

**STATE OF MINNESOTA
PUBLIC UTILITIES COMMISSION**

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October 1, 2021

In the Matter of Updating Generic Standards for
Utility Tariffs for Interconnection and Operation of
Distributed Generation Facilities Under Minn. Stat.
§216B.1611

Docket No. E999/CI-16-521

REPLY COMMENTS OF FRESH ENERGY

Fresh Energy submits these *Reply Comments* in response to the Commission's September 1, 2021, *Notice of Extended Comment Period* regarding Minnesota's Distributed Energy Resource Interconnection Process and the changes recommended by Distributed Generation Workgroup (DGWG) subgroups over the past year. We appreciate the thoughtful comments submitted by other parties and respond to several proposals below.

Table of Contents

| | | |
|-------|---|----|
| I. | Additional detail on the current queue situation | 2 |
| II. | Near-term solutions to reduce queue backlog and resolve extreme delays | 4 |
| III. | Medium and long-term solutions | 7 |
| IV. | Xcel's DER technical planning limit proposal is not sufficiently justified and requires commission approval | 7 |
| V. | Xcel's proposed small DER capacity reservation and open DER capacity limit remain unjustified | 10 |
| VI. | A cost-sharing solution for small projects | 10 |
| VII. | Substantive Interconnection Process Changes Must Be Reviewed and Decided by the Commission | 13 |
| VIII. | Recommendations | 14 |

I. Additional detail on the current queue situation

There are numerous issues in front of the Commission in this proceeding, but it is clear from the DGWG subgroup reports and comments submitted by other parties that the issue most urgently in need of addressing is Xcel's DER Interconnection Queue, and the issue of applications being put on hold. Fresh Energy took a deeper look at Xcel's August 2, 2021 queue report (referenced in our initial comments as well) to identify the magnitude of the two main concerns: extremely long queues and holds at Known Capacity Constraints (KCC).

The data show that of 66 substations where at least one application is on hold, half (33) are KCC according to Xcel's current definition.¹ A bit more than half of all applications on hold are in non-KCC areas – 53% of overall applications on hold, and 55% of community solar gardens on hold. Table 1 below shows an overview of the queue situation by substation, comparing the number of applications on hold in various queue lengths in KCC and non-KCC areas.

Table 1: Projects on Hold by Substation (August 2, 2021)

| Projects on Hold by Substation Status | Number of Subs | Percent of Subs | Number of Applications | Percent of Applications |
|--|-----------------------|------------------------|-------------------------------|--------------------------------|
| Not Constrained | 33 | 50% | 167 | 53% |
| 3 or less on hold | 18 | 27% | 22 | 7% |
| 4-7 on hold | 6 | 9% | 31 | 10% |
| 8 and up on hold | 9 | 14% | 114 | 36% |
| Capacity Constraints | 33 | 50% | 149 | 47% |
| 3 or less on hold | 17 | 26% | 33 | 10% |
| 4-7 on hold | 10 | 15% | 52 | 16% |
| 8 and up on hold | 6 | 9% | 64 | 20% |

Additional tables illustrating these statistics for simplified track projects, community solar gardens, and other projects are included in Attachment 1.

Given the relatively even split between KCC and non-KCC areas, we need near-term solutions for both. We can also see from this data that limiting near-term solutions to short queues is not going to move the ball too much – only 7% of projects are in non-constrained, short queues. In fact, 56% of applications on hold are in what Fresh Energy would call long queues – 8 projects or more – and there are only 15 substations in this situation. This underscores the importance of solutions for longer queues, and due to the limited number of long-queue situations, makes implementing these solutions more feasible. For example, the 15 substations in this situation

¹ Substations or feeders where active plus in-queue DER capacity is $\geq 90\%$ of the limiting equipment capacity rating (usually feeder or transformer rating).

would be good candidates for group study given the length of time it would take to study projects serially in these areas.

Queue backlog is clearly not limited to constrained areas, or to very long queues, but those are significant problems impacting a sizable number of applications. Given this situation, we need a multi-pronged approach that can reduce (or ideally, clear) current queue backlogs and prevent this situation from continuing to spiral. Fresh Energy recommends the Commission adopt a set of solutions including near-term improvements for non-constrained areas and some projects in constrained areas, and long-term solutions to resolve questions and identify the best course forward for constrained areas.

