Ontario Energy Board | Commission de l'énergie de l'Ontario

BY EMAIL AND WEB POSTING

October 17, 2024

To: All Licensed Electricity Distributors
All Participants in Consultation Process EB-2019-0207
All Other Interested Parties

Re: Distribution System Capacity Information Map – Phase 1 Implementation (EB-2019-0207)

The November 2023, Letter of Direction (LOD) requested that the Ontario Energy Board (OEB) provide clear direction to the sector on publicly available electricity distribution capacity information. To address this request, OEB staff has engaged with its Distributed Energy Resources (DER) Connections Review Working Group and conducted a survey of all distributors, Electric Vehicle (EV) charging companies and other stakeholders. This letter outlines the results of this work and the OEB's determination to move ahead with capacity mapping on a phased approach to address the LOD request in order to expedite making this information available as soon as possible.

In the initial phase, which is described in detail below, licensed electricity distributors will be expected to post capacity information maps using their existing systems, such as Geographic Information Systems (GIS) or other similar tools, or using manual methods, such as colour-coded maps. Distributors are expected to complete Phase 1 implementation by **March 3, 2025**.

What we heard

The OEB surveyed 29 electricity distributors and 16 other stakeholders in March 2024 (2024 Survey[1]) to understand the benefits of and implementation considerations for sharing distribution system capacity information. Survey results, available on the OEB's Engage with Us website, confirm the value of system capacity information in supporting the deployment of Electric Vehicle (EV) charging stations. This finding is consistent with

[1] 2024 System Capacity Information Sharing survey: https://engagewithus.oeb.ca/derandevchargingconnections/news_feed/survey-response-summary-collected-from-system-capacity-information-sharing-survey

feedback from the OEB's earlier survey conducted in 2023[2]. The 2024 survey revealed that system capacity maps can also play a crucial role in facilitating the strategic deployment of DERs and supporting other load customer connections.

OEB staff engaged a subgroup of the DER Connections Review Working Group to discuss different approaches to the provision of distribution system capacity information. These discussions highlighted the value of a mapping approach for sharing this important information.

EV charging providers noted that, over the coming years, the number of potential sites for development will be substantial, with many providers simultaneously evaluating a large volume of sites. Similarly, distributors also anticipate a significant increase in non-residential EV charger connection requests and service upgrades over the next five years. Providing system capacity information is seen by EV charging providers and other customers as an opportunity to address a high volume of potential connections by reducing the number of site requests to distributors. Several stakeholders suggested that system capacity information maps could assist customers in site selection and prioritization, while also reducing operational costs and enhancing customer service by minimizing the number of preliminary information requests not only from EV charging providers, but also from proponents of DERs and other commercial customers.

Customer groups, including EV charging and DER providers, underscored the significant value that capacity information maps can offer the EV charging industry and other customers and stakeholders. Access to this information would empower customers to make informed decisions about investments in new electrical loads, and to assess whether the current distribution system can accommodate additional load without requiring major system upgrades. It could also strategically guide the placement of new DER resources, benefiting both customers and distributors. Additionally, this capacity information could be valuable in supporting distributors' future rate applications, particularly in promoting non-wires solutions in areas with limited capacity.

Smaller distributors expect minimal growth in their service areas due to their geographic location and size. These distributors believe the current process of providing capacity information upon customer request remains sufficient and did not support the concept of capacity mapping. EV charging providers and other stakeholders have emphasized that the lack of readily available capacity information during the preliminary site selection and planning stages remains a significant barrier to deploying EV charging stations, particularly when working with multiple distributors across the province. For EV charging providers, this information would aid in selecting optimal sites for new charging stations.

[2] 2023 EV survey: https://engagewithus.oeb.ca/ev-integration/news_feed/report-on-ev-survey

Distributors emphasized the need for additional resources to address capacity information sharing. The level of resources required would depend on the complexity of the capacity map, including the level of automation needed, such as whether it will be interactive or static and whether it will provide capacity information at the street level versus feeder level. Currently, distributors have varying capabilities in their software systems to publish system capacity information. While some can publish capacity maps with minimal effort, others suggested they would require significant system upgrades or modifications to develop advanced maps.

