

STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 23-3604-PET

Petition of Vermont Public Power Supply Authority for approval of a proposed EV/EVSE tariff rider program for its member utilities	
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Order entered: 05/10/2024

ORDER PROVIDING GUIDANCE ON ELECTRIC VEHICLE TARIFF DESIGN CONCEPT

I. INTRODUCTION

This case concerns a petition filed with the Vermont Public Utility Commission (“Commission”) by the Vermont Public Power Supply Authority (“VPPSA”) ¹ for approval of a proposed Electric Vehicle/Electric Vehicle Supply Equipment tariff rider program (“EV/EVSE Tariff Rider Program” or the “Program”) for its member utilities pursuant to Section 33 of Act 55 of 2021.²

As explained below, the Commission does not approve or reject VPPSA’s filing. Instead, the Commission offers guidance that may help to inform the development of future tariff filings. Further, the Commission does not reach any conclusion on whether the Program meets the goals articulated in Section 33 of Act 55. VPPSA’s Program presents an innovative approach toward accomplishing these goals. At this time, the Program is a design concept, but we expect that additional details will be provided in the future tariff filings from VPPSA’s member utilities.

II. PROCEDURAL HISTORY

On October 16, 2023, VPPSA filed the petition, prefiled testimony, and exhibits.

On December 5, 2023, the hearing officer held a scheduling conference.

¹ VPPSA’s member utilities are: Barton Village, Inc., Electric Department; Village of Enosburg Falls Electric Department; Town of Hardwick Electric Department; Jacksonville Electric Company; Village of Johnson Water & Light Department; Village of Ludlow Electric Light Department; Town of Lyndon Electric Department; Village of Morrisville Water & Light Department; Town of Northfield Electric Department; Village of Orleans Electric Department; and Village of Swanton, Inc., Electric Department.

² Public Act No. 55 (2021 Vt., Bien. Sess.) (“Act 55”).

On January 11, 2024, the hearing officer conducted a workshop, which the Commission attended.

On January 25, 2024, the hearing officer issued a request for information.

On February 12, 2024, VPPSA filed supplemental testimony in response to the request for information.

On March 13, 2024, after two rounds of discovery, the Vermont Department of Public Service (“Department”) filed comments stating that it supports VPPSA’s petition for approval of its EV/EVSE Tariff Rider Program.

No party has requested an evidentiary hearing or objected to the prefiled testimony and exhibits. Accordingly, the following documents are admitted as if presented at a hearing: the Petition; prefiled testimony of Sarah Braese and exhibits SB-1 (Resume of Sarah Braese), SB-2 (Proposed Residential Tariff Template), and SB-3 (Proposed Commercial & Industrial Demand Service Template); and prefiled supplemental testimony of Sarah Braese.³

III. LEGAL STANDARDS

Section 33(b) of Act 55 requires Vermont distribution utilities to implement rates related to plug-in electric vehicles (“EVs” or “PEVs”) and electric vehicle supply equipment (“EVSE”) by June 30, 2024. The rates must encourage:

- (1) efficient use of PEV loads consistent with objectives of least-cost integrated planning, set out in 30 V.S.A. § 218c, and 30 V.S.A. § 202(b) and (c);
- (2) participation in the PEV rates;
- (3) travel by PEV relative to available alternatives; and
- (4) greater adoption of PEVs.

Section 33(c)(1) also specifies the minimum findings that the Commission must make before approving an EV rate proposed by a utility, including finding that the rate:

- (A) supports greater adoption of PEVs;
- (B) adequately compensates PEV operators and owners of EVSE available to the public for the value of grid-related services, including costs avoided through peak management;

³ If any party has an objection to any of these documents being entered into evidence, the party must submit its objection within 14 days of the date this Order is entered.

(C) adequately compensates the electric distribution utility and its customers for the additional costs that are directly attributable to the delivery of electricity through a PEV rate;

(D) includes a reasonable contribution to historic or embedded costs required to meet the overall cost of service;

(E) does not discourage EVSE available to the public; and

(F) does not have an adverse impact to ratepayers not utilizing the PEV rate.

The specific PEV-rate criteria provided by Act 55 are in addition to the Commission's general responsibility under 30 V.S.A. §§ 218, 225, and 226 to ensure that the proposed rates are just and reasonable.

