

June 10, 2020

**REVISED Decision Options**

Docket No. E002/M-19-685

*Incorporates Xcel Energy and IREC Revised Decision Options already e-filed.*

*Staff revisions are made at D.O. 1, D.O. 26.5, D.O. 29.5.*

- 1) Accept the 2018<sup>9</sup> Hosting Capacity Analysis Report filed by Northern States Power Company d/b/a Xcel Energy. (*Xcel Energy*) [Staff Revised]
  - a) Find the filing satisfies requirements of the Commission's Order Accepting Study and Setting Further Requirements (August 15, 2019) in Docket No. E002/M-18-684 [2019 HCA Order]. (*Xcel Energy*)

OR

- b) Require a compliance filing within 30 days of the Commission's Order including:
  - i) a tabular report containing the sub-feeder results displayed on the 2019 hosting capacity map. This report shall be available in the docket, on the hosting capacity webpage, and/or by email request. (*Fresh Energy*)
  - ii) Include notation of which feeders had actual DML data incorporated in the 2019 DRIVE HCA (*Staff*)

AND/OR

- c) Find improved and additional information is necessary in future reports to satisfy the requirements in Minn. Stat. 216B.2425; Subd.8. (*IREC, Fresh Energy*)

HCA Use Cases

- 2) Xcel shall collaborate with stakeholders in evaluating the costs and benefits associated with a hosting capacity analysis able to achieve the following objectives: (*Department*)
  - a) Remaining an early indicator of possible locations for interconnection;
  - b) Replacing or augmenting initial review screens and/or supplemental review in the interconnection process; and/or
  - c) Automating interconnection studies; further,
  - d) Direct Xcel to continue working with stakeholders to identify opportunities to integrate the HCA and the MN DIP pre-application and screening processes in future iterations of the HCA.
- 3) Direct Xcel to include on the HCA map and in downloadable spreadsheet format the following data: Transformer Name, Transformer Absolute Min, Load Tap Changer (LTC) or Regulator, Feeder Absolute Min, and Network or Radial. (*IREC*) **[D.O. 8.f requires same monthly]**
- 4) Direct Xcel in the 2020 HCA, to provide a discussion of how Xcel's hosting capacity analysis can be used to assist state energy policy goals related to beneficial electrification including

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detail on how a load hosting analysis would be done, an estimate of the resources that would be required, and the specific information the Company could provide. (Fresh Energy)

[OR]

4a. Direct Xcel in ~~the its~~ 2020 HCA IDP Compliance Filing, to provide a discussion of how Xcel's hosting capacity analysis can be used to assist state energy policy goals related to beneficial electrification including detail on how a load hosting analysis would be done, an estimate of the resources that would be required, and the specific information the Company could provide. [Xcel Energy Revised Decision Option]

5) Xcel's Hosting Capacity Report must be detailed enough to provide developers with a reliable estimate of the available level of hosting capacity per feeder at the time of submittal of the report to the extent practicable. The information should be sufficient to provide developers with a starting point for interconnection applications. (2018 HCA Order, Order Point #2)

[OR]

5a. Xcel's Hosting Capacity Report must be detailed enough to provide developers with a reliable estimate of the available level of hosting capacity per ~~feeder line segment~~ at the time of submittal of the report to the extent practicable. The information should be sufficient to provide developers with a starting point for interconnection applications. [IREC Revised Decision Option]

5.5. The Commission adopts a long-term goal to use the hosting capacity analysis in the interconnection process's fast track screens. Xcel should work with stakeholders to refine the hosting capacity analysis so that it can be used for this purpose. [IREC New Decision Option (from 19-666 docket)]

HCA Methodology and Tools

6) Direct Xcel to analyze and compare the hosting capacity of a selection of representative feeders using both the DRIVE tool and Synergi. (Department)

7) Direct Xcel to provide an update on the evolving capabilities of Synergi in future HCAs and a discussion of which tool is more capable of providing an accurate and reliable HCA in the 2020 HCA Report. (Department)

Frequency of HCA Updates

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- 8) Require monthly updates and publication of hosting capacity analysis and available distribution system data beginning with the 2020 HCA Report. (*IREC, Minneapolis*)
  - a) For feeders where significant changes in load, configuration, or generation has occurred, update or rebuild those feeder models and publish updated HCA data and results.
  - b) Publish the criteria violation values for each HCA model run and location.
  - c) Publish HCA results using peak load for each month of the year, daytime minimum load in each month of the year and absolute minimum load in each month of the year.
  - d) Include a unique name or number for each line segment in the map's pop-up boxes.
  - e) Show the actual locations of distribution system lines instead of broad blocks of color on the HCA map.
  - f) Include on the HCA map and in downloadable spreadsheet format the following data: Transformer Name, Transformer Absolute Minimum, Load Tap Changer (LTC) or Regulator, Feeder Absolute Minimum, and Network or Radial.

