



BULLETIN

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**TO: All Licensed Electricity Distributors
All Other Interested Parties**

RE: Residential Customer Connections & Service Upgrades

This Bulletin provides Ontario Energy Board (OEB) staff guidance to electricity distributors regarding the basic connection for residential customers. OEB staff is also reminding distributors of their obligations under the Distribution System Code (DSC) when determining the cost responsibility for residential subdivision connections and residential customer service upgrades.

OEB staff has received questions and complaints regarding electricity distributors' residential customer connection practices pertaining to cost responsibility, which indicated a lack of consistency and compliance in how distributors assign costs for residential customer connections. To gather further information, OEB staff undertook a survey of a sample of distributors to better understand the current practices regarding residential customer connections. OEB staff also reviewed all licensed electricity distributors' residential customer connections provisions as set out in their Conditions of Service (CoS).

In light of the foregoing, OEB staff is providing guidance to distributors regarding residential customer Basic Connections; and reminding distributors of the requirements of the DSC in relation to subdivision connections and service upgrades.

1. Guidance on electrical capacity for residential customers under the “Basic Connection”

With the shift to electrification currently underway in Ontario, an increasing number of prospective homeowners will likely seek residences that can readily support electrical service that can accommodate the demands of equipment such as electric vehicle (EV) chargers and heat pumps. In light of this shift in consumer preferences and attitudes,

electricity distributors need to ensure their distribution systems will support the increasing demand for residential electrification. The *Filing Requirements for Electricity Distribution Rate Applications* (Filing Requirements) state that an electricity distributor must demonstrate that it has a planning process for future capacity needs of the distribution system, which must include, among others, increased adoption of EVs¹. The Filing Requirements include the expectation that distributors will consider such needs to avoid premature replacement of assets due to capacity constraints.

Section 3.1.4 of the DSC requires a distributor to define a Basic Connection for residential customers that includes, at a minimum, transformation capacity and conductor. Based on information gathered from the survey of distributors and the review of CoS, OEB staff identified that 38 of the 58 distributors include the necessary transformation and conductor to provide electrical capacity to accommodate a 200-amp service as part of their Basic Connection.

While the DSC does not specify the capacity to be provided as a Basic Connection, OEB staff is of the view that it is good practice for distributors to provide new residential customers with capacity (both transformation and conductor) to accommodate a 200-amp service under their Basic Connection policy. This approach recognizes residential customers' increased electrical demand as a result of electrification, which means that what can be considered a Basic Connection has evolved. For example, a typical level 2 residential EV charger requires approximately 30 to 50 amps, and a heat pump requires approximately 20 amps. OEB staff is also of the view that factoring in the increased electrification when providing adequate capacity will avoid replacing assets prematurely as individual homeowners gradually increase their electricity demand. The OEB's Filing Requirements contemplate that distributors will consider this future capacity in their planning.

This guidance does not apply to multi-unit residential complexes that require a single electrical supply from the distributor's main distribution system to the complex. In both the case of multi-unit complex and in the event a new house requires a service capacity greater than 200 amps, the distributor should continue to assess whether the customer will bear any additional costs according to section 3.1.6 of the DSC.

2. Treatment of basic connection costs for residential subdivision connections

Through both the survey, and several recent compliance reviews, OEB staff has identified that some distributors do not attribute a Basic Connection to each lot in a plan

¹ [OEB Filing Requirements for Electricity Distribution Rate Applications – 2023 Edition for 2024 Rate Applications, Chapter 5, Distribution System Plan](#), December 15, 2022, pg. 11.

of subdivision; instead, they incorporate the entire project costs into their calculations when determining the capital contribution to be paid by developers.

OEB staff is of the view that this approach does not comply with section 3.1.4 of the DSC. OEB staff reminds distributors that they are required to provide a Basic Connection for residential customers in accordance with section 3.1.4 of the DSC. OEB staff considers each lot on a plan of subdivision to represent an individual residential customer. Accordingly, the cost for a Basic Connection for each of the lots within the plan of the subdivision should be removed from the entire project costs, as each lot represents an individual residential customer connection. OEB staff understands from the survey results and discussions with distributors that this requirement of the DSC in relation to its application to subdivision developments may not have been clear and is therefore providing this explanation to promote future compliance.

