expand Xcel's transmission system in the areas Geronimo proposed to interconnect, the Department declined to incorporate these alleged savings into its analysis.⁷⁶

Some of the ALJ's concerns with the Department's analysis may reflect a misunderstanding of how the Department conducted its analysis. For example, in its first round of Strategist analysis the Department tested two demand forecasts – one included in Xcel's 2011 resource plan, the other reflecting Xcel's 2013 forecast which generated a lower estimate of need.⁷⁷ But the Department notes that neither analysis incorporated Xcel's new 7.3 percent planning reserve margin.⁷⁸ This larger margin would offset some of the anticipated reduction in Xcel's forecasted demand. Due to the magnitude, and frequency, of MISO's formula changes, the Department concludes that it is no longer clear how to calculate Xcel's reserve requirements.

Conclusion. In summary, the Department states that it continues to evaluate how MISO's changing methods may affect Minnesota's resource planning – including how it may influence the measurement of Xcel's demand-side management programs.⁷⁹ Given the uncertainty engendered by all the changed circumstances, the Department recommends that the Commission accept Xcel's offer to file status assessments in 2014 and 2015.⁸⁰ The Department supports Xcel's efforts to

⁷² ALJ's Report, Findings 205-206, citing Ex. 13 at 31 (Distributed Solar Energy Proposal); Ex. 46 at 35 (Wishart Direct); Ex. 61 at 7 (Beach Rebuttal).

⁷³ Ex. 81 at CJS-5 at 4 (Shaw Direct Attachments). Xcel would incur any costs associated with a proposal's transmission losses through the differential in locational marginal prices (LMP) between a generator and the retail customers receiving the electricity. Xcel analyzed the LMP differential for all bids except for the Geronimo proposal.

⁷⁴ ALJ's Report, Finding 207, citing Ex. 13 at 9-12 (Geronimo Proposal).

⁷⁵ *Id.*, Finding 208, 210, citing Ex. 13 at 9-12 (Geronimo Proposal); Ex. 59 at 20 (Engelking Rebuttal).

⁷⁶ Ex. 59 at 20 (Engelking Rebuttal); Ex. 61 at 9-10 (Beach Rebuttal). The Department also disputed Geronimo's calculation of benefits, noting that the benefits would decline over time as the solar panels' generating capacity deteriorated. *Id.*

⁷⁷ Ex. 83 at 22-25 (Rakow Direct).

⁷⁸ *Id.* at 39.

⁷⁹ *Id.* at 23 n.11.

⁸⁰ Ex. 85 at 7 (Rakow Rebuttal).

economize by negotiating with the project proposers for the discretion to postpone implementation of any selected project.⁸¹ Finally, the Department recommends that the Commission require the selected bidders to bear the consequences of their statements, and to refrain from shifting more costs to ratepayers than were reflected in the Department's analysis of the project.⁸²

B. Calpine

Calpine championed the use of the Levelized Cost of Electricity model for evaluating competing proposals – although Calpine restricted its analysis solely to the gas-powered proposals. Employing this model, Calpine argues that it has demonstrated that its Mankato proposal is the least-cost option among the gas-powered resources.

Nevertheless, Calpine also notes that the Strategist model also identified Calpine as a least-cost option under some circumstances, and as a competitive option under most circumstances.

As environmental regulations prompt the closure of ever more base load coal plants, Calpine argues that Xcel will need more than just the peaking capacity offered by Invenergy's and Xcel's proposals.

C. Environmental Intervenors

The Environmental Intervenors support Geronimo's proposal, citing many of the same arguments made by the ALJ.

First, the Environmental Intervenors argue that the Commission's order finding need for new resources should be reconsidered in light of current circumstances, that Xcel bears the burden of demonstrating need, and that the record shows that Xcel's needs through 2019 are modest at best. The Intervenors reject the idea that the Commission should ignore changes in demand or MISO's reserve requirements or Minnesota's Solar Energy Standard; indeed, statute directs the Commission to consider legal changes when evaluating a Certificate of Need docket.⁸³ And, according to the Environmental Intervenors, the Department's analysis of scenarios including demand levels at or below the level reflected in Xcel's Spring 2013 forecast is not a substitute for conducting a thorough analysis focused on the lower level of need forecast by Xcel.

Second, the Environmental Intervenors argue that statute directs the Commission to select a generator using renewable sources of energy unless the Commission finds that Xcel has proven that doing so would not be in the public interest.⁸⁴ The Intervenors then argue that the Commission should evaluate the public interest with due consideration for complying with the state's greenhouse gas reduction goals, the renewable energy standard, or the solar energy

⁸¹ Ex. 86 at 11-12 (Rakow Rebuttal); *See*, Hearing Transcript, Vol. 2 at 55. The Department did not express an opinion on Xcel's desire to negotiate for the right to cancel implementation of a selected project.

⁸² Ex. 82 at 4 -5 (Shaw Rebuttal).

⁸³ Minn. Stat. § 216B.243, subd. 3(2).

⁸⁴ Minn. Stat. § 216B.2422, subd. 4.

standard.⁸⁵ In addition, they cite the state's environmental policy, Minn. Stat. Chap. 116D, for the proposition that the state may not grant a permit for actions that would cause pollution if there are feasible and prudent alternatives – and an alternative cannot be dismissed as infeasible or imprudent merely because it costs more. Minn. Stat. § 116D.04, subd. 6, states:

No state action significantly affecting the quality of the environment shall be allowed, nor shall any permit for natural resources management and development be granted, where such action or permit has caused or is likely to cause pollution, impairment, or destruction of the air, water, land or other natural resources located within the state, so long as there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety, and welfare and the state's paramount concern for the protection of its air, water, land and other natural resources from pollution, impairment, or destruction. *Economic considerations alone shall not justify such conduct.* (Emphasis added.)

Third, the Environmental Intervenors argue that the Commission's analysis should acknowledge the particular value of Geronimo's proposal, including the federal tax credit for solar power and the value of the resulting S-RECs – whether those S-RECs are sold or used to help Xcel comply with the Solar Energy Standard. While the Department questions Geronimo's estimate of the value of an S-REC, the Environmental Intervenors note that no party offered a different estimate.

According to the Environmental Intervenors, Xcel's plan to solicit proposals for meeting its obligations under the Solar Energy Standard in no way diminishes the merits of Geronimo's proposal for purposes of the current docket, or justifies deferring consideration of the proposal until this later proceeding. And given the competitive nature of the current proceeding – in which Geronimo knew that its proposal would be competing with gas-powered generators – the Environmental Intervenors found no support for the suggestion that a future proceeding would generate cheaper sources of solar power.

D. Geronimo

Geronimo submitted two different pricing proposals for the parties' consideration; each proposal would have the effect of providing Xcel with all the renewable energy credits (RECs) or solar renewable energy credits arising from Geronimo's proposal.⁸⁶

Geronimo supports the ALJ's analysis and recommendation, and shares many of the ALJ's criticisms of the analysis performed by other parties. In particular, Geronimo faults the Department's analysis for failing to give sufficient (or any) weight to the value of Geronimo's low-emissions, S-RECs, or transmission cost savings. Xcel could use the S-RECs to help meet its Solar Energy Standard mandate, Geronimo argues, or could sell them.⁸⁷

In addition, Geronimo notes that both the Department and Xcel conducted their modeling while relying on imputed cost and performance data from generic generators. In the case of generic

⁸⁵ *Id.*

⁸⁶ Ex. 13 at 1, 19 (Geronimo Proposal); Ex. 57 at 5 (Engelking Direct).

⁸⁷ Ex. 13 at 1 (Geronimo Proposal).

gas-powered generators, Xcel generated the relevant data based on its own experiences with such generators – and in fact, the cost of these generic generators proved to be higher than the cost of any of the gas-powered proposals. In contrast, Xcel has had little or no experience with solar-powered generators, and the costs Xcel imputed to a generic solar-powered generator proved to be cheaper than the cost of Geronimo’s proposal. Geronimo argues that this modeling artifact skewed the results against its proposal.

E. GRE

GRE has submitted a proposal to sell Xcel MISO Zone 1 Resource Credits. GRE’s proposal identified two different amounts of credits, with the precise quantity regarded as a trade secret.

Under GRE’s proposal no new facilities would be constructed and no rights to energy production would be transferred to Xcel. If either of GRE’s proposals is selected, GRE would maintain its current energy production rights and MISO would continue to dispatch GRE’s existing generation resources. Xcel could use the credits to meet its reliability goals, but would need some other source of energy – its own generators, or purchases from a third party – to meet the needs of its customers.

GRE argues that its proposal has no adverse environmental consequences. If GRE’s proposal is not selected, GRE would continue to operate its resource portfolio in the same way as it does today. GRE would likely offer to sell its capacity credits to others in the market, or through MISO’s annual capacity auction. In other words, the environmental consequences will likely be the same whether or not Xcel buys GRE’s credits.

GRE initially proposed to sell to Xcel credits for a period of three years, but later agreed to offer Xcel the option of buying credits for only two years. The Department declined to consider this second proposal in its Strategist modeling on the grounds that GRE had made the offer too late in the proceedings. The first round of the Department’s analysis found that the flexibility provided by GRE’s three-year proposal was not worth the cost, and the Department excluded further consideration of GRE’s proposal from the second and third rounds of the Department’s Strategist analysis. GRE argues that the Department’s analysis needlessly precluded GRE’s proposals from consideration.

F. Invenergy

Invenergy supports its Cannon Falls and Hampton combustion turbine proposals. Noting that Xcel’s forecasted need for power had declined for various reasons, Invenergy argues that the most economic way to serve Xcel’s remaining demand is through the use of peaking generators such as combustion turbines. Indeed, while Xcel’s analysis favors gas-powered generators, Invenergy argues that this analysis understated the benefits of combustion turbines and overstated the benefits of intermediate generators such as Calpine’s combined cycle plant.

Invenergy challenges the merits of Calpine’s Levelized Cost of Electricity analysis of the various proposals, arguing that the analysis is skewed to favor intermediate generators over peaking generators. Invenergy argues that Xcel’s forecast demonstrates a need for peaking generators, whereas Xcel already has excess intermediate capacity.

If the Commission elects to authorize construction of a combustion turbine, Invenergy favors its

proposed turbine over Xcel's. Given Xcel's modest forecasts of demand, Invenergy argues that its 179 MW proposals would be a better fit for Xcel's modest demand forecasts than would be Xcel's 215 MW Black Dog Unit 6 proposal.

Finally, Invenergy argues that a power purchase agreement with a party such as itself would better shield ratepayers from bearing hidden costs than an arrangement with Xcel's own generator. But Invenergy argues that Xcel's analysis discriminates against power purchase proposals. In conducting an analysis comparing Invenergy's and Xcel's proposals, Xcel assumed that it would not need to replace its own generator throughout the 35-year period of its analysis – but assumed that it would need to build a substitute generator to replace the Invenergy generator at the end of Invenergy's proposed 20-year power purchase agreement. Invenergy argues that it would have made more sense to assume extending the term of the contract – an option Invenergy is willing to offer.

G. NDPSC Advocacy Staff

The NDPSC Advocacy Staff express concern about geographical equity. According to the NDPSC Advocacy Staff, Xcel serves four of North Dakota's five largest cities yet has built no adjacent generators. This places North Dakota cities at risk for power outages in the event of a transmission line failure, they argue. Consequently the NDPSC Advocacy Staff favors Xcel's proposal to build two gas-powered generators at Hankinson, North Dakota; they ask the Commission to place a premium on the reliability the Hankinson project would contribute to the local grid, even if the plant proved to be more expensive than some others.

But given the degree of uncertainty and changed circumstances in this docket, if the Commission declined to authorize the Hankinson proposals, the NDPSC Advocacy Staff would recommend deferring action until after Xcel's next resource plan.

H. Xcel

Xcel disputes the ALJ's Findings and his conclusion. In particular, while changed circumstances may justify reducing the amount of capacity to acquire in this docket, Xcel denies that they justify the forecast adopted by the ALJ.

In addition, Xcel joins the Department and Invenergy in favoring the reliance on the Strategist model rather than the Levelized Cost of Electricity model.

