

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben	Chair
Valerie Means	Commissioner
Matthew Schuerger	Commissioner
Joseph K. Sullivan	Commissioner
John A. Tuma	Commissioner

In the Matter of the 2020–2034 Upper
Midwest Integrated Resource Plan of
Northern States Power Company d/b/a Xcel
Energy

ISSUE DATE: April 15, 2022

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

ORDER APPROVING PLAN WITH
MODIFICATIONS AND
ESTABLISHING REQUIREMENTS
FOR FUTURE FILINGS

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PROCEDURAL HISTORY

On July 1, 2019, Northern States Power Company d/b/a Xcel Energy (Xcel or the company) filed a new resource plan (Initial Plan) under Minn. Stat. § 216B.2422 and Minn. R. 7843.0400 covering the period 2020–2034.

On July 18, 2019, the Commission referred the resource plan to the Office of Administrative Hearings to conduct public hearings. The administrative law judge convened five public hearings at various locations throughout Xcel’s Minnesota service area, and filed a summary of the comments on December 18, 2019.

On June 30, 2020, Xcel filed a revised resource plan (Supplement Plan). On August 25, 2020, Xcel filed errata to its Supplement Plan.

On June 25, 2021, Xcel filed a resource plan with further revisions (Alternate Plan). On August 19, 2021, Xcel filed errata to its Alternate Plan.

Throughout the proceeding the Commission received comments on Xcel’s proposals. These included comments from private individuals as well as the following organizations:

- As You Sow, Boston Common Asset Management, and the Seventh Generation Interfaith Coalition for Responsible Investment
- Becker Township
- The Burnsville Chamber of Commerce
- The Center of the American Experiment
- The Citizens Utility Board of Minnesota (CUB)

- The City of Becker
- The City of Burnsville
- The City of Minneapolis (Minneapolis)
- The City of Monticello and City of Monticello Industrial Economic Development Committee
- The City of Red Wing
- The City of St. Louis Park
- The City of Saint Paul
- Clean Energy Economy Minnesota
- The Coalition of Utility Cities
- The Community Energy Justice Commenters
- Cooperative Energy Futures, the Environmental Law and Policy Center, the Institute for Local Self-Reliance, and Vote Solar (Distributed Solar Parties)
- Covia Holdings Corporation; Flint Hills Resources Pine Bend, LLC; Gerdau Ameristeel US Inc.; Marathon Petroleum Corporation; and USG Interiors, Inc. (Xcel Large Industrials, or XLI)
- Energy We Can't Afford
- Fresh Energy, Clean Grid Alliance, Union of Concerned Scientists, and the Minnesota Center for Environmental Advocacy (Clean Energy Organizations, or CEOs)
- Fresh Energy, Community Stabilization Project, Green & Healthy Homes Initiative, Inquilinx Unidxs Por Justicia, Minnesota Housing Partnership, National Housing Trust, and Natural Resources Defense Council (Energy Efficiency for All Partners)
- Generation Atomic
- Goodhue County Board of Commissioners
- The International Brotherhood of Electrical Workers, Locals 23, 160, and 949 (IBEW)
- International Union of Operating Engineers, Local 49 (IUOE)
- The Institute for Local Self Reliance, Native Sun, Solar Bear, Minnesota Interfaith Power and Light, MN350, Community Power, St. Paul 350, Izaak Walton League—Minnesota Division, Union of Concerned Scientists, Sierra Club, Land Stewardship Project, Honor the Earth, Minnesota Environmental Partnership, and Clean Up the River Environment
- Laborers' International Union of North America—Minnesota & North Dakota (LIUNA)
- Litty Solar and Energy Releaf
- The Minnesota Department of Commerce (Department), and Deputy Commissioner of Commerce Aditya Ranade
- The Minnesota Office of the Attorney General (OAG)
- The Monticello Industrial & Economic Development Committee
- The Monticello Labor Coalition
- The North Central States Regional Council of Carpenters (Carpenters)
- Northern Natural Gas
- The Prairie Island Indian Community
- St. Paul 350
- The St. Paul Area Chamber
- The Sierra Club
- The Suburban Rate Authority and the Coalition of Local Government Units
- The Sustainable Growth Coalition
- US Solar

- Wright County Board of Commissioners
- Wright County Economic Development Partnership

On January 25 and 27, and February 8, 2022, the Commission met to consider the matter.

FINDINGS AND CONCLUSIONS

I. Summary of Commission Action

In this order, the Commission approves a modified version of Xcel’s Alternate Plan that will guide investments through 2034. With the benefit of significant stakeholder engagement spanning more than two years, the Commission is able to approve a plan largely reflecting the positions taken jointly by Xcel, many environmental groups (the CEOs), and many labor groups (the Carpenters, IUOE, and LIUNA). The plan is designed to manage costs for households and businesses; reduce emissions that contribute to climate change; and ensure reliable electric service for Xcel customers. Most significantly, it provides for –

- retiring all of Xcel’s coal-powered generators,
- adding substantial amounts of solar- and wind-powered generation,
- reinforcing system reliability,
- exploring options for adding new technology such as energy storage and hydrogen-powered generation, and
- pursuing the process of extending the life of Xcel’s Monticello Nuclear Generating Plant (Monticello) in Monticello, Minnesota.

Under this plan, Xcel will reduce its greenhouse gas emissions by 86% relative to 2005 levels; by 2032, 81% of Xcel’s electricity will be generated from carbon-free resources.

The plan also directs Xcel to manage the resulting changes for Minnesota’s cities, workers, and the Prairie Island Indian Community, and to promote equity among its customers and employees.

II. Resource Planning

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 generally details the projected need for electricity in its service territory for a forecasted period, and the utility’s plans for meeting projected need, including the actions it will take in the next five years.¹ 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;

¹ 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.²

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.³ 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.

Any number of combinations of resources might permit a utility to match supply with demand under a given set of assumptions. To select a plan that balances the needs for maintaining reliability, reducing adverse environmental and socioeconomic burdens, and minimizing rates, a utility then analyzes various options under a variety of assumptions—including assumptions about unanticipated deviations from forecasts, or unexpected failures of generators or transmission facilities. Computer models help parties evaluate each scenario under a variety of assumptions. Specifically, utilities develop a *base case scenario*, and develop other scenarios as variations on the base case. While the base case scenario has no greater weight than any other scenario, it tends to reflect a conventional, status quo position. After analyzing the various scenarios, the utility selects a *preferred plan*.

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 a wide array of facts and considerations 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.

² Minn. R. 7843.0500, subp. 3.

³ Minn. Stat. § 216B.2422, subd. 1(d).

III. Resource Acquisition Strategies

A resource planning process will identify the resources a utility should pursue—and, in particular, a resource’s size, type, and timing. But where a plan identifies the need for a new resource, it will generally not identify a specific project, developer, or owner, or the specific terms governing a power purchase agreement. Thus, even after identifying the optimal size, type, and timing for a new resource, the Commission still has the task of identifying the optimal method for selecting among resources that meet the size/type/timing requirements.

One option is to acquire a new resource through the Certificate of Need process. Before a developer builds a generator with capacity of 50 MW or more in Minnesota,⁴ Minn. Stat. § 216B.243 requires the developer to acquire a Certificate of Need demonstrating that there are no more cost-effective means to meet the alleged need.

But the Legislature provides various exceptions to the Certificate of Need process. For example, Minn. Stat. § 216B.243, subd. 9, eliminates the need for a Certificate of Need for projects that are designed to provide energy to fulfill the state’s renewable energy standards or solar energy standards under Minn. Stat. § 216B.1691. And Minn. Stat. § 216B.2422, subd. 5, provides an exception for generators that are selected via a Commission-approved bidding process. Over the last several resource plans, the Commission has developed three bidding processes. These processes are described briefly here, and set forth in greater detail in Appendix A.

Track 1, or the No-Bid process, is a competitive process that applies when Xcel does not plan to submit its own bid.⁵ Under No-Bid/Track 1, Xcel solicits proposals to fill an identified need, then evaluates the bids and submits the resulting contracts to the Commission for approval.

Track 2, or the Xcel-Bid Contested Case process, is a competitive process that applies when Xcel does intend to offer its own proposals.⁶ Under Xcel-Bid Contested Case/Track 2, Xcel solicits proposals to fill all or part of an identified need. The bids are then sent to a contested case process, allowing parties to file testimony, followed by an evidentiary hearing, briefs, an administrative law judge’s recommendation, and ultimately a Commission determination.

Modified Track 2, or the Xcel-Bid Auditor process, also establishes a competitive process that applies when Xcel intends to offer its own proposals.⁷ As in the No-Bid/Track 1 process and the Xcel-Bid Contested Case/Track 2 process, Xcel solicits proposals to meet all or part of an identified need. But under Xcel-Bid Auditor/Modified Track 2, Xcel must submit its own proposals a day before any of the bids from other developers are due. Xcel then evaluates all the proposals received based on an established list of factors, and identifies projects to pursue in

⁴ See Minn. Stat. § 216B.2421, subd. 2(1).

⁵ *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).

⁶ *Id.*

⁷ See *In the Matter of Xcel Energy’s 2016–2030 Integrated Resource Plan*, Docket No. E-002/RP-15-21, Order Approving Plan with Modifications and Establishing Requirements for Future Resource Plan Filings (January 11, 2017).

negotiations. Thereafter, Xcel reports to the Commission its own analysis and recommendations regarding the bids and the results of a third-party auditor's report on the bidding process, among other topics.

IV. Xcel's Prior Resource Plan

Xcel's 2016-2030 resource plan, as approved by the Commission, included the following elements:⁸

The Commission directed Xcel to save an average of 444 gigawatt-hours (GWh) per year through promoting energy efficiency.

The Commission ordered Xcel to develop plans for retiring its aging generators, including the coal-powered Allen S. King Generating Station (King) on the banks of the St. Croix River near Bayport, Minnesota, and the coal-powered Sherburne County Generating Station (Sherco) in Becker, Minnesota.

The Commission approved Xcel's proposal to retire Sherco Unit 2, with a generating capacity of 680 MW, in 2023, and Unit 1, with a capacity of 680 MW, in 2026. Xcel proposed replacing these units with a natural gas-powered combined cycle generator at the Sherco site. But instead, the Commission found it more likely than not that there would be a need for approximately 750 MW of capacity in 2026 and authorized a Certificate of Need proceeding to evaluate the optimal resources to meet Xcel's needs, considering the socioeconomic impact of various alternatives.⁹

The Commission found that Xcel had demonstrated the need to add one natural gas-powered combustion turbine to its system, but had not demonstrated a need to locate the turbine in Fargo, North Dakota, as Xcel had proposed. (Xcel has a regulatory commitment to build a combustion turbine in that state.)

The Commission authorized Xcel to add more solar- and wind-powered generators, and outlined the Xcel-Bid Auditor/Modified Track 2 process to be used for this purpose. The Commission also directed Xcel to plan for the contingency that the process could fail to produce the desired generating capacity.

The Commission ordered Xcel to establish programs by 2023 that would allow the utility to call on customers who subscribe to temporarily reduce their electricity use—that is, provide “demand response”—by an aggregate 400 MW. The Commission also ordered Xcel to explore adding 1,000 MW of demand response by 2025.

Finally, the Commission ordered Xcel to use the same inputs and analysis in its future resource planning as in its Integrated Distribution Planning, discussed below.

⁸ *Id.*

⁹ Minn. R. 7843.0500, subp. 3.C.

V. Xcel's Preferred Resource Plans

This proceeding addresses Xcel's 2020–2034 Upper Midwest Integrated Resource Plan—that is, a plan addressing the demand for electricity, and the supply of electricity, in Xcel's service areas in Michigan, Minnesota, North Dakota, South Dakota, and Wisconsin.

