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Xcel Energy

Information Request No. 1

Docket No.: E999/M-16-521

Response To: Fresh Energy

Requestor: Isabel Ricker

Date Received: July 10, 2020

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Question:

Please complete the following data table.

		<b>Year before MN DIP implementation</b> (June 1, 2018 – June 16, 2019)	<b>Year since MN DIP implementation</b> (June 17, 2019-June 30, 2020, or latest available date)
1.	Total interconnection applications deemed complete in this period		
a)	Applications for projects $\geq 1$ MW		
b)	Applications that required a System Impact Study or equivalent		
c)	Applications for which Xcel completed multiple System Impact Studies, or equivalent (e.g. where restudies were required)		
2.	Total interconnection applications that have been withdrawn, of those deemed complete in this period		
a)	Applications for projects $\geq 1$ MW that were withdrawn after the application was deemed complete		
b)	Applications that were withdrawn after a System Impact Study was completed		

Response:

The Company provides the details requested in the table below.

		<b>Year before MN DIP implementation<sup>1</sup></b> (June 1, 2018 – June 16, 2019)	<b>Year since MN DIP implementation</b> (June 17, 2019-June 30, 2020, or latest available date)
1.	Total interconnection applications deemed complete in this period ( <b>expedited ready for pre-MN DIP</b> )	165	1,414
a)	Applications for projects $\geq 1$ MW	154	141
b)	Applications that required a System Impact Study or equivalent	165	90
c)	Applications for which Xcel completed multiple System Impact Studies, or equivalent (e.g. where restudies were required) <sup>2</sup>	39	0
2.	Total interconnection applications that have been withdrawn, of those deemed complete/expedited ready in this period ( <b>including cancelled</b> )	51	79
a)	Applications for projects $\geq 1$ MW that were withdrawn after the application was deemed complete/expedited ready	49	10
b)	Applications that were withdrawn after a System Impact Study was completed	44	1

1. A MN DIP interconnection application is “deemed complete” when it provides all applicable and correct information required to move the application forward and be placed in the queue. This includes single line diagrams, site plans, specification sheets and certain payments. This term is defined for the MN DIP process and did not have an exactly corresponding rule for pre-MN DIP applications. However, pre-MN DIP Community Solar Garden (CSG) applications had requirements to meet in order to be “expedited ready” and enter the queue, including the payment of certain fees. The first column above with the numbers therefore only includes pre-MN DIP CSG data for applications that were expedited ready.

2. Prior to the MN DIP process, our system tracked two timelines for CSGs. 1) Study Analysis; and 2) Restudy. If multiple studies were conducted in these categories were provided, the data was updated and therefore we do not have a record of multiple studies in these categories. We provide instances in which a study was put into the restudy category below for 1c. The majority of these

projects were restudied due to a withdrawn project or system change ahead in queue.

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Xcel Energy

Information Request No. 2

Docket No.: E999/M-16-521

Response To: Fresh Energy

Requestor: Isabel Ricker

Date Received: July 10, 2020

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Question:

1. What does it mean for an interconnection application to be “on hold”?
2. When did Xcel begin using “on hold” status for some interconnection applications in Minnesota?
3. Under what circumstances does Xcel put applications “on hold”?
4. At what point(s) in the process may an application be put “on hold”?
5. What is the maximum length of time a project may be “on hold”?

Response:

Minnesota’s Distribution Interconnection Process (Mn DIP) requires the Area EPS Operator (i.e. Xcel Energy) to maintain a single, administrative queue and manage the queue by geographical region (i.e. feeder, substation, etc.) This means that all DER applications, including community solar gardens and on-site solar systems, are being studied serially based on their queue position (*as noted in MN DIP 1.8.3*). Applications behind projects being studied in queue are temporarily placed “on hold” until the application ahead in queue is fully studied and has signed the Interconnection Agreement or been withdrawn. The application timeline is paused until the application re-enters active study.

To further clarify, the “on hold” process was effectively adopted on June 17, 2019 with the implementation of MN DIP.<sup>1</sup> Interconnection projects prior to this time were not serially reviewed as part of one interconnection queue; this prior practice caused increased costs and delay completion for community solar garden (CSG)

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<sup>1</sup> We further note that the CSG program has an additional process for developers to place projects “on hold” during the design and construction process. This is unrelated to the issues discussed as part of this response as it occurs later in the process and is requested by the Garden Operator. Further information regarding this process can be found in our December 2016 response to Commission Staff’s information request filed in Docket No. E002/M-13-867.

<https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={58E9B171-1676-4E3C-A7D8-015C404B6418}&documentTitle=201612-127362-02>

projects. In fact, the process of reviewing CSG applications as received has caused over 40 restudies. In some cases, we have seen more than one withdrawal in queue, causing multiple restudies for later in queue projects. This pushes out their ability to be completed, as well as, potentially increasing interconnection costs. The MN DIP required serial study analysis helps to address this issue.