Table 2: Summary of Fresh Energy Queue Management Proposals

| Constraint Status | Application Track | Transition Period (Jan-Dec 2022) | Long-Term (Jan 2023 and beyond) |
|---|----------------------------------|--|--|
| Non-Constrained Areas <i>All queue lengths</i> | Simplified and Fast Track | Parallel screening, beginning screens per MN DIP timelines | Parallel screening, beginning screens per MN DIP timelines |
| | Study Track | Semi-parallel study. Trigger point = delivery of ahead application's SIS or final screens | Begin SIS per MN DIP timelines, unless projects apply within 30 days. In which case, semi-parallel study. Potential for group studies to address long queues. |
| Capacity Constrained Areas <i>All queue lengths</i> | Simplified | Semi-parallel screening. Trigger point for screens = delivery of ahead application's SIS or final screens | Semi-parallel screening. Trigger point for screens = delivery of ahead application's SIS or final screens |
| | Fast Track | For projects that do not trigger constraint: Semi-parallel screen or study. For projects that trigger constraint: current one-by-one process until | Mandatory group studies in some circumstances, to be determined by workgroup process and Commission Order |

| | | | |
|--|--------------------|--|---|
| | | group study process is approved | |
| | Study Track | For projects that do not trigger constraint: Semi-parallel screen or study. For projects that trigger constraint: current one-by-one process until group study process is approved | Mandatory group studies in some circumstances, to be determined by workgroup process and Commission Order |

II. Near-term solutions to reduce queue backlog and resolve extreme delays

As other commenters have pointed out, “on hold” status is not defined in or envisioned by MN DIP.² Fresh Energy agrees that Xcel has interpreted the word “serial” in a way that other parties to the development of MN DIP have not, and in a manner that is not required by the MN DIP language. A “serial” process simply means projects must be studied in order of application date, and Fresh Energy strongly believes parallel screens and semi-parallel studies are also “serial” review processes.

Xcel implemented the on-hold process unilaterally in an effort to ease engineering study complexity and workload by ensuring ahead in queue projects and upgrades are defined before commencing the next project’s screen or study.³ Fresh Energy understands the Company’s desire to limit restudies, and that this was a concern discussed during MN DIP development. However, the solution Xcel has implemented is not proportionate to the risk of restudies and has caused extreme delays for hundreds of customers. As discussed in our initial comments, the risk of restudies under the MN DIP process is quite low, at least in non-constrained areas, and developers pay 100% of restudy costs. The broad application of an on-hold process is not a reasonable solution.

A. Implementing a one-year transition period to reduce queue backlog

Fresh Energy recommends that the Commission direct Xcel to immediately begin processing applications more quickly to reduce queue lengths, reduce the duration projects are on hold, and reduce the circumstances where holds are used. The goal of these immediate efforts

² See, Nokomis Energy at 2 and IREC at 6

³ Except for projects up to 40kW in non-constrained areas, which are screened in parallel with ahead in queue projects.

should be to clear most if not all queue backlog, so that Xcel can begin implementing its interconnection process in line with MN DIP timelines. Fresh Energy recommends an initial transition period of one year (January 1 through December 31, 2022), during which special guidelines may apply to Xcel customer interconnection applications and stakeholders work out the details of longer-term solutions.

To track progress toward this goal, Xcel should add to its quarterly compliance filings in this proceeding a discussion of its work to implement the Commission's transition period directions, changes to known capacity constraints, the number of projects on hold in constrained and non-constrained locations, and any other relevant information.

1. Immediate improvements for applications that do not trigger capacity constraint thresholds

For applications that are in areas with no known capacity constraints, and for those that do not trigger capacity constraint thresholds, the Commission should direct Xcel to move to a parallel screening and study process.⁴ Currently, projects up to 40kW are already screened in parallel, unless they trigger a capacity constraint threshold. Xcel should expand this to include all Fast Track projects and adopt a semi-parallel SIS process for all Study Track projects. In Initial Comments, Fresh Energy recommended that Semi-Parallel SIS begin when the ahead-in-queue projects has signed a Facilities Study agreement.

We amend our recommendation to begin the Semi-Parallel SIS when the ahead-in-queue projects has received their SIS. We make this change because the number of projects that withdraw at this stage is very small and the change will accelerate the queue by an additional three weeks per project (by allowing a subsequent SIS to begin during the three-week period allowed for signing a facilities study agreement). Alternatively, the Commission could adopt our original recommendation and require that Semi-Parallel Studies be conducted with a trigger point at the signed facilities study agreement.

We recommend this change be applied to all non-constrained queues, no matter the number of projects in queue. If a queue is not constrained, there is potential thermal capacity for all projects active and queued, and any upgrade costs are expected to be mostly modest or manageable. The same is true for applications in KCC areas that are in queue before the capacity constraint is reached (i.e., that do not trigger the constraint). However, to adequately address longer queues, Fresh Energy believes that the best option long-term may be to transition to a group study process so that more projects can be studied at the same time and therefore receive an answer more quickly.