Through the course of this proceeding, Xcel filed three resource plans:

- The July 1, 2019 Initial Plan.
- The June 30, 2020 Supplement Plan.
- The June 25, 2021 Alternate Plan.

Each iteration was designed, in part, to address concerns raised regarding the prior plan, as summarized below.

A. Initial Plan

Xcel developed its Initial Plan using the Strategist capacity expansion model, and calculated the cost of electricity from renewable sources on the basis of 2018 data from the National Renewable Energy Laboratory's Annual Technology Baseline (NREL ATB) report.

Xcel's initial preferred plan included many items that the Commission ordered as part of Xcel's last resource plan.¹⁰ For example, Xcel proposed to acquire 400 MW of demand response by 2023. And Xcel proposed to retire the Sherco Unit 2 in 2023, and Unit 1 in 2026.

But in addition, Xcel proposed to retire its remaining coal-powered plants—King (511 MW) in 2028 and Sherco Unit 3 (517 MW) in 2030. Xcel also identified six other fossil-fuel-powered generators that would retire, and three power purchase agreements that would expire, by 2034. All of these changes would help Xcel reduce the amount of greenhouse gases (such as carbon dioxide, or “carbon”) that it emits—gases that contribute to climate change.¹¹

Again, Xcel proposed to offset this loss of generating capacity by, among other things, adding more solar- and wind-powered generators selected via the Xcel-Bid Auditor/Modified Track 2 process, and adding a new gas-powered combined cycle plant near the Sherco site. Xcel also proposed to seek to extend Monticello's operating life by ten years—to 2040—and to continue operating its Prairie Island Generating Plant (Prairie Island), Units 1 and 2, at least through the end of their current licenses—to 2033 and 2034, respectively.

¹⁰ *In the Matter of Xcel Energy's 2016–2030 Integrated Resource Plan*, Docket No. E-002/RP-15-21, Order Approving Plan with Modifications and Establishing Requirements for Future Resource Plan Filings (January 11, 2017).

¹¹ On the need to reduce greenhouse gas emissions, see Minn. Stat. § 216H.02, subd. 1; *In the Matter of the Further Investigation into Environmental and Socioeconomic Costs Under Minnesota Statutes Section 216B.2422, Subdivision 3*, Docket No. E-999/CI-14-643, Order Updating Environmental Cost Values, at 9 (January 3, 2018).

Furthermore, Xcel proposed to save, on average, more than 780 GWh per year through 2034 via programs promoting energy efficiency.

B. Supplement Plan

In shifting from its Initial Plan to its Supplement Plan, Xcel switched from using the Strategist model to the EnCompass model. In general, Strategist modeled the amount of generation capacity Xcel would require, and the order for dispatching the generators, by analyzing data from a representative week and extrapolating from these results to estimate needs and strategies for the rest of each year. EnCompass creates capacity expansion plans in the same manner, but then redispatches the plan while simulating all 8,760 hours of the year. The resulting plan reflects both the capital costs from the first run and the production costs from the second run. These changes, among others, permit the model to identify optimal plans that consider adding resources, committing and dispatching those resources, buying and selling electricity on the market, and selling ancillary services—that is, selling capacity for the purpose of supporting the grid’s reliability.

Xcel also updated its forecast of the amount of energy its customers would consume, the capacity it would need to deliver this energy, and the NREL ATB data used to estimate the cost of electricity from renewable sources.

Based on this new analysis, Xcel selected a preferred plan that included the Sherco combined cycle plant, but also new gas-powered combustion turbine generators in Lyon County and Fargo, North Dakota; this latter generator was designed in part to fulfill a regulatory requirement in North Dakota. Xcel argued that these generators were needed to provide energy, power, and blackstart capabilities—that is, a capacity to continue or initiate electric generation to help re-energize the transmission grid following an electricity blackout.

C. Alternate Plan

In developing its Alternate Plan, Xcel switched from using EnCompass 4.2 to EnCompass 5.0. Among other benefits, Version 5.0 better models the variability in the output of renewable generators. But Xcel continued to use 2019 NREL ATB data to model the cost of electricity from renewable sources, reasoning that the small benefit that would result from updating this data would not justify the administrative burden for itself and for those analyzing its revised plan.

Xcel also updated its analysis to reflect roughly 1,150 MW of generating capacity—resulting from new or refurbished generators, or extended contracts—that the company had added to its portfolio between the time Xcel filed its Supplement Plan and June 1, 2021. (As a result, Xcel’s

modeling did not include a 460 MW solar power project planned for development near the Sherco site (Sherco Solar),¹² nor a proposed 120 MW wind power project.¹³)

Based on this analysis, the preferred Alternate Plan would add approximately 3,150 MW of utility-scale solar-powered generation and 2,650 MW of wind-powered generation by 2034 (although the wind-powered additions do not occur within the plan's five-year action plan). These additions represent an increase of approximately 27% over the Supplement Plan's total renewable generating capacity.

Xcel would maintain its plan to retire its coal-powered generators while continuing to operate Prairie Island and extend the life of Monticello. But Xcel no longer recommended adding a combined cycle plant at the Sherco site. Instead, Xcel proposed repowering two existing combustion turbines by 2026 to provide blackstart capacity in the near term, and acquiring two new 400 MW combustion turbines—one in Fargo, North Dakota by 2027, another one in Lyon County, Minnesota by 2029. The Fargo generator would have the attribute of fulfilling a regulatory commitment in North Dakota, while the Lyon County generator would have the attributes of providing energy, system stability, and blackstart capabilities. Xcel stated that these turbines would have the option of running on hydrogen in lieu of natural gas; unlike burning natural gas, burning hydrogen does not release greenhouse gases.

¹² *In the Matter of Xcel Energy's Petition for Approval of the Sherco Solar Project*, Docket No. E-002/M-20-891; *In the Matter of the Application of Xcel Energy for a Route Permit for the West 345 kV Transmission Line for the Sherco Solar Project in Sherburne County*, Docket No. E-002/TL-21-189; *In the Matter of the Application of Xcel Energy for a Route Permit for the East 345 kV Transmission Line for the Sherco Solar Project in Sherburne County*, Docket No. E-002/TL-21-190; *In the Matter of the Application of Xcel Energy for a Site Permit for the up to 460 MW Sherco Solar Project in Sherburne County*, Docket No. E-002/GS-21-191.

¹³ *In the Matter of the Application for a Site Permit Amendment to Decommission the Existing Chanarambie and Viking Wind Facilities and Construct the 120-Megawatt Northern Wind Facility in Murray County, Minnesota*, Docket No. IP-7046/WS-20-860.

Xcel also proposed building two transmission lines designed to enable new renewable sources of generation to tie into the regional transmission grid (generation tie-lines, or “gen-tie lines”) at the site of the retiring King and Sherco plants. Xcel explained that, to encourage utilities to transition to the use of electricity from renewable sources, the Federal Energy Regulatory Commission (FERC) authorizes the owners of old generators to retain control of the transmission rights associated with those generators to facilitate the interconnection of new generation at the same location. This policy is incorporated into the tariffs of the Midcontinent Independent System Operator, Inc. (MISO), which manages the regional transmission grid.¹⁴ To make use of this valuable transmission right, however, Xcel would have to own these new generators, rather than independent power producers.

For modeling purposes, Xcel described the Sherco gen-tie line as a 345 kilovolt (kV) cable installed on existing transmission towers extending 140 miles southwest to Lyon County. Xcel initially described the King gen-tie line as a single 345-kV cable extending 15 miles east across the St. Croix River into Wisconsin—but during the Commission meeting, Xcel clarified that it would seek to install the cable on existing transmission towers to cross the river, thereby minimizing consequences for the environment.

Finally, Xcel asked the Commission to authorize the company to solicit requests for proposals, and to choose among the proposals, for various generators—including the Lyon County combustion turbine, and the various generators using renewable sources of power—via the Commission’s Xcel-Bid Auditor/Modified Track 2 process.

VI. Resource Plan Selection

A. Positions of the Parties and Commenters

While the CEOs, CUB, the Department, and the Sierra Club each offered their own plans, ultimately most parties and commenters developed their final positions relative to the Alternate Plan.

For example, the Distributed Solar Parties and the Sierra Club supported Xcel’s proposal to retire King and Sherco, but recommended that Xcel continue to evaluate whether the company should accelerate those retirement dates. They supported authorizing Xcel to build and own the Sherco and King gen-tie lines and generation up to the limits of the company’s current interconnection rights, provided that Xcel select the generators using a rigorous competitive bidding process—though they proposed refinements to that process. But these parties did not support extending Monticello’s operating life; the Sierra Club specifically opposed it. They objected that Xcel developed its Alternate Plan based on the presumption that Xcel would add new 400 MW combustion turbines in Fargo and Lyon County, rather than letting the model pick the optimal mix of resources—arguing that this practice defeated the purpose of optimization modeling. Also, the Sierra Club argued that the EnCompass model fails to appropriately model the reliability added by having multiple distributed generators with uncorrelated outputs—especially fleets of wind turbines—rather than a few large generators.

In response to this and other feedback, Xcel joined the Carpenters, the CEOs, IUOE, and LIUNA in recommending a variation on its Alternate Plan. These parties and commenters generally

¹⁴ See MISO Tariff, Attachment X (Generator Interconnection Procedures), §§ 3.3.1 and 3.7.1.

supported the Alternate Plan, but proposed deferring decisions about the need for adding the combustion turbines in Fargo and Lyon County. Instead, they recommended the following:

- Requiring Xcel to consider and pursue opportunities to deploy storage technologies and renewable resources—including resources powered by hydrogen or clean fuel alternatives—on a schedule faster than in its Alternate Plan, if such deployment would be cost-effective, maintain reliability, and aid in achieving compliance with policies to mitigate climate change.
- Finding that it is more likely than not that there will be a need for approximately 800 MW of additional generic “firm dispatchable” resources between 2027 and 2029, some of which could be located in North Dakota.
- Requiring Xcel in a future proceeding—specifically, a future resource plan, Certificate of Need, or applicable resource acquisition proceeding—to evaluate renewable resources and storage options that can deliver the identified necessary grid attributes to meet this need.

For purposes of this recommendation, these parties and commenters defined “firm dispatchable” to mean a resource or combination of resources that can provide capacity, energy, and energy availability to meet customer demand for extended durations in the context of the system as a whole. They acknowledged that the analysis might also consider characteristics such as the value from production capabilities during potential system restoration events of unknown durations, environmental consequences, costs, and the ability to foster integration of renewable resources into Xcel’s system.

These parties and commenters specified that, in the future proceeding addressing this need, Xcel should conduct up-to-date systemwide modeling to update Xcel’s need—including capacity, energy, resource adequacy, energy availability, ancillary service, and reliability needs—and to quantify and compare the electric system attributes from each resource option considered to meet the identified grid needs.

The Suburban Rate Authority generally supported this proposed variant on the Alternate Plan, praising the plan to acquire large amounts of generation from renewable sources, and the choice to retire many generators running on fossil fuels.

IBEW acknowledged Xcel’s need to shift its sources of electricity to reduce the emission of greenhouse gases, even though this would result in hardship to IBEW members working at some generators—especially the King and Sherco plants. To mitigate these effects, IBEW supported plans to build new generators and to extend the operating life of Monticello.

