POWER ADVISORY

EV Delivery Rates Addendum 2: Implementation Considerations

Prepared for: Ontario Energy Board

March 25, 2024

Power Advisory · 55 University Avenue Suite 700, PO Box 32 · Toronto, Ontario M5J 2H7
647.525.9373 · ssimmons@poweradvisoryllc.com

TABLE OF CONTENTS

EV Delivery Rates Addendum 2: Implementation Considerations

EXECUTIVE SUMMARY:

Power Advisory has considered a variety of real-world scenarios that may be instructive for the Ontario Energy Board (OEB) and Ontario local distribution companies (LDCs) with respect to the implementation of an electric vehicle (EV)-specific rate in Ontario. This addendum discusses three types of scenarios: EV-specific rates that already exist in other jurisdictions, specifically Quebec and Massachusetts; opt-in rate classes and on-bill benefits/programs in Ontario, where the customer must proactively elect to receive a given electricity rate or benefit; and automatic application of billing components/rate riders by Ontario LDCs in respect of customers with particular characteristics.

While direct consultation with Ontario LDCs will be needed to better understand any specific local issues or concerns, Power Advisory's comparative research suggests that Ontario LDCs are well-equipped to implement an EV-specific rate.

1. EX-ONTARIO COMPARISONS

As noted in the jurisdictional scan that Power Advisory completed as part of an earlier phase of this project, utilities outside of Ontario already have experience with offering and enrolling customers in rate classes that are designed to alleviate the impact of demand charges, both specifically for EVs and, in some cases, for other low load factor customers. Power Advisory has researched the implementation and ongoing maintenance of such rates by Hydro-Québec and by National Grid in its Massachusetts service territory and has conducted interviews with staff at both utilities to better understand the rates and their implementation.

1.1 Hydro-Québec

1.1.1 *Overview*

Hydro-Québec offers an EV-specific rate (*Rate BR*) to EV charging stations rated at 400 volts or more (though at a customer's request Rate BR can also be applied to 240-volt stations) and which is aimed at stations with very low load factors, i.e. 10% or less. Hydro-Québec also offers a non-load-type-specific low load factor rate (*Rate G9*) for customers with demand ≥65 kW whose load factor is less than approximately 30%. Both of these rates are offered to customers on a voluntary basis – that is, rather than selecting one of these rates, customers may instead elect to be billed on a standard general service rate (e.g., Rate M). Should an EV charging station billed on Rate BR experience a higher load factor, it may wish to move to Rate G9; should its load factor grow further, it may ultimately choose to move from Rate G9 to Rate M.

1.1.2 *Process for Enrolment*

Hydro-Québec's general process for new connections or connection upgrades requires that a master electrician submit the request on the customer's behalf. There is no distinct process for enrolling customers in Rate BR, though Hydro-Québec suggested that when the utility receives a new connection request that indicates that the load will be electric vehicle supply equipment (EVSE), it will generally apply Rate BR by default. Additionally, the utility has an e-mobility team that can receive connection requests, and presumably requests received by that group will have the optimal rate (e.g., Rate BR vs. Rate G9) applied to the account. Hydro-Québec's rate design is intended to "graduate" customers from Rate BR to Rate G9 as their load factor increases; the utility conducts an annual rate classification review and proactively reaches out to customers who would be better served by being on one or the other rate. Customers may switch between rate classes once a year.

1.1.3 *Eligibility Verification*

Rate G9: Beyond the minimum demand (i.e., the customer must otherwise qualify for the general service class), the low load factor rate has no specific eligibility criteria. This is because as the customer's load factor increases, it becomes economically disadvantageous to remain on Rate G9.

Rate BR: The customer's eligibility is assessed at the time of the connection request based on the application submitted by the master electrician. With respect to ongoing verification of eligibility, Hydro-Québec noted that as load factors are generally low for EV chargers in Quebec at present, it is relatively easy to identify accounts enrolled on Rate BR, but which are using power for non-EV charging purposes.

Customers receiving Rate BR may only have ancillary/non-EV-charging loads of up to 10 kW, a figure that is consistent with the demand limit for residential class customers; Hydro-Québec noted that its conditions of service entitle the utility to investigate in cases where it has reason to believe a customer does not meet the eligibility criteria for its class (either with respect to basic eligibility or for the size of its ancillary load). Hydro-Québec reported few instances where non-EV-related loads were connected to an account billed on Rate BR.

