ONTARIO ENERGY BOARD

Staff Discussion Paper

Draft Proposal:

Adjusted Retail Transmission Service Rate for Low Load Factor Electric Vehicle Charging

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Ontario

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Executive Summary

The following document describes a draft proposal by Ontario Energy Board (OEB) staff for an adjustment to the Retail Transmission Service Rates (RTSRs) that apply to EV charging stations that meet the following eligibility criteria:

1. Demand between 50 kW and 4,999 kW
2. Load factor of 15% or lower
3. Publicly accessible
4. Separately metered

OEB staff's proposed Electric Vehicle Charger Discount Electricity Rate (EVC Rate) responds to direction from the Minister of Energy to the OEB to consider rate design options for EV charging (October 21, 2022, Letter of Direction, November 29, 2023, Letter of Direction and Minister's announcement, May 1, 2024).

OEB staff's proposal aims to better support the efficient integration of EVs in Ontario. OEB staff will meet with stakeholders to discuss this draft proposal and solicit their input on it. Stakeholders will also be invited to provide written comments to inform OEB staff in the finalization of the draft proposal.

OEB staff proposes that rate-regulated electricity distributors in Ontario would be required to offer the EVC Rate to qualifying EV charging stations as of January 1, 2026. Qualifying customers would sign up for the rate on a voluntary, opt-in basis.

OEB staff's proposed EVC Rate is informed by analysis of EV charging station demand and reflects the causality of public EV chargers with low load factors towards the transmission system costs to be recovered from distribution customers.

Estimated RTSR savings for participants would range between 74% and 91% for load factors between 5% and 15%, corresponding to total bill savings of between 8% and 42%. Savings would depend on load factor, distribution service territory and the rate design implemented.

Non-participants could expect to see limited bill increases in the near term, following the recovery of any RTSR variances through OEB-approved disposition processes. Total estimated bill increases for non-participants are expected to range between 0.05% to 0.14%, averaging approximately 0.1% upon implementation of the proposed rate in 2026.

Process and Next Steps

On April 13, 2023, OEB staff released its consultant report on Electricity Delivery Rates for EV Charging (the 2023 Report). The 2023 Report assessed the impact of demand charges on commercial fleets and DCFC stations and explored alternative rate options, with consideration to ratemaking principles.

OEB staff held a meeting on May 24, 2023, to discuss details of the 2023 Report with stakeholders and gather feedback from them on its findings. OEB staff also invited stakeholders to provide written feedback following the meeting. That feedback is available on the OEB's website.

OEB staff commissioned additional analysis from its consultant, Power Advisory, in 2023 and 2024. The analysis is summarized in two consultant reports (collectively, the 2024 Reports).

One of the two 2024 Reports addresses analysis and rate design matters (the Analysis and Rate Design Report); the other addresses implementation considerations (the Implementation Considerations Report).

Based on stakeholder feedback on the 2023 Report and on the additional analysis in the 2024 reports, OEB staff has developed a draft proposal for an EVC Rate. OEB staff has prepared this document to summarize its draft proposal, provide supporting information and facilitate discussion with stakeholders.

OEB staff will meet with stakeholders in June 2024 to discuss its proposed Rate and gather feedback on it. Stakeholders will also be invited to provide written comments on the draft proposal following the meeting.

OEB staff will finalize its Rate proposal once it has considered all stakeholder feedback.

Materials related to OEB staff's work on electricity delivery rates for EV charging, including stakeholder meeting materials, are available on the Engage with Us EV Integration webpage.

OEB Staff Proposal

EVC Rate Reduces Retail Transmission Service Rates

The EVC Rate would be an adjustment to the RTSRs for participating EV charging stations.

Discussion

RTSRs are charges that a distributor applies to end-use customers to recover the costs of wholesale transmission line connection, transformation connection and network charges that the distributor owes to transmitters.

The EVC Rate would reduce the RTSRs that participating EV charging stations would otherwise pay. The EVC Rate would better align the RTSRs paid by public low load factor EV charging stations with the transmission system costs incurred to serve them. The EVC Rate would change each year or more frequently, in accordance with updates to Ontario's Uniform Transmission Rates (UTRs). Transmitter revenue requirements are recovered through UTRs, which are charged to all wholesale market participants, including electricity distributors. The UTRs are inputs into electricity distributors' RTSRs.

OEB staff expects that focusing only on RTSRs could minimize implementation complexity and administrative burden for electricity distributors. An EVC Rate design that considers only RTSRs could be implemented with relatively simple modifications to the Incentive Rate-setting Mechanism (IRM) rate generator model and RTSR workform. In contrast, expanding the scope of focus to also include distribution costs would likely require either new rate classes to be created and/or a potentially complex cost allocation and rate design process.

An EVC Rate that focuses only on RTSRs should be easier for electricity distributors to implement in annual IRM updates, reducing the amount of time it would take for all distributors to implement. All distributors filing applications for 2026 rates would be positioned to implement the new rate, not just those filing for a full cost of service review.

EVC Rate Mandatory to Offer by Distributors, Optional to Sign up For

All rate-regulated electricity distributors would be required to offer the EVC Rate. Participation by qualifying customers would be on a voluntary, opt-in basis.

Discussion

Electricity distributors would be required to offer the EVC Rate to eligible customers as of January 1, 2026. Eligible customers who wish to have the rate applied to them would voluntarily opt in.

