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Ms. Holly Anderson, Clerk
Vermont Public Utility Commission
112 State Street
Montpelier, VT 05620-2701

12 December 2022
RE: 22-4869 EV rates due 12 December

Dear Ms. Anderson:

Washington Electric Co-op (WEC) herein provides its comments and answers to the PUC questions in its 17 November 2022 Order.

1.**Rate Details**. *Details on the specific rate or rates offered, including eligibility by customer class or group. Utilities may provide either a descriptive narrative or the titles or numbers of any tariffs or pilot programs previously filed with the Commission. Please also identify the default residential and commercial rates and tariffs for point of reference.*

In conjunction with Efficiency Vermont, and funding from VLITE, WEC has been providing a no cost Type II charger to members participating in our **Powershift** pilot project. The project is a research project with voluntary participation, with peak and off-peak hours to charge EVs.

There are 36 members with WEC provided Type II EVSE in Powershift today. There is no penalty for using EVSE in the current peak period (3 pm to 10 pm); however, in 3 years of pilot project there have been a small number of instances when the member used the EVSE during the peak period.

Powershift has been significantly limited for new participants since the pandemic induced supply chain issues including transformers. Most EVSE locations will require a right-sized transformer, which WEC and other distribution utilities now are seeing delays up to 18 months or more.

WEC has a pending rate case (22-4100) with a requested 14.2% increase. WEC rate 38 (**Time of Day**) is an existing class of service with no current participants. This is a hold over tariff from the period when WEC used analog meters. The current metering platform (Power Line Carrier/PLC) is able to provide a peak/off peak option, but not any additional option such as for net metering on the same meter.

WEC recognizes its metering limitation especially for those members who are or will net meter, because we know that group of members are highly likely to also install Type II EVSE and other heating and transportation options using electricity.

WEC is planning to deploy an **RF mesh** network over the next couple of years; currently WEC has a **grant application** at the DPS to begin this deployment. The RF mesh meters will allow multiple rate options and with **Wi-Fi/RF capability** are able to provide near real time load and **Demand Response** opportunity.

Under **DPS grant** ("RATE DESIGN AND INNOVATIVE **(RDI)**PROJECTS BY VERMONT MUNICIPAL AND COOPERATIVE ELECTRIC UTILITIES") WEC along with project lead BED and VEC, the utilities are in early stage of providing "smart plugs" for our members with Type I (L1) charging equipment. The project will identify both suitable devices to allow member and utility data access for L1 use and member behavior with L1 charging.

2. **Enrollment:** *The number of customers enrolled in such rates and the percentage of customers who utilize incentives related to EVs who are also enrolled in the rate or rates.*

There are no current members enrolled in Rate 38 (Time of Day).

There are 36 members enrolled in the Powershift voluntary peak/off peak pilot project with WEC-provided Type 2 EVSE. Efficiency Vermont provides project management and dashboard access across the program.

Of the 66 WEC members since 2018 who applied for and were paid an EV incentive, 36 are currently enrolled in Powershift and received a no cost Type II EVSE. If not for the current supply chain disruptions which impact WEC's ability to install a right-sized transformer WEC would have additional participants. The transformer supply issue is on-going, and impacts all of WEC operations adversely to varying degrees. Elective projects (vs a new interconnection membership) have been advised of on-going delays and schedule impact. While the supply chain impact is outside of WEC's control, the issue has forced on-going outreach to all members generally to help level set expectations.

In the recently initiated DPS funded **"RDI"** project with BED and VEC, the plan is to deploy up to 200 "smart plugs" capable of use with a L1 120 volt EVSE. The ultimate number of participants will be distributed among the 3 distribution utilities based on the capital cost per device and a proration of customer counts.

3. **Effectiveness.** *Do the rates appear to be directing load away from peak times related to cost? Are there other value streams or opportunities presented by EV rates? For example, will EV rates be effective in avoiding upgrades to the distribution grid or reducing other power supply costs? What are the "lessons learned" during implementation so far?*

As noted above (1, 2) without a meter-based peak/off peak option using PLC metering, there are mixed results to share based on the Powershift voluntary model. The main lesson for a voluntary program such as Powershift is currently configured is how vulnerable participation is to members' Wi-Fi router performance to maintain visibility on the Charge Point dashboard.