1.1.4 *Implementation Issues*

No significant implementation issues occurred with respect to the introduction of Rate BR. Hydro-Québec reported to Power Advisory that it did not encounter any issues during the integration of Rate BR into its billing system, and that as with any new rate implementation, the utility's customer support team needed to be trained in the particulars of the rate.

Hydro-Québec noted that outreach to the electrical contractor industry to familiarize electricians with Rate BR was ongoing. This outreach is important because Rate BR only applies to separately metered EVSE; to benefit from the rate, it is therefore essential that an electrical contractor request a new service rather than simply adding EVSE to a customer's existing panel.

1.2 National Grid (Massachusetts Service Territory)

1.2.1 *Overview*

National Grid offers EV-specific rates (as options under its general service rates *G-2* and *G-3*) to general service customers in Massachusetts; the rate is a demand transition-type structure, with three tiers that phase in a demand charge and reduce the per-kWh/volumetric charge as the customer's load factor increases. The tiers escalate in 5% load factor increments, i.e., 0 to 5%, 5 to 10%, and 10 to 15%; above 15%, the demand and volumetric charges are the same as a regular general service customer. Customers are assigned to a tier based on their previous 12 months' load factor, which the utility reviews annually; new customers are automatically assigned to the lowest tier. This rate was implemented in response to state legislation that was developed with stakeholder input.

1.2.2 *Process for Enrolment*

Uptake of the EV-specific rate in National Grid's service territory has been limited thus far; as a result, the enrolment process was reported as being largely manual. That is, a customer requests to be charged at the EV-specific rate and their application is individually reviewed and processed by the utility's customer service staff. As in Quebec, eligibility for the EV-specific rate with National Grid requires that the EVSE load be separately metered.

As National Grid had already worked with EV customers on its EV Charging Station Make-Ready Program, the utility had established relationships with charging operators, allowing it to raise awareness of its EV-specific rates and facilitate enrolment of those customers. Furthermore, as all connection/upgrade requests are reviewed by utility staff, this has allowed the utility to identify additional potentially eligible customers (i.e., those who noted that their connection request was for the purpose of installing EVSE) and to suggest enrolment in the EV-specific rates to them.

National Grid records customers' eligibility for the rate even after their load factor has increased beyond the 15% cut-off point. Thus, while customers with a load factor above 15% pay standard general service

rates, their accounts are coded as being EV-rate-eligible such that if their load factor falls below 15% in the following year's review, they can resume benefitting from the EV-specific rate (at the applicable tier per their most recent load factor) without having to reapply for it.

1.2.3 *Eligibility Verification*

When enrolling in the rate class, the customer must declare as part of the connection request that they meet the eligibility criteria. The volume of uptake thus far has allowed utility staff to manually review and verify eligibility for the EV-specific rate. In discussions with Power Advisory, National Grid noted that, in anticipation of growing number of requests for enrolment in its EV-specific rates, they are in the process of developing an audit or spot-checking process to ensure that customers receiving the EV-specific rate are indeed using it for the appropriate EVSE loads.

1.2.4 *Implementation Issues*

No major/recurring implementation issues were reported by National Grid in discussion with Power Advisory.

2. ONTARIO ELECTRICITY RATES/PROGRAMS REQUIRING CUSTOMER OPT-IN

This section briefly describes existing rate classes requiring opt-ins, and goes on to outline four examples of situations where Ontario LDCs enrol certain customers to receive benefits not available to all customers; while these are not all strictly rate-related, they are illustrative insofar as they represent potential models for Ontario LDCs' enrolment of EV charging customers should the OEB proceed to institute an EV-specific rate.

2.1 Opt-In Rates

In addition to their standard general service rate classes, most LDCs in Ontario offer specific rates classes for various kinds of unmetered loads, e.g. unmetered scattered load and sentinel lighting. The Distribution System Code (section 2.4.6) requires LDCs' conditions of service to describe the process an unmetered load customer must use to file data with its distributor and what evidence is necessary for the distributor to validate the data.

Power Advisory has reviewed a small sample of LDCs' conditions of service to understand how these various existing policies might offer guidance on the operation of an opt-in EV-specific rate or rate class. LDCs generally require such customers to provide detailed manufacturer information about the load, as well as its expected demand and/or consumption, and expected patterns of consumption (e.g., expected hours of operation). Customers may also be required to notify the LDC of any changes to the equipment, to undertake and submit usage profile studies, and to allow the distributor to meter the load for the purpose of verifying usage.

