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December 12, 2022

*Via ePUC*

Holly Anderson, Clerk  
Vermont Public Utility Commission  
Peoples United Bank Building, 4th Floor  
112 State Street  
Montpelier, VT 05620-2701

**Re: Case No. 22-4869-INV – Public Utility Commission 2022 Investigation into Rates Related to Electric Vehicles**  
*GMP EV rate inventory & comments*

Dear Ms. Anderson,

Green Mountain Power Corporation (GMP) provides the following inventory of rates and tariffs we offer related to Electric Vehicles (EVs) and Electric Vehicle Supply Equipment (EVSE), per the Commission's November 15, 2022 Order in this matter requesting input from the distribution utilities.

GMP continues to focus on working with customers to address the top source of carbon pollution in Vermont, which is transportation. Switching to EVs represents the single biggest step most Vermonters can take to cut their carbon emissions. Helping reduce the top barriers to driving electric is a priority, which includes vehicle cost and range anxiety. When customers electrify their transportation, they are not only reducing their own transportation expense, but are helping to reduce costs for all GMP customers. Below GMP provides updated comments and data on EV-related tariffs we offer, which help support our customers' transition away from fossil fuels.

1. **Rate details** – Details on the specific rate or rates offered, including eligibility by customer class or group. Utilities may either provide 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 retail rates and tariffs for point of reference.

**GMP Response**

*Off Peak Electric Vehicle Residential Service Rate Schedule 72* – This rate is for single-phase electric service at secondary voltage for vehicle charging using specific approved EVSE. Participation is open to eligible Residential Rate Schedule 1 customers who have installed a GMP-approved Level 2 charger, have reliable internet access, and are the

owner of the account address or have the owner's consent to install charging equipment in a form acceptable to GMP. Customers utilize Residential Rate Schedule 1 for their household consumption, with Rate 72 electric use as measured by the charging equipment subtracted from the household billing meter and billed under Rate 72 kWh rates. In partnership with customers, GMP has the ability to avoid charging vehicles during Peak Events and customers enjoy a cost-based rate reduction consistent with generation capacity and transmission costs avoided due to GMP's control. If customers choose, they have the option to override a Peak Event and continue charging, by paying a higher kWh rate that reflects recovery of additional generation capacity and transmission costs.

*Time-of-Use Electric Vehicle Residential Service Rate Schedule 74* – The eligibility, basic customer criteria, and billing method for Rate 74 is the same as for Rate 72. Under Rate 74, enrolled customers manage usage by determining whether to charge during the Peak hours, or instead only during less-expensive Off-Peak hours. Peak hours are a period of eight consecutive hours between 1:00 p.m. and 9:00 p.m., Monday through Friday. All other hours are designated as Off-Peak hours. Rate 74 Peak kWh are priced the same as Residential Rate 1 and the Off-Peak kWh are priced at a cost-based reduced rate reflecting generation capacity and transmission costs avoided by charging during Off-Peak periods.

Residential customers who have charging equipment who do not utilize Rate 72 or Rate 74 service would be subject to all household service on Residential Rate 1 or Residential Time-of-Use Service Rate Schedule 11.<sup>1</sup>

*General Service Rate Schedule 6 EV Charging Equipment Exemption* – Non-residential customers are eligible to take service under General Service Rate Schedule 6 which has a daily customer charge and a flat kWh rate. Where all service is restricted to electric vehicle charging station equipment available to the general public, the 200 kW and/or 7,600 kWh/month service limitations of this rate schedule will not be enforced.

Without this exemption, the default rate schedule for usage above the service limitations would be Commercial and Industrial Time-of-Use Rate Schedule 63/65 which consists of a customer charge and TOU kW and kWh rates.

*Generic Special Contract for EV Bus Charging* – This generic special contract was approved by PUC Order dated December 8, 2021, in Case No. 21-4593-SC and is in effect through July 30, 2023 for a group of eligible customers operating EVs for transit. Similar to the General Service Rate Schedule 6 EV Charging Equipment Exemption, contract participants will not be subject to the 200 kW and/or 7,600 kWh/month service limitations of Rate 6. This contract has been utilized for four GMP customers participating in the Vermont Agency of Natural Resources Electric School and Transit

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<sup>1</sup> Each of these rate schedules also have companion service offerings with a Critical Peak Pricing rate design. These rate schedules (Residential Critical Peak Pricing Rate Schedule 9 and Residential TOU & Critical Peak Pricing Rate Schedule 14) could also serve as default service offerings for EV charging equipment that does not elect to take service on Rate 72 or Rate 74.