Xcel disagrees with the ALJ's preference for deferring necessary resource decisions. Xcel warns against delay. Xcel finds the current round of proposals attractive and the record well developed; it is unclear that future proceedings will provide proposals with such attractive terms.

Moreover, while Xcel did estimate that it could erect a combustion turbine in 21 months, Xcel suspects that the ALJ has mistaken an estimate for a planning criterion. To have a new generator ready by 2017, Xcel would propose to build Black Dog 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 need to begin in the fall of 2014.⁸⁸ Delaying the start of this

⁸⁸ Ex. 1 at 1-11 (Xcel Energy Proposal).

process could delay the end date.

Much like the Department, Xcel argues that Geronimo's claim to be able to avoid approximately \$9 million in transmission losses is insignificant, given that the Strategist model indicated that Geronimo's proposal would exceed the cost of other proposals by \$34 million (measured in terms of the present value of societal costs). Moreover, Xcel argues that Geronimo made it impossible to calculate this alleged savings because Geronimo could not state precisely the size and location of its proposed generators.⁸⁹

Xcel disputes the Environmental Intervenor's claim that Minn. Stat. § 116D.04, subd. 6, bars the Commission from authorizing the construction of a generator that might cause "pollution, impairment, or destruction of . . . natural resources" whenever there is the option to authorize construction of a plant that does not emit pollution. According to Xcel, the statutory proscription arises only after a party shows that the state action would result in the violation of an environmental quality standard, limitation, rule, order, license, stipulation agreement, or permit, or would materially adversely affect the environment.⁹⁰

Xcel takes exception to how the ALJ applied the Certificate of Need criteria to the record. In particular, Xcel argues that nothing in the record of this case demonstrates that any of the parties' proposals would fail to comply with the legal requirements of any jurisdiction.

Finally, Xcel addresses procedural matters. When the Commission selects the proposal or proposals that best fulfill Xcel's needs in this docket, Xcel recommends that the Commission direct Xcel and the winning bidders to negotiate terms anticipating the possibility of project delay and/or cancellation. Second, given changes in MISO's reserve requirement formula and other factors, Xcel states its willingness to provide reports in the fall of 2014 and 2015 regarding its assessment of its resource needs.⁹¹

I. Xcel Large Industrials

The Xcel Large Industrials largely share the view of the ALJ, but go further. They argue that the degree of changed circumstances in this docket render Xcel's demand forecast unreliable, and consequently ask the Commission to postpone any decisions until after Xcel's next resource plan.

If the Commission concludes that it must select one or more proposals, the Xcel Large Industrials would urge the Commission to proceed cautiously – that is, erring on the side of making fewer, and

⁸⁹ Ex. 81 at CJS-5 at 4 (Shaw Direct Attachments). Xcel would incur any costs associated with a proposal's transmission losses through the differential in locational marginal prices (LMP) between a generator and the retail customers receiving the electricity. Xcel analyzed the LMP differential for all bids except for the Geronimo proposal.

⁹⁰ Xcel Reply Brief at n. 88; Xcel Exceptions at n.66, citing *Iron Rangers for Responsible Ridge Action v. Iron Range Resources*, 531 N.W.2d 874, 882 (Minn. Ct. App. 1995) *rev. denied* (Minn. July 28, 1995), and *In re Application for Air Emission Facility Permit*, 566 N.W.2d 98, 105 (Minn. Ct. App. 1997) (no finding of material adverse environmental effects where a facility will comply with all applicable state and federal permitting standards).

⁹¹ Ex. 46 at 11 (Wishard Direct); Ex. 48 at 27 (Wishard Rebuttal).

later, capital investments. Because the Solar Energy Standard requires Xcel to acquire more solar power in any event, the Xcel Large Industrials recommend that the Commission make Geronimo's proposal their first choice. Beyond this, the Xcel Large Industrials would favor purchasing GRE's offer of MISO capacity credits over a two- or three-year period, thereby delaying the need to make a longer-term capital investment until after Xcel's next resource plan. But the Xcel Large Industrials recommend making any decision contingent upon decisions rendered in Xcel's next resource plan.

VII. Commission Action

A. Environmental Report

The Commission finds that the Department's environmental report addresses the issues raised in the Department's scoping decision, including the consequences identified in Minn. R. 7849.1500, subpart 2 (air emissions, visibility impacts, ozone, fuel availability and fuel transportation, electric transmission facilities associated with each proposal, water appropriations, amount and types of wastewater discharges, solid and hazardous wastes, anticipated noise). Consequently the Commission finds that the environmental report, supported by the record of this proceeding, addresses the issues outlined in the Department's Scoping Decision.

B. Changed Circumstances and the Resource Plan Order

Citing circumstances that have changed since the Commission approved Xcel's last resource plan, the ALJ sought to reevaluate the amount of capacity that Xcel should seek to acquire via the current proceedings. Other parties argued that efforts to reevaluate this need exceeded the scope of the current proceedings, and argued for evaluating the proposals based on the level of need established in the resource plan.

The Commission did not specify the precise amount of capacity to be obtained via the current docket. Rather, the Commission stated in its March 5, 2013 Order:

[P]arties disagree about the magnitude of Xcel's needs. For example, the Environmental Intervenors and the [Xcel Large Industrials] 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 2017.⁹²

Moreover, the Commission concluded that this description sufficed “to inform potential bidders of the *scope* of projects that the Commission will be considering.”⁹³ The description has fulfilled this role, attracting proposals of appropriate size.

Nothing in the order indicated that the Commission would refrain from considering all relevant factors in determining the amount of capacity to select via this competitive resource acquisition process. Consequently the Commission will evaluate the bidders’ proposals to determine which would best meet the needs identified in this record and the Commission’s March 5, 2013 Order.

C. Changed Circumstances Generally

1. Introduction

The Commission’s March 2013 resource plan order found that Xcel had demonstrated the need for at least 150 MW by 2017, potentially increasing to 500 MW by 2019.⁹⁴ Since then, a variety of circumstances have changed pertaining to energy resources on Xcel’s system and potential changes in need estimated by Xcel.⁹⁵ Because uncertainty makes errors more likely, the ALJ opted to err on the side of making fewer and smaller commitments, rather than more and larger ones.⁹⁶

The Commission agrees with the ALJ that uncertainty in the record is an important fact to weigh in making a commitment of resources. But the Commission concludes that the strategy recommended in the ALJ’s Report gives insufficient attention to uncertainty – specifically, the uncertainty in the data suggesting that Xcel will need no more than 26 MW by 2019. Instead, the Commission will err on the side of ensuring that Xcel has enough capacity to meet the needs of its customers. The future will always be uncertain, but the Commission must proceed to make the necessary choices on the basis of a rigorous analysis of the data that *is* in the record.⁹⁷

Among the arguments that Xcel should curtail the amount of capacity it acquires in this docket,

⁹² *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) at 2 and 6 (emphasis in original).

⁹³ *Id.* (emphasis added).

⁹⁴ See *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).

⁹⁵ ALJ’s Report, Finding 12.

⁹⁶ *Id.*, citing Ex. 49 at 2 (Alder’s Direct).

⁹⁷ Ex. 49 at 7 (Alders Direct) (“[T]here 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 [Xcel]’s potential need in the 2017-2019 timeframe.”).

parties cite the following:

- The Legislature adopted the Solar Energy Standard, effectively requiring Xcel to acquire between 72 and 200 MW of accredited capacity from solar-powered generators by 2020.
- Xcel entered into arrangements with the operators of wind turbines having a combined nameplate capacity of 750 MW – that is, 550 MW more than contemplated in Xcel’s resource plan.
- Xcel’s Spring 2013 forecast predicted lower growth than anticipated in Xcel’s resource plan.
- MISO changed the formula for calculating short-term reserve margins.⁹⁸
- Xcel rates the capacity of its demand-side management programs based on how well they perform during Xcel’s peak – not during MISO’s peak.
- Xcel revised its estimates of the generating capacity of its existing generators.

All these factors were analyzed in this proceeding. The Commission finds that some of these changes may appropriately reduce the amount of capacity to be acquired in this proceeding, but other changes will have no effect, or ambiguous effects, on Xcel’s capacity needs.

2. Solar Energy Standard

Because the Legislature has directed Xcel to acquire more energy from solar power, Xcel will have less need for power from other sources – potentially including from resources acquired through the current docket. Consequently, the Commission concurs with the parties arguing that this new development justifies reducing the amount of capacity Xcel would acquire through this proceeding. That said, quantifying how much this mandate should reduce Xcel’s acquisitions is complicated by the fact that Geronimo’s proposal could be used to fulfill part of the Solar Energy Standard mandate, or could be sold. Conceptually, Xcel’s demand for Geronimo’s proposal is 72 MW larger than its demand for the other proposals.

3. 750 MW Wind “Power” Acquisition

Xcel has purchased and contracted for wind turbines having a total nominal capacity of 750 MW – but as a source of *energy*, not *capacity*. That is, the turbines are intended to permit Xcel to reduce the amount of fuel it burns at its other generators during periods of low and moderate demand. But the turbines are unlikely to help Xcel meet demand on peak days because, on peak days, the transmission grid will have no spare capacity to permit Xcel to receive this power. These transmission constraints are expected to continue until 2021 at the earliest; consequently these new wind resources have no bearing on Xcel’s capacity needs in the 2017 – 2019 timeframe.

⁹⁸ Ex. 46 at 37 (Wishart Direct). See generally *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; *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.

4. New Demand Forecast

Xcel regularly revises its forecasts of customer demand within its service area. And the demand levels indicated by Xcel's Spring 2013 forecast were less than the levels reflected in Xcel's last resource plan.

However, the Department notes that Xcel's resource plan forecast, unlike Xcel's Spring 2013 forecast, received the benefit of Department review and Commission approval. Consequently the Department did not rely on Xcel's revised forecast for purposes of analyzing the parties' proposals.⁹⁹

That said, the Department analyzed the parties' proposals under a variety of circumstances -- including circumstances that would reflect levels of demand indicated by Xcel's spring 2013 sales forecast.¹⁰⁰ On this basis the Commission concludes that the record adequately incorporates and reflects the contingency that demand in Xcel's service area has declined since the time of Xcel's last resource plan.

5. MISO's Reserve Requirement Formula

It is unclear how changes in MISO's new reserve requirement formula should influence the amount of power Xcel will acquire via this docket. As previously discussed, the new formula is calculated on the basis of the planning reserve margin multiplied by the level of demand on Xcel's system during the hour of MISO's peak demand.

The time of Xcel's system peak differs from the MISO system peak; between 2006 and 2012, demand on Xcel's system was on average 5 percent lower during MISO's peak than during Xcel's peak.¹⁰¹ Consequently the ALJ observed that this aspect of MISO's new formula should tend to reduce the amount of capacity Xcel is required to maintain. However, this capacity "savings" has proven unreliable, varying from zero percent (in 2006) to 14 percent (in 2007).¹⁰²

Moreover, this change in MISO's reserve margin formula was implemented at the same time as a countervailing change in the formula: the size of the planning reserve margin. MISO increased this margin from 3.79 percent to 6.2 percent. MISO acknowledges that utilities need stable standards upon which to base their plans -- while also acknowledging that MISO was again changing the planning reserve margin to 7.3 percent.¹⁰³

The forecasted amount of Xcel's need varies substantially depending upon which reserve requirement formula is used. MISO's new method of calculating reserves effectively reduces Xcel's peak demand by 275 MW to 290 MW, even without adjusting for changes in the calculation

⁹⁹ Hearing Transcript - Vol. 2 at 29-30.

¹⁰⁰ Ex. 76 at 13 (Shah Direct).

¹⁰¹ ALJ's Report, Finding 21.

¹⁰² Ex. 46 at 8-9 and Table 3 (Wishart Direct); Ex. 83 at 23-24 (Rakow Direct).

¹⁰³ Ex. 46 at 7-11 (Wishart Direct).

of Xcel's demand-side management capability or changes in MISO's short-term planning reserve margin.¹⁰⁴

Clearly Xcel must, at a minimum, plan to have sufficient capacity to meet its reserve requirements. But given the level of uncertainty created by the new formula, it is far from clear that Xcel's new reserve requirement, even if lower than Xcel's previous reserve requirement, should serve as a guide for purposes of Xcel's longer-range plan.