OR

- 9) Evaluate the feasibility, resource requirements, and estimated costs of partial (targeted) updates to the HCA and file a compliance filing by *[INSERT DATE]*. This analysis should evaluate the feasibility, resource requirements, and costs for (1) monthly and (2) quarterly updates, and updates made pursuant to different possible criteria. Xcel shall consult with stakeholders about which criteria should be prioritized in more frequent updates and which to examine in this compliance filing. (*Fresh Energy*)
  - a. Set November 2, 2020 as the date. [Xcel Energy Revised Decision Option]

OR

- 10) Provide options for monthly, quarterly and semi-annual HCA updates, including cost estimates, with the 2020 HCA Report filing (*Department, Xcel Energy*)

Granularity of HCA

- 11) Direct Xcel to include a unique name or number for each line segment in the maps' pop-up boxes. (*IREC*) [D.O. 8.d requires same monthly]
- 12) Direct Xcel to show the actual locations of distribution system lines instead of broad blocks of color on the HCA map. (*IREC*) [D.O. 8.e requires same monthly]
- 13) Direct Xcel, starting in November 2020, to make available a tabular report containing the sub-feeder results displayed on the 2020 hosting capacity map. This report shall be

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available in the docket, on the hosting capacity webpage, and/or by email request. (*Fresh Energy, IREC, Minneapolis*)

Granularity of Load Data

- 14) Direct Xcel to include in future HCA reports the precise number of feeders with actual and estimated Daytime Minimum Load data and note the feeders with estimated Daytime Minimum Load on the tabular spreadsheet to inform developers' use of the report. (*Fresh Energy*)
- 15) Direct Xcel, in future HCA reports, to provide a description of plans for adding SCADA to additional feeders, particularly rural feeders where SCADA would help secure actual Daytime Minimum Load data for areas with significant community solar garden penetration. (*Fresh Energy*)
- ~~16) Require Xcel to publish HCA results using peak load for each month of the year, daytime minimum load in each month of the year, and absolute minimum load in each month of the year unless that data violates the 15/15 standard. (*IREC*)~~

16.a Require Xcel to publish monthly peak load, monthly absolute minimum load, and monthly daytime minimum load, by substation and feeder, unless that data violates the 15/15 standard. [IREC Revised Decision Option]

16.b Require Xcel to publish HCA results using peak load for each month of the year and daytime minimum load in each month of the year. [IREC Revised Decision Option]

16.c Require Xcel to publish HCA results using absolute minimum load in each month of the year. [IREC Revised Decision Option]

Criteria Threshold Violations

- 17) Direct Xcel to publish the criteria violation and corresponding hosting capacity values for each HCA model run and location in the 2020 HCA tabular report and map with appropriate caveats. (*IREC, Fresh Energy, Department, Minneapolis*)
- 18) Examine publishing the additional criteria violation information and provide an update in the 2020 HCA Report (*Xcel Energy*)

Mitigation Analysis

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- 19) Direct Xcel to perform mitigation analyses [*of feeders with zero hosting capacity analysis*] in future HCAs that provide information related to: (1) the frequency at which constraints to individual feeders occur; (2) the mitigation options available for those constraints and a discussion of whether distributed energy resources can also serve as a mitigation option; (3) the amount of additional hosting capacity that can be obtained by implementing the identified mitigation option; (4) the cost of each mitigation option; and (5) whether the mitigation analysis performed by Xcel can be relied upon to interconnect specific and actual distributed energy resource project proposals. (*Department with [Staff clarification], Minneapolis*)
- 20) Direct Xcel to request that EPRI add load DER into EPRI's Mitigation Assessment tool. If such a feature can be added in time to conduct such analysis for the 2020 HCA, Xcel should do so. If it cannot be added in time, or added at all, Xcel should provide the results of its discussion with EPRI. (*Department*)
- 21) If load DER cannot be incorporated into EPRI's Mitigation Assessment tool in time to be included in Xcel's 2020 HCA, direct Xcel to conduct an illustrative technical and economic analysis of the effect that a load DER can have on hosting capacity as an alternative to traditional mitigation options. (*Department*)

Sensitivity and Accuracy Analysis

- 22) The Commission requests that Xcel Energy address stakeholder recommendations in the Company's 2020 Hosting Capacity Report filing; including:  
  
