

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger
Nancy Lange
Dan Lipschultz
Matthew Schuerger
John A. Tuma

Chair
Commissioner
Commissioner
Commissioner
Commissioner

In the Matter of Xcel Energy's 2016–2030
Integrated Resource Plan

ISSUE DATE: January 11, 2017

DOCKET NO. E-002/RP-15-21

ORDER APPROVING PLAN WITH
MODIFICATIONS AND
ESTABLISHING REQUIREMENTS
FOR FUTURE RESOURCE PLAN
FILINGS

PROCEDURAL HISTORY

On January 2, 2015, Northern States Power Company d/b/a Xcel Energy (Xcel) filed a resource plan under Minn. Stat. § 216B.2422 and Minn. R. 7843.0400, covering the period 2016–2030.

On January 16, 2015, the Commission issued a Notice of Comment Period and Procedures on Resource Plan, requiring Xcel to submit a revised preferred plan that incorporated resource decisions made in Docket E-002/CN-12-1240.¹ The Commission also established a public comment and reply-comment period for the resource plan.

On October 2, 2015, in response to stakeholder comment filings and information requests, Xcel filed reply comments proposing significant changes to its resource plan.

On January 6, 2016, the Commission issued an order requiring Xcel to supplement its resource plan no later than January 29, 2016, by filing updated plans and related additional analysis.² The order provided that the Commission would establish a procedural schedule after the Minnesota Department of Commerce (the Department) had an opportunity to initially review the filing and make procedural recommendations.

¹ In Docket E-002/CN-12-1240 the Commission approved certain power purchase agreements to meet identified resource needs arising before 2019. *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*, Order Approving Power Purchase Agreement with Calpine, Approving Power Purchase Agreement with Geronimo, and Approving Price Terms With Xcel (February 5, 2015).

² Order Requiring Supplemental Filing (January 6, 2016).

On January 29, 2016, Xcel filed a supplement describing its “Current Preferred Plan.” The supplemented resource plan proposed:

- Ceasing coal operations at Sherburne County Generating Station (Sherco) Units 1 and 2 in the 2020s;
- Adding 1,400 megawatts of large-scale solar (400 megawatts by 2020);
- Adding 1,800 megawatts of wind (800 megawatts by 2020);
- Adding natural gas generation in the 2020s, including a combustion turbine generator in North Dakota, and a combined cycle generator on the Sherco site by 2026.

On February 29, 2016, after conducting discovery and holding discussions with the Company, the Department filed its review of the plan and made procedural recommendations.

On March 3, 2016, the Commission requested comments on whether Xcel’s Current Preferred Plan is in the public interest.

By July 8, 2016, the Commission received comments from:

- Becker City Council
- Fresh Energy, Minnesota Center for Environmental Advocacy, Sierra Club, and Wind on the Wires (the Clean Energy Organizations)
- EDF Renewable Energy
- Enel Green Power North America, Inc.
- Hennepin County
- Institute for Local Self-Reliance
- Invenergy LLC
- Minnesota Department of Commerce (the Department)
- Minnesota Pollution Control Agency
- Minnesota State Representative Jim Newberger
- NextEra Energy Resources, LLC
- Prairie Island Indian Community
- St. Paul Cogeneration, LLC
- Sherburne County Administration
- Flint Hills Resources, LP; Gerdau Ameristeel US Inc.; Unimin Corporation; and USG Interiors LLC (the Xcel Large Industrials)

By August 12, 2016, the Commission received reply comments from:

- City of Red Wing
- Center for Energy and Environment
- City of Minneapolis
- the Clean Energy Organizations

- Health Professionals for a Healthy Climate
- the Saint Paul Area Chamber of Commerce
- Sierra Club-organized individuals and organizations
- Xcel Energy
- Xcel Large Industrials
- 3 individuals via SpeakUp

On September 13, 2016, the Department submitted supplemental comments. The Department recommended approval of Xcel’s revised resource plan, with further modifications and additional filing requirements.

On October 6 and 13, 2016, the Commission met to consider the matter.

FINDINGS AND CONCLUSIONS

I. Summary of Commission Action

In this order, the Commission will approve a modified version of Xcel’s supplemented resource plan and set requirements for future resource plan filings. The Commission will:

- approve the acquisition of at least 1000 MW of wind generation by 2019 and at least 650 MW of solar generation by 2021;
- approve the retirement of Sherco 2 in 2023, and Sherco 1 in 2026;
- determine that there will likely be a need for approximately 750 MW of intermediate capacity coinciding with the retirement of Sherco 1 in 2026.