6. Demand-Side Management

Xcel has historically measured its demand-side management programs on their ability to help Xcel shed load during times of *Xcel's* peak demand; Xcel has not calibrated the performance of these programs during *MISO's* peak demand. For example, subscribers to Xcel's Saver's Switch program authorize Xcel to cycle their air conditioners on and off. While this program helps Xcel reduce the demand that air conditioners place on Xcel's system at any one time, estimates of the amount of demand savings this program can produce during MISO's peak period vary by more than 100 MW.¹⁰⁵ Any decrease in the rated capacity of Xcel's demand-side management programs must be offset by an increase in Xcel's reserve requirement.

In short, MISO's new reserve margin formula adds an additional level of uncertainty regarding the performance of demand-side programs.

7. Capacity of Existing Generators

Each generator has a rated nameplate capacity, identifying the maximum power the generator can produce without shortening its operational life. Typically a generator's capacity will decline over time, and due to circumstances such as hot, humid weather. The rated capacities of Xcel's generators have recently been revised, contributing one more degree of uncertainty about the relationship of power supply and demand.

8. Effect of Changed Circumstances

The ALJ cites Xcel witness Wishart for the proposition that MISO's new reserve margin formula reduced Xcel's reserve requirements by approximately 200 MW, and that various changes can be combined to produce a forecast purporting to show that Xcel will not need additional capacity until 2019, when Xcel will need to add a mere 26 MW.¹⁰⁶ But Wishart made this forecast based on Xcel's untested 2013 demand forecast, MISO's 2013 reserve requirement formula – a formula MISO has already stated that it plans to increase – and on the untested assumption that Xcel's demand-side resource capacity will remain unchanged even as applied to MISO's peak demand rather than Xcel's peak.

Overall, these changes might reduce Xcel's expected capacity needs in general – but they also introduce greater uncertainty into the analysis. Utilities cannot know which reserve margin

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 24-25.

¹⁰⁶ ALJ's Report, Findings 24 - 25, citing Ex. 46 at 2, 10 (Wishart Direct).

formula MISO will use in the long run; Xcel has less confidence in the performance of its demand-side management programs during MISO's peak than during its own.¹⁰⁷

Taking into account the consequence of Xcel's new demand forecast, the new Solar Energy Standard, and changes in the forecasted capacity of Xcel's existing generators and demand-side management programs, Xcel reduced its anticipated need for new capacity to 93 MW in 2017, potentially growing to 307 MW by 2019.¹⁰⁸ This represents a substantial decline from the Commission-approved level of demand. Nevertheless it remains within the range of demand analyzed by the Department.¹⁰⁹

The Commission finds that the Strategist modeling performed by the Department and Xcel, using a wide range of assumptions, inputs, and considerations, provides sufficient information to form the foundation of the Commission's choices in this docket.

D. Certificate of Need Criteria

Parties dispute the manner in which the ALJ interpreted the criteria of Minn. R. 7849.0120 to evaluate the various proposals. The Commission both concurs in, and dissents from, the ALJ's findings.

1. Effect on Electric Supply's Future Adequacy, Reliability, or Efficiency

Minn. R. 7849.0120.A. addresses how the choice of resource might affect the future adequacy, reliability, or efficiency of energy supplied to the utility, its customers, and the people of Minnesota and neighboring states.

This docket was initially driven by the Commission's March 2013 order finding that Xcel had demonstrated the need for at least 150 MW by 2017, potentially increasing to 500 MW by 2019.¹¹⁰ But given a broad range of changed circumstances, the ALJ concluded that Xcel would not need to acquire any new capacity for 2017 or 2018, and would need only 26 MW by 2019. And the ALJ found that it would not be efficient to procure large generators, such as gas turbines, to meet this modest need.¹¹¹

As previously discussed, the Commission concurs with the view that changed circumstances may justify Xcel reducing or delaying its acquisition of new capacity. But the Commission rejects the view that changed circumstances justify reducing Xcel's acquisitions to no more than 26 MW by 2019. The analysis that led to this conclusion reflected the combined effects of all dynamics that might reduce an estimate of need – while omitting consideration of the corresponding dynamics

¹⁰⁷ Ex. 46 at 9 (Wishart Direct) and Ex. 83 at 24-25, 39 (Rakow Direct).

¹⁰⁸ Ex. 46 at 7-8 and Table 2 (Wishart Direct).

¹⁰⁹ Ex. 76 at 13 (Shah Direct).

¹¹⁰ See *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).

¹¹¹ ALJ's Report, Finding 250.

that might reasonably offset those reductions.

The future adequacy, reliability, and efficiency of power available to Xcel, its customers, and the people of Minnesota and neighboring states, depend upon a prudent assessment of need. Even Xcel's revised 2013 forecast, with further adjustments for the Solar Energy Standard and revised capacity ratings for Xcel's generators and demand-side management programs, demonstrates a need for more than 300 MW by 2019.

Thus, the Commission concurs with the ALJ that the record demonstrates sufficient demand to justify selecting the Geronimo proposal. But contrary to the ALJ's finding, this level of demand is also more than sufficient to justify selecting a new combustion turbine or combined cycle generator.

2. Reasonableness and Prudence

Minn. R. 7849.0120.B. addresses whether the record demonstrates by a preponderance of the evidence that some other facility is more reasonable and prudent. Addressing this question requires consideration of both process and substance.

Procedurally, the Commission must evaluate the tools the parties offer to help the Commission gauge reasonableness and prudence. The ALJ concludes, and Calpine and Geronimo agree, that a Levelized Cost of Electricity analysis provides better guidance than the Strategist capacity expansion model, and that the manner in which the Department and Xcel conducted their analysis led to biased results.

The Department, Invenergy, and Xcel argue the contrary, supporting both the Strategist model in general and their implementation of it. And under the current circumstances, the Commission agrees.

As previously discussed, a Levelized Cost of Electricity analysis calculates 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, it does not consider how a new resource would affect the utility's existing resources – for example, by helping to avoid additional capacity costs and variable costs, including fuel.

Because this model takes little or no account of the context within which a resource would be used, the analysis may be appropriate where competing resources will be used in identical contexts, and thus all other factors can be regarded as equal. But the U.S. Energy Information Administration concludes that “the direct comparison of the levelized cost of electricity across technologies is often problematic and can be misleading as a method to assess the economic competitiveness of various generation alternatives.”¹¹²

In the current docket, the Commission confronts a choice among vastly dissimilar proposals – proposals for peaking and intermediate capacity, for dispatchable and non-dispatchable generation, for solar-powered and gas-powered generators, for proposals that would be governed by a power purchase agreement and proposals that would be owned by Xcel outright, and between

¹¹² Ex. 47 at 16 (Wishart Rebuttal).

generators and transmission capacity credits.¹¹³ This range of variables simply exceeds what a Levelized Cost of Electricity analysis is designed to consider.

In addition, the Strategist model permits the parties to compare the amount of pollution each proposal would generate, and to weigh this pollution on the basis of Commission-approved externality and regulatory values; a levelized analysis does not. In this circumstance, the evidence and long-standing Commission practice support the conclusion that capacity expansion modeling provides better predictions of costs and ratepayer effects than does a Levelized Cost of Electricity analysis.¹¹⁴

More substantively, the ALJ, Geronimo, and Calpine object to the manner in which the Department and Xcel conducted their Strategist modeling, and the conclusions they drew from it. The ALJ concluded a reasonable and prudent purchaser could not select any of the gas-powered proposals when Geronimo's proposal is the lowest-cost stand-alone resource when judged on the basis of the amount of energy it is expected to generate.¹¹⁵ And the ALJ rejected the analyses of other parties on the theory that they had placed undue reliance on the demand forecast from Xcel's resource plan.

The record supports the conclusion that, on a stand-alone basis, Geronimo's proposal has the lowest ratio of cost to anticipated energy generated. But the record also shows that when analyzed as part of a system, Geronimo's proposal incurs the highest costs.¹¹⁶ And, while parties disagree about the relative merits of relying on the forecast from Xcel's resource plan or Xcel's 2013 update, the Department analyzed all the proposals under a variety of scenarios – including levels of demand that were less than Xcel's 2013 forecast. Consequently, the Department's analysis cannot be dismissed on this basis. 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.

In sum, while the record clearly demonstrates the merits of Geronimo's proposal, the Commission rejects the ALJ's finding that reason and prudence precludes the selection of the gas-powered proposals as well.

3. Benefits Compatible with Nature, Society, and Health

Minn. R. 7849.0120.C. asks whether the proposed resource will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.

The ALJ found that this criterion favors Geronimo's proposal, noting both its environmental benefits and its propensity to generate economic activity. Here, the Commission concurs. While

¹¹³ Ex. 74 at 5–6 (Norman Rebuttal); Ex. 47 at 15–16 (Wishart Rebuttal); Department Reply Brief at 35.

¹¹⁴ Ex. 47 at 2-3 (Wishart Rebuttal). Consequently the Commission declined to adopt findings or conclusions from the ALJ's Report grounded in the quantification of costs and benefits derived from the Levelized Cost of Electricity analysis, including Finding 255.

¹¹⁵ ALJ's Report, Finding 257, citing Ex. 74 at 7 (Norman Rebuttal).

¹¹⁶ See, Ex. 74 at 7 (Norman Rebuttal), referencing Dr. Rakow and Mr. Wishart's direct testimonies.

other parties argue that the cost of Geronimo's proposal outweighs its natural and socioeconomic advantages, no party has challenged the merits of Geronimo's proposal in terms of protecting the natural environment or human health.

The record shows that construction and operation of Geronimo's proposal, unlike the gas-powered proposals, would avoid generating a variety of pollutants. Relying on Geronimo's generators, each year Xcel could expect to avoid emitting 94,133 tons of carbon dioxide (CO₂), 115.98 tons of carbon monoxide (CO), 63.26 tons of nitrogen dioxides (NO_x), 27.08 tons of particulate matter (PM₁₀), 10.48 tons of sulfur dioxide (SO₂), 3.44 tons of volatile organic compounds (VOCs), and unspecified amounts of lead (Pb) and hazardous air pollutants (HAPs).¹¹⁷ In addition, Geronimo's generators do not require water to generate power, thereby avoiding the need to tax aquifers or to discharge heated, chemical-laden wastewater into the environment.

The record also indicates that construction and operation of Geronimo's proposal would promote more employment, and more dispersed employment, than would the other projects. Geronimo's construction phase would generate approximately 500 jobs, dispersed in work crews of between 13 and 40 members each, plus generate roughly 10 permanent operations and maintenance positions.¹¹⁸ In contrast, construction of Xcel's Black Dog Unit 6 proposal is not anticipated to require more than 60 workers at any one time. Calpine anticipates that approximately 250 construction workers would be employed during the peak of its construction activity. Invenergy estimates needing approximately 100 construction workers during the peak of construction activity.¹¹⁹ Finally, no new operations jobs are expected to be created with the Black Dog, Calpine, or Invenergy proposals.¹²⁰

4. Compliance with Laws of Other Jurisdictions

Minn. R. 7849.0120.D. asks whether a proposed facility "will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments."

Noting that the regulation of emissions has grown more restrictive, and may grow more restrictive yet, the ALJ reasoned that Geronimo poses the fewest risks of violating laws and policies beyond the Commission's jurisdiction because Geronimo's proposal produces the fewest emissions.¹²¹

Whatever the merits of the ALJ's conclusion in general, this fourth criterion merely asks whether the record proves that any given facility will fail to comply with laws and policies outside the Commission's jurisdiction. As the Department, Invenergy, and Xcel note, the record does not demonstrate that any of the proposed projects would fail this test. Consequently the Commission concludes that this fourth Certificate of Need criterion provides no advantage to any of the proposed projects.

¹¹⁷ Ex. 13 at 24, 34 (Distributed Solar Energy Proposal); Ex. 38 at 38 (Environmental Report).

¹¹⁸ Ex. 38 at 31-33 (Environmental Report).

¹¹⁹ *Id.* at 30-31 (Environmental Report).

¹²⁰ *Id.* at 29.

¹²¹ ALJ's Report, Findings 282-289.