The proposed "opt-in" nature of the proposed EVC Rate represents a departure from conventional practice for transmission and distribution delivery rates. OEB staff proposes this approach because distributors might not otherwise have visibility on the end-use of the customer in order to assess eligibility. Normally, a customer would not be able to select a delivery rate.

A non-residential customer intending to connect EV supply equipment to a distribution system is responsible for initiating communication with the distributor, either by requesting a preliminary consultation or by submitting a connection request. The OEB's Electric Vehicle Charging Connection Procedures (EVCCP) establish standardized and streamlined requirements that electricity distributors across Ontario must follow when dealing with requests to connect EV charging facilities.

EVC Rate Reflects Cost Causality

OEB staff's proposal for an EVC Rate is grounded in the principle of cost causality – it is not meant as a subsidy for EV chargers.

Discussion

OEB staff's proposed EVC Rate is informed by analysis that examines the extent to which public EV chargers, which are electricity distributor customers, contribute toward the bulk system coincident peak demand compared to other types of customers. The analysis also examines how an EV charging station's estimated contribution to the transmission system coincident peak changes as a function of its load factor. This is done to help estimate the appropriate share of coincident peak-related demand charges that low load factor public EV charging stations ought to pay.

The EVC Rate fairly apportions the transmission delivery costs to be recovered among customers, including low load factor EV chargers, by accounting for the lower contribution that low load factor public EV chargers make to bulk system coincident peak demands compared to other customers. The EVC Rate reflects the causality of low load factor public EV chargers towards the transmission costs to be recovered from customers.

No New Rate Classes

OEB staff proposes that participating public EV charging stations will remain within the General Service 50 kW to 4,999 kW class that has been established by their respective electricity distributor. New rate classes would not be established for participating EV charging stations upon implementation of the EVC Rate.

Discussion

The 50 kW to 4,999 kW eligibility criteria for the EVC Rate would open eligibility to existing and future EV charging customers in the General Service 50 kW to 4,999 kW rate class.

DCFCs, which are usually installed at public EV charging stations, typically have a power output ranging from 50 kW to 350 kW. As illustration, this could mean that the number of chargers installed at a station that belongs to the General Service 50 kW to 4,999 kW rate class could range from 1 to 99. This will likely cover the size of most public charging stations.

Making use of existing rate classes would reduce the complexity and administrative burden of establishing any new rate classes for participating EV charging stations. Making use of existing rate classes would also help ensure that the EVC Rate can be implemented by 2026.

It is recognized that some distributors might have more than one class in the 50 kW to 4,999 kW range instead of a single class that spans the entire range. Distributors would be expected to assign any new participating customers to the applicable General Service 50 kW to 4,999 kW class.

Not Applicable to EV Fleet Charging Stations

The EVC Rate would only apply to public EV charging stations and not commercial and public sector EV fleets.

Discussion

OEB staff proposes to focus on public EV charging stations as a priority, rather than commercial and public sector EV fleets. Commercial and public sector fleets are expected to have more ability to manage their charging times and costs than users of public charging stations.

A Time-of-Use (TOU) demand charge for EV fleets in general was considered by OEB staff in the spring of 2023 and discussed with stakeholders on May 24, 2023. OEB staff does not propose to implement a TOU demand charge for EV fleets in parallel with the rollout of the EVC Rate.

The analysis that explores the potential for a EVC Rate does not provide sufficient guidance for TOU demand charge implementation. For example, the analysis related to the EVC Rate did not examine the appropriateness of TOU for distribution costs, including from the perspectives of cost causality and bill impacts. More analysis would be required to inform the potential development of any TOU EVC Rate. A TOU EVC Rate for EV fleets would also be more complex to implement for the OEB and distributors.

OEB staff is currently exploring alternative commodity rate options for Class B non-RPP electricity customers that vary with time. EV charger customers that meet some or all the eligibility requirements for the EVC Rate likely belong to the Class B non-RPP group.

Not Applicable to Other Low Load Factor Customers

The EVC Rate would only apply to eligible EV charging stations, not to other low load factor customers within General Service 50 kW to 4,999 kW classes.

Discussion

The focus of the OEB staff and Power Advisory analysis has been on developing rate design options for EV charging stations. The focus has not been on analyzing the load profiles of other specific end-uses or customers.

As a result, OEB staff has less insight on how any other low load factor customers are likely to contribute to coincident transmission system peak demand, or what the bill impacts would be of adopting a specific rate for them.

Bill impacts on non-participating, higher load factor customers is an important implementation consideration. There is a relatively small risk of a large immediate bill impact on higher load factor customers from implementing the EVC Rate because of the relatively low number of public DCFC stations in Ontario today. There would more of an increase for higher load factor customers if all existing low load factor customers (i.e., including non-EV customers) switched to a lower rate.

Future initiatives could evaluate the potential for specific transmission rates for non-EV low load factor customers, but that is not the focus now.

Eligibility Requirements Summary

EV charging stations must meet the following four eligibility requirements to participate in the EVC Rate, as discussed below:

1. Demand between 50 kW and 4,999 kW
2. Load factor of 15% or lower
3. Publicly accessible
4. Separately metered

Eligibility Requirement 1: Demand between 50 kW and 4,999 kW

EV charging stations would need to have a demand between 50 kW and 4,999 kW to be eligible for the EVC Rate. The demand would have to relate primarily to EV charging.