⁴ By "trigger a capacity constraint threshold," Fresh Energy means an application whose capacity, when added to the capacity of ahead-in queue applications (including active DER), exceeds 90% of the limiting equipment capacity rating.

2. Applications that trigger capacity constraint thresholds

Applications in queue after a capacity constraint has been reached have a greater risk of triggering a sizable upgrade that no one project can afford. For this reason, there is a greater risk of these projects withdrawing, and if Semi-Parallel Study was used, a greater risk of restudies. Due to the homogeneity of CSG project sizes around 1MW, it is likely that costly upgrades that cause withdrawals will cause domino effects, as no other projects in queue are likely to have significantly different finances and be able to absorb a large upgrade. The long-term answer to this challenge is a well-defined group study process that is mandatory in certain circumstances.

Fresh Energy appreciates that Xcel's reply comments expressed support for mandatory group studies "on feeder: (1) that have reached capacity, and (2) where there are at least three projects above 40kW in queue and only distribution system upgrades are anticipated."⁵ We are pleased the Company sees the importance of designing a group study process for capacity constrained areas.

Unfortunately, Fresh Energy does not believe Xcel's currently proposed group study process is workable. The proposed MN DIP language to implement this process, included in Attachment B, states:

1.8.3.3 (Applicable to Xcel Energy only) The Distribution Group Study process may need to have different processes than what would ordinarily be part of the MN DIP process, and therefore will be handled on an individual case basis as designed by the Area EPS Operator, and not subject to MN DIP timelines and processes prior to the signing and funding of the MN DIA.⁶

Xcel proposes to conduct group studies on an ad-hoc basis with no set guidelines or timelines. This is not acceptable interconnection practice, especially not for a policy that will impact at perhaps 294 projects – the number of applications on hold as of August 2021 that would meet Xcel's criteria for a group study. A group study process needs the same rigor that MN DIP includes for System Impact Studies regarding obligations and rights of each party, defined steps in the process, timelines and triggers for moving to next steps, monetary obligations, etc. A lack of rigor, clarity, transparency creates risk for applicants and for Xcel. Fresh Energy proposes a process for developing these details below. During the transition period, and until a group study process has been approved by the Commission and included in MN DIP, the best path for applications that trigger capacity constraint thresholds may be to use the current on-at-a-time ("serial") process.

⁵ Xcel Comments p. 4

⁶ Xcel Comments, Attachment B. Proposed Section 1.9.6 includes the same language in reference to the cluster study process proposed for Transmission and Distribution Studies (TDS).

III. Medium and long-term solutions

As discussed above, we need to establish a group study process to adequately address interconnection queues in constrained areas, and perhaps long queues in non-constrained areas of Xcel's system. Fresh Energy recommends that the Commission require a group study process be developed that responds to each of the process elements listed in the Group Study Subgroup's report as "Key Considerations."⁷ The workgroup should include DGWG members and parties with a business interest in group studies who wish to participate.

Second, Fresh Energy reiterates that stakeholders need clarity on what the technical issues *are* and what the magnitude of necessary upgrades *would be* on known capacity constraints. Our recommendation that the Commission direct Xcel to provide a full technical assessment of the capacity constrained locations is a critical foundation for moving forward productively with solutions for these areas – or for identifying where there are no practical solutions at this time.

To address these issues over the long-term, the Commission should consider alternative methods of the allocating costs of distribution upgrades required for DER interconnection. IREC put forward the possibility of moving toward proactive upgrades that address the equipment needs of all DER types that are forecast to connect during the planning cycle.⁸ A cost allocation method that balances the benefits to DER customers and other customers could accompany a proactive upgrade portfolio. Dakota Electric also put forward a potential alternative cost allocation framework which would capitalize distribution upgrades and recover the costs over time through monthly rates – the method utilities use to pay for distribution upgrades for new homes or businesses.⁹ Fresh Energy appreciates the discussion of these alternatives and agrees both ideas could help to resolve a number of interconnection challenges. We are interested in discussing these ideas further and plan to address the issue in utilities' upcoming Integrated Distribution Plans (IDPs).

IV. Xcel's DER technical planning limit proposal is not sufficiently justified and requires commission approval

Fresh Energy appreciates that Xcel has modified its DER technical planning limit proposal in response to stakeholder feedback and now proposed to include daytime minimum load (DML) in the planning limit.¹⁰ However, there still is not a clear reason for implementing this limit and Xcel's plan to implement the policy unilaterally on October 1 is unreasonable. Fresh

⁷ The main categories of group study elements are: group formation, how the study is conducted, group retention strategies, cost allocation, and a transition period. See the full list of criteria in the Group Study Subgroup Report, filed July 16, 2021, Docket E999/CI-16-521 ([link](#)).