E. Conclusion

1. Geronimo's Proposal

In sum, the ALJ's Report demonstrates the merits of Geronimo's proposal, both for supporting the reliability and adequacy of Xcel's power supply, but also for promoting beneficial environmental and socioeconomic outcomes. In particular, the Commission notes the state policy favoring energy from renewable sources,¹²² and the goal of reducing greenhouse gases relative to 2005 levels by 30 percent by 2025 and 80 percent by 2050.¹²³ Geronimo's proposal best advances these policies.

The principal objection to Geronimo's proposal has been cost. But whether an analysis shows Geronimo's proposal to be more expensive than the other proposals, or less expensive, or similar in cost, depends on the value given to solar energy, S-RECs, externality values, and other factors. While the Department's analysis found other proposals to be more cost-effective, the difference in the cost of Geronimo's proposal and other proposals was less than half a percent.¹²⁴

Weighing all factors explored in this record, the Commission affirms the ALJ's recommendation and will select Geronimo's proposal.

2. GRE's Proposal

However, while the Commission is persuaded of the need to plan for more than 72 MW of accredited capacity, it will decline the ALJ's recommendation to also select GRE's proposal. Given the ALJ's conclusions about the limited demand growth in Xcel's service area, the ALJ's recommendation was driven by the flexibility and scalability offered by GRE.

The unique nature of GRE's proposal gives it this unusual degree of flexibility. GRE offers to sell capacity credits for two or three years. As such, GRE does not offer to add any new capacity or energy to the MISO system, or any longer-term solution to fill Xcel's need. And while GRE's proposal generates no environmental costs, it also generates no environmental benefits. That is, unlike Geronimo's proposal, GRE's proposal would not provide any substitute means for Xcel to acquire energy in a manner that imposes fewer costs on the environment.

Ultimately the Commission remains convinced that Xcel must plan for the possibility of demand levels consistent with the findings in its last resource plan. Both Xcel and the Department included some version of GRE's proposal in their Strategist modeling to determine if this capacity credit offer had sufficient value -- for example, by delaying the need to actually add resources to the system -- to warrant consideration. Their analyses showed that the costs of GRE's proposal

¹²² Minn. Stat. 216B.2422, subd. 4.

¹²³ Minn. Stat. 216H.02.

¹²⁴ Ex. 84 SRR-4A (Rakow Direct Attachments) (no package including Geronimo's proposal increases Xcel's present value of societal cost by more than 0.47 percent); Environmental Intervenors' Brief at 7-8 (adding Geronimo's proposal to the package of Cannon Falls and Black Dog Unit 6 increases the annual societal cost by 0.08 percent); Public Hearing Transcript, Vol. 1 at 145-46 (testimony of Geronimo witness Engelking) (cost differences between packages are "in the hundredths of a percent" of Xcel's system costs).

exceeded the value of delaying investment in a long-term solution.¹²⁵

In an environment in which Xcel's need for new capacity is speculative and remote, GRE's proposal may have been an appropriate strategic choice. In an environment in which Xcel has demonstrated need for substantial capacity in the near term, GRE's short-term proposal serves no purpose. Based on this record, the Commission concludes that it is neither reasonable nor prudent for Xcel to pursue a capacity credit purchase from GRE to meet Xcel's level of need.

3. Gas-powered Proposals

Among the remaining options, the record demonstrates that Calpine's proposal, Invenergy's proposal, and Xcel's Black Dog Unit 6 proposal have comparable merits. Indeed, the deciding factor as between these proposals may rest in the specific terms of their agreements.

4. Draft Power Agreements

Consequently the Commission will direct Xcel to negotiate agreement terms with Calpine, Geronimo, and Invenergy for securing power from their proposals, and to draft equivalent terms under which Xcel would recover from ratepayers the cost of its Black Dog Unit 6 proposal. In accordance with Xcel's competitive resource acquisition process, Xcel will have four months in which to develop these terms and submit them for Commission approval – or, alternatively, to explain why it had not been able to develop these terms, and to propose how to proceed.

These terms should acknowledge that, for purposes of cost recovery, each bidder will be held to the prices and terms used to evaluate its bid. The terms should not put ratepayers at risk for costs that are higher than bid, or for promised levels of accredited capacity, energy, or other benefits that do not fully materialize. The Commission is not likely to regard as reasonable any terms that shift risk or unknown costs to ratepayers. If a bidder's actual costs prove to be lower than bid, however, the bidders should retain those savings.

In particular, the Commission notes that proposals offering flexible installation dates would provide opportunities for substantial savings to Xcel and its ratepayers. Consequently, while the parties are not required to incorporate such terms into their proposals, the Commission concurs with the ALJ, the Department, and Xcel that it would be appropriate for the Commission and the Department, in reviewing draft terms, to look for terms governing the possibility that a project might be delayed or cancelled.

5. Housekeeping Matters

In support of these decisions, the Commission adopts the ALJ's Report to the extent it is consistent with this order. The decisions set forth here are compatible with socioeconomic and environmental requirements, and compliant with other applicable state law.

To facilitate Commission oversight of the rest of this resource acquisition process, the Commission will accept Xcel's offer to file status reports regarding changes in Xcel's resource needs, including needs resulting from changes in MISO's reserve requirements. The Commission

¹²⁵ Ex. 46 at 24 (Wishart Direct).

will direct Xcel to file its first report by October 2014, and the second report a year later.

Finally, the Commission observes that Xcel's next resource plan is due July 1, 2014. However, the current docket has amply documented a list of changed circumstances that would complicate Xcel's resource planning. Xcel may add to that list the unresolved state of the current docket. In light of these developments, the Commission finds it appropriate to extend the date of Xcel's next resource plan to January 2, 2015.

ORDER

1. Northern States Power Company d/b/a Xcel Energy shall negotiate terms for acquiring new supply resources with the following parties:
 - A. Xcel shall negotiate a draft power purchase agreement with Geronimo Wind Energy, LLC, d/b/a Geronimo Energy, LLC, and submit the agreement for Commission review to ensure that the negotiated terms are consistent with the public interest.
 - B. Xcel shall negotiate draft power purchase agreements with Calpine Corporation and Invenergy Thermal Development, LLC, and shall develop price terms for Black Dog Unit 6. Xcel shall then submit the agreements and terms for Commission review to determine which of these project(s), if any, best addresses Xcel's overall system needs identified in this record and in the Commission's Order Approving Plan, Finding Need, Establishing Filing Requirements, and Closing Docket (March 5, 2013) issued in Docket No. E-002/RP-10-825, *In the Matter of Xcel Energy's 2011-2025 Integrated Resource Plan*.

Within four months, Xcel shall file these terms for Commission approval, or shall explain its failure to do so and recommend how to proceed.

2. Regarding these terms:
 - A. Calpine, Geronimo, Invenergy, and Xcel shall be held to the prices and terms used to evaluate each bid for the purpose of cost recovery from Xcel ratepayers. Ratepayers must not be put 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.
 - B. The agreements must 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.
 - C. The Commission is unlikely to find it reasonable for Xcel to enter into an agreement in which negotiated terms shift risk or unknown costs to ratepayers.

- D. Delay and cancellation provisions are appropriate considerations for power purchase agreement negotiations.
3. The Commission adopts the ALJ's Findings of Fact, Conclusions of Law, and Recommendation (December 31, 2013) to the extent that it is consistent with this order.
4. Xcel shall file status updates in October 2014 and October 2015 on any changes in Xcel's resource needs, including needs resulting from changes in MISO's reserve requirements.
5. The Commission extends the deadline for Xcel's next resource plan to January 2, 2015.
6. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION



Burl W. Haar
Executive Secretary



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CERTIFICATE OF SERVICE

I, Robin Rice, hereby certify that I have this day, served a true and correct copy of the following document to all persons at the addresses indicated below or on the attached list by electronic filing, electronic mail, courier, interoffice mail or by depositing the same enveloped with postage paid in the United States mail at St. Paul, Minnesota.

Minnesota Public Utilities Commission

**ORDER DIRECTING XCEL TO NEGOTIATE DRAFT AGREEMENTS WITH
SELECTED PARTIES**

Docket Number E-002/CN-1240

Dated this 23rd day of May, 2014

/s/ Robin Rice

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Northern States Power Company
Case No. PU-15-95

Attachment 3

Order Approving Power Purchase Agreement with Calpine, Approving Power Purchase Agreement
with Geronimo and Approving Price Terms with Xcel

Docket No. E002/CN-12-1240

February 5, 2015

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger
Nancy Lange
Dan Lipschultz
John A. Tuma
Betsy Wergin

Chair
Commissioner
Commissioner
Commissioner
Commissioner

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

ISSUE DATE: February 5, 2015

DOCKET NO. E-002/CN-12-1240

DOCKET NO. E-002/M-14-788

In the Matter of a Draft Purchase Power
Agreement with Geronimo Wind Energy, LLC,
d/b/a Geronimo Energy, LLC

DOCKET NO. E-002/M-14-789

In the Matter of Draft Purchase Power
Agreements with Calpine Corporation and
Invenergy Thermal Development, and Proposed
Price Terms for Black Dog Unit 6

ORDER APPROVING POWER
PURCHASE AGREEMENT WITH
CALPINE, APPROVING POWER
PURCHASE AGREEMENT WITH
GERONIMO, AND APPROVING PRICE
TERMS WITH XCEL

PROCEDURAL HISTORY

I. History Leading to Commission Order

On November 21, 2012, the Commission initiated Docket No. 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*, Docket No. E-002/CN-12-1240 (*12-1240 Docket*). In it, the Commission directed Northern States Power Company d/b/a Xcel Energy (Xcel) to solicit proposals from project developers to provide the additional resources needed to serve Xcel's customers.¹ The Commission later found that Xcel had demonstrated the need for an additional capacity of 150 megawatts (MW) by 2017, increasing up to 500 MW by 2019.² These findings provided the context in which project developers submitted their proposals.

¹ *12-1240 Docket*, Order Closing Docket, Establishing New Docket, and Schedule for Competitive Resource Acquisition Process (November 21, 2012).

² See *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).

On December 31, 2013, an administrative law judge (ALJ), after conducting evidentiary hearings in the *12-1240 Docket*, issued his Findings of Fact, Conclusions of Law, and Recommendation.³ The ALJ concluded that changes in Xcel's need forecast justified a strategy of minimizing capital commitments. In this context the ALJ concluded that the solar-powered generators proposed by Geronimo Wind Energy, LLC, d/b/a Geronimo Energy, LLC (Geronimo) provided the optimal combination of low cost and high flexibility. To the extent the Commission found it appropriate to acquire additional capacity, the ALJ recommended buying a utility's *capacity credits* – that is, the right to transmit electricity across the transmission grid for two or three years.

II. May 2014 Order

After lengthy proceedings, on May 23, 2014, the Commission issued its Order Directing Xcel to Negotiate Draft Agreements with Selected Parties (May 2014 Order). In that order the Commission found that Xcel continued to need new sources of generation to meet its customers' needs. The Commission found that the cost of the temporary capacity credits was greater than the cost of simply accelerating the implementation of some more permanent solution. And the Commission found that the record justified ordering Xcel to pursue negotiating finalized terms for four rival proposals:

- Geronimo's collection of solar-powered generators to be installed at various locations throughout Minnesota, with an accredited capacity of 72 megawatts (MW).
- Calpine Corporation's Mankato Energy Center II, a 345 MW gas-powered generator to be installed in Mankato.
- Invenergy Thermal Development, LLC, (Invenergy)'s Cannon Falls II, 178.5 MW gas-powered generator to be installed in Cannon Falls.
- Xcel's Black Dog Unit 6, a 215 MW gas-powered generator to be installed in Burnsville.

Specifically, the Commission selected Geronimo's proposal for implementation, provided the parties could negotiate a power purchase agreement that was consistent with the public interest. The Commission also stated that it would review the finalized agreements for Calpine's and Invenergy's proposals, and price terms for Xcel's proposal, to determine which, if any, would best address Xcel's remaining system needs.

III. Subsequent Events

Calpine, Geronimo, and Invenergy each formed subsidiaries -- respectively, Mankato Energy Center II, LLC; Aurora Distributed Solar, LLC; and Invenergy Cannon Falls II, LLC -- for the purpose of owning and operating their proposed projects. For ease of exposition, in this order these entities will also be referred to as Calpine, Geronimo, and Invenergy, respectively.