Discussion

Eligible EV charging customers must have a monthly average peak demand that is equal to or greater than 50 kW but less than 5,000 kW. This range corresponds to the range of demand that characterizes the General Service 50 kW to 4,999 kW rate classes among electricity distributors in Ontario (including, as applicable, General Service 50 kW to 4,999 kW; General Service 50 kW to 999 kW; General Service 1,000 kW to 4,999 kW rate classes).

Distributors would be expected to measure peak demand and billing demand for EVC Rate participants consistent with how they measure peak demand and billing demand for customers in their General Service 50 kW to 4,999 kW rate classes. The intent is to

leverage methods and processes that distributors use now for determining eligibility and billing demand.

Similarly, distributors would be required to periodically review the ongoing eligibility of participating EVC Rate customers, consistent with how they periodically review ongoing eligibility for customers within the General Service 50 kW to 4,999 kW classes.

Eligibility Requirement 2: Publicly Accessible

EV charging stations would have to be publicly accessible to be eligible for the EVC Rate.

Discussion

The EVC Rate would only be available to EV stations that are publicly accessible. This is meant to exclude charging stations that only or primarily serve corporate and/or public sector fleets, which would be expected to have different load profiles.
The term “accessible” is meant to indicate that the public can access the charging stations, subject to any requirements, conditions, or restrictions established by the charging station owners (including fees for use, conditions of service, hours of operation and other restrictions on access to sites). It is not intended to mean that a charging station must provide charging service to all EV models to be eligible for the EVC Rate. A “universal” charging port would not be required.

Examples of eligible use cases include, but are not necessarily limited to, the following (provided that all other eligibility requirements are met):

- Charging stations on or just off highways (e.g., 400 series highways)
- Charging stations on the site of a retail establishment, plaza, shopping centre
- Charging stations on the site of a municipal, university, school or hospital building
- Charging stations associated with multi-unit residential buildings
- Charging stations associated with condominiums
- Charging stations on employee parking lots

Eligibility Requirement 3: Load Factor up to 15%

The EVC Rate would apply to participating public EV charging stations that have a load factor of 15% or lower.

Discussion

Charging stations with load factors greater than 15% would not be eligible for the EVC Rate. The 15% load factor cutoff refers to a monthly load factor (e.g., not a seasonal, annual or other kind of load factor). Distributors should continue to apply their existing procedures for dealing with participating stations whose monthly load factors occasionally exceed the 15% load factor cutoff. Stations without any charging data, such as new stations, could apply for the EVC Rate based on load factor projections.

A 15% cutoff is expected to account for most public charging EV station customers today, and perhaps for the foreseeable future. The public charging EV stations in the sample of data used for the EVC Rate analysis ranged from 0 to 34%, but most were well below 15% (Analysis and Rate Design Report, page 23).

OEB staff has less insight into how public EV charging stations with load factors above 15% drive transmission system delivery costs. This is because available data is sparse for public EV charging stations that exceed 15% load factor, especially in Canada. Increasing the load factor eligibility threshold above 15% could increase the risk of inappropriate rates, absent data and analysis to demonstrate otherwise.
There are also limitations and approximations to the analysis which support a relatively narrow range of eligibility to minimize any undue impacts on non-participating customers. For example, the data sources used in support of OEB staff's proposed EVC Rate provide customer-level insight, but are not necessarily fully representative of existing customers and cannot capture future changes in consumption patterns.

A higher load factor cutoff, for example 25%, would result in a smaller rate transition for participants moving from the low load factor EVC Rate to the regular (non-low load factor) rate. On the other hand, a higher load factor cutoff could also result in a larger impact for existing non-participating customers who would initially pay more as participating EV charging station customers switched to the EVC Rate.

Eligibility Requirement 4: Separately Metered

EV charging stations must be separately metered to participate in the EVC Rate.

Discussion

The intent of this requirement is to ensure that the EVC Rate is applied only to electricity demand for EV charging services, including eligible auxiliary load.

Some sites may have a primary commercial business (e.g., grocery stores) but opt to install EV chargers as a secondary business on their property. In such cases, the EV charging stations would need to be separately metered to ensure the correct rates are applied.

EV charging stations that are separately metered may also have auxiliary loads, such as lighting, that are required at a site to provide the charging services. Charging stations might also include auxiliary loads that are not necessary for EV charging, but which complement it, such as tire inflation, vacuuming, washrooms, snacks and refreshments, etc.

Some jurisdictions specify the amount of load that can be used for purposes other than supplying EV charging stations. For example, Hydro Quebec's analogous low load factor rate allows up to 10 kW to be used for purposes other than supplying the charging stations. Eversource in Massachusetts requires at least 90% of the load to be dedicated to EV charging.

OEB staff proposes that the following auxiliary loads be permitted to be included in an EVC Rate participant's total qualifying EV charging station load:

- Lighting
- Tire inflation
- Vacuuming
- Washrooms
- Snacks/refreshments
- Seasonal/administrative/safety

OEB staff proposes this allowance in consideration of the materiality of the load and the burden of installing separate meters for otherwise ineligible auxiliary loads.