Some distributors expressed concerns that publishing capacity maps could unintentionally discourage customer engagement with distributors, potentially preventing customers from exploring other viable options not represented in the capacity map. Additionally, a few distributors highlighted potential cybersecurity risks associated with publishing too much detailed information. Customer groups noted that these issues can be addressed as part of implementation, such as by including disclaimers and removing any sensitive information.

Phased Implementation Approach

The OEB has determined that, through a phased approach, providing capacity information in the form of distribution system capacity maps is the most accessible option for customers and other potential users, and would offer the highest level of benefits. Two key factors have led the OEB to adopt a phased approach in implementing capacity maps:

- Customer groups, such as EV charging companies and DER providers have indicated that even if less detailed capacity information were provided, it would be valuable in identifying the location of potential capacity availability in a distributor's service area. And, while stakeholders preferred monthly updates, quarterly updates were considered acceptable. These stakeholders emphasized the urgency of addressing this issue, noting that the lack of easy access to system capacity information is a barrier to the deployment of new EV charging stations and DERs.

- Distributors noted that providing feeder-level capacity information requires significantly less effort than street-level data. While distributors preferred semi-annual updates they generally agreed that quarterly updates are feasible. Several distributors emphasized the need for sufficient time to adjust their processes and systems to accommodate the posting of advanced capacity maps.

The OEB's phased approach to implement the system capacity information map is described below. In developing its proposed approach to providing distribution system capacity information, the OEB considered the input from the DER Connections Review Working Group and the survey results.

Phase 1

In the first phase, distributors will be expected to post capacity information maps on their websites that rely on their current technical capabilities. This approach will allow for faster implementation by responding to the concerns heard from customers and other stakeholders. It also recognizes the comments from distributors about the time needed to make changes to systems and/or gather the necessary information, to be able to provide system capacity mapping. Distributors should rely on their existing systems, such as GIS or other similar tools, to create capacity maps. Where a distributor does not have this technology available, it may choose to use manual methods, such as colour-coded maps. Distributors will be expected to update this information on a quarterly basis. Although customer stakeholders prefer monthly updates, the quarterly schedule strikes a balance between ensuring timely information and minimizing operational challenges for distributors.

Regarding the concerns of distributors anticipating minimal growth in connection requests for either EV charging or DERs within their service areas due to geographic and regional constraints, OEB staff expects that these distributors will only need to make minimal efforts in developing the maps during Phase 1. In service areas with minimal load growth, OEB staff anticipates that the effort required to update the information will also be minimal.

The OEB has provided scope and implementation details for Phase 1 mapping in Appendix A along with examples of capacity maps in Appendix B. All distributors should avoid making significant investments implementing this phase. Distributors are expected to publish their distribution capacity maps in accordance with Appendix A of this letter. The OEB acknowledges that distributors may need to adjust their websites, processes and systems to implement and post the required capacity information map. Therefore, distributors have until **March 3, 2025** to complete the Phase 1 implementation.

Phase 2

In the second phase, distributors will be required to provide advanced and consistent capacity information maps. The development of Phase 2 requirements will continue into early 2025, through discussions with the DER Connections Review Working Group. The objective of Phase 2 is to provide customers with easy access to consistent and more detailed system capacity information across all distributors' service areas. OEB staff expects to explore various approaches, including the possibility of a centralized platform to ensure cost-effective implementation of capacity maps across the province.

Distributors are encouraged to consider Phase 2's objective as they implement Phase 1. If significant system modifications are anticipated for Phase 1, distributors should contact OEB staff to discuss their implementation strategies and any potential challenges. Phase 1 will establish a foundation for future improvements, with the overarching goal of enhancing transparency and supporting the growing electricity demand in Ontario.

By adopting this phased approach, the OEB aims to balance the timely provision of valuable system capacity information to stakeholders with the operational and security concerns raised by distributors.