On September 23, 2014, Xcel made the compliance filing required by the May 2014 Order; Xcel revised the filing on October 2. The filing contained the following:

³ *12-1240 Docket*, Findings of Fact, Conclusions of Law, and Recommendation (December 31, 2013).

- A draft power purchase agreement (PPA) that Xcel had negotiated with Geronimo for generators to begin operations by 2016.
- Draft agreements that Xcel had negotiated with Calpine and Invenergy, and a statement reaffirming terms Xcel had previously proposed for Black Dog Unit 6, for generators to begin operations by 2018 or 2019.
- Xcel's updated assessment of need, now predicting that Xcel would not require additional resources until 2024.

Citing its revised need assessment, Xcel's recommended that the Commission refrain from selecting any gas-powered generators at this time, and instead authorize Xcel to re-negotiate the agreements to establish terms for a later implementation date. And Xcel recommended, in effect, that the Commission refer consideration of Geronimo's proposal to a separate docket for solar-powered generators, discussed below.

On September 25, 2014, the Commission initiated two dockets -- Docket No. E-002/M-14-788, *In the Matter of a Draft Purchase Power Agreement with Geronimo Wind Energy, LLC, d/b/a Geronimo Energy, LLC*, and Docket No. E-002/M-14-789, *In the Matter of Draft Purchase Power Agreements with Calpine Corporation and Invenergy Thermal Development and Proposed Price Terms for Black Dog Unit 6* -- soliciting comments on Xcel's compliance filing.

By November 3, 2014, the Commission had received comments, reply comments, or both, from –

- the project developers,
- the Minnesota Department of Commerce (the Department), and
- the Minnesota Center for Environmental Advocacy (MCEA), appearing on behalf of MCEA, Fresh Energy, Sierra Club, and Izaak Walton League - Midwest Office (collectively, the Environmental Intervenors).

On December 8, 2014, the Commission met to receive oral arguments from the parties.

On December 12, 2014, Xcel filed proposed revisions to Geronimo's power purchase agreement that were agreeable to both Xcel and Geronimo, in response to the Commission's concerns about the agreement's language governing cost recovery. In addition, Geronimo and Xcel filed joint comments addressing these concerns.

On December 15, 2014, the Commission met to consider the matter, and again received comments from the parties.

FINDINGS AND CONCLUSIONS

I. Summary

In this order the Commission reviews Xcel's compliance filing, and the parties' comments on it. The Commission then reviews salient terms for the projects offered by the various developers. Finally, in rendering a decision on the merits, the Commission does the following:

- Finds that the terms offered by each of the project developers are consistent with the public interest and consistent with the prices and terms used to evaluate their proposals in this process.
- Reaffirms its selection of the Geronimo proposal, and orders Xcel to execute Geronimo's power purchase agreement as revised.
- Selects Calpine's and Xcel's proposals as resources that meet Xcel's remaining need, and approves the terms offered by Calpine and Xcel.
- Declines Invenergy's proposal on the grounds that it does not meet Xcel's needs as efficiently as Calpine's and Xcel's.

II. Background

A. The Proposed Projects

Consistent with the May 2014 Order, Xcel developed terms for the following four proposals:

- Geronimo proposes to erect photovoltaic panels at approximately 24 sites adjoining substations along Xcel's transmission or distribution lines, each site with a capacity of up to 10 megawatts (MW), for an aggregate capacity of up to 100 MW (or 72 MW of accredited capacity) fueled by solar power.
- Xcel proposes to install a 215 MW combustion turbine generator, powered by natural gas, at Xcel's existing Black Dog Generating Station in Burnsville (Black Dog Unit 6). This would be a peaking generator – that is, a generator designed to run only under periods of peak demand for electricity; these generators tend to be less expensive to build, but have relatively high operating costs, including fuel costs.⁴
- Invenergy proposes to install a natural gas combustion turbine generator adjoining its existing 357 MW generator in Cannon Falls. While initially proposing to install a 178.5 MW generator, Invenergy has now committed that generator to another project; Invenergy now proposes a substitute generator with a capacity of 209 MW.⁵
- Calpine proposes to install a gas-powered combined cycle generating plant – that is, a combustion turbine combined with a heat recovery steam generator to extract more energy from each unit of fuel burned. Calpine proposes to build its new Mankato Energy Center II (MEC II) adjoining the existing 375 MW Mankato Energy Center (MEC I). This addition would provide at least 55 MW of peaking capacity plus at least 290 MW of intermediate capacity. Intermediate generators, having higher construction costs but lower operating costs, are designed to run more frequently than peaking generators.⁶

⁴ See, for example, *12-1240 Docket*, Public Hearing Transcript, Vol. 1 at 11-12 (testimony of Xcel witness Alders).

⁵ Xcel Compliance Filing (September 23, 2014) at 16.

⁶ *Id.*; Xcel proposal (April 15, 2013) at 5-3.

B. Commission Instruction for Power Purchase Agreements and Price Terms

In directing Xcel to finalize draft terms for each of the developer's proposals, the Commission offered the following admonitions:

- A. *Calpine, Geronimo, Invenergy, and Xcel shall be held to the prices and terms used to evaluate each bid for the purpose of cost recovery from Xcel ratepayers. Ratepayers must not be put 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.*
- B. *The agreements must 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.*
- C. *The Commission is unlikely to find it reasonable for Xcel to enter into an agreement in which negotiated terms shift risk or unknown costs to ratepayers.*
- D. *Delay and cancellation provisions are appropriate considerations for power purchase agreement negotiations.*⁷

C. Xcel's Solar Energy Standard Docket (SES)

On May 23, 2013, the Governor signed a bill establishing Minnesota's Solar Energy Standard (SES), directing investor-owned utilities such as Xcel to acquire sufficient electricity from solar energy to supply 1.5 percent of the utility's total retail electric sales (excluding sales to certain industrial customers) by 2020.⁸ By 2020 this policy would require Xcel to acquire an estimated 455,919 megawatt-hours (MWh) of solar energy,⁹ or up to 200 MW of accredited capacity.¹⁰

Xcel has initiated a docket to solicit proposals for solar-powered generators to comply with the Solar Energy Standard (the SES Docket).¹¹ Both the Department and Xcel have proposed that the Commission defer consideration of Geronimo's proposal to that docket. Xcel aspires to make selections in that docket promptly in order to take advantage of a 30 percent federal investment tax credit, currently due to expire by the end of 2016.¹²

⁷ May 2014 Order, Ordering Paragraph 2.

⁸ See 2013 Laws of Minnesota ch. 85, art. 10, § 3, codified at Minn. Stat. § 216B.1691, subd. 2f.

⁹ *12-1240 Docket*, ALJ's Report, Finding 14, citing Ex. 57 at 8 (Engelking Direct), citing Xcel 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 at 4 (August 15, 2013).

¹⁰ *12-1240 Docket*, Ex. 46 at 22 (Wishart Direct), Ex. 83 at 19 (Rakow Direct); but see Xcel Reply Comments (November 3, 2014) at 21-22.

¹¹ See *In the Matter of the Petition of Xcel Energy for the Approval of a Solar Portfolio to Meet Initial Solar Energy Standard Compliance*, Docket No. E-002/M-14-162.

¹² See 26 U.S.C. § 48; after 2016 the tax credit is reduced to 10 percent.

D. The Midcontinent Independent System Operator, Inc. (MISO)

All parties to this proceeding must anticipate and respond to the actions (and inactions) of the Midcontinent Independent System Operator, Inc. (MISO), which administers a regional electric transmission grid operating in parts of Minnesota, Manitoba, and 14 other states. MISO runs a market for bulk energy transactions, selecting the most efficient generators to meet the needs of the participating utilities and large industrial customers. And MISO runs a market for ancillary services, selecting the most efficient generators to hold in reserve for back-up power and balancing momentary fluctuations in supply and demand.

In an effort to maintain the transmission grid's reliability, MISO considers both supply and demand. MISO considers demand when it identifies the amount of capacity each load-serving entity is responsible to provide in order to meet the forecasted levels of peak demand, as well as each entity's reserve requirements – that is, a minimum amount of generating capacity that a utility must have in excess of the projected peak demand for electricity.¹³

MISO considers supply when it establishes policies to estimate, or *accredit*, the amount of power a generator can be expected to provide to meet this demand and reserve requirements. For example, Geronimo determined that under MISO's current policies, Geronimo's proposal would receive accreditation of 72 percent of the generators' nominal capacity of 100 MW. In accrediting the capacity of a gas-powered generator, MISO currently does not consider whether the generator has a firm gas supply – but this policy is currently under review.

MISO recalculates reserve requirements, and reassesses generators' accredited capacity, annually.

Finally, MISO designates the generators that may interconnect to the regional power grid, and establishes the price and schedule under which they may do so. Under MISO's current practices, MISO will not credit the capacity of generators such as those proposed by Calpine and Invenergy until the related transmission facilities have been upgraded – which is not expected until 2019 or 2020.

III. Xcel's Compliance Filing and Recommendation

In its compliance filing, Xcel submitted the draft power purchase agreements it has negotiated with Geronimo, Calpine, and Invenergy, and reaffirmed the terms it has offered for its own Black Dog Unit 6 proposal. But Xcel does not ask the Commission to approve any of these agreements.

Based on its new need assessment, Xcel claims that it will still have an excess 96 MW through 2019, and will not need new capacity until as late as 2024.¹⁴ Xcel attributes this putative change in need to 1) a decline in customer demand, 2) the addition of generating capacity through temporary contracts and delayed plant retirements, and 3) changes in Xcel's assessment of its reserve margin¹⁵ – in effect, freeing up some of Xcel's existing generators to meet customer needs.

¹³ See, for example, *12-1240 Docket*, Ex. 46 at 5 (Wishart direct) (defining “reserve margin”).

¹⁴ *12-1240 Docket*, Xcel Compliance Filing (September 23, 2014) at 9.

¹⁵ While MISO has not altered its reserve margin formula since the Commission's prior meeting in this docket, Xcel has altered its assessment of its reserve margin as it has “gained more confidence in the approach....” *12-1240 Docket*, Xcel Compliance Filing (September 23, 2014) at 5.

Given these changes, Xcel proposes that the Commission postpone acting on any of the proposals for gas-powered generators and authorize Xcel to negotiate terms for extending the implementation date for each of these projects into 2019-2021. And Xcel proposes that the Commission “mak[e] the public interest determination required for Geronimo’s Aurora PPA in light of the Commission’s assessment of the Company’s capacity requirements and the availability of the solar PPA proposals that we have developed through our [SES Docket].”¹⁶

But Xcel acknowledges that its proposals reflect only one means of balancing the various factors at issue in this docket, and that the Commission would be justified in drawing a different conclusion based on a different balancing of the factors.

IV. Need Assessment

A. Positions of the Parties

The Environmental Intervenors support Xcel’s recommendation to defer action on all new generators except for Geronimo’s. The Environmental Intervenors argue that the Commission’s May 2014 Order already selected Geronimo’s proposal for implementation, subject only to the condition that the parties agree on terms that are in the public interest. To the extent that the record demonstrates that Xcel has additional needs, the Environmental Intervenors recommend that Xcel pursue additional opportunities for conservation and other forms of managing customer demand.

Geronimo, Invenergy, and Calpine point out that Xcel’s new need assessment is internal, unvetted, and introduced too late in this case for adequate examination by other parties. Noting that need assessments inevitably change over time, these parties argue that Xcel’s most recent assessment provides an insufficient basis to abandon this docket.

Moreover, the Department joins these developers in emphasizing that the draft power purchase agreements, and Xcel’s terms for developing Black Dog Unit 6, offer favorable terms.¹⁷ They caution that these terms are not likely to be available by the time Xcel’s need for additional generating capacity is resolved beyond all dispute. In particular, they argue that environmental regulations will prompt utilities to retire their older and coal-powered generators, driving up demand for -- and thus the price of -- new generators. For example, MISO estimates that the federal Mercury and Air Toxics Standards (MATS) will trigger the retirement of 10-12 gigawatts of coal-fired generation by 2016, and the proposed federal Clean Power Plan Proposed Rule (Section 111(d) Rule) could trigger the retirement of an additional 11-14 gigawatts by 2020.¹⁸

¹⁶ *12-1240 Docket*, Xcel Reply Comments (November 3, 2014) at 1.