The Department presented its own proposal that differed from Xcel’s in many respects. In particular, the Department argued that over time Xcel’s analysis systematically overestimates demand and underestimates capital costs, leading the company to propose needlessly expansive growth. The Department argued that Xcel would be better off extending the life of Prairie Island

rather than Monticello—but also concluded that this matter could be addressed with greater precision in the context of the related Certificate of Need proceeding for Monticello.¹⁵

Various parties and commenters—including the Center for the American Experiment, the OAG, and XLI—expressed concern that Xcel had not provided adequate cost data supporting its gen-tie proposal. They warned that approving the gen-tie lines might saddle ratepayers with higher rates than necessary. This fact is especially consequential because, according to the Department’s modeling, small changes in the cost of solar energy produced large changes in the recommended amount to add to Xcel’s system. To provide adequate opportunity to evaluate the gen-tie proposal, XLI recommended that the Commission defer setting retirement dates for Xcel’s existing generators.

According to Xcel’s estimates, building gen-tie lines to connect to various new energy resources would be substantially cheaper per kilowatt than trying to acquire an equivalent amount of resources through the MISO queue process.¹⁶ In any event, Xcel argued that it is unnecessary to establish the cost of the gen-tie lines in the current docket because, if the Commission authorized Xcel to proceed with its gen-tie proposal, more precise cost data would be developed in the ensuing Certificate of Need process. But Xcel offered to issue a request for information asking potential developers to estimate project cost ranges, and to retain an independent expert to evaluate these estimates.

B. Commission Action

The current resource planning docket has been long, rigorous, and iterative—but the analysis has revealed the state of Xcel’s current system, a forecast of Xcel’s future needs, and the limits of those forecasts. Most significantly, even Xcel has concluded that the record no longer supports its initial proposal for a new combined cycle gas facility, and has consented to deferring decisions about building two new combustion turbines. As Community Power observed,

[F]or the first time in the history of Minnesota’s [resource planning,] three alternative models have been set forth that demonstrated alternative pathways that are more affordable, cleaner, and aim Minnesota towards local-level resilience to climate risks and economic uncertainty. [Xcel’s plan] has been utterly transformed by this engagement and the ability for alternatives to come forward early in the process and the community to react to them.¹⁷

¹⁵ While Xcel may not require a new Certificate of Need to extend Monticello’s operating life *per se*, Xcel must obtain a Certificate of Need before increasing its capacity for storing spent nuclear fuel, a necessary concomitant of extending Monticello’s operations. *See In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for a Certificate of Need for Additional Dry Cask Storage at the Monticello Nuclear Generating Plant Independent Spent Fuel Storage Installation in Wright County*, Docket No. E-002/CN-21-668. Specifically, Minn. Stat. § 216B.243, subd. 3b, requires Xcel to “address the impacts of continued operation” of the nuclear generator and related facilities.

¹⁶ Xcel reply comments, at 12 (June 25, 2021).

¹⁷ Community Power comments, at 2 (January 27, 2022).

Having analyzed the record and the positions of all parties and commenters, the Commission will adopt the recommendations set forth by the Carpenters, the CEOs, IUOE, LIUNA, and Xcel—with the following modifications.

First, various parties and commenters argued that the record failed to demonstrate that building a combined-cycle generator at the Sherco site would be a prudent investment, and therefore ratepayers should not have to bear the cost of the plant. Ultimately Xcel withdrew its combined-cycle proposal. The Commission concurs with this choice and finds no basis in the record that would justify Xcel recovering the cost of such a project from Minnesota ratepayers.

Second, the Commission will specifically approve the following elements of Xcel's Alternate Plan as filed on June 25, 2021:

- 1) Each year through 2034, Xcel shall save at least 780 GWh via energy efficiency.
- 2) Xcel shall continue to acquire 400 MW of incremental demand response by 2023 as ordered in the company's last resource plan.
- 3) In 2025 and 2026, Xcel may repower existing resources needed for blackstart services.
- 4) Xcel shall retire King in 2028 and Sherco Unit 3 in 2030. Contrary to the objections raised by XLI and others, multiple resource plan scenarios demonstrated that retiring these units would be a cost-effective option—demonstrating the robustness of this choice.
- 5) By 2026 Xcel shall acquire –
 - Approximately 720 MW of company-owned solar-powered generation to fully reutilize the interconnection capacity to be made available following the retirement of Sherco Unit 2 (460 MW of which could come from the proposed Sherco Solar project if approved by the Commission) and
 - An additional 600 MW of solar-powered generation unconstrained by interconnection location or ownership.
- 6) Xcel shall launch proceedings to obtain a Certificate of Need and route permit¹⁸ for transmission lines with a capacity of 345 kVs extended from the locations of the retiring King and Sherco generators designed to permit new energy resources to connect to the MISO transmission grid (gen-tie lines).

¹⁸ Anyone seeking to build a transmission line longer than 1,500 feet and with a capacity of 100 kV or more in Minnesota must first obtain a route permit from the Commission. Minn. Stat. §§ 216E.01, subd. 4; 216E.03, subd. 2.

- 7) For each gen-tie line for which Xcel obtains the necessary Certificate of Need and route permit, Xcel may own the line and the renewable resources that connect to the line, up to the company's current interconnection rights for that line—approximately 600 MW for King and 2,000 MW for Sherco.
- 8) Xcel has demonstrated that, between 2027 and 2032, it will need approximately 600 MW more solar-powered generation and 2,150 MW of wind-powered generation on the Sherco gen-tie line—or an equivalent amount of energy and capacity from a combination of wind, solar, and/or storage. Xcel may partially fill this need by acquiring approximately 1,300 MW of company-owned wind, solar, and/or storage resources to fully reutilize the Sherco Unit 1 and Unit 3 interconnections.
- 9) Xcel has demonstrated that, between 2028 and 2030, it will need approximately 600 MW more company-owned solar and/or storage resources to maximize the use of the King gen-tie line and fully reuse the King interconnection.
- 10) Any acquisition proceeding for surplus generation on the King and Sherco gen-tie lines, beyond the amount required to fully reuse the Sherco and King interconnections, must be open to either company-owned or non-company-owned resources.
- 11) Xcel may continue pursuing a ten-year extension for Monticello. Xcel will have the opportunity—and obligation—to explore plans for Prairie Island in a future proceeding, as discussed further below.

The Commission will approve the remainder of Xcel's Alternate Plan for planning purposes, except—consistent with the recommendations noted above—the Commission will make no finding approving combustion turbines in Fargo or Lyon County.

Third, consistent with the parties' and commenters' recommendations, the Commission finds that it is more likely than not that Xcel will need up to 800 MW of generic firm dispatchable resources between 2027 and 2029. While Xcel asked the Commission to make findings about the need for "approximately 800 MW," this request must be balanced against the Department's argument that Xcel's analysis contains a systemic bias in favor of growth. In acknowledgement of this argument, the Commission clarifies that this finding will not, by itself, support plans to acquire more than 800 MW.

Fourth, the Commission concurs on the merits of making a finding about a *generic* 800 MW—that is, a finding of need that is not tied to a specific location or technology. Accordingly, the Commission will decline to adopt language connecting this finding of need to North Dakota because Xcel has not demonstrated to this Commission that the resources must be located there. And regardless of where Xcel builds any of the resources discussed in its resource plan, it should proceed assuming that cost recovery will be based on traditional jurisdictional allocators.

Fifth, the Commission appreciates Xcel's need for firm dispatchable resources, but is not persuaded that these resources must provide energy availability to meet load for extended durations of energy in the context of the system as a whole. Rather, the Commission regards this

factor as one of a number of useful factors to be considered when choosing among firm dispatchable resources.

Sixth, when Xcel conducts the up-to-date system-wide modeling for renewable resources and storage discussed above, it should correct its modeling of wind fleet variability and of exchanges with MISO. This is necessary to ensure that Xcel does not exaggerate the variability of distributed sources of electricity, and thereby underestimate their value to the system.

Seventh, the Commission will accept Xcel's offer to issue a request for information from potential developers of the gen-tie lines, estimating the likely range of project costs. The Commission will direct Xcel to file a thorough description of this request-for-information process and explain how the company might use an independent expert to evaluate the credibility of the proposals and their potential cost ranges. This filing will be due within 30 days.

VII. Resource Acquisition

A. Positions of the Parties and Commenters

The Department recommended authorizing Xcel to pursue new storage-, solar-, and wind-based resources using the No-Bid/Track 1 process and Xcel-Bid Auditor/Modified Track 2 processes, as these processes were described in the Department's February 11, 2021, comments. The Department also proposed additional refinements, including the following:

First, the Department argued that any Xcel document requesting a proposal for peaking resources should refrain from favoring one technology over another—for example, favoring combustion turbines over storage.

Second, the Department argued that Xcel should have to use the Commission-approved No-Bid/Track 1 and Xcel-Bid Auditor/Modified Track 2 bidding process whenever Xcel intends to acquire at least 100 MW for more than five years using solar-powered generators, wind-powered generators, or storage.

Third, the Department expressed concern about circumstances under which Xcel might buy a resource by exercising a Right of First Offer clause in a power purchase agreement. Under such a clause, the resource owner could not sell the resource to a third party without first giving Xcel the opportunity to make an offer for it. Because a rate-regulated utility expects to earn a return on its investments in operating plant, and to recover its investment, the utility may lack the typical incentive to seek the lowest price for an asset. To protect ratepayers from paying rates based on inflated costs, it is customary to limit a utility's opportunity to recover costs that exceed an asset's net book value—that is, the cost of the asset when initially committed to public use, minus depreciation and amortizations. The Department recommended that the Commission adopt this conventional limit on cost recovery.

Finally, the Department emphasized the importance of rigorous modeling, especially regarding the cost of solar energy. As previously discussed, the Department's modeling revealed that small

increases in the predicted cost of solar energy results in large reductions in the amount of solar energy included in an optimal plan.¹⁹

The CEOs largely supported this proposal—but also recommended authorizing Xcel to pursue firm dispatchable resources using the Xcel-Bid Contested Case/Track 2 process.

CUB and the OAG recommended modifying the Xcel-Bid Auditor/Modified Track 2 process to require Xcel to first file the details of its proposed competitive bidding process—including the following components:

- A list of independent auditors Xcel considered to oversee the bidding process, and a discussion of why the selected independent auditor was chosen.
- The criteria that Xcel will use to evaluate proposals.
- The planned text of the request for proposals.
- The planned timeline for the issuance of the request for proposals, the allowed response time, the date upon which Xcel will submit its self-build proposal (if applicable), and the date upon which Xcel will submit its report to the Commission detailing the bid results, including the independent auditor’s evaluation of the bid process.
- Confirmation that the request for proposals will be published publicly and open to any interested developer.
- Confirmation that there will be no geographic limitations on the proposals, other than the requirement that transmission-connected resources be located within the MISO resource zone and distribution-connected resources be located within Xcel’s service territory.
- Confirmation that Xcel will consider bids for power purchase agreements (and not merely generators to be sold to Xcel).
- A contingency plan in the event of an unsuccessful bidding process.

Finally, CUB and the OAG recommended that parties have 30 days to raise objection to Xcel’s proposal.

Xcel joined the Carpenters, IUOE, and LIUNA in supporting much of the CUB/OAG proposal. But they objected to two aspects in particular. First, the Carpenters, IUOE, and LIUNA argued that the Commission should not entirely preclude geographic limits in a request for proposals—reasoning that Xcel may want to target economic development as a tool to mitigate the economic harms resulting from plant closures, or to help historically disadvantaged communities. Second, they opposed the idea of authorizing all parties to veto Xcel’s request for proposals, reasoning that this policy would add needless delay and administrative burden to implementing the changes found necessary in this resource planning docket.

¹⁹ Department comments, at 42 (October 15, 2021).

B. Commission Action

As with its analysis of Xcel's resource plan, the Commission will adopt most of these recommendations, but with modifications.