Although the speed of the charging service offered would not be prescribed as an eligibility requirement, OEB staff expects that charging stations that participate in the EVC Rate will provide DCFC service. OEB staff acknowledges, however, that some participating stations might also provide lower voltage charging, such as level 2 charging. OEB staff does not propose to require distinct meters for DCFC and other charging types at participating EV charging stations. OEB staff would be interested in stakeholder views on whether, for EVC Rate eligibility purposes, a limit should be prescribed on the share of charging station load that may come from non-DCFC chargers. OEB staff's consultant analysis focused on DCFC service.

Customer to Attest to Eligibility Upon Opting In

Customers who opt into the EVC Rate must attest to their electricity distributor that they meet all the EVC Rate eligibility requirements.

Discussion

The attestation would need to be signed by a representative of the customer to validate that, over the next 12 months, the charging station demand is expected to be between 50 kW and 4,999 kW, the station will be publicly accessible, the station will have a load factor of 15% or lower, and the station will be separately metered. The attestation must also verify that any auxiliary loads at the charging station are eligible to be included in its total qualifying EV charging station load.

Electricity distributors would be expected to take reasonable steps and due diligence in accepting the attestation of eligibility provided by customers who opt into the EVC Rate. Also, as stated previously, electricity distributors would be required to periodically review the ongoing eligibility of participating EVC Rate customers.

EVC Rate to be Achieved by Applying an OEB-issued Parameter to Retail Transmission Service Rates

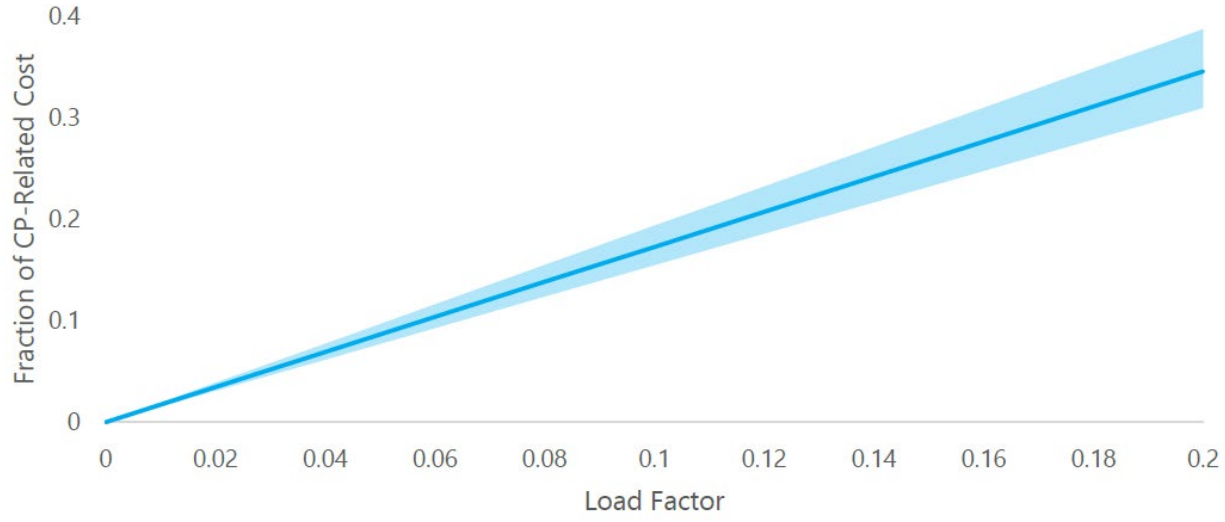
The OEB would provide distributors with a numerical parameter which they would apply to their base General Service 50 kW to 4,999 kW class RTSR to determine the EVC Rate for participating customers.

Discussion

The parameter would describe the idealized linear relationship between public EV charging station coincident peak contribution and load factor as estimated by OEB staff's consultant. The derivation of this relationship is detailed in the Analysis and Rate Design Report.

The relationship between the share of base RTSR costs to be recovered from participants and their load factor is illustrated in Figure 1 below. This relationship is expressed through a parameter that the OEB would provide to distributors. The value of the parameter would depend on the specific rate design implemented.

Figure 1: Idealized Share of Coincident Peak Demand-Related Transmission Cost vs. Load Factor for Public Electric Vehicle Direct Current Fast Charger Stations



EVC Rate Design Options

OEB staff has identified three different rate design options for implementing the EVC Rate. Each option has its strengths and limitations. OEB staff seeks stakeholder input on the options.

Discussion

OEB staff proposes that participating EV charging customers that currently belong to – or will belong to – a distributor's General Service 50 kW to 4,999 kW class be assigned a lower RTSR than other members of that class.

The quantum of the lower RTSR would reflect a distributor's base RTSR for its General Service 50 kW to 4,999 kW rate class multiplied by a parameter or parameters to be provided by the OEB.

The value of the parameter or parameters would depend on the specific rate design option chosen for the EVC Rate. OEB staff has considered three rate design options. Each rate design option is described below and summarized in Table 1.