The Commission will also approve resource acquisition processes to meet anticipated generation needs in a manner consistent with the public interest.

II. Legal Background

A public utility providing electricity to at least 10,000 customers and capable of generating 100 megawatts (MW) of electricity must file a resource plan or report for the Commission’s approval, rejection, or modification. A resource plan or report generally details the projected need for electricity in its service territory for a forecasted planning period, and the utility’s plans for meeting projected need, including the actions it will take in the next five years.³ Resource plans are evaluated on their ability to:

- A. maintain or improve the adequacy and reliability of utility service;
- B. keep the customers’ bills and the utility’s rates as low as practicable, given regulatory and other constraints;

³ Minn. Stat. § 216B.2422; Minn. R. Chap. 7843.

- C. minimize adverse socioeconomic effects and adverse effects upon the environment;
- D. enhance the utility's ability to respond to changes in the financial, social, and technological factors affecting its operations; and
- E. limit the risk of adverse effects on the utility and its customers from financial, social, and technological factors that the utility cannot control.⁴

To reliably provide the electricity demanded by its customers, an electric utility considers both supply and demand. The utility can supply electricity through a combination of generation and power purchases, and by reducing the amount of electricity lost through transmission and distribution. The utility can manage customer 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 demand- and supply-side resource options that the utility could use to meet the forecasted needs of retail customers.⁵

By integrating the evaluation of supply- and demand-side resource options—treating each resource as a potential substitute for the others—a utility can find the least-cost plan that is consistent with legal requirements and policies.

Although the Commission must approve, reject, or modify the resource plans of investor-owned utilities, the resource-planning process is largely collaborative and iterative.

The process is collaborative because there are a wide array of facts and considerations that may be relevant to resource choices or deployment timetables. The facts on which resource decisions depend—how quickly an area and its need for electricity will grow, how much electricity will cost over the lifetime of a generating facility or a purchased-power contract, how much conservation potential the service area holds and at what cost—all require the kind of careful judgment that sharpens with exposure to the views of engaged and knowledgeable stakeholders.

The process is iterative because analyzing future energy needs and preparing to meet them is not a static process; strategies for meeting future needs are always evolving in response to changes in actual conditions in the service area. When demographics, economics, technologies, or environmental regulations change, so do a utility's resource needs and its strategies for meeting them.

III. Xcel's Resource Plan

Xcel projects that, under median forecast conditions, it will have sufficient generation capacity until the mid-2020s, but that three main factors will lead to a need for additional generating capacity in or around 2025. The Company expects the need for new generating capacity to be driven primarily by: (1) Xcel's proposal to retire Sherco units 1 and 2 (1,400 MW of generating capacity), (2) the retirement of roughly 850 MW of aging, Xcel-owned peaking plants, and (3) the expiration of power purchase agreements (PPAs) for more than 2,000 MW. The exact timing

⁴ Minn. R. 7843.0500, subp. 3.

⁵ Minn. Stat. § 216B.2422, subd. 1(d).

and amount of the anticipated need depends on the timing of plant retirements as well as the adoption of community solar gardens (CSGs) and other factors.

Xcel used an industry-standard modeling tool called Strategist to analyze its projected resource needs and propose its preferred plan for meeting the need. Based on its analysis, Xcel proposed to acquire 1,400 MW of large-scale solar, 1,800 MW of wind, and 2,856 MW of natural gas generation over the planning period.

To address a portion of the identified need, the Company specified that it preferred to use the Sherco site for an approximately 800 MW combined cycle natural gas plant. The Company acknowledged that its proposal goes beyond the Commission's historical approach to resource planning by specifying a location for a proposed plant. Xcel asserted that determining the proposed plant's size, type, timing, *and* location in this proceeding would be appropriate because the location is supported by reliability and socioeconomic factors and because a location determination now would provide certainty to employees and the community, which would likely be affected by retirement of Sherco units 1 and 2.

The Department replicated Xcel's modeling in Strategist, reviewed the Company's base assumptions, and ran additional scenarios under a variety of contingencies (or sensitivities). Based on its analysis and modeling, the Department made its own planning recommendations. Overall, the Department largely agreed with Xcel's planned resource additions and retirements, and recommended approval of the plan with modifications.