⁸ IREC comments, p. 22-23

⁹ Dakota Electric Comments, p. 16

¹⁰ Xcel Comments, p. 5

Energy, along with IREC and MnSEIA submitted a letter to this docket on September 28, 2021 noting our objection to the Company implementing this substantial policy change before receiving Commission approval.¹¹ Instead of reiterating those arguments here, we refer the Commission to that letter for our procedural objections to Xcel's plan.

A DER planning limit is a big policy change, and one that has not come up before the Commission before. To our knowledge, nowhere in MN DIP, the Minnesota Technical Interconnection and Interoperability Requirements (TIIR), or Xcel's Technical Specifications Manual (TSM) governing the interconnection process is an ultimate DER technical planning limit established. Xcel essentially characterizes the planning limit as an additional screen that all applications will be subject to.¹² In order to add a screen to the process, Xcel should propose the planning limit as a MN DIP amendment and seek Commission approval. Indeed, Xcel does propose to modify MN DIP to implement the planning limit, a new MN DIP Section 1.9.¹³ Nonetheless, Xcel does not ask for Commission permission to adopt and begin to use the new planning limit.

The Commission has full authority to allow or deny this proposal.¹⁴ Interconnection standards and procedures are regulated by the Commission and previous Commission orders in this docket make it clear that changes to the MN DIP, TIIR, or a TSM must come before the Commission and are subject to review.¹⁵ Xcel asserts that the planning limit falls within the scope of engineering judgement and is not required to be included in MN DIP, the TIIR, or TSM.¹⁶ However, engineering judgement does not typically include market-changing policies. The planning limit Xcel proposes would reduce the potential DER market in Xcel's territory by up to 3 GW.¹⁷

The two technical issues Xcel points to as reasons the lower planning limit is necessary are: the risk of loss of daytime minimum load and the need for operational flexibility.¹⁸ These are real potential issues, but Xcel has not demonstrated that they are occurring or that the magnitude of likely future risks necessitates a 20% reduction in capacity across the board. Based on the response to Fresh Energy Information Request 32, Xcel knows of 31 feeders that have seen

¹¹ See Objection of Fresh Energy, Minnesota Solar Energy Industries Association, and Interstate Renewable Energy Council, September 28, 2021, Docket 16-521.

¹² See Xcel's DER Technical Planning Limit Implementation Flow Chart, [available here](#).

¹³ Xcel Comments, Attachment B

¹⁴ Minn. Stat. § 216B.116

¹⁵ Minnesota Public Utilities Commission, *Order Establishing Updated Technical Interconnection and Interoperability Requirements*, January 22, 2020, p. 5-6 and *Order Establishing Updated Interconnection Process and Standard Interconnection Agreement*, August 13, 2018, Docket E999/CI-16-521.

¹⁶ Xcel *DER Interconnection Engineering Practice – Technical Planning Limits* ([available here](#))

¹⁷ Fresh Energy estimates market impacts of the DER technical planning limit and capacity reservation proposals in Attachment 2.

¹⁸ Xcel Comments, p.

decreases in DML over the past three years, ranging from -1kVA to -5,198 kVA.¹⁹ Xcel's typical feeder DML is 1,850 kVA.²⁰ While this information does not elucidate the percentage drop experienced at these feeders, it seems highly unlikely that experienced DML declines are typically in the 15-20% range. And in a few cases, DML appears to have dropped significantly more than 20%, perhaps when a large customer closed or moved. The planning limit Xcel has proposed is not precise enough to solve the risk of declining daytime minimum load. By being vague, it overly restricts the overall DER market while saving too little margin in some select circumstances.

Xcel's second reason for implementing a lower planning limit is to provide operational flexibility. Xcel reserves a portion of feeder capacity (25%) so that load can be shifted to other feeders during contingencies,²¹ and suggests that the planning limit will allow the same to be done for DER. We believe the analogy here is somewhat misleading. Reconfiguring feeders so that customers do not lose power during an outage or other contingency is a high priority. In contrast, DER is taken offline during outages or contingencies. As far as Fresh Energy knows, this practice has not proven to be a significant issue for DER customers and customers are not requesting a change to the practice. If there are specific situations where additional DER-related measures are needed to enable feeder reconfigurations, those would be best addressed during the System Impact Study phase of the interconnection process for those applications.