¹⁷ See, for example, *12-1240 Docket*, Hearing Transcript, Volume 1 (October 22, 2013) at 109-110 (Xcel witness Wishart).

¹⁸ MISO Letter to federal Environmental Protection Agency (November 25, 2014); see also *In the Matter of Xcel Energy’s 2011-2025 Integrated Resource Plan*, Docket No. E-002/RP-10-825, Order Establishing Procedural Schedules and Filing Requirements (November 30, 2012) at 5 (discussing consequences of new federal environmental regulations); Environmental Report (October 14, 2013), Appendix C, Xcel response to Department Information Request 1-1 (noting Xcel must retire Black Dog Units 3 and 4, or make expensive changes, to comply with MATS); Ex. 46 (Wishart Direct) at 22.

The Department shares the concerns raised by other parties that Xcel's new need assessment filing left insufficient time for analysis. Nevertheless, the Department reports that it was able to evaluate some of Xcel's alleged changes to its need assessment, including Xcel's proposed short-term capacity additions. On the basis of this partial review the Department now recommends that the Commission defer bringing any new gas-powered generators on-line until 2019 – but no later.

B. Commission Action

The Commission strives to maintain a stable perspective in evaluating a utility's ever-changing need assessment. This starts with noting that Xcel has revised its assessment of need throughout this proceeding. It is entirely foreseeable and unremarkable that Xcel's assessment has changed over time – and indeed, that it will continue to do so.

Because factors affecting need are continually changing, resource decisions must be made in the midst of flux. The weight the Commission gives to an assessment reflects the scrutiny the assessment has received. Xcel's latest need assessment is based on a technically complex analysis that has received much less scrutiny than Xcel's prior assessments.

In support of its recommendation to select none of the current generators proposed to it, Xcel argues that it now forecasts having an excess 96 MW through 2019. Parties dispute Xcel's assessment. But even if Xcel's assessment reflected the soundest data and methods, Xcel's recommendation assumes the Commission should be guided solely by Xcel's statement of MISO's minimum requirements. Moreover, 96 MW represents a margin of less than one percent of Xcel's estimated 9776 MW capacity obligation for 2019 – a rather narrow margin.¹⁹

Need assessments are necessarily approximate and even the most analytic utilities must plan for a range of outcomes. In this docket the Department has evaluated the consequences of selecting various combinations of generators under multiple scenarios – including a scenario of lower-than-expected demand. In short, Xcel's latest demand forecast, though new, was still within the range of contingencies contemplated and evaluated by the Department.²⁰

Finally, the Commission's goal is not to forecast the precise level of need – a task rife with the potential for error – but to identify the resource mix that will best manage forecasting error. As Xcel observed,

[A] conservative approach [to resource planning] is warranted to ensure adequate generating capacity on our system under all reasonably plausible outcomes. While this may sometimes mean that available capacity will exceed the identified need for a short period of time, this is preferable to incurring a shortfall of capacity. Further, this conservative planning approach insulates our customers from over-reliance on the MISO market due to routine variations in the availability of system resources.²¹

¹⁹ *12-1240 Docket*, Xcel Compliance Filing (September 23, 2014) at 9 (table).

²⁰ *12-1240 Docket*, Department comments (October 23, 2014) at 3.

²¹ *12-1240 Docket*, Xcel Exceptions to ALJ Report (Jan. 21, 2014) at 6.

Based on the state of the record regarding Xcel's latest need assessment, the Commission will decline to alter its finding of need on this basis. Rather, the Commission reaffirms its finding from its May 2014 Order at 26:

[T]he Commission will err on the side of ensuring that Xcel has enough capacity to meet the needs of its customers. The future will always be uncertain, but the Commission must proceed to make the necessary choices on the basis of a rigorous analysis of the data that *is* in the record.²²

That said, Xcel has negotiated draft terms with each of the developers of gas-powered generators that provide the option of postponing the generator's in-service date to as late as 2019. Commission approval of any of these agreements will provide Xcel with the discretion, consistent with the Department's recommendation, to delay operations to that point in time.

But Geronimo, the Department, the Environmental Intervenors, and Xcel itself acknowledge that different factors influence the timing of a solar-powered project. The Commission concurs: The analysis demonstrating the merits of Geronimo's power purchase agreement rests on the assumption that Geronimo would implement its proposal in time to qualify for a 30 percent federal investment tax credit, currently due to expire by the end of 2016. Nothing in Xcel's need analysis alters this dynamic.

V. Geronimo's Aurora Power Purchase Agreement

A. Party Positions

Geronimo and the Environmental Intervenors ask the Commission to approve Geronimo's power purchase agreement, arguing that it complies with the May 2014 Order. And the Department concludes that the terms of Geronimo's agreement are consistent with the public interest and consistent with the prices and terms used to evaluate its bid in this process.

Xcel does not specifically recommend or oppose the Geronimo project. Rather, Xcel recommends referring consideration of Geronimo's proposal to its new SES Docket, thereby facilitating comparisons to rival proposals for solar-powered generators.

B. Agreement Provisions

1. Capacity and Commercial Operation Date

Geronimo proposes to build solar-powered generators with a combined nameplate capacity of 100 MW, and an accredited capacity of at least 71 percent of this amount.

²² [Fn. 96] Ex. 49 at 7 (Alders Direct) (“[T]here 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 [Xcel]’s potential need in the 2017-2019 timeframe.”).

Unlike Calpine, Invenergy, or Xcel, Geronimo promises that its proposal would be able to provide power by December 1, 2016.

2. Price, Financial Risk, Operational Risk, Capacity Accreditation

The Department reviewed the draft agreement's terms governing price and promised nameplate capacity, and other matters.

All power purchase agreements involve financial risk, such as the risk that the seller will be unable to deliver power as promised, forcing the utility to acquire other resources at the last minute. They also involve operational risks, such as the risk that the project will be delayed, or shut down in whole or part.

Geronimo's agreement provides a Security Fund to provide some protection against the risk of having to buy replacement power on short notice. And the agreement provides a variety of other remedies, including damage payments if Geronimo fails to have 100 MW installed by the operational date, as well as compensation for failing to gain accreditation of at least 71 percent for the generators' installed capacity. The Department concludes that these terms are consistent with Geronimo's proposal and with providing reasonable protection to ratepayers.

3. Transmission Interconnection

Because the Geronimo project is not designed to interconnect with the MISO transmission system, the project bears no risk related to interconnecting to the transmission grid.

Rather, the project is designed to interconnect with Xcel's distribution system. Because Geronimo has agreed to bear all costs related to interconnecting to the distribution system, the Department concludes that this arrangement poses no unreasonable risks to ratepayers.

4. Environmental Risk

Geronimo's agreement would award all environmental and renewable energy credits arising from this project to Xcel. The Department concludes that this arrangement poses no unreasonable risk to ratepayers.

5. Curtailment

Geronimo's agreement provides for Xcel to compensate Geronimo if, from time to time, Xcel refuses to take delivery of the electricity generated by the project. Curtailments might occur, for example, when a given part of Xcel's electrical system is experiencing a temporary glut of electricity relative to demand. Xcel would not need to compensate Geronimo for curtailments triggered by emergencies.

Xcel states that this part of the agreement is analogous to terms in Xcel's other agreements with renewable generators. In any event, Xcel notes that solar generators tend to provide power during periods of high demand, reducing the likelihood of curtailments.

6. Cost Recovery

During the Commission's meetings on December 8 and 15, 2014, the Commission expressed concerns about language in Article 6.1(A) of Geronimo's agreement governing cost recovery; no other developer has proposed similar language in their agreements. In response to the Commission's concerns, Geronimo and Xcel agreed to modify the contested language in the manner set forth in the Ordering Paragraphs.

In general, the revised language provides for either party to terminate the power purchase agreement if, within a specified timeframe, it is unclear that Xcel can secure assurances of having a reasonable opportunity to recover the share of the project's costs allocated to the Minnesota and North Dakota jurisdictions.

According to Geronimo and Xcel, this language is intended to achieve two competing goals. First, it is intended to maximize Xcel's opportunity to recover the cost of Geronimo's project throughout Xcel's service area. This includes cost recovery from North Dakota, a jurisdiction providing roughly five percent of Xcel's revenues, which may preclude cost recovery of projects undertaken prior to receiving state approval. Second, the cost recovery language is intended to give Geronimo the confidence to make the investments necessary to meet the 2016 in-service date before the 30 percent investment tax credit expires.

VI. Calpine's Mankato Energy Center II Power Purchase Agreement

A. Party Positions

The Environmental Intervenors oppose this proposal, as they oppose the other gas-powered generators offered in this docket, as exceeding Xcel's latest assessment of need.

In contrast, the Department recommends that the Commission approve at least one of the gas-powered proposals – and Calpine's project is the Department's first choice among the proposals in this docket. But the Department acknowledges that concerns about some of the terms of Calpine's power purchase agreement, discussed below, could justify selecting one of the other gas-powered generators instead.

As the sole party to propose a combined cycle plant, Calpine argues that its proposal generates greater benefits for lower cost – including environmental costs – than the other gas-powered proposals. Calpine states that the costs reflected in its draft power purchase agreement reflect the economies of scale Calpine was able to achieve by combining its proposal with its existing Mankato Energy Center. Calpine cautions that these unusually advantageous circumstances are unlikely to arise in the future.

According to the Department, Calpine's generator would prove to be the least-cost choice under a variety of scenarios – if gas prices increase, or regulations increase the cost of generating carbon dioxide, or the retirement of other generators causes Xcel (and MISO) to dispatch the remaining generator more often than anticipated. In analyzing the parties' initial proposals, the Department determined that Calpine's proposal was the single least-cost generator under the Department's base forecast of need. And the Department determined that Calpine's proposal combined with Black Dog Unit 6 formed a package of generators that would permit Xcel to meet its customers' needs at least cost.

But the Department also determined that the dynamics that would make Calpine efficient if gas prices were to rise, or plant utilization would be greater, would also render the proposal less advantageous than the other gas-powered proposals in the event gas prices were to fall or the generator were dispatched less than anticipated.

B. Agreement Provisions

1. Capacity and Commercial Operation Date

Calpine proposes to build a 345 MW combined-cycle generator to provide both peaking and intermediate power.

Like the other developers of gas-powered generators, Calpine reports that it is no longer able to have its new generator ready for operation in 2017. It could meet a 2018 or 2019 in-service date, albeit at slightly higher prices than applied to a 2017 in-service date.

2. Price, Financial Risk, Operational Risk

The Department reviewed the draft agreement's terms governing price and promised nameplate capacity, and concluded that they were consistent with the Calpine proposal.

The draft agreement provides for a Security Fund and other measures to manage financial, operational, and capacity accreditation risk. The Department generally concluded that these safeguards were reasonable.

3. Environmental Risk

The agreement identifies circumstances under which each party might bear some cost of future environmental regulations. Where new regulation of emissions would produce a material adverse effect on the economics of the agreement, the parties agree to cooperate in finding a strategy to mitigate the harm. The Department concludes that these terms are reasonable and consistent with the assumptions used for purposes of comparing the various developers' proposals.

4. Capacity Accreditation

Under the terms of the draft agreement, Xcel would begin making payments to Calpine only when MISO recognizes the generator as a "capacity resource" available to help Xcel meet its system power needs, including Xcel's reserve margins. But before this could occur, MISO must complete its upgrades to certain transmission facilities to provide additional transmission capacity. Only MISO can determine the timing of these events. While Calpine might be able to interconnect with the transmission grid by 2018, it does not expect to secure accredited capacity for its generator before 2019, and perhaps later.

The draft power purchase agreement contains various terms managing risks arising from securing capacity accreditation. If Calpine were to conclude that MISO will not provide an assessment of its generator's capacity in time to meet the agreement's in-service date, the draft agreement authorizes Calpine to postpone the date. The power purchase agreement also provides terms to compensate Xcel if Calpine, when it finally receives accreditation, fails to achieve the promised level of generating capacity.