Concerns about Xcel's plan raised by the Department and other commenters fell into three broad categories: forecasts, modeling, and assumptions underlying the plan; details of proposed five-year and intermediate-term resource decisions; and information needed to evaluate future resource plans. These issues are addressed, with plan modifications and filing requirements where appropriate, in the sections below.

IV. Forecasting

Xcel forecasted energy requirements and peak demands from 2016 through 2030 using monthly data from 1998 to 2014. The Department raised concerns about the analyses Xcel used to reach its forecasting conclusions.

A. Positions of the Parties

The Department recommended approval of Xcel's base energy forecast and peak demand forecast for planning purposes only. In particular, the Department argued that the forecast results were subject to some uncertainty and, in light of the uncertainty, the use of the forecasts should be limited.

At the Commission meeting, Xcel agreed with the Department that its energy and peak demand forecasts should only be used for planning purposes.

B. Commission Action

The Commission agrees that Xcel's Strategist-modeled energy and demand forecast is acceptable for planning purposes but concludes it should not be used to support any resource acquisition proposal beyond the five-year action plan. Disagreement over Xcel's methodology for forecasting the long-term peak-demand growth rate and the long-run effects of Demand Side Management raise doubts about the forecasts' usefulness beyond the five-year action plan. The Commission is persuaded that the use of these forecasts should be limited as the Department has proposed. Resource acquisitions beyond the five-year plan should be subject to a more contemporaneous demonstration of need. The Commission will so order.

V. Five-Year Action Plan

Based on its forecasts, Xcel initially proposed adding 400 megawatts of large-scale solar by 2020, and 800 megawatts of wind. While generally supportive of Xcel's proposed resource additions, the Department recommended slightly different quantities and timing. Other commenting parties were also generally supportive of Xcel's proposals for wind and solar acquisitions through 2021.

The process or processes by which Xcel would pursue approved wind and solar resource acquisitions was subject to more disagreement. The process for acquiring generation resources can have a significant effect on the type, cost, and ownership structure of proposals submitted for consideration and ultimately chosen for acquisition. Xcel's proposal included 50% Company-owned wind resources.

A. Positions of the Parties

Xcel proposed to use what it characterized as a modified Track 1 Request for Proposals (RFP) process⁶ to both acquire wind projects and demonstrate the competitiveness of its self-build proposal. Xcel's proposal contained features of both track 1 and track 2 acquisition processes—it contemplates both competitive bidding and a competing Company-owned resource proposal.

The Company proposed the following process:

- 1) Xcel issues an RFP for wind resources.⁷

⁶ The Commission has approved a two-track resource acquisition process—which among other things provides that a competitive bidding process governs when Xcel does not submit a proposal in a competitive resource procurement process (Track 1), and that a Certificate-of-Need-like process governs procurement when Xcel does submit a proposal (Track 2). *In the Matter of Northern States Power Company d/b/a Xcel Energy's Application for Approval of its 2004 Resource Plan*, Docket No. E-002/RP-04-1752, Order Establishing Resource Acquisition Process, Establishing Bidding Process Under Minn. Stat. § 216B.2422, Subd. 5, and Requiring Compliance Filing (May 31, 2006). More detail on the lengthy history of the two-track bidding process can be found in the Department's Comments, pp. 44–50. (July 8, 2016).

⁷ Xcel issued an RFP for wind resources on September 22, 2016, with a bid deadline of October 25, 2016. The Company states that it anticipates seeking Commission approval for agreements arising from the RFP in early 2017. Xcel Letter, this docket (September 22, 2016).

- 2) The day prior to receiving wind bids, Xcel will submit its own self-build proposal including estimates of final costs.
- 3) Xcel will evaluate the bids and select projects for negotiations based on a list of factors (factors which Xcel outlined in its reply comments).
- 4) Xcel will file with the Commission the results of the bidding process, project rankings, its analysis, and the results of a third party auditor's report of its bidding and review process. Additionally, Xcel will evaluate the criteria outlined in the Minn. Stat. § 216B.243, subd. 9 certificate of need exemption for renewable energy standard (RES) facilities.

Xcel argued that this modified or hybrid acquisition process was appropriate to ensure the timely and cost-effective acquisition of wind resources and to reduce the burden on wind developers. The Company also argued that Commission approval of the proposed process would exempt the chosen projects from a certificate of need requirement under Minn. Stat. § 216B.2422, subd. 5.