[*No action maintains these options based on the cited Orders*]
  - a) Conduct a sensitivity analysis. (*2018 HCA Order, Order Point #7c*)
  - b) Re-evaluate Xcel's choice to focus its hosting capacity analysis on large centralized DERs rather than smaller ones. (*2019 HCA Order, Order Point #8a*)
  - c) Discuss Xcel's ability to obtain more detailed data on secondary voltage equipment, and the types of DERs being interconnected to Xcel's system. (*2019 HCA Order, Order Point #8b*)
  - d) Continue to consider and address relevant requests from parties. (*2019 HCA Order, Order Point #8c*)
- 23) The Commission does not require a sensitivity analysis for the 2020 HCA (*Staff clarification option, Department, Xcel Energy*)

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24) Direct Xcel to develop a written data validation plan for HCA results, accept written feedback from stakeholders on a draft of the written plan, and then include the final plan in the next HCA report. (IREC)

[OR]

24a. Following a Commission determination of the Use Case for future HCA reports, Direct Xcel to develop a written corresponding data validation plan for HCA results, accept solicit written feedback from stakeholders on a draft of the written draft plan, and then include the final plan in the next HCA report. [Xcel Energy Revised Decision Option]

Load Analysis

25) Direct Xcel to provide an HCA that is useful for identifying how much new DER load a feeder, or sections of a feeder, can feasibly accommodate without additional study, upgrades, or cost. (IREC)

Data and Privacy/Security

26) Find that when the 15/15 standard calls for the redaction of customer energy use data (CEUD) at the substation or feeder level to protect customer privacy, it is only appropriate to redact load data at that individual level. All other HCA data should be published on Xcel's map, and in a downloadable spreadsheet. (IREC)

26.5 Find that when ~~the 15/15 standard calls for the redaction of~~ Xcel redacts customer energy use data (CEUD) at the substation or feeder level to protect customer privacy, it is only appropriate to redact ~~load~~ data ~~that is defined as CEUD by the Commission at that individual level. All other HCA data should be published on Xcel's map, and in a downloadable spreadsheet~~ The results of Xcel Energy's hosting capacity analysis are not CEUD and should not be redacted for that purpose. [Staff Revised Decision Option]

27) Require Xcel to separately evaluate and justify each privacy and security concern, so as to provide a full description and specific basis for withholding the information. (IREC)

28) Direct that before withholding any HCA data for security reasons, Xcel must demonstrate that publishing data for a specific site creates a significant risk that is substantial enough to outweigh the benefits of providing this transparency to facilitate optimal siting of distributed energy resources (DERs). (IREC)

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29) Refer discussion of grid data, and grid and customer security, privacy, and confidentiality to a Commission discussion involving all utilities, relevant experts with a role in protecting critical infrastructure, and customers. (*Xcel Energy*)

29.5 The Commission hereby delegates authority to the Executive Secretary to issue Notice(s), set schedules, and designate comment periods to further discuss grid and customer security issues related to public display or access to grid data which includes, but is not limited to distribution grid mapping, aggregated load data, and critical energy infrastructure. The Commission anticipates consideration of the record and comments within 12 months of this order. [Staff Revised Decision Option]

Stakeholder Engagement

30) Direct Xcel to implement its 2020 stakeholder engagement plan as outlined in the Company's January 17, 2020 Reply Comments. Direct Xcel to provide the results of the stakeholder process, including an overview of the feedback and suggestions provided by stakeholders, whether the feedback and suggestions are included in the 2020 HCA, and an explanation for any feedback and suggestions received but not included in the 2020 HCA Report. (*Department, Minneapolis*)

31) Direct Commission staff to oversee and facilitate a discussion with Xcel and stakeholders of the technical assumptions, limiting criteria, and thresholds used in Xcel's HCA. ~~Find that after this discussion is completed, the Commission will issue an order setting the thresholds and assumptions for Xcel to use in its HCA.~~ The discussion should address: [Xcel Energy Revised Decision Option. See D.O. 31.5a for the language struck in this revision.]

- a. Thresholds for what constitutes a significant change in configuration, load, or generation to warrant rebuilding a feeder model,
- b. Use of the Maximum Tap Regulators in Over/Under-Voltage Analysis setting,
- c. Analysis assumptions for Primary Voltage Deviation
- d. Other voltage analysis issues identified in IREC's opening comments
- e. Limitations on Unintentional Islanding, and
- f. Other topics identified by stakeholders for review.

[AND?]

31.5a Find that after this discussion is completed, the Commission will issue an order setting the thresholds and assumptions for Xcel to use in its HCA. (IREC, Minneapolis)

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[OR]

31.5b Direct Xcel Energy to provide the results of the discussion, including an overview of the feedback and suggestions provided by stakeholders, and whether the feedback and suggestions are included in its next HCA Report. [Xcel Energy Revised Decision Option]

32) Direct Xcel Energy to file the 2020 HCA Report on November 2, 2020. (*Staff. Clarifies annual HCA Report filing in even-numbered year.*)