3. Transformer or system upgrades triggered by a residential customer service upgrade

According to the results of the survey and discussions with distributors, distributors currently employ varying methodologies in determining cost responsibilities when a residential customer's service panel upgrade from 100 amps (or lower) to 200 amps necessitates a distribution system upgrade. The OEB has received enquiries from both distributors and customers through its Industry Relations Enquiry system about the costs of distribution system upgrades triggered by a residential customer service panel upgrade in relation to adding EV chargers to homes.

OEB staff also recently completed a compliance review of a licensed distributor which is relevant and informative about the issue regarding residential service upgrades. The compliance review was prompted by complaints from numerous homeowners regarding the cost they were being asked to pay the distributor when they requested service panel upgrades (increases to 200 amps) to accommodate the installation of EV chargers. In conducting its compliance review, OEB staff observed that the distributor had attributed 100% of the service transformer upgrade costs to the residential customers who requested the service upgrades. In considering the costs charged to the customers for the upgrade, OEB staff identified that the distributor had not taken into account the pre-existing conditions of the transformers, such as their age and loading, which played a significant role in necessitating the upgrades. As a result of the review, OEB staff advised the distributor that the transformer upgrades should have been treated as enhancements, as that term is defined in the DSC². OEB staff also advised that based

² See DSC section 1.2: "enhancement" means a modification to the main distribution system that is made to improve system operating characteristics such as reliability or power quality or to relieve system

on the information provided by the distributor, the additional load resulting from a single residential customer's service upgrade was not substantial enough to require a service transformer upgrade and should be deemed general load growth. Consequently, OEB staff concluded that the responsibility for the upgrade costs of a new transformer should be the distributor's rather than that of individual residential customers. To comply with the DSC, the distributor was required to refund the affected customers for the costs of transformation.

In staff's view, when a residential service upgrade from 100 amps (or lower) to 200 amps necessitates a distribution system upgrade, it suggests that the existing distribution system supplying the area might have already been operating at or near its capacity limit even before the service upgrade was requested. Since distributors are required to consider the future capacity needs of their assets to avoid premature replacements caused by capacity constraints, the distribution assets that are close to their capacity limit would likely be the ones that are also nearing end of life.

Section 3.3.1 of the DSC requires distributors continue to plan and build the distribution system for reasonable forecast load growth. In accordance with this section a distributor is expected to undertake enhancements to its distribution system for purposes of improving system operating characteristics or for relieving system capacity constraints. OEB staff is reminding distributors that in considering any new connection, it is their responsibility to replace or upgrade main distribution system assets when necessary due to any pre-existing conditions (e.g., end of life and loading issues) as enhancements. These costs must not be transferred to the connecting customer as part of an expansion contribution or charge. OEB staff would consider a distributor noncompliant with section 3.3 of the DSC if, through a compliance review, it were identified that the distributor had included in a customer's Offer to Connect the costs for enhancements as discussed above.

In the event a customer requires a transformation capacity exceeding 200 amps, the distributor should continue to assess whether the customer will bear any additional costs incurred. Similarly, the distributor should continue to assess whether the customer will bear any additional costs for secondary overhead line or underground cable upgrade required due to a service upgrade. Secondary overhead line or underground cable is a connection asset that is only servicing the requesting customer, unlike service transformers and primary conductors that are typically shared by multiple residential customers. Finally, the distributor should continue to assess whether the customer will

capacity constraints resulting, for example, from general load growth, but does not include a renewable enabling improvement.

bear any additional costs for the upgrade of distribution system assets, such as a primary overhead line and a transformer supplying only one customer.

OEB staff wishes to emphasize that this Bulletin is not intended to suggest distributors should proactively upgrade transformers across their service areas to accommodate a 200-amp service capacity for all residential customers. Instead, its purpose is to assist distributors in handling the specific situations as described above to support the expected electrification of Ontario homes, and to promote compliance with the DSC.

The views expressed in this Bulletin are those of OEB staff and are not binding on a panel of Commissioners. Any enquiries regarding this Bulletin should be directed to the OEB's Industry Relations email address at IndustryRelations@oeb.ca.