The Department, on the basis of its independent modeling and analysis, recommended that the Commission modify Xcel's action plan to acquire about 1,000 MW of wind by 2019 (instead of 800 MW in 2018) and to remove the large-scale solar from the action plan to allow for greater certainty from the CSG program. The Department also recommended that the Commission approve Xcel's proposed, modified acquisition process,⁸ with the proper mix of purchased power and Company-owned resources determined by the facts established during the acquisition process regarding alternatives.

The Clean Energy Organizations advocated for a transparent acquisition process that would accommodate a variety of ownership structures and for regulatory oversight to protect ratepayer and public interests. The Institute for Local Self-Reliance objected to the Company's proposal to commit to Xcel's contemplated 50% Company ownership of proposed wind resources.

B. Commission Action

Despite slight variation in the exact timing and magnitude, the record clearly showed that acquisition of wind and possibly solar resources in the next five years represents the least-cost method of meeting Xcel's near-term resource needs. The Commission finds that the record shows that it is reasonable to acquire at least 1000 MW of wind by 2019. This acquisition is least-cost even though Xcel does not show a planning capacity deficit until the mid 2020s because it will provide incrementally lower-cost energy, thereby reducing system costs. Upon submission of evidence such as price, bidder qualifications, rate impact, transmission availability and location, additional acquisitions may be approved.

The Commission will modify Xcel's plan to acquire 400 MW of large-scale solar in 2016–2021. Instead, Xcel will be required to acquire approximately 650 MW of solar in this timeframe through a combination of the Company's community solar gardens program or other acquisitions (without limitation to "large-scale" solar). The Company may pursue additional, cost-effective

⁸ Though initially the Department's recommendation was limited to approving a process for proposed wind acquisitions, at the Commission meeting the Department elaborated on its recommendation, agreeing with a proposal that the Commission "authorize use of the modified Track 2 bidding process and authorize the process as a Commission-authorized bidding process [under Minn. Stat. § 216B.2422, subd. 5(c)]" without expressing a requirement that the process be limited to wind acquisitions.

solar resources if it is in the best interests of its customers. Xcel shall report on its progress in its next resource plan.

Minn. Stat. § 216B.2422, subd. 5(a), provides that a utility may select resources to meet its projected energy demand through a bidding process approved or established by the Commission. The Commission established the existing two-track bidding process for Xcel just over a decade ago. Having reviewed the Company's proposed, modified acquisition process, the Commission agrees that it is a reasonable method of acquiring wind and solar resources in the 2016–2021 timeframe.

The Commission will therefore approve the bidding process described by Xcel for the limited purpose of acquiring wind and solar resources in the 2016–2021 timeframe. The Commission declines to approve the proposed acquisition process without limitation because the two-track process has provided needed certainty and transparency for participants and regulators. But in this case, given the scope and nature of the needed acquisitions, and the need for prompt action, the Commission agrees that the proposed modified process is reasonable and appropriate.

VI. Intermediate Term—Sherco Units 1 and 2

Xcel proposes to retire Sherco Units 1 and 2 before 2030. The two generating units produce approximately 1,400 MW of capacity and associated energy. Together with its proposal to retire the two units, Xcel proposes to construct a 780 MW combined-cycle generating unit on the Sherco site.

A. Positions of the Parties

There was no material disagreement among stakeholders over the proposed retirement of Sherco Units 1 and 2. Retirement of these units is supported by the Company's and Department's modeling showing that retirement is part of virtually every least-cost planning scenario, with some room to argue over the precise year in which to retire each unit.

While the need for some additional resources between 2025 and 2030 was relatively uncontroversial, details of Xcel's proposal drew some criticism, particularly the proposal to identify a specific generator fuel-type and location to meet the identified need. The Company asserted that socio-economic and technical factors justified identifying a fuel type and location as part of this proceeding.

Apart from the Sherco location's general suitability for new generating facilities because a generating facility is already sited there, Xcel argued that committing to the location would clearly mitigate the negative impact of the plant retirements for that community. It also argued that from a business planning perspective having those details decided well in advance would facilitate the Company's efforts to smoothly transition employees in the retiring plants. Finally, it contended that engineering studies showed that a combined cycle generator on the Sherco site would be uniquely well-suited to address grid reliability concerns that would need to be addressed in the same time frame.

