REVISED Decision Options (as e-filed on April 17, 2019)

1. Grant Xcel Energy's March 26, 2019 Motion to Strike and accept the redline strikethroughs in Attachment A.

OR

2. Accept the amended version of SunShare's January 17, 2019 Response to Appeal provided in SunShare's April 5, 2019 Response as resolving the Motion to Strike. (*SunShare)*

---

3. Reject the Independent Engineer Report recommendations and find that it was appropriate for Xcel Energy to offer 3 MW of capacity at the Linden site consistent with the results of the June 27, 2017 engineering review study. (*Xcel Energy)*

OR

4. Affirm the December 24, 2018 Independent Engineer Report and require Xcel Energy to comply with the Independent Engineer's recommendations to: *(SunShare)*
   a) Immediately conduct the flicker study and restudy ordered by the IE, including SunShare's participation to identify errors, to be completed by no later than __[*intentionally left blank*]__;
   b) Complete any interconnection upgrades and schedule witness testing by no later than May 31, 2019, expedited at Xcel's company expense;
   c) Immediately execute the interconnection agreement and complete detailed design review for the 3 MW capacity Xcel has approved
   d) In its restudy, analyze whether advanced smart inverter functionalities such as voltage control functions can reduce interconnection costs and allow for their use
   e) Comply with all other relief ordered by the IE, including in particular the determination that interconnection costs be capped at $1 million and that Xcel be prohibited from charging any profit, labor, overhead, bond costs, or any other markups to the equipment and labor used to complete the interconnection.

OR

5. Find that it was appropriate for Xcel Energy to offer 3 MW of capacity at the Linden site consistent with the results of the June 27, 2017 engineering review study (*Staff modification of Xcel D.O. 3)*. Direct Xcel to:
   a) ~~Immediately~~ Execute the interconnection agreement and complete detailed design review for the 3 MW capacity (*Staff modified SunShare D.O. 4c)*;
   b) Complete any interconnection upgrades and schedule witness testing by no later than May 31, 2019 (*Staff modified SunShare D.O. 4b)*~~; and,~~

And either:

6. (NEW) Reject the Independent Engineer Report Recommendations. (*Xcel Energy*)

OR

7. (NEW) Accept the Independent Engineer Report Recommendations as modified by rejecting the following recommendations: (*SunShare with no modifications*)

	Summary of IE Determination/Recommendation
A	Xcel shall share all inputs used in the Revision 3 model with SunShare in writing, including rationale, and answer SunShare's follow up questions
B	Provide SunShare with the actual, specific reasons why the 1/0 cable segment was originally buried in writing immediately
C	Xcel shall conduct another study of the Linden Project (referred to as "Revision 4") which shall have, but not be limited to: a. "SunShare's selected engineer(s) shall be permitted to be present during the development of the Revision 4 Linden model and shall be present at SunShare's discretion during the entire modeling process and shall be allowed to actively participate in the input evaluation, run of the software model, and output evaluation of the Revision 4 model and Study Report document." b. "If any variation of the Revision 4 Study addresses the use of 750 AL UG cable (at the joint determination of Parties), the 255A rating used in Revision 3 for the 750 AL buried cable shall be corrected to 630A in Revision 4." c. If the Revision 4 revised software model reveals reduced cable, or other equipment, ratings, etc. on Xcel's distribution system is acceptable that equipment shall be allowed by Xcel. d. If the Revision 4 revised software model reveals higher levels of solar output are acceptable, the highest level up to 5 MW shall be allowed. e. "Xcel shall work with SunShare to determine all of the inputs of the Revision 4 model." f. "The 1.5% with 75% drop criteria is not to be used in any variation of the Revision 4 Linden Study, since the IEEE 1453-2018 has excluded it. Voltage regulators shall be modeled with a 2% full on/full off value, or higher if there is no demonstrable result outside of the IEEE 1453 maximum Pst Flicker values." g. "Xcel shall run variations of the Revision 4 model taking into consideration the results of the first, pre-construction Flicker Study …, with the following inputs, up to the point that … monitoring is appropriate" and provide the full results in writing: i. For each 3 MW, 4 MW, and 5 MW PV generation plant output: Study each 2% on/off; 3% on/off; and 4% on/off with a variation using 336 overhead lines instead of 750 AL underground segment.[1] ii. Xcel shall conduct a flicker field study within 1 month of the IE's determination to "… scientifically validate the actual level of flicker found there at the time of the Study." "Xcel shall note the equipment used, the locations, the results of the monitoring at those locations, and the conclusions of the monitoring…" "Xcel shall also allow SunShare's engineer(s) to be present, side by- side with Xcel, during this test and be fully involved in the setup and monitoring process as well as observing the results after the IEEE 1453 recommended testing period… The test shall be used in order to establish the actual base line level of Flicker prior to