VPPSA's filing does not present a rate or tariff for Commission approval. Instead, VPPSA explains in its petition that it:

envisions a process whereby the Commission and Department of Public Service review the proposed EV/EVSE Tariff Rider templates and work with VPPSA to arrive at an-agreed upon template that can then be presented to each member for approval and eventual tariff filings with the Commission.⁴

VPPSA specifically requests that the Commission "approve VPPSA's proposed EV/EVSE Tariff Rider program."⁵ As VPPSA explains, its member utilities will ultimately present tariff filings for Commission approval.

The Commission understands that VPPSA is seeking guidance on its proposed Program before committing its member utilities to the work and cost of preparing and filing individual tariffs. Over the course of this proceeding, the Commission had the opportunity to consider VPPSA's conceptual design and has provided findings and a discussion of issues reflecting our understanding of the Program that VPPSA may find helpful.

IV. FINDINGS

1. VPPSA's proposed EV/EVSE Tariff Rider Program would deliver service under a tariff rider that measures and bills incremental loads through an hourly, formula-based cost-component rate structure. The Program includes a residential rider and a commercial and industrial rider. Braese pf. at 3; exhs. SB-2 and SB-3.

⁴ Petition at 2.

⁵ *Id.*

2. The residential EV rate under the Program is a rider to the base residential rate that will be applicable to incremental EV load. Braese pf. at 7.

3. The proposed tariff riders include the following cost components to be billed on a per-kWh basis: (1) Base Energy; (2) Transmission & Peak Capacity; (3) Program Delivery Costs; and (4) Historic & Embedded Cost Contribution. Exhs. SB-2 and SB-3.

4. The starting point for the Program's EV rate is the 24-hour set of day-ahead locational marginal pricing published daily by ISO-New England (the Base Energy cost component). Braese pf. at 9.

5. Additional hourly per-kWh adders will include market transmission and capacity costs, program delivery costs, and a contribution to fixed costs for embedded distribution, operations and maintenance, and administrative and general costs, and would be added to the day-ahead energy prices. The transmission- and capacity-related adder will have peak and off-peak per-kWh amounts. Braese pf. at 9; Braese pf. supp. at 4-6.

6. Day-ahead pricing information will be automatically communicated to enrolled customers on a predetermined, regular schedule. Current and historical pricing information will also be available. Braese pf. at 8.

7. Customers will be able to choose when to charge based on the day-ahead pricing information to avoid charging during expensive peak periods and reduce charging costs. Braese pf. at 6.

8. To participate in VPPSA's proposed EV rate, a customer's EVSE, EV telemetry, or authorized representative must demonstrate bidirectional communication capabilities using OpenADR 2.0a, 2.0b, or 3.0 data standards. Braese pf. at 8; exhs. SB-2 and SB-3.

9. A customer's communications may occur over the Internet or through an alternative communications channel if the customer's equipment is capable. VPPSA is aware of at least three device manufacturers with equipment capable of using alternative communications channels (*e.g.*, radio or cell tower frequencies) to transmit data. Braese pf. supp. at 10.

10. VPPSA does not know how common it is for EVs to be equipped with the capability to communicate charging data without an Internet connection. Braese pf. supp. at 10.

11. Customers enrolling in the Program will need to work through their equipment manufacturer, through a third-party service, or directly with their utility to establish the

communications channel needed to send their charging data. VPPSA does not plan to establish a default third-party service. Braese pf. supp. at 8, 12.

12. VPPSA has provided a non-exhaustive list of 37 “devices/device manufacturers and Virtual Top- or End-Node providers that utilize and promote the OpenADR communication protocols to enable open accessibility” that customers could choose from to participate in the rate. Braese pf. supp. at 7-8 (citing VPPSA Response to First Set of Discovery, filed January 31, 2024).

13. Customer communications to and from the utility will occur through a “cloud-based technology solution” that implements “an OpenADR compliant Platform as a Service (PaaS) solution.” VPPSA is in negotiations with a PaaS developer that has deployed similar programs and facilitates bidirectional communication pathways between the PaaS and the customer’s device or authorized aggregator. Braese pf. at 4.

14. Incremental EV/EVSE energy usage under the Program would be separately identified on the customer’s bill to include: (1) total kWh consumption for the billing period; and (2) total amount due based on kWh usage using market-informed hourly rates for the billing period. Braese pf. at 8; exhs. SB-2 and SB-3.

15. VPPSA is “currently refining the non-energy aspects of the hourly pricing and expects to finalize the initial pricing profile as soon as feasible, during this Petition’s approval process.” VPPSA has not provided a pricing profile in this proceeding. Braese pf. at 9.

16. VPPSA will develop informational materials for customers describing how the program works and potential impacts on electricity bills and will implement appropriate mechanisms to communicate potential spikes in energy market prices to participating customers. VPPSA has not proposed any grace period while customers adjust to the rate structure. Braese pf. supp. at 3-4.