Separately from the policies for unmetered loads, the Distribution System Code (section 2.5.1) also requires LDCs to review, at least annually, each non-residential customer's rate classification to determine whether, based on the rate classification requirements set out in the distributor's rate order, the customer should be assigned to a different rate class. Thus, the combination of a mandatory annual rate classification (and potential reclassification) exercise, together with the obligation some distributors place on scattered load to report changes in their equipment, could serve as a good model for the protocols LDCs or the OEB might implement in respect of opting into (or being removed from) EV-specific rates or rate classes.

2.2 Opt-In Benefit Programs

Four programs are discussed here as examples of instances where Ontario LDCs receive eligibility attestations of varying kinds and need to code their billing system so that the customer receives the appropriate benefit at the appropriate level. At the end of this subsection, key features are summarized.

2.2.1 *The Ontario Electricity Rebate*

Overview of eligibility

The Ontario Electricity Rebate is provided automatically to residential and certain other customers. However, some customers who are eligible for the rebate cannot be readily assessed as such by the distributor. For those customers to receive the Ontario Electricity Rebate, O. Reg. 363/16 specifies that the customer may declare its eligibility to its distributor.

Enrolment

For customers meeting the automatic eligibility criteria as set out in the aforementioned regulation, distributors code their billing systems so as to automatically calculate and apply the rebate to those customers' bills.

For customers whose eligibility is dependent on submission of a declaration, distributors must have a process in place to receive such declaration. O. Reg. 363/16[1] prescribes the details of what information that notice must contain. While there is no mandatory template, at the time the OER was introduced, the OEB made available a model form[2] that is used by many LDCs; others have developed their own[3], and some (e.g., Hydro One) also allow for the form to be completed through an online portal.

Upon receipt of a properly-executed declaration, the LDC must provide the rebate to the customer. O. Reg. 363/16 suggests that the onus is on the customer to rescind their declaration of eligibility in the event that they cease being eligible for the Ontario Electricity Rebate (s. 1.3 (6)). There is no requirement for the distributor to probe or otherwise verify a customer's eligibility.

2.2.2 *The Ontario Electricity Support Program*

Overview of eligibility

The Ontario Electricity Support Program provides monthly on-bill rate assistance to customers. Customers who declare: that their dwelling is primarily heated by electricity; that the accountholder or a resident family member is Indigenous; or that the accountholder or a member of the household regularly uses a specified "electricity-intensive medical device", are entitled to a greater sum of monthly assistance than would otherwise be the case.

Operation of the Ontario Electricity Support Program, including assessment of eligibility, is outsourced to a third party (the "Central Service Provider"). Once qualified for the base support amount, eligibility for the supplemental amounts (for medical devices, etc.) is determined solely on the basis of the customer's own attestation – no third-party verification (e.g., a doctor's note) is required.

Neither the legislation nor regulation governing the Ontario Electricity Support Program appear to contemplate a process or requirement for a customer to rescind their eligibility for either the program overall or the enhanced benefit. However, the OEB's program manual specifies that customers are to re-apply if there is a change in their circumstances, as well as every two years regardless of any change, at which time their eligibility is reassessed. It is not clear whether there is a statutory basis for this requirement.

Enrolment

The Central Service Provider notifies distributors of a customer's eligibility, the amount of support they are to receive, and the duration for which they are to receive that support; upon receipt of notification,

[1] Section 1.3

[2] See https://www.oeb.ca/sites/default/files/Template-OER-Eligibility-Form.pdf

[3] For example, Toronto Hydro: https://www.torontohydro.com/documents/d/guest/ontario-electricity-rebate-eligibility-notice-form

the distributor must apply the support to the customer's bill[4]. The distributor is not responsible for intake or verification of applications for this program, but rather relies on the instructions given to it by the Central Service Provider.

2.2.3 *The Former Ontario Clean Energy Benefit*

Background and eligibility

The Ontario Clean Energy Benefit was a bill relief program that existed from 2010 to the end of 2015 and that gave eligible customers a ten percent rebate on their electricity bills.