Load Factor	Option A[1]: (a single $/kW rate)	Option B: (a stepped $/kW rate)	Option C: (a $/kWh rate)
0 to 3%	0.13 * RTSR * kW	0.03 * RTSR * kW	1.7262 ÷ Number of hours in billing period * RTSR * kWh
3 to 7%		0.09 * RTSR * kW	
7 to 11%		0.16 * RTSR * kW	
11 to 15%		0.22 * RTSR * kW	
above 15%	1 * RTSR * kW	1* RTSR * kW	1 * RTSR * kW

OEB staff proposes that only one of the rate options should be used to implement the EVC Rate across Ontario. The rate option to be used by distributors would be confirmed after stakeholder input has been considered.

Table 1: Overview of three rate design options for the Electric Vehicle Charging Access Rate

Option A: The first EVC Rate option considered by OEB staff is called option A. It is a single parameter that would apply to participating customers. The parameter does not

[1] Options A, B and C are respectively referred to as "2a", "2b" and "2c" in the Analysis and Rate Design Report.

change depending on the specific load factor, as long as the load factor is between 0% and 15%.

The value of the parameter is 0.13. This means that participating EV customers would pay 13% of the base RTSR that other customers in a distributor's General Service 50 kW to 4,999 kW class pay. As an example, if the base RTSR were $1/kW, participating customers would pay $0.13/kW under rate option A.

A customer's total monthly RTSR payment under option A would be calculated by multiplying the parameter (0.13) by the base RTSR and then by the customer's peak demand (kW).

Option B: Option B is like option A, except the value of the parameter depends on a customer's monthly load factor. There are four potential parameters, only one of which would apply to a customer's load factor in a given month. The first is for monthly load factors below 3%, the second is for monthly load factors between 3% and 7%, the third is for monthly load factors between 7% and 11%, and the fourth is for monthly load factors between 11% and 15%.

The values of the parameters under option B are 0.03; 0.09; 0.16; and 0.22, respectively. The rate is higher for higher load factors, and lower for lower load factors. Like option A, option B is expressed in $/kW.

A customer's total monthly RTSR payment under option B would be calculated by multiplying the applicable parameter (0.03, 0.09, 0.16 or 0.22) by the base RTSR and then by the customer's peak demand (kW). For example, the total monthly RTSR payment for a customer with a 10% load factor would be calculated by multiplying the base RTSR by 0.16, then by the customer's peak demand. Similarly, the total monthly RTSR payment for a customer with a 5% load factor would be calculated by multiplying the base RTSR by 0.09, then by the customer's peak demand.

Option C: Option C resembles option B insofar as its rate increases with higher load factors. However, unlike options A and B, option C is derived on an $/kWh basis, which is an energy basis (rather than on a $/kW basis, which is a power or peak demand basis).

The value of the parameter for option C is 1.7262. The derivation of this parameter is detailed in the Analysis and Rate Design Report.

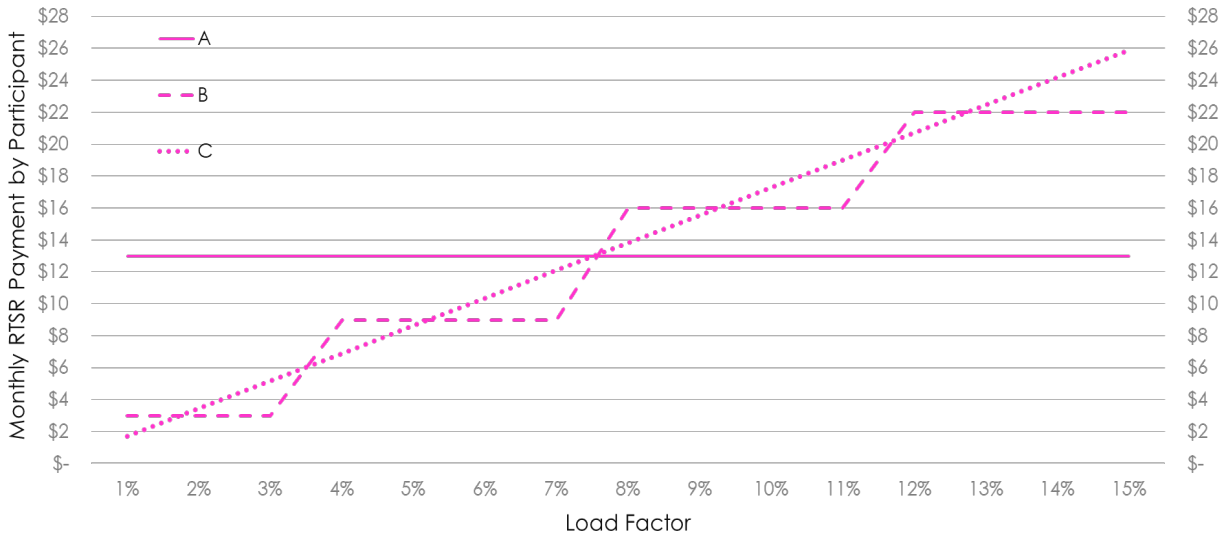
The EVC Rate under option C would be calculated by multiplying the base RTSR(s) as expressed in $/kW by 1.7262 and dividing the result by 730 (the average number of hours in a month each year). The rate would then be multiplied by the participating customer's billing period electricity consumption measured in kWh. For example, if the base RTSR were $1.00/kW, then the EVC Rate under option C would be calculated as $5.65/kW * 1.7262 / 730 = $0.0024/kWh.