In authorizing the use of No-Bid/Track 1 and Xcel-Bid Auditor/Modified Track 2, the Commission clarifies that it is approving these procedures for acquiring the specific storage, solar-powered, and wind-powered resources approved above—and specifically, for resources with at least 100 MW of capacity and a duration longer than five years. In contrast, the Commission will approve the Xcel-Bid Contested Case/Track 2 process for acquiring the firm dispatchable resources approved above, as recommended by the CEOs. The Commission does not, at this time, approve the use of any bidding process for resources that are not identified in this resource plan.

The Commission will also adopt the recommendation that Xcel make an informational filing clarifying its proposals before issuing a request for proposals, incorporating many of suggestions proposed by CUB and the OAG. But the Commission clarifies that this filing should address the request for proposals for storage, solar-powered, and wind-powered resources acquired through the Xcel-Bid Auditor/Modified Track 2 process.

The Commission will adopt the CUB/OAG recommendation to require Xcel to affirm that the company will accept proposals for power purchase agreements. But the Commission will grant an exception for any request for proposals issued exclusively for a need the Commission has stated may be limited to company-owned resources, or where the resources are being procured consistent with applicable FERC or MISO requirements.

At this time the Commission will decline the CUB/OAG recommendation to impose a blanket prohibition on including geographic limits in a request for proposals; this is a matter to be addressed on a case-by-case basis in the context of a resource acquisition process itself. On this record, the Commission cannot preclude the possibility that geographic criteria would be relevant for bolstering reliability or blackstart capabilities at a given part of the grid. Elsewhere in this order the Commission will address issues of mitigating harms to workers and facilitating equity to underserved communities—but here the Commission will simply specify that when Xcel files the criteria that it will use to evaluate proposals, those criteria must include consideration of socioeconomic impacts as required by Minn. R. 7843.0500, subp. 3.C.

The Commission will also decline the CUB/OAG recommendation to permit any party to suspend Xcel's request for proposals by filing an objection within 30 days. Parties will retain the same opportunity to file objections as ever, but the Commission will need to evaluate those objections before giving them effect.

The Commission further clarifies that Xcel should not expect to recover more than the net book value of any resource it acquires via exercise of a Right of First Offer clause. Any deviation from this policy will require separate Commission authorization.

Finally, the Commission finds that rigorous modeling matters, especially regarding the cost of solar energy. To ensure that parties evaluate solar-powered resources appropriately, the Commission will direct Xcel to include updated capacity expansion modeling, and forecasted rate impacts, in any proceeding evaluating solar power. In addition, the Commission notes that

the last time Xcel planned to acquire large amounts of energy from renewable sources, it evaluated projects both on an individual basis and collectively as part of a portfolio.²⁰ This practice ensures that the merits of lower-cost projects are not overlooked by being averaged in with other projects. For proposals offering more than one solar-powered generator, therefore, the Commission will continue its practice of requiring Xcel to model these projects on an individual basis, and as part of a larger portfolio.²¹

VIII. Future Proceedings

As previously noted, resource planning is iterative. In part, this reflects changes within a resource plan docket as parties explore and challenge each other's positions and revise their own; in part, it reflects changes between dockets as the Commission refines its processes. The Commission has discussed some proposed changes above; parties propose still more below.

A. Integrated Distribution Planning

Distributed energy resources are supply- and demand-side resources that can be used throughout a utility's distribution system to meet customers' energy and reliability needs, including such resources as solar-powered generators, energy storage, electric vehicles, demand-side management, and energy efficiency.²² Integrating these resources into Xcel's distribution grid, and optimizing those resources with bulk system generation to minimize costs and maintain reliability, requires changes to Xcel's current approach to Integrated Distribution Planning.²³

Distribution planning involves how an electric utility plans its distribution system to ensure it can reliably deliver electricity while meeting customers' needs.²⁴ Xcel also performs a hosting capacity analysis that examines the utility's capacity to interconnect resources such as solar-powered generators or energy storage facilities to specific locations on the utility's distribution system, and analyzes strategies to enhance the system's ability to accommodate distributed energy resources.

Parties and commenters throughout this proceeding—including Community Power, CUB, the Distributed Solar Parties, Minneapolis, and the Sierra Club—noted that the assumptions that inform Xcel's resource plan models, and the conclusions that flow from them, do not match the assumptions and conclusions in Xcel's Integrated Distribution Plans. But the parties argued that the two plans are necessarily linked: Improved distribution planning will accommodate more distributed energy resources (such as solar-powered generation) and demand (such as electric

²⁰ See *In the Matter of the Petition of Xcel Energy for Approval of the Acquisition of Wind Generation from the Company's 2016-2030 Integrated Resource Plan*, Docket No. E-002/M-16-777.

²¹ See *In the Matter of Xcel Energy's Wind Repower Portfolio*, Docket No. E-002/M-20-620, Order Approving Wind Facility Repowering Projects, at 8 (January 22, 2021).

²² See *In the Matter of Distribution System Planning for Xcel Energy*, Docket No. E-002/CI-18-251, Order Approving Integrated Distribution Planning Filing Requirements for Xcel Energy (August 30, 2018).

²³ See, for example, *In the Matter of Xcel Energy's Integrated Distribution Plan and Advanced Grid Intelligence and Security Certification Request*, Docket No. E-002/M-19-666, Order Accepting Integrated Distribution Plan, Modifying Reporting Requirements, and Certifying Certain Grid Modernization Project (July 23, 2020); see also Minn. Stat. § 216B.2425, subd. 8 (regarding hosting capacity).

²⁴ Xcel Initial Plan, Appendix I, at 265 (July 1, 2019).

vehicle charging), thereby expanding the options to be analyzed in resource planning. Accordingly, these parties argued that Xcel should take steps to better align its resource planning with its distribution planning.

In particular, the Distributed Solar Parties offered five specific suggestions.

First, they recommended that Xcel set its targets for deploying distributed energy resources consistent with the approved resource plan. According to the parties, resource planning should drive distribution planning to ensure that Xcel's distribution grid is prepared to integrate the appropriate levels of distributed energy resources. To implement this policy, Xcel should have to explain in its next Integrated Distribution Plan how its planning will ensure an adequate capacity for all the distributed energy resources forecasted.

Second, the parties recommended that Xcel conduct advanced forecasting using its Commission-approved Advanced Planning Tool²⁵ to better project the levels of distributed energy resources to be deployed at a feeder level. This tool permits Xcel to make more precise forecasts of distributed energy resources and loads. Xcel's Integrated Distribution Plan docket will provide an opportunity for Xcel to explain how it is using its Advanced Planning Tool to improve the transparency of its distribution system.

Third, the parties recommended that Xcel plan investments in hosting capacity and other necessary system capacity to allow adequate additions of distributed generation and electric vehicles. Xcel is required to file hosting capacity analyses that indicate the capacity that each feeder in the distribution system has for adding more distributed energy resources. These studies are also supposed to streamline interconnection studies and inform long-term distribution planning. According to the parties, Xcel should use this analysis to identify and plan improvements in the distribution system that are necessary to increase hosting capacity on circuits where it expects increasing deployment of distributed generation—or where adding distributed energy resources would otherwise help the grid.

Fourth, as a part of its Integrated Distribution Plan, Xcel is required to screen its planned distribution projects to determine whether those projects might be avoided or deferred through the use of “non-wires alternatives.” Non-wires alternatives are electric utility system investments and operating practices intended to reduce transmission congestion or distribution system constraints at times of maximum demand in specific grid areas, allowing utilities to defer or avoid installation of traditional “wires and poles” infrastructure.²⁶ Commenters in Xcel's Integrated Distribution Plan and grid modernization dockets have argued that distributed energy resources owned by customers and third parties cannot fairly compete with traditional utility-owned distribution grid infrastructure unless Xcel improves its analysis of non-wires alternatives. Therefore, parties recommended that Xcel solicit proposals for non-wire alternatives before adding more traditional infrastructure to its distribution grid.

²⁵ See *In the Matter of Xcel Energy's Integrated Distribution Plan and Advanced Grid Intelligence and Security Certification Request*, Docket No. E-002/M-19-666.

²⁶ *Id.*, Order Accepting Integrated Distribution Plan, Modifying Reporting Requirements, and Certifying Certain Grid Modernization Projects, at 5 (July 23, 2020)

Fifth, the parties proposed that Xcel develop models that recognize the energy and capacity that aggregated distributed energy resources contribute to its system, especially during periods of peak demand. They argue that, collectively, these resources may be able to provide various bulk power and distribution system services, and virtually respond to dispatch signals. Therefore they argue that in Xcel's next Integrated Distribution Plan, the company should explore programs to coordinate the use of customer-supplied distributed energy resources to defer or avoid more expensive system upgrades.

The Commission finds these concerns to be reasonable, and so will adopt these recommendations—as modified. Specifically, the Commission does not establish deployment targets for distributed generation and electric vehicle additions. Therefore, with respect to the Distributed Solar Parties' first recommendation, the Commission will instead direct Xcel to use a consistent forecast of distributed energy resources in both its resource planning docket and its Integrated Distribution Planning docket. And with respect to the third recommendation, the Commission will direct Xcel to plan investments in hosting capacity and other necessary system capacity to allow distributed generation and electric vehicle additions consistent with the forecast for distributed energy resources. These matters are set forth in the ordering paragraphs.

B. Electrification

Electrification—the demand for electric vehicles, heat pumps, and other things that have traditionally been powered by fossil fuels—will be an important component of future resource plans, both in how Xcel forecasts its load and in the availability of new load flexibility and potential for demand response. Yet Xcel's base case scenario reflects relatively little new electrification.

In response, the Commission will direct Xcel to develop its next resource plan while incorporating forecasts of the extent to which ratepayers adopt new electric technologies for space heating, water heating, and electric vehicles. Xcel must develop and/or improve base case adoption forecasts of the following technologies to include in its overall demand forecast for its next resource plan filing—either through its Integrated Distribution Plan proceedings or through another stakeholder process.

- Adoption of light-, medium-, and heavy-duty electric vehicles.
- Adoption of electric space heating.
- Adoption of electric water heating.
- Electrification of other end uses.
- Increased potential for demand response and load flexibility from an increase in electrification of the four technologies listed above.
- Adoption of distributed solar generators, including customer-sited generators, community solar gardens organized under Minn. Stat. § 216B.1641, and generators that are neither sited by customers nor part of a community solar garden.

C. Advanced Technologies

Resource planning models help a utility evaluate a variety of choices available to find an optimal choice from among the options. But resource planning is only as good as the choices presented to the model. To ensure that Xcel's planning continues to incorporate all options available, the Commission will direct Xcel to analyze advanced technologies for potential adoption.

To this end, the Commission will accept Xcel's offer to report within 60 days on the work the company is doing to support the integration of advanced technologies (including hydrogen fuel and utility-scale energy storage) into its system.

But in addition, and before Xcel's next resource plan, the company must conduct a deeper analysis of storage options—including an evaluation of solar-powered generators coupled with batteries, and the potential role of hydrogen and other clean fuel alternatives in the context of Xcel's portfolio of generators. In preparing this analysis, Xcel must work with stakeholders on a method to fairly compare generation and storage options under consideration. This comparison must consider, among other things, the consequences for the climate resulting from the choice among various generation and storage options, throughout the option's supply chain and life cycle. This analysis will help the Commission in assessing each option's "adverse socioeconomic effects and adverse effects upon the environment..."²⁷

D. Advanced Rate Design

CUB noted that Xcel is currently exploring various changes to its tariffs—new rate designs, demand response programs, and other efforts—to shift the timing of customer demand away from periods of maximum demand. But CUB reasoned that these policies will likely reduce Xcel's operating costs, and asked that Xcel account for the anticipated effects of these policies in its next resource plan. The CEOs and Minneapolis also supported this proposal.