Xcel's proposal received support from the City of Becker and Sherburne County Administration, and State Representative Jim Newberger. These commenters identified that retirement of the Sherco coal-fired plants would be detrimental to the local economy, and that building replacement generation on the site would mitigate the negative impact.

The Department, the Clean Energy Organizations, and the Xcel Large Industrials objected to a decision that would commit to specifics such as the exact location, fuel type, and generation capacity. They argued that the need for a decision on those details was not immediate, and would be better left for future consideration—which would allow more flexibility to consider alternatives in the meantime.

B. Commission Action

Historically, the Commission has used resource planning as a tool to assess and determine the appropriate size, type, and timing of generation resources. At issue is the level of planning detail the Commission should commit to as part of approving this resource plan.

At the Commission meeting, it became clear that the distance between the stakeholders' positions is small but nuanced. Xcel wishes for the Commission to approve an approximately 780 MW combined cycle facility at a particular location. The Department recommended that the Commission find a need for approximately 750 MW of “intermediate capacity.”⁹ And the Clean Energy Organizations recommended that the Commission find a need for approximately 750 MW of capacity.

The Commission is persuaded by the argument that, given the Sherco retirement dates of 2023 and 2026, it is premature at this time to determine with specificity the fuel type and location to address the identified 750 MW capacity need. The Commission is not persuaded that alternatives to the reliability concerns raised by Xcel have been fully considered, and believes there is adequate time to explore other resource options and consider the relevant socioeconomic factors without jeopardizing the feasibility of Xcel's preferred plan to build a combined cycle unit on the Sherco site.

Therefore, the Commission concludes that, more likely than not, there will be a need for approximately 750 MW of intermediate capacity coinciding with the retirement of Sherco 1 in 2026. The Commission will authorize a certificate of need process to evaluate options for addressing this anticipated need. The process will allow consideration of resources or resource combination alternatives that meet the identified resource and reliability need without prejudging or foreclosing Xcel's preferred plan. Potential need-addressing alternatives between 2025 and 2030 could include renewal of some expiring PPAs, additional demand response, or some other new generation.

The certificate of need process will also be based on a more precise and contemporaneous forecast. Under Minn. Stat. § 216B.243, the Commission must consider the accuracy of the long-range energy demand forecasts offered to justify a certificate of need. As stated above, the forecasts in this resource plan may not be used to support acquisitions beyond Xcel's five-year action plan. At the Commission meeting, Xcel agreed that a certificate of need filing would incorporate an updated energy and demand forecast for Commission evaluation.

⁹ The Department defined “intermediate” capacity facilities as having an overall capacity factor of 20–40%, as distinct from “baseload” (higher capacity factor), and “peaking” (a lower capacity factor). Capacity factor reflects the ratio of a facility's actual output over time relative to its nameplate capacity.

VII. Intermediate Term—Other Resources

The Commission will also require Xcel to evaluate and pursue other resource options between 2023 and 2030. In light of rapidly changing costs among potential energy and capacity sources, Xcel must maintain flexibility and consider a broad range of resource options. In addition to requiring evaluation of combinations of supply-side, demand-side, and transmission alternatives to address its 750 MW need identified above, Xcel's plan must include the acquisition of no less than 400 MW of additional demand response by 2023. This level of potential demand response capacity is supported by even the most conservative study of Xcel's system in the record.

For reasons similar to those stated above regarding the contemplated Sherco replacement, Xcel's planned additions of combustion turbine generation in 2025–2030 will also be modified to be less specific. Rather than approve a plan with a specific generation type or location for those resource additions, the Commission concludes that a plan that does not specify location or generation type in that time frame will be more consistent with the public and ratepayer interests.

VIII. Requirements for Future Resource Plans

Finally, the Commission will direct that Xcel investigate, evaluate, and discuss an array of resource and planning issues that arose during the course of this proceeding. Major plant retirements are coming over Xcel's planning horizon in upcoming resource planning cycles, and it is important that Xcel, the Commission, and stakeholders regard system needs holistically. As this proceeding demonstrated, individual plant retirements can give rise to complex locational and system concerns that, without sufficiently forward-looking planning, may constrain future decisions. Considering the future of Xcel's system as a whole as its generation fleet ages will help maximize planning flexibility.