Whether there are other value streams or opportunities to leverage further voluntary peak/off peak participants will depend on factors outside WEC's control, specifically required service entrance/transformer upgrades to accommodate WEC demographics.

One lesson learned is how **regulatory policy** from the last century is now compounding or restricting member ease of access to significant additional beneficial electrification. The distribution utilities historically had then been directed to reduce voltage and avoid transformer core losses due to oversizing transformers.

WEC member density is around 8 meters per mile with 8,786 transformers on 1300 miles of distribution system. Of the total population today there are almost 7,000 single service transformers. Vermont housing stock is estimated to be the one of the oldest in the country. One consequence for existing locations is the main service entrance is often **100 amps, connected to a 5 kva transformer.**

WEC has no opinion on whether EV rates can avoid service entrance/transformer upgrades overall. WEC believes the **existing infrastructure being both member-owned and Co-op owned creates a site-specific issue, with or without available EV rates.**

The other trend which will add distribution capacity pressure will be coming in the form of (1) larger on board charging (OBC) such as is today seen in the Ford Lightning with an 80 amp OBC; (2) as bi-directional home charging emerges in the market, the service entrance upgrade pressure will grow further.

4. **Progress.** *Please describe (1) progress toward developing new or additional EC or EVSE rates, (2) any barriers the utility is facing as it attempts to implement the requirement, (3) pathways to overcoming any such barriers associated with the development of rates for Ev and Evse rates in Act 55, and (4) concrete steps the utility is taking to prepare to propose rates in advance of the June 30, 2024 deadline for implementation.*

Until WEC begins to deploy RF mesh metering to overcome the single purpose limit of PLC meters installed in 2012 across WEC's system, the availability of an EV tariff will not enable participation beyond what the existing Rate 38 design has for participation today.

WEC shares the position of VEC and others that an EV specific rate would offer enough benefit to outweigh utility costs to design and implement. WEC is a believer in Flexible Load Management, and the role of the member participant in voluntary options is our pathway to implementing FLM, given the limits of our membership's existing service entrance condition.

WEC is working with Efficiency Vermont and the National Renewable Energy Laboratory (NREL) on a residential research project to examine alternative means to use existing service entrance with (1) load limiters and (2) smart circuit breakers. WEC has no evidence today to provide to the Commission, but when there are field deployments we will share those lessons learned.

5. **Addressing barriers.** *In last year's report, utilities identified several barriers to implementing EV and EVSE rates including metering changing technologies, cost, and broadband access. Please describe the specific actions the utility is taking to overcome these barriers.*

1. WEC is planning to migrate from PLC to RF mesh over the next couple of years; the pace of deployment will be based on (1) whether WEC is able to secure a DPS grant pending and (2) WEC's existing and next four-year Construction Work Plan (C.W.P.).

2. The demographic issues (low density per mile/single meter per transformer/older housing stock) will continue to prevail, compounded by supply chain delays which force the utility into a triage mode to assure equipment for storm restoration/emergency and new member interconnection. These barriers are largely outside WEC's control, and cause our operational options to be limited or delayed.

3. The broadband opportunity appears to be an exception to the other barriers WEC faces, in that we have on-going make ready with the 3 CUDs serving WEC's 41 towns. The immediate value to WEC will be

funded in the C.W.P. and the pending DPS grant award, where WEC will be able to deploy downline devices (reclosers, switches and voltage regulators) with RF and fiber backhaul. This investment will provide Operations with near real time visibility into the system; currently WEC has no SCADA or virtual control to substations or into the field.

Additionally from the members' point of view the underserved/unserved portion of WEC membership is significant. As more members work from home the expectations for real time rate options will develop and WEC will bring RF mesh metering to those members with net metering and EVSE and other electrification investments.

Please contact me if there are questions.

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