Finding the proposal reasonable, the Commission will adopt it.

E. Blackstart Capabilities

Throughout these proceedings, Xcel had asked the Commission to authorize Xcel to take various measures related to ensuring that Xcel maintains the ability to restore the transmission grid in the event of a blackout—and this includes having generators that can function without drawing power from the grid. Ultimately, however, Xcel joined the Carpenters, the CEOs, CUB, the Department, the Distributed Solar Parties, LIUNA, Minneapolis, the Sierra Club, and the UIOE in recommending that the Commission review Xcel's future blackstart needs in a planning meeting or set of planning meetings.

Finding this proposal reasonable, the Commission will adopt it.

²⁷ Minn. Rule 7843.0500, subp. 3.C.

F. Modeling of Distributed Solar-Powered Generators

Parties disagree about how to evaluate distributed solar-powered generators, including community solar gardens, in computer models.

The Distributed Solar Parties and Sierra Club recommended evaluating bundles of distributed solar-powered generators on the same basis that Xcel models demand-management strategies such as electric efficiency and demand response. Xcel argued that this strategy would not fully account for the cost of distributed solar-powered generators to its customers. In the interest of simplicity, Xcel argued, it evaluates distributed solar-powered generators as a supply-side resource with assumed adoption levels.

This matter cannot be resolved based on the current record. Accordingly, the Commission will direct Xcel to develop a modeling construct for its next resource plan that treats economic solar generators that interconnect with the company's distribution grid as resource additions. In developing this modeling construct, Xcel and stakeholders should address the following factors:

- The option of using a “bundled” approach, similar to how Xcel models energy efficiency and demand response.
- The costs that are borne by the utility, and the costs that are borne by the customer.
- A test of cost-effectiveness.
- Other topics identified by stakeholders.

Finally, the Commission will direct Xcel prospectively (including in the company's next resource plan) to use improved methodologies for modeling load flexibility and demand response.

G. Clean Energy Goals of Local Units of Government

Minneapolis and the Suburban Rate Authority argued that Xcel had missed opportunities to add more renewable sources of generation because the company failed to incorporate the clean energy goals of local units of government into the company's models.

Given these concerns, the Commission will direct Xcel to account for the aggregate clean energy goals of local units of government in the forecasting and modeling for its next resource plan. In particular, Xcel's calculation of needed distributed generation should include consideration of the generation goals of local communities.

H. Criteria for Filing Alternative Plans

Many parties commented on the practical challenges posed by the length of this proceeding and the volume of the record. As a partial remedy, Xcel suggested establishing minimum requirements for anyone proposing to offer an alternative resource plan.

Xcel proposed reducing the number of alternative plans to be analyzed by barring proposals that fail to reflect certain baseline information. The CEOs, Community Power, CUB, Distributed Solar Parties, Minneapolis, and the Sierra Club opposed making any changes to the Commission’s current policies.

The Commission notes that it already has standards for filing an alternative resource plan:

Proposed alternative resource plans. Parties and other interested persons may express support for the proposed resource plan filed by a utility. Alternatively, parties and other interested persons may file proposed resource plans different from the plan proposed by the utility. When a plan differs from that submitted by the utility, the plan must be accompanied by a narrative and quantitative discussion of why the proposed changes would be in the public interest, considering the factors listed in part 7843.0500, subpart 3.²⁸

Because the Commission finds no fault with this rule, it will decline Xcel’s proposal.

I. Rate and Bill Impacts

The Center for the American Experiment and XLI argued that the analysis of Xcel and other stakeholders failed to give adequate attention to the regulatory goal of “keep[ing] the customers’ bills and the utility’s rates as low as practicable...”²⁹ Moreover, these parties noted that the state has adopted a policy seeking to set retail electricity rates for each customer class at least five percent below the national average.³⁰ To this end, these parties recommended that in its next resource plan, Xcel analyze the of rate and bill impacts for each customer class.

Xcel stated that its resource plan analysis already incorporates rate and bill impacts, and that the company intends to provide this type of analysis with its next plan as well.

As no party opposes the proposal that Xcel provide an analysis of rate and bill impacts in its next resource plan, the Commission will adopt this proposal. However, the Commission notes that Xcel offers electric service to various specialized customer classes. To avoid needless complexity, Xcel’s obligation to provide rate and bill impacts will be limited to the impacts on the residential, commercial, and industrial classes.

J. Date for Next Resource Plan

Finally, the Commission will direct Xcel to file its next resource plan by February 1, 2024.

IX. Managing Socioeconomic Consequences Arising from Resource Choices

While computer models can suggest optimal strategies for selecting when to retire or refurbish a generator, the Commission must also consider whether a resource plan “minimize[s] adverse

²⁸ Minn. R. 7843.0300, subp. 11.

²⁹ Minn. R. 7843.0500, subp. 3(B).

³⁰ Minn. Stat. § 216C.05, subd. 2(4).

socioeconomic effects....”³¹ To prepare for these challenges, Xcel joined with the Center for Energy and Environment (CEE),³² the Coalition of Utility Cities, the Prairie Island Indian Community, and others in a Host Community Impact Study, designed to explore the financial and social consequences that large power plants have on host communities.³³ Parties recommended various policies for managing and mitigating these effects.

A. Sherco

Various parties and commenters raised valid concerns about how the retirement of Sherco would affect nearby communities. For example, the Coalition of Utility Cities recommended that by December 31, 2023, Xcel file with the Commission and the city of Becker a detailed plan describing the company’s plans for the disposition of the Sherco site, equipment, and buffer property. They recommended that the report include at least the following items:

- A detailed description and timeline of any demolition, environmental clean-up, or similar work that will be required by the impending retirement of Sherco Unit 2.
- To the extent possible, a description of the company’s plans and a detailed timeline to decommission and demolish electric generating equipment related to Sherco Units 1 and 3.
- A detailed description of the timeline and steps necessary to remediate pollution at the Sherco site.
- A section detailing how the company is working to ensure that plans for site remediation, economic development, or future development and maintenance of power generation, transmission, or distribution infrastructure are consistent with the community’s long-range planning and vision.
- A description of any ongoing efforts by the company to evaluate future uses for the plant site, any buffer property owned by the company, or any adjacent property, including a description of how the company is involving Becker in those efforts.
- An update to the Commission on the status of efforts to support Becker’s economic development efforts—including, to the extent possible, specific projects and investments the company is assisting Becker to attract.
- A description of Xcel’s efforts to work with local governments and other stakeholders—before Xcel initiates any additional proceedings to determine the final length and route of the gen-tie line extending from the Sherco site—to assess and account for local land use and planning impacts of the proposed gen-tie line (assuming the Commission authorizes such a line).

³¹ Minn. R. 7843.0500, subp. 3.

³² The not-for-profit CEE helps residents, businesses, and communities manage changes in their energy practices to promote a healthier environment.

³³ See Xcel Supplemental Plan, Appendix E (June 30, 2020), and the CEE reports cited therein.

- Any other items the Commission or the company sees fit to include.³⁴

The Commission finds these proposals reasonable and will adopt them—and expand them as follows.

First, the Commission concurs that Xcel should provide a description of the timeline and steps necessary to remediate pollution at the Sherco site. But in addition, Xcel should provide estimates of the costs involved.

Second, the Commission concurs that Xcel should describe ongoing efforts to evaluate future uses for the plant site, any buffer property owned by the company, or adjacent property, and should describe how Xcel is involving Becker in those efforts. But in addition, Xcel should involve any interested stakeholder in these efforts.

Third, the Commission concurs that Xcel should report on the status of efforts to support Becker's economic development efforts, including projects and investments Xcel is helping Becker to attract. But Xcel's economic development should not be focused exclusively on Becker; it should also address regional needs for economic development.

Fourth, the Commission concurs that, before Xcel starts a new process for building the Sherco gen-tie line, Xcel should describe its efforts to work with local governments and stakeholders to address any anticipated land use and planning challenges. Specifically, the Commission will order Xcel to consult with stakeholders to discuss these plans.

Fifth, if the information necessary to complete any of these items is not available to Xcel at the time of each filing, the company should detail the timeline on which it anticipates it will be able to provide Becker and stakeholders with additional information.

Sixth, Xcel must file an update annually (other than during years when Xcel files a resource plan) providing any new information on each of these items listed above for the Sherco site.

Finally, the Commission will authorize its Executive Secretary to open a new docket regarding the remediation of the site. As part of this docket, Xcel must convene meetings on the subject with interested parties and local units of government. The interested parties must include at least CEE, the CEOs, the Department, DNR, labor unions, the Minnesota Pollution Control Agency (PCA), and Minnesota's Energy Transition Office within the Department of Employment and Economic Development (DEED).³⁵ The local units of government must include at least the cities of Becker and Monticello, Becker Township, adjacent cities and townships, and Sherburne and Wright counties. By January 1, 2023, Xcel must file a report describing the state of its plans for remediating the Sherco site, and details of its stakeholder outreach and meetings.

³⁴ Coalition of Utility Cities comments, at 1–2 (February 1, 2022).

³⁵ Minn. Stat. §116J.5491.

B. King

As with Sherco, various parties expressed concern over the socioeconomic consequences of closing King in the city of Oak Park Heights in Washington County. While many of the concerns are analogous, parties raised additional concerns about the King site because it sits next to the St. Croix, a national scenic riverway.

The Coalition of Utility Cities recommended that by December 31, 2025 (or in Xcel's next resource plan if earlier), Xcel file with the Commission and Oak Park Heights a detailed report describing the company's plans for the disposition of the King site, equipment, and buffer property. They recommended including the following information in the report:

- The company's plans and a detailed timeline to decommission and demolish the electric generation facility.
- A detailed description of the timeline and steps necessary to remediate pollution at the site of the electric generating plant.
- A description of any ongoing efforts by the company to evaluate future uses for the plant site, any buffer property owned by the company, or any adjacent property, including a description of coordination with or involvement of Oak Park Heights in those efforts.
- The status of efforts to support Oak Park Height's economic development efforts—including, to the extent possible, specific projects and investments the company is helping Oak Park Heights to attract.
- Any other items the Commission or the company see fit to include.³⁶

Again the Commission finds the proposals of the Coalition of Utility Cities to be reasonable and will adopt them—and expand them in the same manner as it expanded the recommendations regarding the Sherco site. In addition, the Commission will direct Xcel to provide reports on conservation efforts reflecting the uniqueness of the site and surrounding property located in and along the St. Croix National Scenic Riverway.

As with Sherco, the Commission will authorize its Executive Secretary to open a new docket regarding the remediation of the site. As part of this docket, Xcel must convene quarterly meetings on the subject with interested parties and local units of government. The interested parties must include at least CEE, the CEOs, the Department, DNR, the Energy Transition Office, labor unions, the National Park Service, PCA, and the Wild Rivers Conservancy.³⁷ The local units of government must include at least the city of Oak Park Heights and Washington

³⁶ Coalition of Utility Cities comments, at 2 (February 1, 2022).

³⁷ The Wild Rivers Conservancy of the St. Croix and Namekagon describes itself as the official nonprofit partner of the St. Croix National Scenic Riverway (a unit of the National Park Service) working to conserve land, protect water quality, promote stewardship of the river corridor and watershed, and celebrate the river as a national treasure.

County. By January 1, 2023, and annually thereafter, Xcel must file a report describing its stakeholder outreach, the efficient demolition of the King plant, and the remediation of the site and affected lands.

C. Monticello and Prairie Island

Xcel proposes to seek to extend the operating life of Monticello. Xcel has proposed no changes to the operation of the two generating units of Prairie Island in Red Wing, Minnesota, which are licensed to continue operating through 2033 and 2034, respectively. Xcel emphasized that nuclear power provides firm dispatchable energy and capacity without emitting carbon dioxide or other greenhouse gases.