Bus Pilot Program, for the initial period of time under the terms of their grants that have certain restrictions on load management. The default rate classes for these customers would otherwise be General Service Rate Schedule 6 and Commercial and Industrial Time-of-Use Rate Schedule 63/65 if required by usage levels. We plan to work with these customers this spring to determine the best rate path forward as the initial term contracts come to an end, the data from their initial grant period can be analyzed, and more load management opportunities exist such as Flexible Load Management and Commercial and Industrial Bring Your Own Device pilots.

*Flexible Load Management Pilot* – The South Burlington School District is a participant in GMP’s Flexible Load Management 2.0 for its four EVSEs for fleet charging of their electric buses. That pilot is appropriate for this customer due to their ability to work with us and their equipment provider on load management and vehicle-to-grid applications. The pilot allows them to share in the benefits of the peak shaving and grid services their EVSEs will provide. The default rate class otherwise is General Service Rate Schedule 6.

Respondent: Melinda Humphrey, Manager of Rates

- 2. Enrollment** – The number of customers enrolled in such rates and the percentage of customers who utilize utility incentives related to EVs (Tier III, for example) who are also enrolled in the rate or rates.

#### GMP Response

For Rates 72 and 74, enrollment has been steady. Since these rates were originally approved August 31, 2020,<sup>2</sup> 2,020 customers have signed up. 64% of these customers are enrolled on Rate 74 (time-of-use) and 36% are enrolled on Rate 72 (managed). Currently, 47% of customers who utilized incentives related to EVs since the new rates became available are fully enrolled on one of the EV rates.<sup>3</sup> As expected, this is an increase in enrollment by 11% over last year’s total enrollment rate.

Looking at all chargers, not just those that also received an EV Incentive, the enrollment rate for customers who received a charger totals 75%. The enrollment amount per year is a combination of chargers sent and enrolled in the same year, and chargers sent in previous years being connected for the first time. We are still seeing a lag in time between when chargers are shipped to when they are installed and enrolled, but we are seeing an uptick in enrollments as the outreach to customers about connecting their charger continues as mentioned below.

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<sup>2</sup> The EV rates were originally approved in GMP’s FY21 annual base rate proceeding, Case No. 20-1407-TF, by *Tariff Approval Order* dated August 27, 2020, and subsequently in GMP’s FY22 annual base rate proceeding, Case No. 21-1963-TF, by *Tariff Approval Order* dated August 31, 2021.

<sup>3</sup> This includes both the purchase incentive and the free Level 2 charger; not all customers who access the purchase incentive seek out a free Level 2 charger. Among customers who have received a Tier III EV purchase incentive since September 2020, 78% received a free smart Level 2 charger. (Tesla currently does not have a charger that communicates with the platform, but as described later in this filing, that is expected to change in the coming months.)

*Customers enrolled in Rates 72 & 74 versus Level 2 chargers shipped to date*

	<u>2020<sup>4</sup></u>	<u>2021</u>	<u>2022</u>	<u>Total</u>
Shipped	486	1047	1177	2710
Enrolled	332	682	1007	2021

Customers who get a free Level 2 charger from GMP are required to connect their charger to the internet and enroll in one of our two EV rates within 60 days. We are still seeing a challenge for customers to find an electrician to install their chargers in a timely fashion. Since these EV rates were enacted, 689 customers have received a charger, but have not yet been connected to GMP’s management platform and have not yet enrolled in one of the EV rates. We continue to perform regular outreach to customers to notify them of the need to connect their charger, and we are also now looking into potential partners that can help ease this difficulty and provide a platform to connect customers with electricians to perform this work. Such a platform would give customers the ability to get a quote for installation online, which would then carry them through all phases of the installation of their EVSE. Participating installers would be held to certain metrics to ensure quality and a positive customer experience.

Respondent: Melinda Humphrey, Manager of Rates; Craig Ferreira, Innovation Development

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?

GMP Response

Both our managed charging (Rate 72) and time-of-use (Rate 74) tariffs have been extremely effective at directing load away from peak times. In 2022, Rate 72 customers have opted out of peak events at a rate of 0.6% as compared to 1.99% reported in 2021, calculated by dividing the total number of opt outs by the total number of successful device contacts. Customers who opt out pay a higher rate to charge during the event. Among Rate 74 customers in 2022, 92% of charging has occurred during the off-peak window, i.e., outside of 1:00 p.m. to 9:00 p.m., Monday through Friday. This is compared to 95% from 2021.

We continue to gain invaluable experience administering these two rates. On Rate 74, many customers use their available EVSE mobile application to delay charging until the start of the off-peak window. This has resulted in a spike in charging right at 9:00 p.m. on weekdays, rather than being more spread out across the off-peak window. While this does not currently contribute to system coincident peak demand, we are reviewing options for

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<sup>4</sup> Includes data from September 1, 2020 to December 31, 2020.

this rate that will assure we do not inadvertently create new peaks in the future as the number of EVs increases. One potential solution is to manage groups of customers as cohorts with slightly different off-peak windows to stagger the start of their charging and therefore lessen the spike in demand.