Much as with the Ontario Electricity Rebate that eventually replaced it, the Ontario Clean Energy Benefit was applied automatically by distributors to customers whose met certain criteria. As with the Ontario Electricity Rebate, a process existed for eligible-but-not-automatically-included customers to opt-in to receive the benefit. In addition, and unlike the Ontario Electricity Rebate, the Ontario Clean Energy Benefit was capped – it was to only to be provided in respect of an eligible customer's first 3000 kWh of monthly consumption. Customers using "medical equipment which requires electricity for its operation" were exempt from the cap. This program therefore had two LDC-managed processes for customer opt-in: one for basic participation and a second to receive the uncapped amount.

Enrolment

The process for opting in to basic participation is not discussed here as it is essentially the same as for the Ontario Electricity Rebate. The requirements for receiving the uncapped benefit under the Ontario Clean Energy Benefit were more prescriptive than those of the Ontario Electricity Support Program (which also has a medical-related election/exemption)[5] in that they required the customer to attest not only to having and using the medical equipment, but also that it was prescribed by a healthcare practitioner, to provide the date on which its use began and the name of the person using it, and a commitment to notify the distributor if the person using the equipment ceased to do so or ceased to live on the premises.

Distributors made available a form conforming to the requirements of the regulation[6], and upon receipt of a properly-executed form would have coded the customer account so as to apply the Ontario Clean Energy Benefit to the customer's entire monthly consumption. As with the other programs referred to above, distributors were not responsible for verifying or otherwise monitoring a customer's eligibility to receive the enhanced/uncapped benefit.

[4] DSC s. 9.2.1

[5] And were set out in O. Reg. 495/10, unlike for the Ontario Electricity Support Program where no election procedure is prescribed

[6] See for example https://static.hydroottawa.com/documents/residential/medical-declaration-form_en.pdf

2.2.4 *Disconnection Policy*

Background and eligibility

Distributors are entitled to disconnect customers for nonpayment (other than in the winter); however, they must follow specific steps to notify a customer of an impending disconnection, including a minimum length of time between delivery of such notification and the actual disconnection. Per s. 4.2.3 of the Distribution System Code, a residential customer who has provided their distributor with documentation from a physician confirming that disconnection poses a risk of significant adverse effects on the physical health of the customer or other resident of the premises is entitled to 60 days between notice of impending disconnection and disconnection, rather than the 14 days that apply to all other residential customers.

Enrolment

The Distribution System Code does not specify the means by which a customer provides said physician's documentation, nor the protocol for a distributor to receive and verify the document. An informal inquiry made by Power Advisory of one large LDC suggested that such a declaration would be processed manually by the LDC, which the LDC stated was in any case the process for most/all disconnections. There does not appear to be any requirement for a distributor to verify or validate the physician's documentation.

As can be seen from the above examples, there is a wide range of precedents in Ontario for distributors to receive declaration from customers concerning their eligibility for a given program benefit. Our scan shows that declarations can include such features as:

- A general affirmation of eligibility;
- Some degree of detail from the customer as to how they meet a particular eligibility requirement;
- Requirement for documentation from a third party confirming the customer's eligibility;
- Formal data exchange protocols with third parties to verify a customer's eligibility[7];
- A requirement for the customer to notify the distributor if their eligibility changes; and
- Be either of indefinite validity or have automatic expiry, after which they must be made again.

The scan also shows that across all programs reviewed, distributors have no obligation to:

- Probe or investigate the veracity of a customer's declaration, once made; nor to
- Initiate or conduct reviews to confirm that a customer remains eligible for a given benefit.

Overall, Power Advisory's research shows that the residential rate relief programs do not require (and arguably do not even allow) the LDC to verify the customer's declaration of eligibility, nor does the LDC have an obligation to ensure the customer's continued eligibility over time. In contrast, insofar as the

[7] Eligibility for the Ontario Electricity Support Program is established by retrieving tax filings from the Canada Revenue Agency under agreement with them. This is specifically authorized in the program's enabling legislation.

unmetered loads are also “opt-in” rates, the LDC has far greater authority and obligation to verify participating customers’ eligibility and to remove them from the class in the event they become ineligible.

It is important to note that the definition of who is eligible for various government subsidy programs, and the processes and obligations for determining eligibility, are set out in law. This leaves relatively little latitude for distributors to adjudicate marginal or questionable cases, and in a sense could be viewed as alleviating them of such responsibility. The law also clearly sets out the respective requirements of customers and distributors in making and receiving declaration of eligibility, with most of the onus being on the customer to make the declaration rather than on the distributor to verify it. This too may have the effect of shielding distributors from liability in terms of providing benefits (i.e., disbursing funds) to customer who might in fact be ineligible. At the same time, the funds for these programs are provided by government and are merely passed through by the LDC, and thus any inadvertent provision of the benefit would not impact the LDCs’ other customers. In contrast, unmetered load customers are allocated the LDCs’ costs and are subject to revenue recovery forecasts as other customer classes are. The inappropriate inclusion of a customer in this class could therefore be to the detriment of other customers.