Parties such as CUB, Red Wing, and XLI argued that the record—and Xcel’s own analyses—provided a sufficient basis to begin pursuing an extended license for Prairie Island.

In contrast, Minneapolis asked the Commission to require Xcel to work closely with the Prairie Island Indian Community, a sovereign nation, in planning for whether to renew the operating licenses for Prairie Island. And Community Power and Red Wing asked the Commission to require Xcel to begin stakeholder discussions about the future of Prairie Island and address the matter in its next resource plan.

While Xcel did not propose a license extension in this resource plan, the Prairie Island Indian Community expressed concern about the risks associated with the plant’s continued operations and the indefinite storage of spent nuclear fuel. The Community recommended that the company provide data and analysis sufficient to provide insight into any technical issues or concerns related to subsequent renewals. In particular, the Community recommended that Xcel provide information in its next resource plan about the following topics:

- Planned investments at Prairie Island.
- Issues related to continuing to operate the aging plant.
- Expectations regarding the future workforce for nuclear plants such as Prairie Island.
- Cyber-security issues or concerns as plants move from analog to digital systems.
- A comprehensive cost/benefit analysis, which includes potential environmental and economic consequences for the Prairie Island Indian Community and its Treasure Island Resort & Casino (Treasure Island) located along the Mississippi River.
- Plans to manage the additional spent nuclear fuel generated over the next 10 or 20 years.
- How fuel stored on site will be removed.
- Additional state permits, Certificates of Need, or federal licenses that will be required.

In response, Xcel generally argued that it is premature to address questions about Prairie Island. According to the company, there will be sufficient time to analyze the matter in a future resource

plan, and after Xcel has had sufficient opportunity to broach the subject with the Prairie Island Indian Community and Red Wing.

As a matter of resource planning, the Commission finds that Xcel is justified in deferring long-term decisions about the future of the Prairie Island plant. But the Commission is concerned that the resulting uncertainty imposes a hardship on people who must make plans contingent on the future of that plant. Community Power, Minneapolis, Red Wing, and the Prairie Island Indian Community each offer reasonable means for addressing this uncertainty, so the Commission will approve their proposals—and will expand on the list of topics Xcel should address in its next resource plan.

First, in addition to reporting on planned investments in Prairie Island, Xcel should also report on planned investments in Monticello.

Second, in addition to conducting a cost/benefit analysis that incorporates consideration of potential environmental and economic consequences for the Prairie Island Indian Community and Treasure Island, Xcel should also address the potential consequences for the neighboring communities.

Finally, while Xcel praises nuclear power as a reliable source of energy and capacity that emits few greenhouse gases, the Commission notes that necessary aspects of the operation—extracting uranium, for example—do have consequences for the climate. As part of Xcel’s comprehensive cost/benefit analysis, therefore, the Commission will direct Xcel to analyze how the full supply chain and life-cycle consequences of ongoing generation and storage at each of the facilities affect climate change.

D. Workers

In recommending the retirement of many of its legacy generators—especially King and Sherco—Xcel proposed taking various measures to mitigate the resulting hardships to its workforce. These measures include providing help with resume writing and interviewing, job training, and job shadowing.

In comments filed on March 17, 2020, and March 21, 2021, IBEW asked Xcel to take more extensive measures. For example, IBEW recommended that Xcel provide fully funded apprenticeship and training programs, relocation assistance, retention bonuses for employees staying through coal plant closures, early retirement options, in-house decommissioning work, flexible retraining options, creation and funding for local transition centers, support for union labor to build and operate new generators, and creation of a labor/management task force.

The Commission finds that IBEW’s proposals warrant further exploration. The benefits of transitioning to a newer, less polluting electrical grid should not come at the expense of those who have labored to provide our electrical system to date. The Legislature recognized these challenges in establishing Minnesota’s Energy Transition Office and providing for an energy transition plan.³⁸

³⁸ Minn. Stat. § 116J.5493.

Accordingly, the Commission will open a new docket focused on the workers at retiring generating facilities in Minnesota, including King and Sherco. As part of this docket, the Commission will direct Xcel to work with IBEW, CEE, DEED and the Energy Transition Office, and Minnesota Building Trades, to develop a comprehensive plan for supporting transitioning workers. The plan should consider the measures outlined in the IBEW’s comments dated March 17, 2020, and March 21, 2021, including skills inventories, training and education, worker placement, and potential early retirement buy-out scenarios. By December 31, 2022, Xcel should file the plan with an estimated budget of each measure, timeline for implementation, and a description of additional funding needed by DEED or the Energy Transition Office, if applicable, to implement the plan.

To aid Commission oversight, Xcel should provide detailed reports on its efforts to implement the plan in coordination with CEE, DEED, the Energy Transition Office, and IBEW. Xcel should file these reports beginning December 31, 2023, and annually thereafter.

X. Equity

A. Positions of the Parties and Commenters

Xcel acknowledged that resource planning provides an appropriate forum for addressing issues of equity. Specifically regarding employment diversity, Xcel reported that “[a]t the end of 2019, Xcel Energy’s female representation was 23 percent of the workforce and minority representation was 15.4 percent of the workforce... Xcel’s female representation of leaders was 20.7 percent and minority representation of leaders was 9.8 percent.”³⁹ The company also states that it “aims to increase these numbers” in its workforce diversity, and “is looking at all of our talent processes ... to ensure no bias exists” in promotions.⁴⁰

Various parties and commenters asked Xcel to give greater focus to ensuring equitable treatment of all people, regardless of race, gender, or class. For example, Minneapolis asked the Commission to direct Xcel to do the following:

- Design for the equitable delivery of electricity services and programs for energy-burdened customers in this resource plan.
- Create new options to improve customer access to energy efficiency and renewable energy.
- Submit a plan to bring its workforce’s racial and gender diversity in line with the population it serves and with the utility’s stated goals.

The Distributed Solar Parties recommended that Xcel design incentives to ensure that distributed generation programs provide equitable access to low-income households, and communities of Black, Indigenous, and People of Color that have disproportionately borne costs of unjust and inequitable energy decisions.

³⁹ Xcel Supplement Plan, Attachment C, at 2–3.

⁴⁰ *Id.*

The Energy Efficiency for All Partners echoed many of these concerns and, joined by the Distributed Solar Parties, recommended the following:

- Practices in furtherance of procedural justice—including deeper engagement with renters; affordable rental property owners; communities of Black people, Indigenous people, and People of Color; and under-resourced individuals—providing resources for engagement and participation, and providing financial support for affected individuals to participate in dockets and decision-making processes.
- The formation of an environmental justice accountability board, which would develop environmental justice-focused initiatives to be incorporated throughout the utility.

B. Commission Action

The Commission concurs that resource plans provide appropriate context for addressing equity issues, and appreciates Xcel’s efforts so far. The goal of providing safe, reliable, and reasonable service entails providing it to customers throughout a utility’s service area, and throughout its operations. To achieve these ends, it is reasonable to focus on disadvantaged populations—populations that may have not received appropriate attention in the past.

The Commission appreciates Xcel’s past and current efforts promoting equity. To build on those efforts, the Commission will direct Xcel to solicit input from members of these historically disadvantaged populations. Accordingly, the Commission will direct Xcel to engage in community outreach and establish a stakeholder group as set forth in the ordering paragraphs.

To ensure appropriate oversight of Xcel’s equity efforts, the Commission will direct the company to report each year on its progress in implementing these measures. Starting on January 1, 2023, Xcel must file reports in both its next resource plan and in a new docket to be established to address equity issues.

The Commission will so order.

ORDER

1. Because the record of this proceeding demonstrates that the combined cycle generator proposed for Sherburne County would not be a prudent resource choice, the Commission prohibits Northern States Power Company d/b/a Xcel Energy from recovering the cost of such a plant from Minnesota ratepayers.
2. Regarding Xcel’s 2020–2034 Upper Midwest Integrated Resource Plan, the Commission finds as follows:
 - A. Xcel’s Alternate Plan as filed on June 25, 2021, is approved for planning purposes, and the following elements are specifically approved:
 - 1) Each year through 2034, Xcel shall save at least 780 gigawatt-hours via energy efficiency.

- 2) Xcel shall continue to acquire 400 megawatts of incremental demand response by 2023 as ordered in the company's last resource plan.
- 3) In 2025 and 2026, Xcel shall repower resources needed for blackstart services.
- 4) Xcel shall retire the Allen S. King Generating Station in 2028, and Sherburne County Generating Station Unit 3 in 2030.
- 5) By 2026 Xcel shall acquire –
 - A) Approximately 720 megawatts of company-owned solar-powered generators to fully reutilize the interconnection capacity to be made available following the retirement of the Sherco Unit 2—460 MW of which could come from the proposed Sherco Solar project if approved by the Commission—and
 - B) An additional 600 MW of solar resources unconstrained by interconnection location or ownership.
- 6) Xcel shall begin Certificate of Need and route permit proceedings for transmission lines with a capacity of 345 kilovolts extending from the locations of the retiring King and Sherco generators designed to permit new energy resources to connect to the transmission grid of the Midcontinent Independent System Operator, Inc.
- 7) For each gen-tie line for which Xcel obtains the necessary Certificate of Need and route permit, Xcel may own the line and the renewable resources that connect to the line, up to the company's current interconnection rights for that location. Approvals for company ownership of resources interconnecting to the gen-tie lines identified in this order are conditioned on the outcome of the Certificate of Need and route permit decisions for the Sherco and King gen-tie lines.
- 8) Xcel has demonstrated that, between 2027 and 2032, it will need approximately 600 MW more solar-powered generation and 2,150 MW more wind-powered generation, or an equivalent amount of energy and capacity from a combination of wind, solar and/or storage.
- 9) Xcel has demonstrated that, between 2028 and 2030, it will need approximately 600 MW of company-owned solar and/or storage resources to maximize the use of the King gen-tie line and fully reuse the King interconnection.
- 10) Any acquisition proceeding for surplus generation on the King and Sherco gen-tie lines, beyond the amount required to fully reuse the Sherco and King interconnections, must be open to either company-owned or non-company-owned resources.

- 11) Xcel may pursue extending the operating life of the Monticello Nuclear Generating Plant by ten years.
 - B. The foregoing findings notwithstanding, the Commission makes no finding specifically approving combustion turbines in Fargo or Lyon County.
 - C. Xcel shall proceed assuming that cost recovery will be based on traditional jurisdictional allocators for the resources listed in this paragraph.
3. In addition to the resources discussed in Ordering Paragraph 2, the Commission finds that it is more likely than not that there will be a need for approximately, but not more than, 800 MW of generic firm dispatchable resources between 2027 and 2029. In a future resource plan, Certificate of Need application, or applicable resource acquisition proceeding, Xcel shall include an evaluation of renewable resources and storage that can deliver the identified necessary grid attributes to meet the need for approximately, but not more than, 800 MW of generic firm dispatchable resources between 2027 and 2029.
 - A. For purposes of Ordering Paragraph 3, “firm dispatchable” means a resource or combination of resources that is able to provide capacity and energy.
 - B. Other characteristics for a firm dispatchable resource that may be considered include—
 - 1) energy availability to meet load for extended durations of energy in the context of the system as a whole,
 - 2) the value from production capabilities during potential system restoration events of unknown duration,
 - 3) environmental impacts,
 - 4) costs, and
 - 5) the ability to foster integration of renewable resources.
 - C. Xcel shall analyze this likely need based on up-to-date system-wide modeling, including corrected modeling of wind fleet variability and of exchanges with MISO, in order to —
 - 1) establish the capacity, energy, resource adequacy, energy availability, ancillary service, and reliability needs, and
 - 2) quantify and compare the contribution of the electric system attributes from the different resource options considered to meet the identified grid needs.
 4. Within 30 days, Xcel shall file a thorough description of the request-for-information process it plans to conduct before seeking its Certificates of Need for the Sherco and King gen-tie lines. The filing shall discuss the use of an independent expert to analyze the credibility of the proposals and their potential cost ranges.