A customer's total monthly RTSR payment under option C would be calculated by multiplying the applicable EVC Rate ($0.0024/kWh in this example) by the participating customer's monthly consumption in kWh. For example, if the participating customer consumed 7,300 kWh in a month, then the EVC Rate of $0.0024/kWh would be multiplied by the customer's consumption of 7,300 kWh in that month.

Illustration of options A, B and C: Options A, B and C are illustrated in Figure 2 below using illustrative assumptions to facilitate comparison. Figure 2 shows what a monthly RTSR payment would be by a participating customer assuming a $1 RTSR and a peak customer demand of 100kW.

As shown in Figure 2, under option A (using the illustrative assumptions noted above), the customer would pay a $13 RTSR payment for the billing month, which equates to 13% of what the customer would have paid if it were charged the base RTSR instead. The customer's monthly RTSR payment would not change depending on its load factor, so long as the load factor was 15% or lower.

Figure 2: Illustrative comparison of rate options A, B and C: monthly RTSR payment by a participating customer assuming a $1 RTSR and a peak demand of 100 kW



In contrast, under Option B, a customer's monthly RTSR payment would change depending on its load factor. A customer with a load factor below 3% would pay a $3 RTSR payment for the billing month, or 3% of what it would have paid if it was charged the base RTSR instead. A customer with a load factor between 11% and 15% would pay about $22 for the billing month, or 22% of what it would have paid if it was charged the base RTSR.

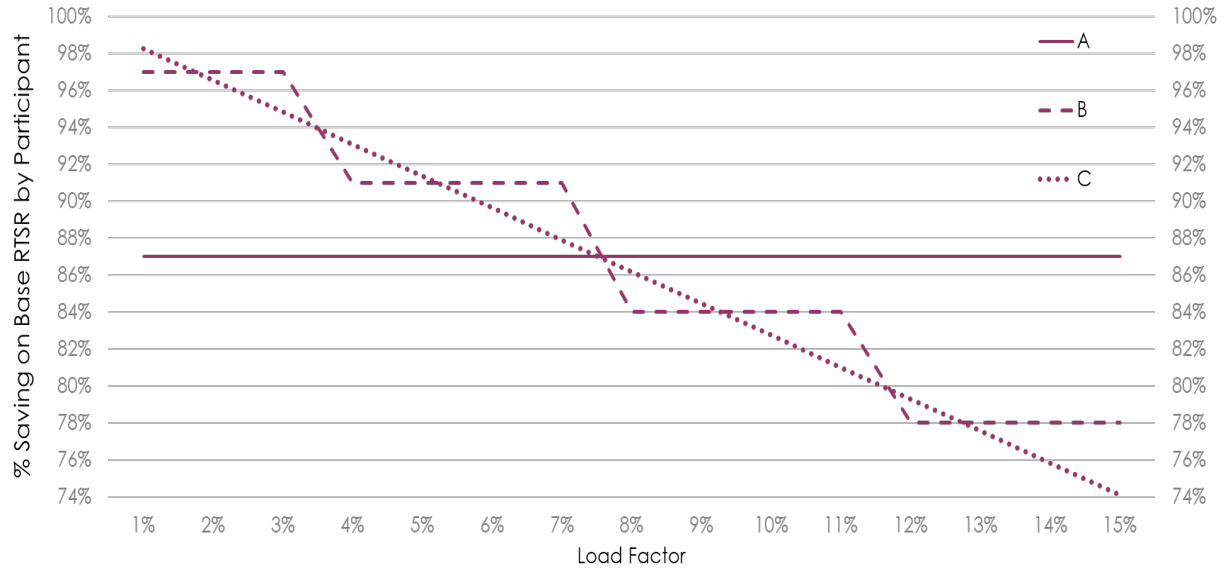
Under Option C, a customer's monthly RTSR payment would also change depending on its load factor, which would be implied by its monthly electricity consumption in kWh. For example, a 100 kW customer that consumed 730 kWh in a month containing 730 hours would have a 1% load factor. If the same customer in the same month consumed 7,300

kWh instead, it would have a 10% load factor. If it consumed 10,950 kWh instead, it would have a 15% load factor.

Under option C, a customer with a 1% load factor would pay an RTSR payment of less than $1.73 for the billing month, or about 2% of what it would have paid if it was charged the base RTSR. A customer with a load factor of 15% would pay $26 for the billing month under option C, or 26% of what it would have paid if it was charged the base RTSR.

Figure 3 illustrates the reduction in the share of base RTSR costs that participants would pay under options A, B and C at various load factors between 1% and 15%.

Figure 3: Illustrative comparison of rate options A, B and C: Reduction in share of base monthly RTSR payment by a participating customer assuming a $1 RTSR and a peak demand of 100 kW



As shown in Figure 3, participants in the EVC Rate would pay 87% less than the base RTSR under option A at any load factor between 1% and 15%. Participants could pay between 78% and 97% less than the base RTSR under option B, depending on load factor. Likewise, participants could pay between 74% and 98% less than the base RTSR under option C, depending on load factor.

Comments on the pros and cons of options A, B and C: EVC Rate option A is the simplest of the three options considered: it relies on a single new parameter and its result is expressed as a $/kW rate, which is how RTSRs are widely billed today. However, it is the most general of the three options: its value does not change with load factor (between 1% and 15%).