Fresh Energy recommends the Commission reject Xcel's DER Technical Planning Limit and, if Xcel has already begun implementation, require Xcel to stop utilizing the planning limit screen. As discussed in our joint letter filed September 28, the implementation of the planning limit may cause financial harm to projects that would otherwise be allowed to proceed or would otherwise need fewer, less expensive upgrades. If Xcel has begun implementation without Commission approval, it may be relevant for the Commission to consider whether remedies are necessary and request information from impacted DER customers to that effect.

If the Commission believes the issues Xcel has raised about drops in DML and operational flexibility are worth discussing in greater detail, the DGWG would be the appropriate place to have that conversation. The DGWG is slated to have further discussions on smart inverter settings and energy storage, which could potentially address some of the operational concerns raised. While other utilities are not in the same situation as Xcel when it comes to DER penetration, we believe the conversation about technical limits for DER capacity in any one location and contingency planning with DERs are relevant to all utilities and thus would be appropriate for the DGWG to address.

¹⁹ Xcel Response to Fresh Energy IR 32

²⁰ Xcel Response to Fresh Energy IR 27

²¹ Xcel Response to Fresh Energy IR 28

V. Xcel’s proposed small DER capacity reservation and open DER capacity limit remain unjustified

Fresh Energy continues to believe that Xcel has not demonstrated that reserving 25% of available capacity for small DER projects is necessary, reasonable, or more beneficial than harmful. When coupled with the proposed DER technical planning limit, the capacity reservation would reduce the “open DER” capacity available on a typical feeder by 37.5%.²²

Fresh Energy supports implementing a solution that will help reduce the burden of high interconnection upgrade costs for customer-sited DER projects, as evidenced by our cost-share proposal. We believe a cost-sharing proposal is the appropriate solution to this challenge. The benefit of reserving capacity for small DER is that qualifying projects would avoid needing to pay for capacity expansions, which tend to be the costliest interconnection upgrades. Xcel’s proposed capacity reservation targets the same population of customers as Fresh Energy’s cost share proposal would serve (customers with behind-the-meter DER up to 40kW)²³ and a similar population of customers as Xcel’s Solar*Rewards interconnection upgrade proposal. We see a capacity reservation and cost sharing policy as supplements, not complements.

Fresh Energy agrees with the Department that the capacity reservation will not help in constrained areas, where there is no surplus to reserve, and is likely not necessary in other locations, as constraints are concentrated on a relatively small number of feeders.²⁴ There are 66 constrained feeders on Xcel’s system, out of 1,200. Fresh Energy is concerned that a reservation is an overly broad solution to a relatively narrow problem. And importantly, a reservation could not help the 43 Simplified applications in progress in KCC areas today,²⁵ while a cost-sharing approach may.

VI. A cost-sharing solution for small projects

Fresh Energy appreciates Xcel bringing to the table a new cost-sharing proposal for small projects that can address the concerns about insurmountable upgrade costs raised in our initial comments, as well as comments from IREC and All Energy Solar. A new cost-sharing mechanism is appropriate because that the current cost-causer-pays approach to interconnection upgrades is no longer suitable for Xcel’s system. A direct “cost causer” may actually be contributing little to the technical issue that they are responsible for addressing. As the DER market matures, it is inevitable under this model that projects are asked to pay for

²² Calculated assuming DML is equal to 20% of feeder capacity rating. Under this assumption the current limit is 120% of capacity rating and the proposed limit is 75% of capacity rating.

²³ Fresh Energy would support limiting the cost-share population to behind the meter systems that meet the 120% of annual load guideline.

²⁴ Department of Commerce Comments, p. 3

²⁵ See Fresh Energy Attachment 1 for an analysis of Solar*Reward applications and KCC status

upgrades that have been necessitated by the *aggregate* generation on a feeder, rather than by them alone.

A. Response to Xcel's residential Solar*Rewards upgrade allowance proposal

Fresh Energy appreciates the Department of Commerce's September 24, 2021 letter in the Solar*Rewards docket and agrees that the cost-share proposals that have been proposed in this comment process should be considered by the Commission before a change is proposed via 30-day negative checkoff process in the Solar*Rewards docket.²⁶

Fresh Energy can support Xcel's proposal, as long as it is accompanied by sufficient transparency measures (discussed more below), but we note that there are some trade-offs between the alternative cost-share approaches that have been proposed here.

Potential equity issues:

- Both proposals can increase access to customer-sited solar by removing (or reducing) the barrier of high upgrade costs, which would disproportionately impact low-income DER customers
- Xcel's proposal shifts the cost of Solar*Rewards customers' upgrades to Xcel's full customer base. Solar customers in Minnesota tend to be higher income than the overall customer base, and the income-qualified portion of Solar*Rewards remains small. However, the projected cost of the program is quite small compared to Xcel's overall distribution budget.