Serial studies have caused some concern with our smaller solar installers as some of their rooftop systems were positioned in queue behind a number of larger projects, which can significantly delay their application process. In order to address these concerns, the Company established a process to evaluate these smaller systems simultaneously when there isn't substantial impact. For instance, all Simplified Process track applications ( $\leq 20$  kW), where the aggregate of existing and ahead-in-queue generation does not exceed the feeder or substation rating, may be able to move forward in the interconnection process and be reviewed simultaneously with projects ahead in queue. The majority of small solar projects are now moving through this process.

As required by MN DIP 1.8.4, we maintain and share a public interconnection queue each month on our website. Solar installers/developers and customers can review the queue to note their application's position at their feeder/substation or to get an idea of feeder/substation capacity prior to submitting an application. Application queue position will be maintained throughout this process, except where noted above for certain applications under the Simplified Process.

1. Projects are placed "on hold" while a project ahead of them is in queue and until such time as the project ahead of them has been studied and the applicant has signed the Minnesota Distribution Interconnection Agreement or been withdrawn. This process follows the serial review requirements of the MN DIP. The exception to this process is small projects that have been approved through the Company's recent business practices to move forward these applications when there is no system concern that could cause increased costs or capacity constraints within the queue. Please see our July 2020 quarterly report in the Community Solar Garden docket (Docket No. E002/13-867) for further discussion.
2. Serial analysis for the interconnection process began on June 17, 2019 consistent with the implementation of the MN DIP process.
3. Applications behind projects being studied in queue are temporarily placed "on hold" until the application ahead in queue is fully studied and has signed the

Interconnection Agreement or been withdrawn. The application timeline is paused until the application re-enters active study.

4. An MN DIP interconnection application can be put “on hold” after it has been deemed complete.
5. There is no maximum time frame and the timing is application and/or location specific.

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Xcel Energy

Information Request No. 3

Docket No.: E999/M-16-521

Response To: Fresh Energy

**REVISION**

Requestor: Isabel Ricker

Date Received: July 10, 2020

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Question:

Does the MN DIP authorize the use of “on hold” status? If so, where in the document?

Does the MN DIP explain when (i.e. under what circumstances) projects can be put “on hold,” or the length “on hold” may last? If so, where in the document?

Response:

Minnesota’s Distribution Interconnection Process (MN DIP) requires the Area EPS Operator (i.e. Xcel Energy) to maintain a single, administrative queue and manage the queue by geographical region (i.e. feeder, substation, etc.) This means that all DER applications, including community solar gardens and on-site solar systems, are being studied serially based on their queue position (*as noted in MN DIP 1.8.3*). Applications behind projects being studied in queue are temporarily placed “on hold” until the application ahead in queue is fully studied and has signed the Interconnection Agreement or been withdrawn. The application timeline is paused until the application re-enters active study.

The MN DIP does not provide further direction regarding circumstances but does provide application timelines which should indicate how long a project may take when not on hold. However, it is our experience, that there are certain substations that have queues of significant length. For example, if there are three projects in queue and the first and second interconnection applications take 300 business days each (as referenced by MN DIP) the third in queue will have to wait 600 days before starting study analysis. For further information regarding the timing of MN DIP, we have provided details on Xcel Energy.com, based on our open office hours on May 15, 2020, at <https://www.xcelenergy.com/staticfiles/xcelresponsive/Working%20With%20Us/Renewable%20Developers/Overview%20of%20Fees%20and%20Timelines%20Engineering%20Screens%20and%20Studies.pdf>.

For further information on serial review and impact to the queue, please see our Community Solar Garden Quarterly Compliance Report for July 2020.

**Revised Response:**

Our original response included a PDF that was mislabeled as being part of our open office hours on May 15, 2020. This presentation was not during an open office hour but rather created to continue the available training for the MN DIP process as part of our SRC Resource Page and was made available online May 15, 2020. In addition, we included the training modules in an email to solar developers on May 18, 2020 and referenced in our quarter two stakeholder discussion held on May 19, 2020.

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**Revised:** July 23, 2020



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Xcel Energy

Information Request No. 4

Docket No.: E999/M-16-521

Response To: Fresh Energy

Requestor: Isabel Ricker

Date Received: July 10, 2020

Question:

Please complete the following data table.