17. VPPSA does not have a best estimate of program costs but has executed an initial agreement and scope of work to identify the risks and challenges for the final design, development, and deployment of the centralized platform that will be necessary to send and receive the necessary customer data for the program. Braese pf. supp. at 12-13.

V. DISCUSSION

As reflected in the findings above, VPPSA's proposed program is still in the design stage and there are details that have not yet been finalized. Our discussion below addresses only the conceptual design of the Program as described in VPPSA's filings.

Section 33(b) of Act 55

The first goal for EV rates under Section 33(b) of Act 55 is to encourage the efficient use of PEV loads. Rates under the Program would provide dynamic, market-informed rates for EV loads, based on day-ahead pricing information communicated to enrolled customers. Customers would receive the day-ahead pricing information on a daily basis and could use that information to decide when to charge their EVs. The EV rate for each day would reflect current (day-ahead) conditions in the energy market and provide an incentive for customers to manage their EV-charging load away from peak hours to receive the lowest prices. In theory, day ahead hourly prices encourage increased generation during high price periods and increased load during low price periods. Accordingly, VPPSA's proposal provides a strong signal to customers to efficiently manage their EV charging loads, consistent with this goal.

Section 33(b) also states the goals of encouraging participation in EV rates, encouraging travel by EV relative to available alternatives, and encouraging greater adoption of EVs. We appreciate VPPSA's efforts to present an interactive approach that enables customers to participate in dynamic pricing opportunities. This approach may result in greater potential savings for customers and utilities as compared to static pricing programs. Along with that opportunity, however, comes greater potential risks.

By providing customers with access to dynamic pricing, VPPSA's proposed program is more complex than other EV rates in Vermont, such as those offered by Green Mountain Power Corporation ("GMP") and the City of Burlington Electric Department ("BED"), which provide fixed periods with lower electric rates for participating customers.⁶ For customers to benefit from dynamic pricing, they will need to be engaged and fully understand how to participate effectively to see the most savings. To achieve this goal, we believe that VPPSA will likely need

⁶ See *Tariff filing of City of Burlington Electric Department for residential electric vehicle rate effective September 6, 2018*, Case No. 18-2763-TF, Order of 8/30/18; *Tariff filing of Green Mountain Power Corporation for approval to implement two new electric vehicle ("EV") charging rates to be effective on bills rendered on or after November 4, 2019*, Case No. 19-3586-TF, Order of 7/20/20.

to develop robust educational materials and include this information in any future tariff filings for the Commission's evaluation in light of the Section 33 requirements. We also think that VPPSA should consider offering an additional, less complex, rate option along the lines of GMP's and BED's tariffs for customers who do not wish to engage with the complexity of a dynamic pricing program.

VPPSA describes the Program as a customer choice approach, but those choices may overwhelm customers, resulting in reduced Program participation.⁷ Customers must choose a compatible EV and/or device, decide how to connect to the utility's software, and use day-ahead pricing information to decide when to charge their EVs.

Customer choices begin with the customer finding and purchasing an EV or EVSE that is capable of bidirectional communications using OpenADR data standards. The bidirectional communications required for participation in VPPSA's Program can occur over an Internet connection, although Internet service would not be needed if the customer selects a device capable of using radio or cell tower communications.⁸ At this time, VPPSA does not know whether EV owners can use their EV's built-in radio or cellular transmission capabilities to communicate charging data to an outside recipient, but states that retrofit options are available if the EV does not already have or allow the capability.

VPPSA has explained in this proceeding that "there are a number of both devices/device manufacturers and Virtual Top- or End-Node providers that utilize and promote the OpenADR communication protocols."⁹ In support, VPPSA identified a website for the OpenADR Alliance, which is a standards organization with members in a variety of industries, some of which offer EV-related products. However, finding OpenADR-certified EV devices on the website was difficult, as was determining whether any devices found would meet the Program requirements.

We expect that VPPSA's educational materials for the Program will provide some guidance to help simplify customers' device-selection process. This guidance could take many forms, such as providing a roadmap for customers to identify OpenADR-compliant devices or identifying example devices that VPPSA knows will successfully interface with its OpenADR

⁷ Braese pf. supp. at 12.

⁸ VPPSA is aware of three device manufacturers with devices capable of using radio or cell tower communications. *Id.* at 10.

⁹ *Id.* at 7-8.

PaaS. We recognize that VPPSA is seeking to maximize customer choice in the Program, but we are concerned that too much choice without appropriate guidance could be a disincentive to customer participation.