5. Xcel shall consider opportunities to deploy renewable resources, storage technologies, and resources powered by hydrogen or clean fuel alternatives on a schedule faster than in its Alternate Plan. If deployment would be cost-effective, maintain reliability, and aid in achieving compliance with decarbonization policies, Xcel shall pursue them.
6. Regarding resource acquisition:
 - A. Xcel shall use the No-Bid/Track 1 and Xcel-Bid Auditor/Modified Track 2 bidding processes for the solar, wind, and storage resources approved in Ordering Paragraph 2, and use the Xcel-Bid Contested Case/Track 2 contested case bidding process for the firm dispatchable resources as identified in Ordering Paragraph 3 and subject to its requirements.
 - B. Documents issued by Xcel making a request for proposals for peaking resources must be technology neutral.
 - C. Xcel shall use the Commission-approved No-Bid/Track 1 process and Xcel-Bid Auditor/Modified Track 2 process whenever Xcel intends to acquire at least 100 MW of solar, wind, or storage capacity for more than five years.
 - D. When Xcel exercises its Right of First Offer provision to acquire a resource, Xcel shall not recover capital costs exceeding the resource's net book value.
7. Before Xcel prepares a request for proposals using the Xcel-Bid Auditor/Modified Track 2 process to acquire new solar- or wind-powered generators, or new energy storage, Xcel shall file a document detailing its planned competitive bidding process—including, at minimum, the following components:
 - A. A list of independent auditors Xcel considered to oversee the bidding process, and Xcel's rationale for the chosen auditor.
 - B. The criteria that Xcel will use to evaluate proposals, including but not limited to consideration of socioeconomic impacts.
 - C. The planned text of the request for proposals.
 - D. The planned timeline for the issuance of the request for proposals; the allowed response time; the date upon which Xcel will submit its self-build proposal (if applicable); and the approximate timeline for Xcel to submit its report to the Commission detailing the bid results, including the independent auditor's evaluation of the bid process.
 - E. Confirmation that the request for proposals will be published publicly and open to any interested developer.

- F. Confirmation that bids for power purchase agreements will be permitted unless –
 - 1) the request for proposals is being issued exclusively for a need the Commission has stated may be limited to company-owned resources, and/or
 - 2) the resources are being procured consistent with applicable requirements of the Federal Energy Regulatory Commission or MISO.
 - G. A contingency plan in the event of an unsuccessful bidding process.
8. For future petitions seeking new sources of solar-generated electricity, Xcel shall provide updated capacity expansion modeling that forecasts the consequences for rates. For solar acquisition petitions that include more than one project, Xcel shall analyze projects on an individual basis and as a total portfolio.
9. Xcel shall take steps to better align distribution and resource planning, including:
- A. Set the forecasts for distributed energy resources consistently in its resource plan and its Integrated Distribution Plan.
 - B. Conduct advanced forecasting to better project the levels of distributed energy resource deployment at a feeder level, using Xcel’s advanced planning tool.
 - C. Proactively plan investments in hosting capacity and other necessary system capacity to allow distributed generation and electric vehicle additions consistent with the forecast for distributed energy resources.
 - D. Improve non-wires alternatives analysis, including market solicitations for deferral opportunities to make sure Xcel can take advantage of distributed energy resources to address discrete distribution system costs.
 - E. Plan for aggregated distributed energy resources to provide system value including energy/capacity during peak hours.
10. In its next resource plan Xcel shall, either through its Integrated Distribution System Plan proceedings or through another stakeholder process, develop and/or improve its forecasts of the adoption rate for the following technologies, to be used in Xcel’s base case scenario and its overall demand forecast.
- A. Adoption of light-, medium-, and heavy-duty electric vehicles.
 - B. Adoption of electric space heating.
 - C. Adoption of electric water heating.

- D. Electrification of other end uses.
 - E. Increased potential for demand response and load flexibility from an increase in electrification of the technologies in A–D.
 - F. Adoption of distributed solar-powered generators—including generators sited by customers, community solar gardens organized under Minn. Stat. § 216B.1641, and generators that are neither sited by customers nor related to community solar gardens.
11. Within 60 days, Xcel shall file a report discussing the work it is doing to support the integration of advanced technologies (including but not limited to hydrogen fuel and utility-scale energy storage) into its system.
 12. Xcel shall include in its next resource plan a deeper analysis of (1) storage options, including options combining solar generation and battery storage, and (2) the role of hydrogen and clean fuel alternatives in Xcel’s resource mix. In preparation, Xcel shall work with stakeholders to develop a fair basis for comparing the full supply-chain and life-cycle carbon impacts of the generation and storage resource options under consideration to help the Commission evaluate the “adverse socioeconomic effects and adverse effects upon the environment” of each option, pursuant to Minn. R. 7843.0500, subp. 3.C.
 13. In its next resource plan, Xcel shall account for anticipated effects of advanced rate design, demand response, and any other efforts to shift customer demand.
 14. The Commission will review Xcel’s future blackstart needs in a future planning meeting or set of planning meetings.
 15. Xcel shall work with stakeholders to develop a modeling construct that enables Xcel, as part of its next resource plan, to model solar-powered generators connected to the company’s distribution grid as a resource. Xcel and stakeholders shall address the following factors in developing the modeling construct:
 - A. Using a “bundled” approach as is used to model energy efficiency and demand response.
 - B. The costs borne by the utility and the costs borne by the customer.
 - C. Cost effectiveness tests.
 - D. Other topics as identified by stakeholders.

Xcel shall include improved load flexibility and demand response modeling methodologies prospectively, including in its next resource plan.

16. In its next resource plan, Xcel shall account for local clean energy goals, in aggregate, in forecasting and modeling. In particular, the plan should include consideration of local community generation goals for distributed generation.
17. The Commission declines to adopt additional criteria for parties proposing to offer resource plans that differ from Xcel's plan.
18. In its next resource plan filing, Xcel shall include an analysis of rate and bill impacts for the residential, commercial, and industrial classes.
19. Xcel shall submit its next resource plan by February 1, 2024.
20. Regarding remediation plans for the Sherco site:
 - A. The Commission authorizes the Executive Secretary to open a new docket on this topic.
 - B. Xcel shall conduct stakeholder meetings regarding the site with interested parties including the city of Becker; adjacent cities and townships including Becker Township and the city of Monticello; Sherburne and Wright counties; the Minnesota Department of Commerce, the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, the Center for Energy and Environment, the Clean Energy Organizations, the Minnesota Energy Transition Office,⁴¹ and labor unions. By January 1, 2023, Xcel shall file in the new docket details describing updates on the site and the stakeholder outreach and meetings.
 - C. Following these stakeholder meetings, by December 31, 2023, or in its next resource plan if earlier—and annually thereafter—Xcel shall submit to the Commission and to the city of Becker a detailed report describing the company's plans for the disposition of the Sherco site, equipment, and buffer property. The report shall include at least the following items:
 - 1) A detailed description and timeline of any demolition, environmental clean-up, or similar work that will be required by the impending retirement of Sherco Unit 2.
 - 2) To the extent possible, a description of the company's plans and a detailed timeline to decommission and demolish electric generating equipment related to Sherco Units 1 and 3.
 - 3) A detailed description of the timeline, estimated costs, and steps necessary to remediate pollution at the Sherco site.

⁴¹ Minn. Stat. § 116J.5491.

- 4) A section detailing how the company is working to ensure that plans for site remediation, economic development, or future development and maintenance of power generation, transmission, or distribution infrastructure are consistent with the community's long-range planning and vision.
- 5) A description of any ongoing efforts by the company to evaluate future uses for the plant site, any buffer property owned by the company, or any adjacent property, including a description of how the company is involving interested stakeholders in those efforts.
- 6) An update to the Commission on the status of efforts to support the city's and region's economic development efforts, including—to the extent possible—specific projects and investments the company is assisting the city and region in attracting.
- 7) A description of the company's efforts to work with local governments and other stakeholders to assess and account for local land use and planning impacts. Before starting any additional regulatory process to determine the final length and route of the Sherco gen-tie line, Xcel shall consult with stakeholders to discuss the plans.
- 8) Any other items the Commission or the company sees fit to include.

If Xcel cannot obtain the necessary information at the time of each filing, the company shall submit a detailed timeline on which it anticipates it will be able to provide the city and stakeholders with additional information.

21. Regarding remediation plans for the King site:

- A. The Commission authorizes its Executive Secretary to open a new docket on this topic.
- B. Xcel shall conduct quarterly stakeholder meetings regarding the King site with interested parties including the city of Oak Park Heights, Washington County, the Department, DNR, the Energy Transition Office, PCA, the National Park Service, CEOs, CEE, the Wild Rivers Conservancy, and labor unions. Xcel shall file in the new docket by January 1, 2023, details describing the stakeholder outreach and updates for the efficient demolition of the King plant and remediation of the site and impacted land.
- C. Following these stakeholder meetings, by December 31, 2023, or in its next resource plan if earlier—and annually thereafter—Xcel shall submit to the Commission, the city of Oak Park Heights, and interested stakeholders a detailed report describing the company's plans for the disposition of the King site, equipment, and buffer property. This report should include the following:

- 1) The company's plans, estimated costs, and a detailed timeline to decommission and demolish the electric generation facility.
- 2) A detailed description of the timeline and steps necessary to remediate pollution at the King site.
- 3) A description of any ongoing efforts by the company to evaluate future uses for the plant site, any buffer property owned by the company, or any adjacent property, including a description of coordination with or involvement of the city and stakeholders in those efforts.
- 4) The status of efforts to support the region's and city's economic development efforts, including—to the extent possible—specific projects and investments the company is helping the city to attract.
- 5) An update on conservation efforts to reflect the uniqueness of the site and surrounding property located in and along the St. Croix National Scenic Riverway.
- 6) Any other items the Commission or the company sees fit to include.

If Xcel cannot obtain the necessary information at the time of each filing, the company shall submit a detailed timeline on which it anticipates it will be able to provide the city and stakeholders with additional information.

22. Xcel shall immediately begin stakeholder discussions exploring the future of the Prairie Island Nuclear Generating Plant.

23. In its next resource plan, Xcel shall file a report explaining the following:

- A. Planned investments at the Prairie Island and Monticello, and future plans for Prairie Island.
- B. Any aging management issues that may arise from continued operation.
- C. Expectations regarding future nuclear workforce.
- D. Cyber-security issues or concerns as plants move from analog to digital systems.
- E. True comprehensive cost-benefit analysis, which includes potential environmental and economic impacts to the neighboring communities—in particular, the Prairie Island Indian Community and its Treasure Island Resort & Casino.
- F. Additional spent nuclear fuel generated over a 10- or 20-year period.