Eligible customers:

- Xcel's proposal ties the distribution upgrade incentive to the Solar*Rewards program. This may help to streamline administration and/or customer communication, but it means the upgrade assistance is tied to a program with a sunset date.
- Xcel also proposes to limit upgrade assistance to residential Solar*Rewards customers. This excludes other segments of Solar*Rewards customers (including income-qualified non-profit, multi-family, and community solar gardens) and customers that may otherwise qualify but do not receive the Solar*Rewards incentive.
 - Due to proposed changes that would reduce the Solar*Rewards production incentive and thus allow the same budget to serve more customers, this may be a less acute concern going forward, but recently, incentives have often run out mid-year. In that case, some qualified customers would not benefit from the program unless they elected to wait until the next program year.

²⁶ Department of Commerce, September 24, 2021 Letter in Docket E002/M-13-1015

To balance these concerns, it may be worth considering whether \$15,000 is the right number to cover, whether only residential systems should qualify, and whether income-qualified customers should receive a higher upgrade allowance. Fresh Energy continues to believe our originally proposed cost-sharing approach provides an avenue for small projects to interconnect when facing otherwise insurmountable interconnection costs and may avoid some of the challenges described above. However, it does require annual updates, accounting processes to track the costs, and may be more challenging than Xcel's proposal to administer. We strongly recommend the Commission adopt a cost-sharing solution for small projects and believe that both proposals are viable options. The Commission may want to adopt either proposal with the understanding that the program will be thoroughly reviewed and subject to modification after one year, and a require a compliance filing from Xcel to inform that decision.

B. Transparency into interconnection-related distribution upgrade costs is critical to any cost-sharing program

As discussed in our initial comments, transparency must be a requirement for any cost sharing approach. If upgrades are covered by the general distribution budget, ratepayers deserve transparency and assurance that the costs are reasonable, prudent, and necessary. If covered through a cost-sharing approach fully paid for by DER customers, DER customers need assurance that the costs are reasonable, prudent, and necessary. Currently, customers receive little information about the costs they are billed for and no explanation of alternative options (e.g., a small system or different inverter settings) and what those alternative costs would be. We recommend this issue be addressed through a change to the facilities study results Xcel provides customers and through reporting should Xcel implement cost-sharing or rate-basing of interconnection-related distribution upgrades:

- Xcel shall provide as part of Facilities Study results, itemized cost estimates for each major component of proposed distribution upgrades, network upgrades, and/or interconnection facilities. Additionally, Xcel will provide information indicating if a smaller system size and/or different settings would avoid the need for major upgrades and if so, identify that size or setting(s) and itemize the potential reduction in upgrade costs. These changes will take effect within 60 days of this Order.
- Should Xcel seek cost recovery for distribution upgrades for Solar*Rewards customers, or request to charge a fee to certain DER customers to cover interconnection upgrades, it will include in this request a detailed report the costs incurred and the technical rationale for each upgrade.

Fresh Energy believes that additional transparency into typical distribution upgrade costs is appropriate to establish for all Minnesota rate-regulated utilities. There appears to be inconsistency in how utilities account for distribution upgrades that may benefit the general

customer base (e.g., whether depreciation or salvage value is considered). This is a critical foundational question for discussions of alternative cost allocation, proactive upgrades, or cost-sharing. Likewise, having more information about typical costs for common distribution upgrades can inform interconnection customers' decisions about siting, project sizing, and financing. When combined with the criteria violation values on Xcel's Hosting Capacity Analysis, rough cost estimates for common issues could significantly accelerate the decision-making process for prospective Xcel DER customers.

As discussed in initial comments, we recommend:

- All rate-regulated utilities develop and publish on their websites a cost guide for typical DER upgrades within 30 days of this Order, update it as needed, and notify the Commission in this docket whenever the guide has been updated.
- All rate-regulated utilities publish an Accounting Treatment Guide for DER Interconnection Costs within 30 days of this Order to explain how they consider factors including depreciation, salvage value, and tax implications of contributions in aid of construction in costs assessed for interconnection.

VII. Substantive interconnection process changes must be reviewed and decided by the commission

Through the DGWG subgroup process and this comment period, it has become clear that Xcel Energy has made, or proposes to make, several interconnection process changes that fall into perceived "gray areas" of MN DIP before seeking input from stakeholders or approval from the Commission. These include:

- The on-hold process, which is not defined in MN DIP and results from a contested interpretation of the word "serial."
- Defining certain feeders and substations as "Known Capacity Constraints" and assigning different review procedures and timeline expectations to these areas.
- Phase 2 System Impact Studies, which are not defined in MN DIP and appear to differ from the Transmission System Impact Study provided for under MN DIP 4.3.
- The proposed DER Technical Planning Limit.