Conclusion

Phase 1 is expected to be completed by March 3, 2025. Any distributor anticipating difficulty in meeting this deadline should contact OEB staff as soon as possible. OEB staff will evaluate extension requests on a case-by-case basis. Any questions regarding this letter should be sent to IndustryRelations@oeb.ca.

Yours truly,

Brian Hewson
Vice President, Consumer Protection & Industry Performance

Appendix A – Phase 1 Scope and Implementation Details

1. **Information to be included in the map**: Distributors are expected, at a minimum, to publish remaining capacity information at both station and feeder-level as described below. Additional information may be provided at the distributor's discretion.

   - **Stations**: Distributors should identify the location and remaining capacity of transformer stations with nameplate rating of 7.5 MVA or greater located in their service area. The geographic areas served by the stations are not required to be shown on the map. The station remaining capacity should be shown in the following ranges: 0–1,000 kVA, 1,000–2,000 kVA, and over 2,000 kVA.

   - **Feeders**: The capacity map should provide distribution system capacity information based on feeder capacity at the breaker level, for feeders operating at 8kV or higher. Distributors may choose to use colour-coded polygons or lines to show the available capacity in a geographic area without revealing the precise feeder locations. The size of the polygons can be determined based on the coverage by the feeder. The remaining feeder capacity should be displayed in the following ranges: 0–499 kVA, 500–999 kVA, 1,000–1,999 kVA, and over 2,000 kVA.

     - For areas served by multiple feeders, distributors should determine the highest remaining feeder capacity that can be offered for a single connection. For example, if an area is supplied by an 8 kV feeder with 500 kVA of remaining capacity and a 27.6 kV feeder with 1,000 kVA of remaining capacity, the available capacity for a single connection would be 1,000 kVA. This is because a single connection is unlikely to be supplied by both feeders.

     - For feeders supplied by a host distributor, the embedded distributors can determine the remaining feeder capacity based either on the capacity at the feeder breaker level or the actual remaining capacity of the feeder section owned by the embedded distributor.

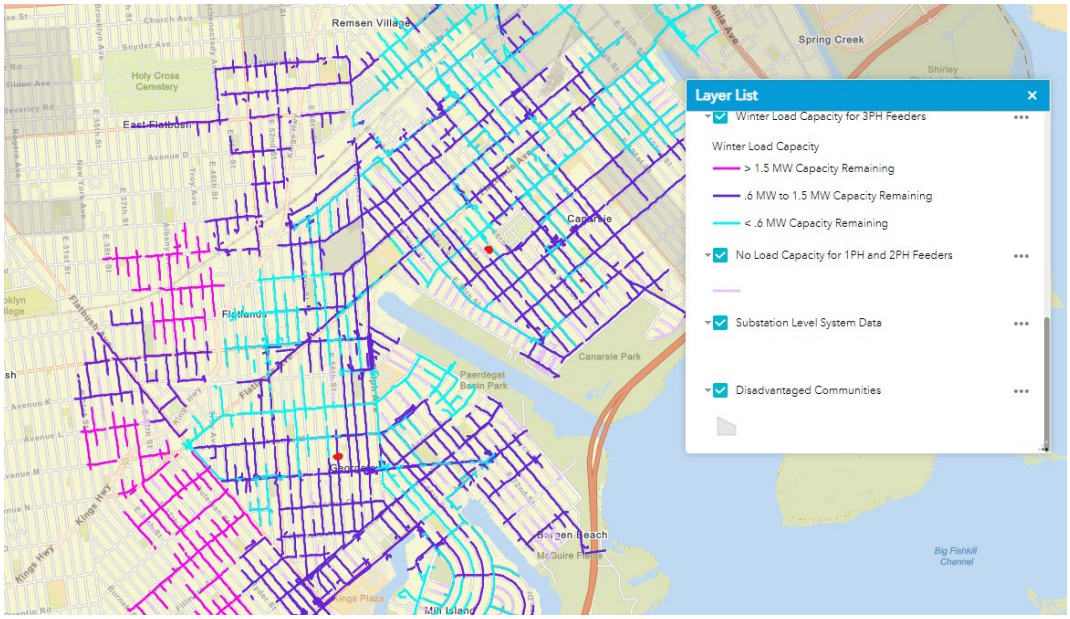
   - **Remaining Capacity Calculation**: Remaining capacity should be calculated based on the annual summer or winter peak of the station or feeder.