5. Transmission Interconnection

Generators seeking to interconnect with the transmission grid must pay the transmission interconnection cost established by MISO. This practice creates two uncertainties: uncertainty about the magnitude of the costs, and uncertainty about when MISO will establish the relevant costs. Calpine reports that MISO has not yet established the transmission interconnection cost for its proposed project.

Under the draft agreement, Xcel would bear these transmission interconnection costs. Calpine estimated that MISO would allocate transmission costs of \$650,000 to \$1.5 million to the Calpine project, and the Department used the \$1.5 million figure when comparing the cost-effectiveness of the Calpine proposal to other alternatives.

The Department offers no opinion about the appropriate magnitude of the risk. Rather, the Department concludes that allocating this risk to Xcel, and hence to ratepayers, is inconsistent with the Commission's May 2014 Order admonishing negotiators that the terms of the power purchase agreements should not place such risks on ratepayers.

Calpine defends the agreement's allocation of interconnection costs on various grounds. First, Calpine argues that Xcel, being the more experienced party, is in the better position to assess and bear the risk.

Second, Calpine argues that the manner in which the parties have evaluated Calpine's proposal has mitigated the interconnection risk. In modeling the costs and benefits of Calpine's initial proposal, the Department imputed a cost of \$1.5 million for interconnection. The fact that Calpine's proposal remains cost-competitive relative to other proposals suggests that it delivers \$1.5 million in benefits beyond the benefits of the competing proposals. In effect, the power purchase agreement would pay Xcel \$1.5 million to bear this interconnection risk; if interconnection costs less than \$1.5 million, Xcel and ratepayers retain the benefit.

Third, Calpine argues that the interconnection costs are not unbounded. The agreement provides for Xcel to cancel the agreement (albeit with cancellation fees) if the costs grow too high.²³

6. Dispatchability Payments

Calpine's agreement provides for Xcel to make dispatchability payments to Calpine. Generally, dispatchability payments provide a financial incentive for a power plant operator to maximize the capacity the generator has available to respond when dispatched, and to maximize the promptness and speed with which the generator responds to signals to change output levels.²⁴ These are not uncommon terms, appearing in both Calpine's power purchase agreement with Xcel, and in Invenegy's draft agreement.²⁵ According to the Department, while the magnitude of this payment

²³ 12-1240 Docket, Xcel Compliance Filing (September 23, 2014), Attachment A (draft MEC II power purchase agreement), Article 2 (Term and Termination).

²⁴ *Id.*, Attachment A (draft MEC II power purchase agreement), Section 8.2 (Payment for Dispatchability).

²⁵ See *id.*, Attachment B (draft Invenegy Cannon Falls II power purchase agreement), Section 8.2 (Payment for Dispatchability).

is designated a trade secret, the net effect of this term would be to “slightly increase[] the total expected capacity payments” to Calpine.²⁶

The Department objects to this provision -- not because of its magnitude, but because it represents a type of charge that was not included in Calpine’s initial proposal, and thus was not incorporated into the calculations comparing the cost-effectiveness of the various proposals.

Calpine and Xcel argue that this added term would benefit all parties. Xcel sought this change to make the payment structure for Calpine’s new generator mirror Xcel’s payments structure for the existing Mankato Energy Center generator – a structure that the Commission has already approved. According to Calpine, a more uniform pricing structure would better enable Xcel to offer the combined plant’s capacity into the MISO ancillary services markets via automatic generation control, making the facility more nimble and useful – and able to generate more revenues.

In addition, Xcel negotiated other changes to offset the advantage that this change would bring to Calpine. For example, the draft language eliminated bonus payments, requires Calpine to obtain a subordinated mortgage on the facility for Xcel, grants a Right of First Offer in the event Calpine were to propose to sell the original Mankato Energy Center I, and grants the right to assume Calpine’s duties and prerogatives if Calpine were to default (“step-in rights”).

VII. Invenergy’s Cannon Falls Power Purchase Agreement

A. Party Positions

The Environmental Intervenors oppose this proposal, as they oppose the other gas-powered generators offered in this docket, as exceeding Xcel’s latest assessment of need.

In contrast to Calpine’s agreement, the Department praises Invenergy’s draft power purchase agreement for refraining from shifting costs or risks to ratepayers that were not part of its initial bid. It does, however, expose Xcel to the risk of a fuel supply interruption, discussed below.

According to the Department, Invenergy’s proposal proves to be the least-cost generator under scenarios in which demand for electricity is lower than anticipated, and when the generator selected in this docket is dispatched less often than anticipated. However, it compares less favorably under scenarios in which gas prices are lower than anticipated, or if the generator were required to operate more often than anticipated. And when the Department identified the least-cost package of generators to meet Xcel’s forecasted need, Invenergy’s proposal was not part of the package.

B. Agreement Provisions

1. Capacity and Commercial Operation Date

Invenergy proposes to build a 209 MW peaking generator.

²⁶ Department comments (October 23, 2014) at 15.

Like the other developers of gas-powered generators, Invenergy reports that it is no longer able to have its new generator ready for operation in 2017. It could meet a 2018 or 2019 in-service date, albeit at slightly higher prices than applied to a 2017 in-service date.

2. Price, Financial Risk, Operational Risk, Capacity Accreditation

The Department reviewed the draft agreement's terms governing price and promised nameplate capacity, and concluded that they were consistent with Invenergy's proposal.

The draft agreement provides for a Security Fund and other measures to manage financial, operational, and capacity accreditation risk. The Department generally concluded that these safeguards were reasonable.

3. Transmission Interconnection

As with Calpine's proposal, Invenergy's proposal cannot interconnect with the transmission grid until MISO completes necessary grid improvements. Invenergy would not expect to interconnect and secure accredited capacity for its generator before 2019, and perhaps later. As with Calpine's proposal, this proposal manages that risk for the generator by permitting the developer to postpone the project's agreed-upon in-service date without penalty.

Unlike Calpine's proposal, Invenergy's proposal bears 100 percent of the cost of interconnecting to the transmission grid. The Department concludes that this arrangement imposes no unreasonable risk to ratepayers.

4. Environmental Risk

The agreement identifies circumstances under which each party might bear some cost of future environmental regulations. The Department concludes that these terms are reasonable and consistent with the assumptions used for purposes of comparing the various developers' proposals.

5. Dispatchability

As with Calpine's agreement, Invenergy's agreement provides for Xcel to make dispatchability payments. Unlike Calpine, Invenergy had included this provision in its initial proposal, and these payments therefore did not represent a change from the proposal as submitted.

6. Fuel Supply

Invenergy's proposal provides for Xcel to acquire either firm or interruptible sources of natural gas to power the plant. Contracting for an interruptible supply would save money, but expose the project to the risk that the utility's gas supply would be interrupted, especially during the winter when demand for natural gas grows higher. For purposes of developing a cost comparison with other proposals, the estimated cost of the Invenergy proposal incorporated the cost of contracting for an interruptible gas supply.

Invenergy offers three reasons to conclude that this risk is reasonable. First, the period of highest demand for natural gas is during the winter when the MISO system has excess generating capacity. Second, Invenergy proposes to have on site a 28-hour supply of fuel oil to use in the event that the

gas supply is interrupted. Third, MISO accredits the capacity of generators that rely on interruptible sources of fuel, indicating that MISO does not regard this arrangement as excessively risky.

The Department notes, however, that MISO has been reconsidering its policy regarding the accreditation of generators relying on interruptible sources of gas.

VIII. Xcel's Black Dog Unit 6 Price Terms

A. Party Positions

The Environmental Intervenors oppose this proposal, as they oppose the other gas-powered generators offered in this docket, as exceeding Xcel's latest assessment of need.

According to the Department's analysis, Black Dog Unit 6 is Xcel's least-cost alternative under a variety of scenarios, including if gas costs are lower than forecast, or the unit is dispatched less often than anticipated. Conversely, Black Dog Unit 6 performs less well than other generators under scenarios in which the cost of natural gas, or of carbon emissions, is higher, or if the unit is dispatched more than anticipated.

Based on its analysis of all the generators, the Department concludes that if the Commission were to select two gas-powered generators, one of them should be Black Dog Unit 6. But as previously noted, if the Commission were to select only one gas-powered generator, the Department would recommend Calpine's generator instead.

B. Agreement Provisions

The May 2014 Order directed Xcel to develop price terms for its proposal in lieu of a draft power purchase agreement. These terms address many of the same issues addressed in the power purchase agreements, including the following:

1. Capacity and Commercial Operation Date

Xcel proposed to build a 215 MW combustion turbine generator providing peaking power.

Like the other developers of gas-powered generators, Xcel reports that it is no longer able to have its new generator ready for operation in 2017. It could meet a 2018 or 2019 in-service date.

2. Transmission Interconnection

Xcel expects Unit 6 would be able to interconnect with the transmission grid as early as 2018 using the accredited transmission capacity of Black Dog Units 3 and 4, which Xcel plans to retire in 2015. Consequently, Xcel argues, the Commission can have confidence that Black Dog Unit 6, unlike the proposals of Calpine or Invenergy, will be able to secure interconnection rights promptly.

3. Cost Recovery and Term

In its May 2014 Order, the Commission admonished the negotiating parties that ratepayers should not be put at risk for costs that are higher than bid, but that bidders would be allowed to retain the savings if actual costs prove to be lower than bid. This language applies to the Black Dog Unit 6

proposal differently than to the other proposals, in that 1) Xcel would own this project rather than contract for it, and 2) Xcel estimates that the project would last longer than 20 years.

Xcel first addresses cost: Consistent with the first part of the Commission's admonition, Xcel states that it will forgo recovery of any costs that exceed its proposal (plus financing costs). But distinct from the second part of the admonition, Xcel states that it would not seek to recover from ratepayers more than the project's actual costs, plus financing costs, even if this proves to be less than the amount of Xcel's bid.

Xcel then addresses benefits: To the extent that Black Dog Unit 6 operates beyond the 20 years analyzed for purposes of comparing the developer's proposals, ratepayers would derive the benefit of retaining Unit 6's capacity without necessarily incurring additional capital costs. In contrast, while it may be possible to extend the term of a power purchase agreement, it would come at additional cost.

The Department concludes that these proposed terms are reasonable.

IX. Commission Analysis and Action

A. Summary

Having reviewed the parties' arguments, the Commission reaffirms its selection of Geronimo's proposal and directs Xcel to execute Geronimo's draft power purchase agreement.

To meet the rest of Xcel's needs, the Commission also selects the power purchase agreement offered by Calpine – largely due to its operational efficiency and economies of scale -- and the terms offered by Xcel – largely due to its ability to interconnect and provide flexible energy on a timely basis.

B. Geronimo Proposal

1. Referral to Xcel's SES Docket

On April 15, 2013, Geronimo submitted its proposal to build a collection of solar generators distributed throughout Minnesota. Ever since, parties have periodically requested that the Commission refer this proposal to Xcel's SES Docket.²⁷ Nevertheless, the proposal has remained in the current docket, was recommended by the administrative law judge, and was selected by this Commission subject to review of the power purchase agreement's terms. Simply put, Geronimo's proposal fit squarely within the criteria of Xcel's request for proposal and deserves to be considered alongside the other proposals.

In any event, it is not obvious that the proposals being considered in the SES Docket are comparable to Geronimo's proposal. In the current docket, Xcel solicited proposals to provide *capacity* in the near-term; in the SES Docket, Xcel solicited proposals to provide *energy* by 2020, the focus of the Solar Energy Standard. Thus Geronimo's proposal offered to provide

²⁷ See, for example, *12-1240 Docket*, Ex. 46 at 36 (Wishart Direct), Ex. 83 at 12-13 (Rakow Direct).

MISO-accredited levels of power to Xcel's system by 2016, and to bear financial consequences if the solar project fails to perform. The SES Docket was not designed to elicit this type of proposal.

For the foregoing reasons, the Commission will decline to refer consideration of Geronimo's project to a different docket. Instead, the Commission will evaluate Geronimo's power purchase agreement in the context of the current docket.