		<b>Year before MN DIP implementation</b> (June 1, 2018 – June 16, 2019)	<b>Year since MN DIP implementation</b> (June 17, 2019-June 30, 2020, or latest available date)
1.	Interconnection applications that have been put “on hold”		
a)	Simplified applications that have been put <i>on hold</i>		
b)	Average length of <i>on hold</i> status for Simplified applications put <i>on hold</i>		
c)	Fast Track applications that have been put <i>on hold</i>		
d)	Average length of <i>on hold</i> status for Fast Track applications put <i>on hold</i>		
e)	Study Process applications that have been put <i>on hold</i>		
f)	Average length of <i>on hold</i> status for Study Process applications put <i>on hold</i>		

Response:

The Public Utilities Commission’s August 13, 2018 Order (at Order Point 20) requires the Company to provide certain reporting associated with the MN DIP process. Accordingly, the Company has created reporting capability as defined by this Order. The Company objects to this information request as it would require a specialized study. Notwithstanding we provide the following details as they relate to this request.

As noted in Information Request No. 2, we assume the reference to “on hold” is for MN DIP projects only and prior to study analysis.

Serial review for our one integrated queue began on June 17, 2020 with implementation of the MN DIP. Therefore, there is no comparison in our pre-MN DIP application process; nor are we able to categorize projects as indicated in the requested table.

Tracking “on hold” projects was not a requirement of the MN DIP tracking as defined by the Commission’s August 13, 2018 Order. Therefore, our system only tracks this designation at the time the application is “on hold”. These details can be found as part of our interconnection queue published monthly on our website. We have provided the queue reports from August 2019 through July 2020 which provide the number of projects on hold as part of this response. In addition, we have provided the details below as of July 1, 2020 and as defined by the interconnection queue report.<sup>1</sup>

**Table 1: As of July 1, 2020: “On Hold” projects**

		<b>Year before MN DIP implementation</b>	<b>Year since MN DIP implementation (July 1, 2020)</b>
1.	Interconnection applications that have been put “on hold”	N/A	96
a)	Simplified applications that have been put <i>on hold</i>	N/A	2
b)	Average length of <i>on hold</i> status for Simplified applications put <i>on hold</i>	N/A	Special Study Required
c)	Fast Track applications that have been put <i>on hold</i>	N/A	64
d)	Average length of <i>on hold</i> status for Fast Track applications put <i>on hold</i>	N/A	Special Study Required
e)	Study Process applications that have been put <i>on hold</i>	N/A	30
f)	Average length of <i>on hold</i> status for Study Process applications put <i>on hold</i>	N/A	Special Study Required

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<sup>1</sup> We note that the interconnection process on the interconnection queue is the original process assigned to a given application. For example, as an application moves from Fast Track to Study this is not captured in the queue nor in the above table. Accordingly, the above table shows the current “on hold” status not based on where the application currently sits, but instead based on what category originally applied to a given application.

Of further note, projects “on hold” are currently limited to certain feeders – as more projects are added to these feeders, additional study analysis is necessary, and projects are placed “on hold” for longer times. Most projects on hold in July have 1-2 projects ahead of them in queue (44 out of 96). The remaining projects have 3-7 projects ahead of them in queue we provide further details in Table 2 as presented by the July 1, 2020 queue:

**Table 2: As of July 2020: Projects “on-hold” by Queue (for projects queues >2)**

<b># of Projects on hold per Feeder</b>	<b>Feeders</b>
3	GAY002 LAY061 MAZ021 WAB031 WAS092 WAT021 WIN043 YAM031
4	AVR081 HWW075 LCR311 MHW311
5	PAT312
6	N/A
7	CHI311

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Xcel Energy

Information Request No. 5

Docket No.: E999/M-16-521

Response To: Fresh Energy

Requestor: Isabel Ricker

Date Received: July 10, 2020

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Question:

Does Public Service Company of Colorado put interconnection applications received in that territory “on hold”? If yes, under what circumstances are applications put on hold?

Response:

Yes. Public Service Company of Colorado does have a similar queue process but does not use the term “on hold”.

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Xcel Energy

Information Request No. 6

Docket No.: E999/M-16-521

Response To: Fresh Energy

Requestor: Isabel Ricker

Date Received: July 10, 2020

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Question:

1. What expenses are included in the cost of System Impact Studies billed to interconnection applicants?
2. Are there any costs associated with System Impact Studies that are borne by Xcel, and not billed to interconnection applicants? If so, explain what these costs are, and the approximate percentage of the total Study cost they comprise.

Response:

1. Per Attachment 6 to the MN DIP (System Impact Study Agreement), Sections 8.0 and 9.0, the customer is responsible for actual costs incurred by the Area EPS Operator when performing System Impact Studies (SIS). Accordingly, Xcel Energy collects study fees commensurate with both our internal and consultant costs to perform studies. Included in these expenses are employee time to collect study data and perform Quality Assurance (QA) of consultant work, as well as consultant fees for system impact reviews.
2. For consultant work, Xcel Energy directly passes all costs to applicants in accordance with the MN DIP. For internal work, our company-wide time reporting, and work management systems are not structured in a way that supports detailed cost tracking at a discrete project level. Thus, for internal costs, the Company estimates typical internal costs for activities such as data collection and transmittal, QA of consultant work, model troubleshooting and consultant assistance, customer options meetings, and preparation of MN DIP results letters and other required documents. These costs end up being about 10 percent of the total cost seen by the applicant.