2. **Update Frequency**: Distributors will be expected to update capacity information on a quarterly basis.

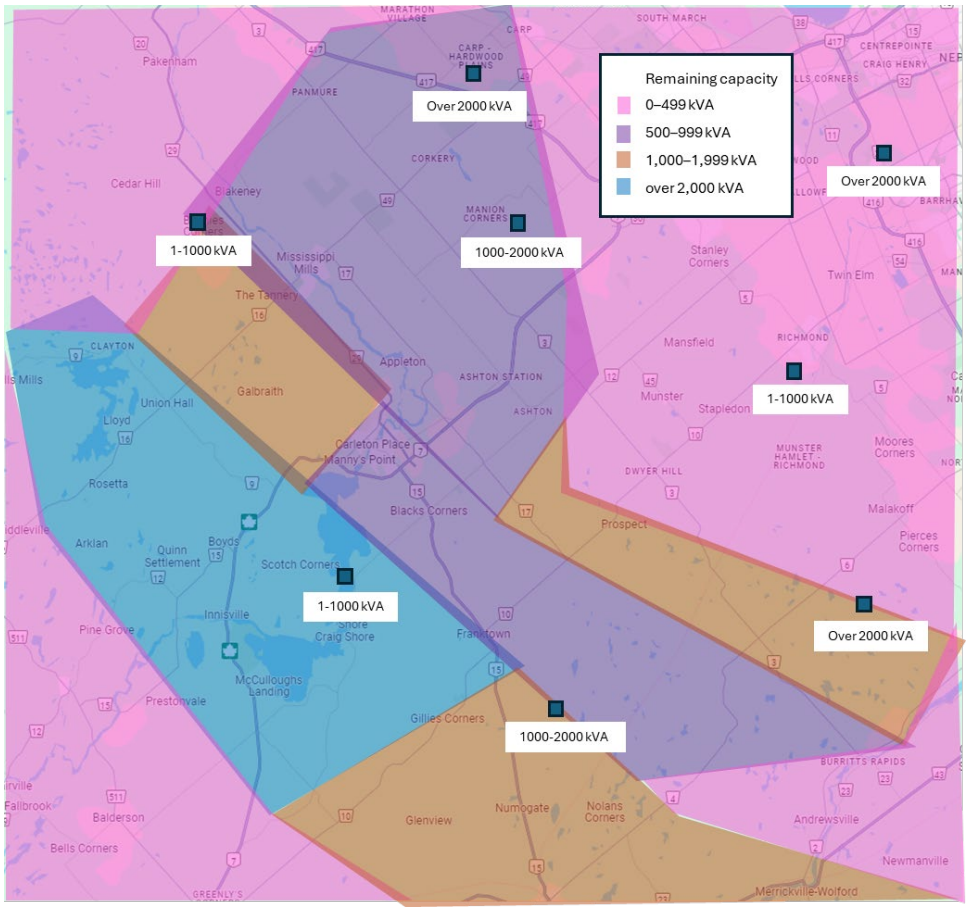
3. **Customer Engagement**: Distributors should include messaging alongside the capacity maps to encourage customers to reach out to distributors directly to explore additional options or discuss specific connection needs, ensuring that customer engagement remains robust.

4. **Cybersecurity Considerations:** To address any potential cybersecurity concerns for Phase 1, distributors are not expected to post station and feeder names or other sensitive information. Distributors should take any necessary steps in preparing their capacity map, while ensuring cybersecurity risks are managed appropriately.

Appendix B – Examples of System Capacity Maps



Example 1 – Advanced distribution system capacity map. Source: [Con Edison Hosting Capacity Map]



Example 2 – Colour-coded map (illustrative only)