	Summary of IE Determination/Recommendation
	construction/connection of the Linden interconnection." Further, "… a second Flicker test will be performed at the same site(s) after commissioning is completed and the Linden PV farm is energized…[with] full participation by SunShare engineer(s) and full cooperation by Xcel... Depending on the results of the second flicker Study, the levels of flicker emissions from the Linden site can be accurately assessed and corrective adjustments can be implemented by Xcel and SunShare."
D	Reset the Linden Project's 24-Month Mechanical Completion clock upon completion of this dispute or upon completion of appeals to the Commission by either party.
E	Revised costs shall continue through to the completion of the project staying below the $1M cap. SunShare shall further be granted relieve through Xcel not adding its typical profit, overhead or bond costs, or any other markups to this project's cable, poles, and associated line and hardware; as well as, labor required to perform this interconnection… Upon SunShare's request, Xcel shall demonstrate its actual wholesale costs.
F	It is reasonable for Xcel use 336 AL OH cable for the entire project, but Xcel will take their mark-up including profit and bond cost off of the price of the materials for this interconnection to make up for the problems and delays that have occurred with the modeling.
G	Update Xcel Energy's Section 10 Interconnection tariff per the IE's suggestions to clarify voltage limits for ANSI C84.1 and IEEE 1453.

---

8. (REVISED. *Formerly 5c.*) Direct Xcel Energy to work with Community Solar Garden Stakeholder Workgroup to propose an advanced functionality inverter pilot project, upon mutual agreement of the utility and the DER developer, for voltage regulation using inverters certified to IEEE 1547-2018 that would reduce anticipated distribution upgrade costs. (*Staff modified SunShare D.O. 4d)*

9. (NEW). Refer review and discussion of the Simplified IEEE 1453 Method outlined in Xcel Energy's April 26, 2017 compliance filing in Docket No. E002/M-13-867, voltage fluctuation measurements in the field compared to engineering review (e.g. Glazier compliance report filed April 28, 2017 and other relevant findings), and current industry practice to comply with IEEE 1453 in engineering review of solar PV to the Technical Subgroup in Docket No. E999/CI-16-521 for consideration in the update to statewide technical interconnection and interoperability requirements.

CSG Step	Step	Description	Where the Project is today	Impact of Commission Action
1,2		CSG application, program deposit/escrow, certificate of good standing		
3	1	Interconnection Application by Interconnection Customer/Developer		
3	2	Preliminary [Application] Review by Xcel		
4	3	Go-No Go Decision by Customer re: Engineering Studies	*The CSG tariff describes an "Expedited Ready" determination at this stage which triggers the 24 month Mechanical Completion clock. Linden was determined "Expedited Ready" and the Mechanical Completion clock deadline has been updated several times due to changes in the interconnection review timeline (restudies, disputes, etc.)*	
4	4	Engineering Studies		If you require additional restudy (Revision 4), project goes back to this step (DO #4)
4	5	Study Results and [indicative] Cost Estimates		
4			**Linden Project is currently here**. SunShare has signed IA and paid 1/3 payment for 3 MW; however, claims they still have right to expand if IE recommendations result in higher capacity for the project. Xcel claims they will not sign an IA if the final capacity is not determined and cannot proceed until resolved.	
4	6	Final Go-No Go Decision by Customer (Sign Interconnection Agreement and Provide 1/3 payment)		
5	7	Final Design Review by Xcel		If you order moving forward at 3 MW, Xcel will need to sign the IA and then it begins this step. (DO #3 or 5)
5	8	Order Equipment and Construction by Both Parties	*SunShare has already begun some construction on the site.*	*This is the step that must be achieved by the 24-month Mechanical Completion clock.*
6*,7	9	Final Tests by Xcel/Customer		
8	10	Written Permission to Operate from Xcel		*Unless agreed to in Step 9, this is when the project is energized (must be within 3 days of accepted final tests.)*
	11	Updated Drawings and Prints by Customer		

- CSG Step 6 occurs simultaneous with CSG Step 5 and requires additional program requirements.

Source: Xcel's Section 10 tariff (based on 2004 interconnection standards) and Section 9 CSG Program Tariff. CSG Step numbers based on: https://www.xcelenergy.com/working_with_us/renewable_developer_resource_center/solar_rewards_community_developer_resources