Power Advisory understands that the OEB is approaching the EV-specific rate as if it were a true rate or rate class rather than a program. While it may therefore be appropriate to require a degree of scrutiny more closely aligned with that applied to unmetered loads than to low-income residential customers, the expected uptake of the EV rate and the total administrative burden should also be considered.

3. ONTARIO LDCS IMPLEMENTING NEW AND CUSTOMER-SPECIFIC RATES

There are many examples of charges and adjustments on LDC tariff schedules that apply differently to customers within a rate class. The billing systems used by LDCs must already be capable of incorporating the type of EV-specific charges that are being considered by the OEB. This suggests there is a low regulatory burden associated with implementing EV-specific charges into billing systems.

Examples of charges and adjustments that apply to specific customers within a class are provided below. LDCs must code customers for the appropriate charges and adjustments to be applied to each customer. An additional coding for EV charging customers is unlikely to require significant incremental effort.

3.1 RSTRs

There are fifteen LDCs that have multiple sets of retail transmission service rates (RTSRs) applicable within their General Service > 50 kW rate class. Most of these LDCs have two separate RTSRs for interval and non-interval metered customers and one LDC has three sets of RTSRs. Waterloo North has RTSRs for interval-metered customers with monthly demands between 50 kW and 999 kW, interval-metered customers with demands between 1,000 kW and 4,999 kW, and non-interval metered customers. The Waterloo North example suggests the application of charges depending on volumes is feasible.

3.2 Rate Riders

Rate riders within a rate class may be specific to certain groups of customers. Rate riders are commonly applicable only to either Regulated Price Plan (RPP) or non-RPP customers, or to Class A or Class B customers. Each customer must be coded as RPP/non-RPP and Class A/Class B for the appropriate rate riders to be applied. Adding an additional coding for EV charging would not present significant regulatory burden.

3.3 Allowances

Customers within the General Service > 50 kW rate class may receive the Primary Metering Allowance for Transformer Losses and/or the Transformer Allowance for Ownership. The Primary Metering Allowance for Transformer Losses is a 1% reduction to metered consumption and demand volumes that is applied when the customer's meter is installed on the primary side of stepdown facilities or when the customer is supplied directly through high voltage equipment. The Transformer Allowance for Ownership is a $0.60/kW credit for customers that own their transformers. These two allowances are applicable to a subset of customers within a rate class.

3.4 Loss Factors

In general, LDCs apply different loss factors depending on whether the customer is served by the primary or secondary distribution system. Loss factors may also differ by maximum demand volumes or, occasionally, by rate class. The primary/secondary distinction is an additional variable that must be coded for each customer.

4. DETERMINING RATES TO BE IMPLEMENTED

A concern for LDCs may be the regulatory burden of determining EV charging-specific rates. Should the OEB move forward with adjusted RTSR rates for EV charging customers, these charges can be calculated with minimal effort required from LDCs.

Power Advisory anticipates that the EV charging RTSRs would be based on an adjustment made to General Service > 50 kW RTSRs. RTSRs are calculated in the OEB's RTSR model, which uses historic RRR volumes applied to the UTRs applicable in the upcoming rate period. Therefore, RTSRs are not set using forecast volumes. If a generic load profile and coincident peak contribution (CPC) factor is used, an LDC without existing EV charging loads can calculate RTSRs without any input data. The EV charging RTSRs for an LDC with EV charging loads can be calculated with those historic loads as the only input.

As discussed in Addendum 1, LDCs with low voltage (LV) charges should have separate EV charging LV rates. These rates can be calculated with the same adjustment factors that are used to calculate EV charging RTSRs.

EV charging RTSRs can be determined with modest revisions to the OEB's RTSR model and the RTSR section of the IRM model. Minor revisions to the Tariff Schedule and Bill Impact model, and that section of the IRM model, may also be warranted.

This change would necessitate revisions to the workbooks LDCs use to calculate transmission and low voltage-related variances (i.e. USoA 1550, 1584, 1586), but again this incremental effort is not significant.