Once a customer has purchased equipment that meets the Program requirements, the customer will then need to connect their equipment to the utility software platform. To establish the network connection, VPPSA explains that customers will need to work “through their [EV/EVSE manufacturer], through an aggregator, or directly with their utility” to establish the necessary communications channel to participate in the program.¹⁰ Even though customer devices will use OpenADR protocols, the process of networking those devices will likely vary between devices and manufacturers and require coordination between the customer and the utility or the PaaS cloud service provider, depending on which entity is ultimately responsible for Program networking issues. VPPSA will need to consider what networking guidance it will provide to customers and what entity will be responsible for resolving device networking issues that arise for customers participating in the Program. While maximizing customer choice is a worthwhile goal, those choices must be managed to ensure that customers do not purchase devices that will not work with the PaaS system.

We are intrigued by the conceptual design of the Program as a rate option for EV customers. However, we think that there is more that VPPSA must do to provide sufficient guidance to potential participants.¹¹ Additionally, we are also concerned that, even with sufficient guidance, the degree of customer involvement required by the Program may still be too demanding for meaningful customer service elections and then effective participation. For this reason, in addition to developing robust guidance and support for customers considering whether to participate in the Program, VPPSA should strongly consider providing EV customers with a less complex and potentially less risky¹² EV rate in order to meet the goal of Section 33(b) of Act 55 to encourage participation in EV rates. While a second, simpler EV rate option may not

¹⁰ *Id.* at 12.

¹¹ In response to the Department’s discovery, VPPSA explained that it has not formalized all aspects of the Program’s customer outreach and engagement strategies at this time but recognizes the importance of clear and consistent communications to support customer enrollment. *See* VPPSA Response to Second Set of Discovery, filed February 21, 2024, Q.DPS.VPPSA.2-4.

¹² For example, a customer may mistakenly continue charging an EV during peak pricing due to oversight or not understanding the utility’s price-related communications.

provide the same opportunities for benefits as the market-informed Program approach, it should lead to additional savings for EV customers and encourage the participation of customers wanting less complexity.

In considering the suggestions offered above, VPPSA should plan to include any educational materials to be provided to potential participants in tariff filings by its member utilities. Further, the language in the tariff riders ultimately filed with the Commission should provide sufficient information for customers to understand how to participate in the Program.

Section 33(c) of Act 55

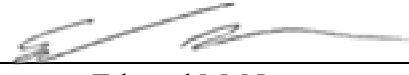
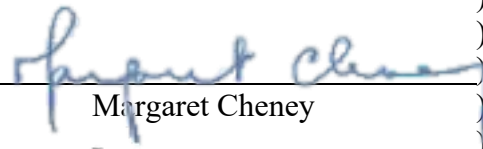

Because this is not a formal tariff filing, we have not evaluated the tariff criteria specified in Section 33(c) of Act 55. VPPSA has not presented actual rates for Commission review, but explains that individual member utilities will file tariffs that the Commission will need to address once filed. The Commission will analyze the costs included in the tariff filings from the member utilities and will determine whether the Program meets the criteria specified by Section 33(c) and the broader just and reasonable requirements of 30 V.S.A. §§ 218, 225, and 226.

VI. CONCLUSION

We do not approve or reject VPPSA's filing. Instead, we offer guidance on the conceptual design of the Program. This guidance should not be interpreted as predetermining any issue involved in future EV-rate filings from VPPSA's member utilities, which will be evaluated once filed under the criteria of Act 55 and the requirements of 30 V.S.A. §§ 218, 225, and 226, including reasonableness and prudence. If VPPSA requires additional time to consider this Order and prepare tariff filings for its member utilities, it may request an extension of time under Section 33(e) of Act 55.

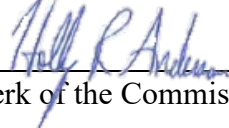
SO ORDERED.

Dated at Montpelier, Vermont, this 10th day of May, 2024.

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Edward McNamara)	PUBLIC UTILITY
)	
)	
Margaret Cheney)	COMMISSION
)	
)	
J. Riley Allen)	OF VERMONT

OFFICE OF THE CLERK

Filed: May 10, 2024

Attest: 
Clerk of the Commission

Notice to Readers: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Commission (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: puc.clerk@vermont.gov)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Commission within 30 days. Appeal will not stay the effect of this Order, absent further order by this Commission or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Commission within 28 days of the date of this decision and Order.

PUC Case No. 23-3604-PET - SERVICE LIST

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