Many of these changes have had (or will have) substantial financial and customer service impacts for customers. There may be legitimate reasons for wanting to update the process, add new steps, or define other procedures for new situations. However, interconnection customers are rightly frustrated that the rules the utility imposes on them are changing substantially, without warning, and multiple times. The role of statewide interconnection procedures is to ensure transparency, accountability, and consistency in what is required of DER customers and of utilities once a customer has requested to interconnect – as explained in the Forward to MN DIP. A continually shifting set of procedures implemented outside of state standards is not what MN DIP envisioned or the Commission intended.

The DER market is dynamic and that unforeseen issues may arise that necessitate changes to MN DIP, the TIIR, or TSMs. In fact, the Forward to MN DIP states “As these standards go into effect and more distributed energy resources interconnect with utility systems, the Commission expects this to be a living document.”²⁷ Utilities that are experiencing interconnection challenges, whether technical, staffing-related, or other, need to come to the Commission before making changes that substantially impact the interconnection process. For example, Fresh Energy believes that adding a screen, adding a process step, assigning projects to different processes based on characteristics not discussed in MN DIP, or altering information provided in system impact and facilities study reports, would all be substantial changes that should have an opportunity for Commission review.

Accordingly, we propose that utilities seeking to make a substantial interconnection process change – even if it does not explicitly require a MN DIP amendment – file a notice with the Commission explaining the issue, citing concrete examples, providing workpapers or background documentation if relevant, and explaining in detail their proposed change. The notice would be subject to a 30-day negative check-off process, like the Commission requires for proposed changes to utility TSMs.

VIII. Recommendations

Fresh Energy’s recommendations, with some additions and modifications from our Initial Comments, are summarized below.

Compliance Filings

1. Fresh Energy recommends that the Commission direct Xcel to add to its quarterly compliance filings in this proceeding a discussion of its work to implement the Commission’s transition period directions regarding parallel screening and semi-parallel studies, changes to known capacity constraints, the number of projects on hold in constrained and non-constrained locations, and any other relevant information.
(new)

Parallel Screening:

1. Fresh Energy recommends that the Commission direct Xcel to expand its parallel screening process to include all Fast-Track DER Interconnection Applications, except those that trigger capacity constraint thresholds, within 30 days of this Order.
(modified)

Semi-Parallel SIS:

²⁷ MN DIP p. 1

2. Fresh Energy recommends that the Commission direct Xcel to adopt a Semi-Parallel Study Process for Study Track projects, except those that trigger capacity constraint thresholds, within 30 days of this Order. Under the Semi-Parallel process Xcel will commence a System Impact Study (SIS) process within 1 business day of delivering the SIS or final screen results to the ahead-in-queue project. (modified)

Cost-Sharing Upgrade Costs

3. Fresh Energy recommends that the Commission adopt a cost-sharing solution for small DER projects seeking to interconnect with Xcel Energy. The cost sharing program shall go into effect 60 days after this Order date. (new)
4. Fresh Energy recommends the Commission direct Xcel to file a comprehensive report on the cost-sharing program one year from the implementation date, which will inform the Commission's decision about whether to continue or modify the program. (new)

Group Studies

5. Fresh Energy recommends that the Commission direct Xcel to provide the following reporting on any voluntary pilot Group Study processes it implements:
 - a. A compliance filing six months after the Order in this matter describing the participating applications, relevant feeder and substation characteristics, the time in which each phase of the study was completed, any group retention measures (deposits or penalties), the general cost allocation process used, and any disputes that arose.
 - b. A presentation at the next Solar*Rewards Community stakeholder meeting that follows submission of this report, to be given by Xcel with input from participating applicants about the process and lessons learned.
6. Fresh Energy recommends that the Commission require a group study process be developed that responds to each of the process elements listed in the Group Study Subgroup's report as "Key Considerations."²⁸ The workgroup should include DGWG members and parties with a business interest in group studies who wish to participate. Xcel will submit a Group Study proposal for the Commission's review by September 1, 2022, or at another date determined by the Executive Secretary. (modified)

DER Planning Limits

7. Fresh Energy recommends that the Commission reject Xcel's proposal for a DER Technical Planning Limit and, if Xcel has already begun implementation, require Xcel to stop utilizing the planning limit screen. (new)
8. Fresh Energy recommends that Xcel discuss any specific issues that arise as a result of

²⁸ The main categories of group study elements are: group formation, how the study is conducted, group retention strategies, cost allocation, and a transition period. See the full list of criteria in the Group Study Subgroup Report, filed July 16, 2021, Docket E999/CI-16-521 ([link](#)).

reduced DML on feeders with high DER capacity, or specific issues related to DER and operational flexibility, in its quarterly compliance filings in this docket. (modified)

Capacity Reservation

9. Fresh Energy recommends that the Commission reject Xcel's capacity reservation proposal. (modified)
10. Should Xcel opt to bring forward another capacity reservation proposal in the future:
 - a. The amount of the capacity reservation should be based on expected DER growth and other anticipated changes in electrical conditions.
 - b. The amount of the capacity reservation should be adjusted to the characteristics of each substation and feeder.
 - c. Xcel will include supporting documentation to demonstrate why the capacity reservation is needed and why each proposed reservation amount is justified.