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Xcel Energy

Information Request No.

7

Docket No.: E999/M-16-521

Response To: Fresh Energy

Requestor: Isabel Ricker

Date Received: July 10, 2020

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Question:

Please answer the following questions about Xcel's staff capacity for completing System Impact Studies for interconnection applications:

- a) Approximately how many System Impact Studies is the team (as currently established) able to work on at a time? What is the maximum number of System Impact Studies that could be underway concurrently?
- b) How many Xcel employees work on System Impact Studies? (in full-time employee (FTE) equivalent)
- c) How many consultants/contractors work on System Impact Studies? (in full-time employee (FTE) equivalent)
- d) Has the number of FTE-equivalent Xcel employees that work on System Impact Studies changed over the past two years? If yes, has it increased or decreased and by how much?
- e) Has the number of FTE-equivalent Xcel consultants/contractors that work on System Impact Studies changed over the past two years? If yes, has it increased or decreased and by how much?

Response:

- a) We clarify that in this response we discuss the System Impact Studies (SIS). We have not included Initial or Supplemental Review Screens that may come before the SIS in the MN DIP.

There are many factors to consider as part of the SIS making each one unique. Some of those factors include the amount of existing distribution energy resources (DER) on the given feeder, recent or planned system changes, or other new challenges that continue to emerge. Consequently, it is difficult to pinpoint a specific sustainable number.

MN DIP 4.3.5 allows 30-business days after the System Impact Study Agreement is signed and deposit paid to complete the SIS. We break this into three distinct parts that include data gathering, analysis, and review and correction.

Our internal process is to gather and package all relevant SIS data within five business days. This includes building a feeder model, collecting substation documentation, requesting data from other groups, and correcting any other apparent discrepancies before sending to our consultants. This part of the process typically takes between two and eight hours, or more, of total time but can be spread out over many days. When there are multiple requests for SIS, it can be a challenge to meet this five-business day goal based on the number of hours available in a week. Likewise, there are periods where very few are needed over given stretches.

The next part of our process allows fifteen business days for the consultants to complete the study analysis. Throughout this step we are answering questions as quickly as possible from the consultant to keep the study moving.

We then have ten business days assigned to allow the consultant to make any corrections as needed after we perform a Quality Assurance assessment. Like the other parts of the process, delays can occur when we request our consultants to re-run large parts of the study.

Overall, we have found that the studies do typically require the 30-business day MN DIP timeline for completing the System Impact Study, based on the complexity and rigorous level of engineering needed. If issues are encountered along the way it can make it more difficult to meet the timeline. However, we are dedicated to completing this as quickly as we can while ensuring safety and accuracy of the results.

- b) We have three Xcel Energy employees who are closely tied to the System Impact Study Process. Two engineers work on packaging the data, answering ongoing questions, and monitoring consultant performance. A third employee provides project management oversight. That person monitors consultant workflow, timeframes, ensures data is being transferred efficiently, and consistent communication is taking place.
- c) In MN, we currently have one consultant that completes the majority of the SIS work. We have a second consultant that we have been bringing up to speed since this spring (giving a limited number of projects to) and a third that we use in our CO territory but could leverage in MN, if needed. While we cannot put an FTE count on this part of the process, as each consultant has varying amounts of



engineers able to work on this, we do have flexibility in how we manage this work and can adjust as situations dictate.

Since there is variability in the amount of SIS at any one time, we have adopted a best practice that tries to keep one consultant more engaged than the others. This helps maintain consistency and efficiency. Performing a Distribution System Impact Studies of this nature is a specialized task that goes beyond traditional distribution engineering knowledge and requires the engineer to consider multiple alternatives, especially on highly penetrated feeders. There are a very limited number of consultants who have engineers with the right expertise available today. We have seen some consultants unable to effectively complete these studies or quickly come up to speed, which resulted in certain inefficiencies.

- d) We continue to monitor the amount of time it takes to generate accurate SIS. As we become more constrained on our feeders with additional DER it becomes more time consuming to accurately build the feeder models, study, develop mitigation solutions, and write the study reports. Consequently, we are encountering issues very few are seeing at this level in the industry.

To help in addressing these issues we added one FTE in Q4 of 2019 who specifically works on SIS. We also added formal management to the DER engineering group at the beginning of 2020.

As noted in part c, we can use three consultants at this time. We have also stopped using two consultants, that we had used prior to 2020, due to performance issues. Through the extensive amount of SIS that have been completed we have been able to focus in on those consultants who have performed better, and we have adjusted our process accordingly.

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