2. Commission Action

In its May 2014 Order, the Commission directed Xcel to negotiate a draft power purchase agreement with Geronimo, and to submit the agreement for Commission review to ensure that the negotiated terms are consistent with the public interest.²⁸ A variety of factors prompted the Commission to select Geronimo's project:

[T]he ALJ's Report demonstrates the merits of Geronimo's proposal, both for supporting the reliability and adequacy of Xcel's power supply, but also for promoting beneficial environmental and socioeconomic outcomes. In particular, the Commission notes the state policy favoring energy from renewable sources,²⁹ and the goal of reducing greenhouse gases relative to 2005 levels by 30 percent by 2025 and 80 percent by 2050.³⁰ Geronimo's proposal best advances these policies.

The principal objection to Geronimo's proposal has been cost. But whether an analysis shows Geronimo's proposal to be more expensive than the other proposals, or less expensive, or similar in cost, depends on the value given to solar energy, S-RECs [solar renewable energy credits], externality values, and other factors. While the Department's analysis found other proposals to be more cost-effective, the difference in the cost of Geronimo's proposal and other proposals was less than half a percent.

Weighing all factors explored in this record, the Commission affirms the ALJ's recommendation and will select Geronimo's proposal.³¹

The Commission affirms these findings. Geronimo's proposal offers unique benefits. For example, only Geronimo's proposal would connect to Xcel's distribution system, thereby alleviating rather than exacerbating transmission line congestion. And only Geronimo states that it can implement its proposal by the beginning of 2017, the first year specified in the docket's request for proposal.

The Department concludes that Geronimo's agreement is generally consistent with Geronimo's proposal and the prices and terms used to evaluate Geronimo's bid in this proceeding. The agreement maintains the project's in-service date. The price has remained the same. And the agreement does not place Xcel's ratepayers at risk for more cost than Geronimo included in its

²⁸ May 2014 Order at 36.

²⁹ Minn. Stat. 216B.2422, subd. 4.

³⁰ Minn. Stat. 216H.02.

³¹ May 2014 Order at 34 (some citations omitted).

initial proposal; indeed, the agreement specifies that Geronimo bears the risk if the generators fail to deliver the promised generating capacity.

While the proposed agreement does not shift costs to Xcel or ratepayers, it does add language addressing how Xcel would recover the cost of this project. Geronimo and Xcel explain that these terms were prompted by the need to manage a potential conflict of state policies within the time constraints of an expiring federal tax credit. The Commission concludes that these terms, as revised through these proceedings, promote the interest of Minnesota ratepayers by enhancing the likelihood that Xcel will recover the cost of the Geronimo project from ratepayers throughout Xcel's operations, and from the tax credit.

The Commission finds that Geronimo's power purchase agreement is consistent with its initial proposal, does not put ratepayers at undue risk, and is consistent with the public interest. Consequently the Commission will approve it.

C. Proposals for Gas-Powered Generators

1. Introduction

Throughout this docket, analytical models developed by the Department and Xcel have identified combinations of three natural gas projects -- Calpine's Mankato Energy Center II proposal, Invenenergy's Cannon Falls II proposal, and Xcel's Black Dog Unit 6 proposal – as providing Xcel with the least-cost means to fulfill Xcel's established need for more power. To aid the Commission's selection among these alternatives, the Commission directed the developers of these projects to finalize the terms of their proposals.

Having reviewed the filings, the Commission finds that the terms offered for all of these proposals are generally consistent with the prices and terms used to evaluate the proposals in this proceeding.

Moreover, the Commission finds that these terms are consistent with the public interest. The Commission concurs with the Department and the developers that the offered terms appear quite economical by historical standards. This fact, combined with forecasts of plant retirements due to new regulations, persuade the Commission to authorize Xcel to lock in these favorable terms on behalf of ratepayers.

Nevertheless, the Commission found that Xcel might require up to 500 MW of additional capacity by 2019. The Commission anticipates Geronimo providing 72 of those MW, leaving a need for up to 428 MW. This is enough demand to justify contracting for two, but not three, of the gas-powered generators under consideration.

Again, the Department recommends that the Commission secure the services of at least one of the gas-powered generators. If the Commission were to select only one, the Department would recommend Calpine's; if two, the Department would recommend the combination of Calpine's and Xcel's. The Commission concurs.

2. Calpine

Calpine provides the greatest flexibility of any of the proposals under consideration. It offers both peaking and intermediate power. With at least 345 MW, it offers the greatest capacity of any single generator. And this capacity could be coordinated with the capacity provided by the existing Mankato Energy Center, which Xcel already has under contract.

Calpine's economies of scale permit it to operate with the lowest operating cost (including lowest carbon emissions) per unit of output of the gas-powered alternatives.

Calpine's generator would prove to be the least-cost choice under a variety of scenarios – if gas prices increase, or regulations increase the cost of generating carbon dioxide, or the retirement of other generators causes Xcel (and MISO) to dispatch the remaining generator more often than anticipated. In analyzing the parties' initial proposals, the Department determined that Calpine's proposal was the single least-cost generator under the Department's base forecast of need. And the Department determined that Calpine's proposal combined with Black Dog Unit 6 formed a package of generators that would permit Xcel to meet its customers' needs at least cost.

Moreover, the Commission finds the terms of Calpine's power purchase agreement to be reasonable, even with respect to transmission costs and dispatchability payments. This is so, notwithstanding the Commission's admonitions that "[r]atepayers must not be put at risk for costs that are higher than bid" and that "[t]he Commission is unlikely to find it reasonable for Xcel to enter into an agreement in which negotiated terms shift risk or unknown costs to ratepayers."³²

With respect to Calpine's transmission interconnection language, the negotiated agreement does not alter the terms initially established in Calpine's proposal – that is, the terms under which the Department determined Calpine's proposal to be the most cost-effective. Moreover, Calpine and Xcel are sophisticated, competing parties negotiating an arm's length transaction. There is nothing inherently unreasonable with Xcel bearing a portion of a generator's interconnection costs as part of a power purchase agreement, especially when the agreement has a cancellation clause. Consequently the Commission finds insufficient reason to second-guess their transmission interconnection terms at this time.

Calpine's proposed dispatchability payments, in isolation, would shift costs to ratepayers. However, the magnitude of these costs is not unknown; it is reasonably clear and quantified. Moreover, when these payments are evaluated not in isolation, but within the context of the larger agreement, they are eminently reasonable. According to Calpine and Xcel, these payments are 1) common in the industry, 2) small in proportion to other considerations, 3) motivated by a desire to coordinate the operations of both halves of the Mankato Energy Center, creating economies of scale and the potential to generate offsetting revenues, and 4) offset by other concessions. Thus the Commission finds that the *net* costs of these terms, evaluated in context, are reasonable and consistent with Calpine's overall proposal.

³² May 2014 Order, Ordering Paragraph 2.

That said, the dispatchability terms were not included in the initial calculation of Calpine's costs, and the quantification of costs and benefits were not well developed in the record. Consequently the Commission will require this matter to be addressed when Xcel seeks to recover the costs of the Calpine project.

3. Xcel's Black Dog Unit 6

As previously noted, Black Dog Unit 6 is Xcel's least-cost generator under a variety of scenarios, including if gas costs are lower than forecast, or the unit is dispatched less often than anticipated.

Xcel's proposal offers attractive terms, including the option of retaining the benefits of any construction savings, and the option of continuing to derive useful life from the plant beyond its first 20 years. But its most unique attribute is that Black Dog Unit 6 has the option of providing dispatchable capacity by 2018 due to its ability to use the transmission capacity from some of Xcel's retiring generators. By selecting Black Dog Unit 6, the Commission builds a higher degree of security into Xcel's generation portfolio.

4. Invenergy

As previously discussed, the terms of Invenergy's proposal are consistent with the public interest and consistent with the prices and terms used to evaluate its bid in this process. Moreover, Invenergy proves to be the least-cost generator under scenarios in which demand for electricity is lower than anticipated, and when the generator selected in this docket is dispatched less often than anticipated. However, it compares less favorably under scenarios in which gas prices are lower than anticipated, or if the generator were required to operate more often than anticipated. And when the Department identified the least-cost package of generators to meet Xcel's forecasted need, it did not include Invenergy's proposal as part of the package.

The Department concluded that Invenergy's proposal was competitive with the other proposals in this docket – under the assumption that Invenergy would operate with an interruptible gas supply. Securing fuel on an interruptible basis is cheaper, but exposes the generator to a risk that the fuel supply would be cut off, especially during periods of peak demand for natural gas. It is unclear how well a 28-hour supply of fuel oil would offset this risk, especially in extreme cold when demand for gas is likely to be at its highest. And prospectively, it is unclear how MISO will accredit generators that rely on interruptible gas supplies.

5. Commission Action

In selecting the gas-powered generators to meet the remainder of Xcel's needs, the Commission strives to identify a portfolio that will provide the best combination of benefits at least cost. In brief, the Commission finds that Calpine's proposal provides the greatest operational flexibility and lowest operating costs, while Xcel's proposal provides the greatest reliability in securing an energy source with transmission access. These generators, combined with Geronimo's proposal, meet all the capacity needs demonstrated on the record.

For the foregoing reasons, the Commission will select Calpine's Mankato Energy Center II power purchase agreement and Xcel's Black Dog Unit 6, subject to its price terms, as resources that fit Xcel's need. Consequently the Commission will approve the power purchase agreement and the price terms. For the same reasons, the Commission will decline to select Invenergy's proposal.

The Commission will so order.

ORDER

1. Regarding Geronimo’s proposal:
 - A. The Commission selects the proposal as a resource that fits Xcel’s need and approves the power purchase agreement between Xcel and Aurora Distributed Solar, LLC, as set forth in Xcel’s compliance filing of September 23, 2014, modified to substitute the following language for the original language in Article 6.1(A), as well as for the language in Exhibit A, “State Regulatory Agency(s)” and “State Regulatory Approval”:

Article 6 – CONDITIONS PRECEDENT

6.1 Company CPs.

(A) On September 23, 2014, Company filed an unexecuted draft of this PPA with the Minnesota Public Utilities Commission pursuant to the requirements of the Order. No later than ten (10) Days after receipt of an order from the Minnesota Public Utilities Commission authorizing Company to execute this PPA, Company shall file this PPA with the North Dakota Public Service Commission. Seller shall cooperate with Company’s effort to seek State Regulatory Approval.

(B) Either Party shall have the right to terminate this PPA, without any further financial or other obligation to the other as a result of such termination, by Notice to the other Party not more than ten (10) Days after the earlier of: (i) fourteen (14) Days after receipt of written determinations by both State Regulatory Agencies that together do not constitute State Regulatory Approval, or (ii) six (6) months following the written request for State Regulatory Approval without receipt of State Regulatory Approval. If a Party fails to terminate this PPA in the time allowed by this paragraph, such Party shall be deemed to have waived its right to terminate this PPA under this Section 6.1 and this PPA shall remain in full force and effect thereafter.

Exhibit A -- DEFINITIONS

“State Regulatory Agency(s)” means the Minnesota Public Utilities Commission or any successor agencies in the State of Minnesota and the North Dakota Public Service Commission or any successor agencies in the State of North Dakota.

“State Regulatory Approval” means a final, written order of one State Regulatory Agency, or if needed, both State Regulatory Agencies, that does not impose conditions unsatisfactory to the Company and is not subject to application for rehearing, re-argument and reconsideration,

and that makes the affirmative determination that Company's execution of this PPA is prudent and/or in the public interest, and that those costs incurred by Company under this PPA as presently allocated by ratemaking mechanisms to Company's Minnesota and North Dakota jurisdictions are recoverable, in the aggregate, from the Company's Minnesota and/or North Dakota retail customers. The preceding is subject only to the requirement that the State Regulatory Agency retains ongoing prudency review of Company's performance and administration of this PPA.

- B. Xcel shall execute Geronimo's power purchase agreement as amended and, within 10 days of the Commission's order in this matter, make a compliance filing with the executed power purchase agreement.
2. Regarding Calpine's proposal:
- A. The Commission selects the proposal as a resource that fits Xcel's need and approves Xcel's draft power purchase agreement with Mankato Energy Center II, LLC.
 - B. In any request to recover costs related to this project, Xcel shall address the costs and benefits of the dispatchability payments.
3. Regarding Xcel's Black Dog 6 proposal, the Commission selects the proposal as a resource that fits Xcel's need and approves the price terms.
4. The Commission declines to select Invenergy's proposal.
5. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Daniel P. Wolf
Executive Secretary



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