Dispute Resolution

11. Fresh Energy recommends that the Commission approve Xcel's proposed DER Dispute Resolution process with the following modification:
 - a. Customers with a complaint about a missed timeline may file a complaint with the CAO at the same time they complete Xcel's Notice of Dispute Form.
12. Fresh Energy recommends that the Commission and Xcel provide information on the updated dispute process on relevant webpages, including a link to the Notice of Dispute Form and a statement that customers may file a complaint with the CAO after filing a Notice of Dispute Form with Xcel. For complaints regarding issues other than compliance with MNDIP timelines, customers can file a complaint with the CAO after the corresponding resolution period (10 business days for non-technical, 20 business days for technical disputes) if they are not satisfied with the response or resolution received.
13. In future quarterly MN DIP compliance filings to the Commission, Xcel should provide:
 - The number of nontechnical and technical dispute notices received that quarter
 - The number of nontechnical and technical disputes resolved that quarter
 - A breakdown of all dispute notices received that quarter by issue area
 - A discussion of work planned, ongoing, or recently completed to address issues highlighted by nontechnical and technical customer disputes
 - Any other relevant information

Known Capacity Constraints

14. Fresh Energy recommends that the Commission direct Xcel to provide a full technical assessment of each Known Capacity Constraint location, outlining the technical issues being encountered and the potential avenues are for addressing them, including estimated costs and timelines for the alternative solutions. This assessment will be

submitted within 60 days of the Commission's Order, or as part of Xcel's 2021 Hosting Capacity Analysis.

15. Fresh Energy recommends the Executive Secretary issue a notice of comment period and set a comment schedule after Xcel's Known Capacity Constraint report is filed, to allow stakeholders to comment on the completeness of the assessment, the merits of various solutions Xcel presented, and to offer alternative solutions.
16. Fresh Energy recommends the Commission consider asking the Department of Commerce to utilize an internal distribution engineering expert or an external consultant with this expertise to assist in evaluating Xcel's assessment.

Transparency into Interconnection Costs

17. Fresh Energy recommends the Commission direct Xcel to provide as part of Facilities Study results, itemized cost estimates for each major component of proposed distribution upgrades, network upgrades, and/or interconnection facilities. Additionally, Xcel will provide information indicating if a smaller system size and/or different settings would avoid the need for major upgrades and if so, identify that size or setting(s) and itemize the potential reduction in upgrade costs. These changes will take effect within 60 days of this Order. (new)
18. Fresh Energy recommends the Commission direct Xcel to Xcel seek cost recovery for distribution upgrades for Solar*Rewards customers, or request to charge a fee to certain DER customers to cover interconnection upgrades, it will include in this request a detailed report the costs incurred and the technical rationale for each upgrade. (new)
19. Fresh Energy recommends the Commission direct all rate-regulated utilities to develop and publish on their websites a cost guide for typical DER upgrades within 30 days of this Order, update it as needed, and notify the Commission in this docket whenever the guide has been updated. (modified)
20. Fresh Energy recommends that the Commission direct all rate-regulated utilities to publish an Accounting Treatment Guide for DER Interconnection Costs within 30 days of this Order to explain how they consider factors including depreciation, salvage value, and tax implications of contributions in aid of construction in costs assessed for interconnection. (modified)

Process for Making Interconnection Changes

21. Fresh Energy recommends that the Commission direct all rate-regulated utilities seeking to make a substantial interconnection process change – even if it does not explicitly require a MN DIP amendment – to file a notice in this docket explaining the issue, citing concrete examples, providing workpapers or background documentation if relevant, and explaining in detail their proposed change. The notice must be submitted at least 30 days before the utility's proposed implementation date. If no party comments or submits a notice of intent to comment within 30 days, the change will be accepted, otherwise the Commission will open a notice of Comment Period to consider

the proposed change. (new)

Fresh Energy appreciates the opportunity to provide further comments on the complex but important policy matters under consideration here. Thank you for the Commission's time and consideration of our comments.

/s/ Isabel Ricker
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