EVC Rate option B is more complicated than option A because it requires establishing four rising load factor tiers and involves more than a single new rate parameter. Like option A, however, the result of option B is expressed as a $/kW rate. Compared to option A, Option B is a closer approximation of the idealized linear relationship between

public EV charging station coincident peak contribution and load factor which was illustrated previously.

EVC Rate option C does not involve establishing tiers but relies on a less widespread $/kWh rate structure. It has the greatest resolution of the three options and, like option 2a, relies on only one single new parameter. However, it is arguably the least intuitive of the three options and its derivation is the most complicated.

OEB staff proposes to use option A because of its simplicity – it would involve distributors multiplying their base RTSR by 0.13 and applying the resulting rate as the RTSR for EVC Rate participants. OEB staff also appreciates the theoretical appeal of option C which relates to its fidelity to the idealized linear relationship between public EV charging station coincident peak contribution and load factor. simplicity.

Provincewide Parameter for Now

The OEB would establish a general, provincewide EVC Rate parameter for implementation by 2026. Distributors would use the parameter to calculate their RTSRs for participating public EV charging stations. As distributors gain more experience with public EV charging stations, they may wish to propose EVC Rate parameters specifically tailored to their own service territories.

Discussion

The EVC Rate parameter is based on analysis which estimates how public EV charging stations contribute to Ontario transmission system coincident peak demands at various load factors.

The analysis was conducted by Power Advisory and makes use of a variety of data, including customer-level smart meter data for General Service Greater than 50 kW customers of three large electricity distributors in Ontario for the period from January 2018 to September 2023. The analysis also relies on IESO zonal demand data and anonymized consumption profiles of 55 electricity distributors in Ontario.

While the results are sufficiently indicative for establishing an initial EVC Rate, in time, distributors may wish to conduct their own analysis of the coincident peak contributions of qualifying public EV charging stations in their service territories. This analysis might help establish a more specific coincident peak contribution parameter for their respective service territories.

Distributors would have the opportunity to propose any specific customization to their EVC Rate in future cost of service applications. It is expected that any distributor-specific EVC Rate would be underpinned by a study conducted by or on behalf of the distributor.

In the meantime, adopting the provincewide EVC Rate established by OEB staff is probably the most administratively simple option for the OEB and distributors.

Existing Deferral and Variance Accounts should Continue to be used by Distributors to Record and Recover any Retail Transmission Service Rate Revenue Shortfalls

The difference between the RTSR that participating customers pay upon implementation of the EVC Rate and the base RTSR that would otherwise have applied to them could drive an RTSR revenue shortfall for distributors. Distributors should continue to use their RTSR variance accounts to record RTSR revenue variances.

Discussion

Any revenue shortfall associated with participation by existing EV charger customers in the EVC Rate should be recovered using distributor RTSR variance accounts and disposition processes.

Variance accounts are used to track the timing difference between when the distributor pays for the transmission service charges and when it receives payment of the corresponding retail transmission service charges from customers.

Variance accounts are also used to account for the difference in the rate that a distributor pays for transmission service compared to the retail rate that the distributor is authorized to charge its customers. These variances are recorded in Uniform System of Accounts 1584 and 1586.

With respect to new eligible EV charger customers, they were not responsible for previous allocations of RTSR obligations to distributor customers. This means their participation in the EVC Rate would not result in revenue shortfalls – they will be expected to pay for future RTSR obligations in accordance with their cost causality. That is, incremental RTSR payments from new participating EV charger customers will be expected to match the incremental costs of serving them.

In the meantime, however, any existing EV charger customers who pay the base RTSR rate just prior to the implementation of the EVC Rate will cause, all else being equal, an RTSR revenue shortfall upon opting into the EVC Rate. This would be the case until base RTSRs are reset to account for, among other things, the introduction of the EVC Rate.

Bill Impacts

The EVC Rate would reduce RTSRs for participants. The amount by which a participant's RTSR would be reduced would depend on the participant's base RTSR, load factor and the EVC Rate design. Non-participants would initially pay more as RTSR revenue shortfalls would be recovered from them following implementation of the EVC Rate.

Discussion

Estimated RTSR savings for participants would range between 74% and 91%, depending on a participant's load factor and the rate option implemented (option 2a, 2b or 2c). This estimate reflects a range of load factors between 5% and 15%. In general, customers with lower load factors would save more relative to the base RTSR under options 2b or 2c, while customers with higher load factors would save less, as shown in Figure 2 above.

Total bill savings (including commodity costs) for participants are estimated to range between 8% and 42%, depending on load factor, rate option and the distributor that serves them. This estimate reflects a range of load factors between 5% and 15%.

A customer's total bill savings percentage would be influenced by the proportion that the RTSR represents of their total delivery costs (which includes distribution delivery costs). The relative share of RTSR costs to total delivery costs varies by distributor across the province. In general, participants would save proportionately more under the EVC Rate if their base RTSR represents a larger proportion of their total delivery costs (and total bill). Participants whose RTSR comprises a smaller proportion of their total delivery costs would save proportionately less.

Table 2 illustrates the range of estimated potential total bill savings for EVC Rate participants at different load factors. The savings are presented for EVC Rate option 2c for illustration. The range in savings expressed for each load factor captures the effect of different delivery rate structures among distributors in Ontario (e.g., the RTSR represents a larger share of total delivery rates charged by some distributors, a lower share for others).