ORDER

1. Xcel Energy's 2016–2030 Resource Plan is approved with the modifications required by this order.
2. Xcel's Strategist-modeled energy and demand forecast is acceptable for planning purposes but may not be used to support any resource acquisition proposal beyond the five-year action plan.
3. It is reasonable to acquire at least 1000 MW of wind by 2019. Acquisition of greater than 1000 MW may be approved upon submission of evidence such as price, bidder qualifications, rate impact, transmission availability, and location.
4. Xcel's resource plan is modified as follows:
 - a. to remove 400 MW of large-scale solar in 2016–2021. Xcel shall acquire approximately 650 MW of solar in 2016–2021 through a combination of the Company's community solar gardens program or other acquisitions. The Company may pursue additional, cost-effective solar resources if it is in the best interests of its customers.
 - b. to change Xcel's proposed Fargo combustion turbine to a generic combustion turbine.

- c. to change Xcel's planned CT additions in the 2025–2030 time frame to provide instead for adding the most cost-effective combination of resources consistent with state energy policies, including but not limited to the following resource options: large hydropower, short-term life extensions of Xcel-owned peaking units, natural gas combustion turbines, demand response, utility-scale solar generation, energy storage, and combined heat and power.
5. Concerning wind and solar resource acquisitions, Xcel:
 - a. may use the modified Track 2 process for the acquisition of wind resources included in the five-year action plan, and for any additional solar, if needed, through 2021;
 - b. shall, if Xcel intends to provide a bid for wind generation, acquire wind resources through the modified Track 2 process.
 - c. shall file a contingency plan early in the process (preferably with the filing of the Company's self-build proposal) to address the potential for the bidding process to fail; and
 - d. shall, in wind acquisition proceedings, describe how revenues from wind generation sold into the MISO market will be returned to Minnesota ratepayers, and provide an estimate of these revenues.

The proper mix of purchased power and Company-owned resources shall be determined during the resource acquisition process.

6. In any filing seeking approval of wind resources, Xcel shall discuss each project's wind curtailment risk.
7. Xcel's schedule to retire Sherco 2 in 2023, and Sherco 1 in 2026, is approved.
8. The Commission finds that more likely than not there will be a need for approximately 750 MW of intermediate capacity coinciding with the retirement of Sherco 1 in 2026.
9. Xcel is authorized to file a petition for a certificate of need under Minn. Stat. § 216B.243 to select the resource or resource combination that best meets the system resource and reliability needs associated with the retirement of Sherco 1 in 2026. The Company's filing and the proceeding shall:
 - evaluate combinations of supply-side, demand-side, and transmission alternatives;
 - consider location-specific factors related to socioeconomic impacts on the local community and regional reliability;
 - allow for utility ownership of replacement resources if determined to be in the best interest of customers;
 - comply with all relevant state energy policies; and
 - ensure public participation.
10. Xcel shall acquire no less than 400 MW of additional demand response by 2023.
11. An average annual energy savings level of 444 GWh for all planning years is approved.

12. Xcel shall investigate the potential for an energy-efficiency competitive bidding process for customers that have opted out of the statewide Conservation Improvement Program (CIP) under Minn. Stat. § 216B.241, subd. 1a(b).
13. Xcel shall file its next resource plan on February 1, 2019.
14. In its next resource plan filing, Xcel shall:
 - a. describe its plans and possible scenarios for cost-effective and orderly retirement of its aging baseload fleet, including Sherco, King, Monticello, and Prairie Island.
 - b. evaluate combinations of supply-side (distributed and centralized), demand-side, and transmission solutions that could in the aggregate meet post-retirement energy and capacity needs as well as contribute to grid support.
 - c. explore the role of cost-effective combined heat and power solutions.
 - d. report on its solar acquisition progress.
 - e. provide a full and thorough cost-effectiveness study that takes into account the technical and economic achievability of 1,000 MW of additional demand response, or approximately 20% of Xcel's system peak in total by 2025.
 - f. summarize its investigation and findings concerning the potential for an energy-efficiency competitive bidding process for customers that have opted out of CIP.
15. In future resource plan filings, analysis and inputs must, to the extent possible, be consistent with Xcel's distribution system planning.
16. This order shall become effective immediately.

BY ORDER OF THE COMMISSION

Daniel P. Wolf
Executive Secretary



This document can be made available in alternative formats (e.g., large print or audio) by calling 651.296.0406 (voice). Persons with hearing loss or speech disabilities may call us through their preferred Telecommunications Relay Service.