On Rate 72, the default behavior during a peak event is to allow charging to be temporarily paused until the event ends. Customers need to explicitly opt out (through a text, email, or with the charger itself) to charge during the event. The low opt-out rate indicates that this “default opt-in” approach has been successful. We always want to make the easy choice the one that benefits all customers (including participants). Similar to the start of the off-peak window on Rate 74, the end of a peak event often sees a spike in demand among Rate 72 customers. There are various ways GMP can address the potential for a spike if it becomes necessary, such as through similar smoothing of when customers come on to charge. Thus far, we have managed this by dividing Rate 72 customers into multiple subgroups to bring smaller groups of chargers back online over a period of time and avoid any problematic snapback in demand. Each group has the same duration event, just with slightly differing start and end times.

For both of these rates, as the volume and needs for management grows, we could modify the rate design if needed, for example to meet new windows of peak time.

Below we discuss specific issues regarding charger communication or availability. For all enrolled customers, we continue to receive data directly from the charging equipment to calculate the on- and off- peak consumption, which is backed out of the total home consumption measured by the AMI meter. Any charging activity that is missed due to lack of connectivity for any reason in a given cycle (e.g., due to an offline charger), is reflected in the first bill after connection is reestablished. We continue to send notifications via text and email to alert customers to an offline charger after it has been offline for three days. Given the rate differences, customers have incentives to address these issues and as noted below, we have taken steps to help when manufacturer-specific problems have arisen.

We have seen the importance of providing a charging solution for customers at the time of vehicle purchase. Acquiring a charger is often the first thing new EV owners do after taking delivery of the vehicle (if not sooner). GMP customers can receive a free smart Level 2 charger with the purchase or lease of any EV, simply by checking a box on our EV rebate form (which is completed at the dealership). An online option is also available to customers who may want to make a decision after the purchase of their vehicle. These chargers are compatible with our EV rates. All customers who receive a charger are required to enroll it in our device management platform and to sign up for either Rate 72 or Rate 74 within 60 days (or they could be billed for the charger). We have not yet sought to enforce that provision because we continue to work with customers to get chargers connected as needed; they pay Rate 1 for all service until this is accomplished.

Respondent: Craig Ferreira, Innovation Development; Melinda Humphrey, Manager of Rates

- 4. Progress** – Please describe (1) progress toward developing new or additional EV 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.

GMP Response

We see the importance and the need to develop a new EV rate garnered to the commercial and industrial class customer specifically for workplace and fleet charging. We are exploring solutions and various rate designs that would allow for these customers to enroll in a commercial time-of-use rate for both single phase level 2 charging and three-phase level 3 charging. This time-of-use rate, similar to Rates 72 and 74, would add value by directing load away from peak times related to cost. At the time of this writing, we are still in the early stages to identify appropriate technology and vendors that will help implement and add value to this concept.

Respondent: Melinda Humphrey, Manager of Rates

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

GMP Response

We continue to be enthusiastic about EV/EVSE rates that share the benefits of load growth and load control between the EV owners and all other customers. EV customers have been very willing to enroll in these rates and share management with GMP to help the grid and lower costs.

In the past year, we saw charger connectivity issues associated with one manufacturer, Chargepoint. We worked directly to alert Chargepoint to what our enrolled customers were experiencing. Chargepoint acknowledged the technical issue and then began implementing a fix remotely where possible and replacing EVSE units if needed. We have not experienced the same types of issues with Flo chargers.

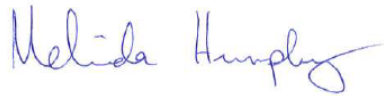
GMP has taken some measures to safeguard against this type of EVSE manufacturer-specific issue in a couple of ways. First, we are about to begin offering a third EVSE type from Emporia. Second, we are finalizing a rollout plan for supporting billing through EV telematics wherever possible. This is communication directly to each vehicle instead of the charger, which will allow for uninterrupted data flow as each vehicle communicates over cellular network rather than homeowner Wi-fi. This option will only be available at first from a limited number of vehicle manufacturers that provide this functionality. However, it will enable Tesla vehicles to participate in our EV rates

without the need for a GMP compatible charger, which has been a pain point for Tesla drivers who prefer to use the Tesla provided charger. We expect this technology will expand in the future. We will be filing updates to our tariffs to include EV telematics where available.

Respondent: Craig Ferreira, Innovation Development

GMP thanks the Commission for the opportunity to provide comments and data on its existing EV tariffs. Please do not hesitate to reach out with any questions.

Sincerely,

A handwritten signature in blue ink that reads "Melinda Humphrey". The signature is fluid and cursive, with the first name "Melinda" and the last name "Humphrey" clearly legible.

Melinda Humphrey  
Manager of Rates

cc: Service list (*via ePUC*)