- G. How fuel stored on-site will be removed during the next integrated resource plan period.
 - H. Which additional state permits, Certificates of Need, or federal licenses will be required.
 - I. The full supply chain and life-cycle carbon impacts of the ongoing nuclear generation and storage at each of the facilities.
24. The Commission authorizes the Executive Secretary to open a new docket regarding workers at retiring generating facilities in Minnesota, including Sherco and King.
- A. Xcel—working with the Minnesota Department of Employment and Economic Development and the Energy Transition Office; the International Brotherhood of Electrical Workers, Locals 23, 160, and 949; the Minnesota Building Trades; and the Center for Energy and Environment—shall develop a comprehensive plan for supporting transitioning workers. The plan shall consider the measures outlined in the IBEW comments dated March 17, 2020, and March 21, 2021, including skills inventories, training and education, worker placement and potential early retirement buy-out scenarios. Xcel shall file the plan with the Commission no later than December 31, 2022. The plan shall include an estimated budget for each measure, timeline for implementation, and a description of additional funding needed by DEED or the Energy Transition Office, if applicable, to implement the plan.
 - B. Beginning on December 31, 2023, and annually thereafter, Xcel shall file a detailed update on its efforts to implement the plan in coordination with CEE, DEED and the Energy Transition Office, and IBEW.
25. Xcel shall engage in community outreach and establish a stakeholder group to do the following:
- A. Design for the equitable delivery of electricity services and programs for energy-burdened customers in the company's next resource plan.
 - B. Create new options to improve customer access to energy efficiency and renewable energy.
 - C. Draft a plan to be submitted in Xcel's next resource plan to bring the racial and gender diversity of the company's workforce in line with the utility's stated goals.
 - D. Design incentives to ensure that communities of low-income, Black, Indigenous, and People of Color that have disproportionately borne costs of unjust and inequitable energy decisions have equitable access to programs promoting distributed generation.

- E. Adopt practices in furtherance of procedural justice—including deeper engagement with renters; affordable rental property owners; communities of Black, Indigenous, and People of Color; and under-resourced individuals—providing resources for engagement and participation, and providing financial support for impacted individuals to participate in dockets and decision-making processes.
- F. Form an environmental justice accountability board which shall develop environmental justice-focused initiatives to be incorporated throughout the utility.

By January 1, 2023, and annually thereafter, Xcel shall file details describing stakeholder outreach and progress in its next resource planning docket, and in a separate docket to be established by the Executive Secretary.

26. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Will Seuffert
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 or speech impairment may call using their preferred Telecommunications Relay Service or email consumer.puc@state.mn.us for assistance.

APPENDIX A: Commission-Approved Alternative Resource Acquisition Processes for Northern States Power Company d/b/a Xcel Energy (Xcel)⁴²

I. No-Bid/Track 1 Process⁴³

This track provides an independent auditor's report, use of a standard contract as the starting point in every bidding process, and a contingency plan in the event of an unsuccessful bidding process. The main steps of the process for requesting proposals are as follows.

- A. The Commission issues a resource plan order indicating the size, type, and timing of the resources Xcel needs.
- B. The Commission –
 1. Approves a standard contract to be used by independent power producers for the intermediate, peaking, and wind resources;
 2. Requires requests for proposals for the intermediate, peaking, and wind needs identified in the order;
 3. Requires Xcel to use an independent auditor to certify that the company used an unbiased process for obtaining and evaluating responses to the request for proposals;
 4. Sets the timing for Xcel to file its proposal for each separate resource; and
 5. Potentially sets the timing for completion of the resource acquisition process.
- C. A targeted request for proposals for peaking, intermediate, or renewable resources is issued (consistent with any timing specified in the Commission order). The request for proposals includes the standard contract.
- D. Bidders file their proposals with Xcel pursuant to the request for proposals.
- E. Xcel files the contingency plan on the same date that bids are due.
- F. Xcel makes selections and begins negotiations with the selected vendor.
- G. Xcel files the Independent Auditor certification within 20 days of the selections. (Xcel would not file a “selection report” or similar filing but would proceed directly to negotiations.)
- H. Within one year of issuing its request for proposals (or other date specified by the Commission),

⁴² Derived from *In the Matter of the 2020–2034 Upper Midwest Integrated Resource Plan of Northern States Power Company d/b/a Xcel*, Docket No. E-002/RP-19-368, Department comments, at 93-97 (February 11, 2021).

⁴³ Derived from *In the Matter of Northern States Power Company d/b/a Xcel’s Application for Approval of its 2004 Resource Plan*, Docket No. E-002/RP-04-1752, Xcel compliance filing, at 3-5 (August 28, 2006).

1. Xcel files for approval of a proposed power purchase agreement with the selected vendor. The petition for the power purchase agreement must demonstrate that the proposed contract and its cost recovery would be reasonable.
 2. Alternatively, Xcel files a statement of reasons why the negotiations have not been successfully completed. Under the alternative, the Commission could decide whether to have negotiations continue, to have the contingency plan pursued, or consider some other option
- I. If the Commission approves the power purchase agreement, the project would proceed to obtain any remaining permits, but a Certificate of Need would not be required pursuant to Minn. Stat. § 216B.2422, subd. 5.
 - J. Upon receipt of all needed permits, the project proceeds with construction.

Other Details: Consistent with the desire to keep the process moving rapidly, the above process would eliminate pre-filing of the request for proposals with the Commission and interim selection reports that would require comments or otherwise delay the start of negotiation of the power purchase agreement. This would not prevent review of the selections by the Minnesota Department of Commerce (the Department). If the process does not produce a petition for approval of a power purchase agreement following the one-year period, the Commission can determine whether to allow more time, direct the company to move forward with the contingency plan, or seek additional information.

Standard Contract Approval: Xcel submits a standard contract for use in acquiring the peaking generating resource identified in the resource plan order. Because this contract is to be approved prior to use, Xcel provides the standard contract only to the Commission, Department, and Office of Attorney General for approval. The request for proposals includes the approved standard contract and instructs bidders to specify a monetary value with each exception to the standard contract. Additionally, Xcel will instruct bidders to identify exceptions they believe do not have a monetary value.

Independent Auditor Selection: Xcel selects an independent auditor from the list of auditors it maintains for use in the bidding process.

II. Xcel-Bid Contested Case/Track 2 Process⁴⁴

This is a competitive resource acquisition process with the framework of a Certificate of Need-type process in which alternative proposals to Xcel's preferred option are considered. This process applies when Xcel proposes to build its own generating facility and for all baseload resource needs. The main steps of this track are as follows.

- A. The Commission issues a resource plan order identifying the size, type, and timing of the resource needs.
- B. The Commission sets the date to initiate the competitive process.

⁴⁴ *Id.*, at 5-7.

- C. On the date specified by the Commission, Xcel submits its detailed filing for approval of its preferred resource (such as through a Certificate of Need, a filing containing Certificate of Need quality information for an out-of-state resource, a petition for approval of a power purchase agreement for a baseload resource, or combinations of such filings.)
- D. On the same date as Xcel's submission described in Step B, interested competitors (or alternative projects) provide their proposals in similar Certificate of Need-like detail.
- E. A contested case (Certificate of Need-like proceeding) is conducted, returning findings and recommendations to the Commission.
- F. The Commission considers the developed record and issues its decision.
- G. If the Commission selects Xcel's proposal, the Commission order provides the requested (or Commission-modified) approval.
- H. If the Commission selects (or prefers) an option that is not Xcel's proposal, Xcel spends up to four months negotiating a power purchase agreement. Following the four-month negotiation period (or earlier as applicable), Xcel petitions for approval of the power purchase agreement. If the parties are unable to reach agreement, Xcel files an explanation with the Commission and requested instruction (such as switching to an alternative proposal or to the company's original proposal).
- I. For an approved power purchase agreement, the project would proceed to obtain any remaining permits, but a Certificate of Need would not be required pursuant to Minn. Stat. § 216B.2422, subd. 5.
- J. Upon receipt of all needed permits, the project proceeds with construction.

Other Details: The proposal content should be sufficiently detailed so that the Commission can effectively initiate the contested case proceeding and so that no proposal is advantaged or disadvantaged by the level of information provided. For plants to be built in Minnesota, the Certificate of Need rules would apply (except as noted below for alternative proposals). For out-of-state build options, similar quality data should be provided to allow thorough and complete record development. For power purchase agreements, the proposal should include the level of detail provided historically in petitions for approval. Alternative proposals would be granted the following exemptions:

- 7849.0240 subpart 2, part A (socially beneficial uses)
- 7849.0250 subpart B (alternatives to the facility)
- 7849.0250 subpart C (the portion pertaining to alternatives)
- 7849.0270 (peak demand and annual consumption forecasts)
- 7849.0280 (system capacity)
- 7849.0290 (conservation programs)
- 7849.0300 (consequences of delay)

- 7849.0340 (required within 7849.0310, information regarding the alternative of no facility)

Alternative providers would be required to submit a list of supplementary data including the following:

- A. Developer experience and qualifications.
- B. Pricing of the proposal, including but not limited to the following:
 - 1. The term,
 - 2. In-service date,
 - 3. Contract capacity,
 - 4. Capacity payment,
 - 5. Fixed operations and maintenance payment,
 - 6. Variable operations and maintenance payment,
 - 7. Fuel payment, and
 - 8. Tax-related payments and other costs.
- C. Scheduling provisions, including but not limited to –
 - 1. Planned maintenance,
 - 2. Expected minimum load,
 - 3. Ramp rates, and
 - 4. Limitations on operations.
- D. Discussion of the guaranteed performance factors, such as construction costs, unit completion, availability, and efficiency.
- E. Any other key contract terms the provider requires.

III. Xcel-Bid Auditor/Modified Track 2 Process⁴⁵

- A. The Commission issues a resource plan order identifying the size, type, and timing of the resource needs.
- B. Xcel issues its request for proposals.

⁴⁵ Derived from *In the Matter of Xcel's 2016–2030 Integrated Resource Plan*, Docket No. E-002/RP-15-21, Xcel reply comments, at 9-10 (August 12, 2016).

- C. Early in the process (preferably with the filing of the company’s self-build proposal, discussed below) Xcel files a contingency plan to address the potential for the bidding process to fail.⁴⁶
- D. The day before Xcel receives responses to that request for proposals, Xcel submits its self-build project petition. This petition contains an estimate of final costs for the project and other project details necessary to evaluate the proposal in accordance with the identified selection factors.
- E. After receiving bids in response to the request for proposals, Xcel evaluates the bids and select projects for contract negotiation that are in the best interest of its customers. Xcel evaluates the bids using a number of factors, such as –
1. Levelized cost,
 2. Financial capability,
 3. Project schedule,
 4. Project design,
 5. Project risks,
 6. MISO queue position status,
 7. Interconnection and network upgrades,
 8. Energy production profile,
 9. Site control,
 10. Project output delivery plan,
 11. Expected turbine availability,
 12. Pricing options,
 13. Project development milestones,
 14. Exceptions to standard contract terms and conditions, and
 15. Other relevant factors.

Using these criteria, Xcel selects projects that are in the best interest of its customers and negotiates contracts with each of the developers.

- F. Xcel then makes a filing to the Commission that includes the contracts for projects selected from the request for proposals, as well as a comparison between those projects and Xcel’s self-build proposal. The company includes a ranking and bid data for all bids received in response to the request for proposals and an analysis of the factors identified above for all projects for which Xcel conducts due diligence. Additionally, the company provides an independent third-party auditor report of its process for requesting proposals, which reviews the company’s evaluation of proposals and due diligence, as well as the company’s selection of proposals for contract negotiation.

⁴⁶ Derived from *In the Matter of Xcel’s 2016–2030 Integrated Resource Plan*, Docket No. E-002/RP-15-21, Order Approving Plan with Modifications and Establishing Requirements for Future Resource Plan Filings, at 11, Ordering Paragraph 5.c. (January 11, 2017).

CERTIFICATE OF SERVICE

I, Chrishna Beard, 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 APPROVING PLAN WITH MODIFICATIONS AND
ESTABLISHING REQUIREMENTS FOR FUTURE FILINGS**

Docket Number **E-002/RP-19-368**

Dated this 15th day of April, 2022

/s/ Chrishna Beard

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