Table 2: Illustrative Total Bill Savings for Electric Vehicle Charging Access Rate Participant with a 300kW Public DCFC Charging Station, Option C, Various Load Factors

Load Factor	Minimum	Average	Maximum
5%	13%	31%	42%
10%	10%	22%	30%
15%	8%	17%	22%

Non-participants could expect to see limited RTSR increases in the near term, as RTSR obligations would be reapportioned among customers through RTSR variance account clearing processes.

Non-participants would see an average total bill increase of about 0.1% upon implementation of the EVC Rate, as shown in Table 3 below. The exact timing of the bill increase for non-participating customers would depend on the timing of RTSR variance account clearances by distributors.

Total bill impacts could be higher or lower for non-participants than the estimated average of 0.1%. As shown in Table 3, estimated total bill increases for non-participants in 2026 range from 0.05% to 0.14%. The range shown for each rate option reflects estimated differences among distributors in Ontario.

Table 3: Illustrative Total Bill Increase for Non-Participants Upon Implementation of the Electric Vehicle Charging Access Rate in 2026 and disposition of any related RTSR variance accounts by distributors, Options 2a, 2b and 2c

Value	Option A	Option B	Option C
Minimum	0.05%	0.06%	0.06%
Average	0.09%	0.10%	0.10%
Maximum	0.13%	0.14%	0.14%

The EVC Rate would be implemented through changes to the RTSR Workform and IRM Rate Generator Model Used by Distributors

The OEB would revise the RTSR Workform and IRM Rate Generator Model to facilitate implementation of the EVC Rate.

Discussion

RTSRs are set through a Cost of Service process or an IRM process. In a Cost of Service process, this is achieved through the RTSR workform. In an IRM process, this is achieved through the IRM Rate Generator Model. The RTSR workform and IRM Generator Model are created and updated by the OEB and completed by distributors. The OEB would revise both models to facilitate implementation of the EVC Rate.

The following is an overview of the RTSR workform, assuming (for illustration) that 2025 RTSRs are being set:

- Tab 3: Reporting and Record Keeping (RRR) Data includes inputs for the current approved RTSRs, metered kWh consumption and kW demand based on RRR data for the most recent historic year and the applicable Loss Factor.

- Tab 4: UTRs and Sub-transmission include inputs for historic, current and test year UTRs. If the test year UTRs have not been set, preliminary UTRs are used if available. Otherwise, current UTRs are used. If the distributor is an embedded distributor, the host distributor's rates are also inputted.

- Tab 5: Historical Wholesale calculates the billing when historic UTRs and host RTSRs are applied against historic wholesale transmission units billed.

- Tab 6: Current Wholesale calculates the expected billing when the UTRs set for the current year are applied against historic wholesale transmission units billed.

- Tab 7: Forecast Wholesale calculates the expected billing forecasted UTRs are applied against historic wholesale transmission units billed.

- Tab 8: RTSRs to Forecast calculates the amount that each rate class is billed for their RTSRs based on the relevant historic billing determinant and current RTSRs. Then the billed amount percentage is calculated for each rate class to determine the percentage of the total RTSR payments that are attributed to that rate class. This percentage is multiplied by the billed amount calculated in Tab 6 and Tab 7 to determine the portion of the current and forecast wholesale bill that would be attributed that rate class. To determine the adjusted RTSRs, current

and forecast wholesale billing amounts are divided by the historic billing determinant.

The same historic year is used for host volumes and customer volumes. It is expected that test year volumes will result in a proportional change to both host and customer volumes, resulting in the calculated rates recovering the test year expenses as accurately as reasonably possible.

Revisions would be required to the RTSR Workform by the OEB to incorporate the EVC Rate. For example, new lines for the new rate would be created in the RTSR Workform for the applicable rate classes in Tab 8 to be applied by distributors to the Network Service and Line and Transformation Connection Service RTSRs of participating customers.

OEB staff proposes to revise the RTSR Workform and IRM Rate Generator Model to facilitate implementation of the EVC Rate after details of the EVC Rate have been finalized following input from stakeholders.

EVC Rate to be Reviewed in Due Course

The OEB might initiate a review of the EVC Rate after some experience has been gained with it, likely within several years of its implementation.

Discussion

The review might consider distributor and customer experiences, lessons learned, other relevant considerations and next steps. The timing and scope of such a review would be informed by stakeholder input.

Considerations related to the design of a potential review might include providing rate predictability for participants and distributors, and providing enough time to gather information and observe trends to facilitate review, while also allowing for adaptation to ensure that the EVC Rate remains fit for purpose in an evolving landscape.

Conclusion

OEB staff developed its draft proposal for a EVC Rate in response to direction from the Minister of Energy to consider rate design options for EV public charging infrastructure providers.

OEB staff's draft proposal is being developed under the auspices of the OEB's EV Integration Initiative, which is intended to inform actions the OEB is taking to ensure the efficient integration of EVs with the electricity system.

OEB staff has placed importance on the following considerations in developing its draft proposal for an EVC Rate:

- Ratemaking principles, cost causality in particular
- Evidence-based analysis
- Simplicity and administrative ease, including for EV charging station participants and distributors
- Providing for evolution over time
- Feedback received from stakeholders

OEB staff thanks stakeholders for reviewing its draft EVC Rate proposal and looks forward to discussing it with them and receiving their input on it.