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

Re: Case No. 21-____-TF – Extension of Bring Your Own Device Program and Energy Storage System Service Tariffs

Dear Ms. Anderson:

Green Mountain Power (“GMP”) files for approval by the Vermont Public Utility Commission (“PUC”) tariff sheets extending the term of the Bring Your Own Device Program (“BYOD”) and Energy Storage System Service (“ESS”) tariffs that were approved by the PUC by Order dated May 20, 2020 in Case Nos. 19-3537-TF and 19-3167-TF. The original term of the two tariffs is from June 1, 2020 through September 30, 2022. The only material adjustments to the rates, eligibility, and conditions of the tariffs are an adjustment to the term length of both offerings and a clarification to benefit customers that BYOD systems will be required to permit grid-charging (the tariff is presently silent on this point). GMP requests extension for both tariffs until September 30, 2026, which is the requested end of the proposed Multi-Year Regulation Plan (“MYRP”) filed with the Commission in September (Case No. 21-3707-PET).

GMP requests an effective date of January 29, 2022, pursuant to 30 V.S.A. 225(a), but has filed this extension request at this time so that there would be no expected lapse in service offerings if the PUC elects to suspend and investigate this filing. GMP welcomes the opportunity to engage and answer any questions related to this filing as requested.

This filing consists of the following documents for both the BYOD and ESS tariffs:

- GMP’s workpapers supporting the tariffs;
- clean and redlined tariff sheets; and
- estimate of revenues and costs attributable to the services pursuant to Rule 2.401(c).¹

Background and Explanation of Extension Request

GMP believes it is critical to continue offering programs to customers that encourage installation of energy storage with multiple options in energy storage manufacturers as well as a choice of installers. The ESS and BYOD tariffs in conjunction with one another provide customers who wish to lease an avenue to do so, while those customers who prefer to own their systems (or arrange financing or leasing through another company) have that option.

When the two tariffs were approved, the Commission set an initial expiration date of September 30, 2022, in recognition that the residential-scale energy storage market was nascent and that further review of the uptake by customers and GMP’s role in the marketplace would be appropriate after some further period of market development. Since that time, the unanticipated pandemic has intervened to create both economic and supply chain disruption over nearly two years of the initial terms of the programs. While the ESS tariff is well-subscribed, installations in the past year have lagged due to pandemic shutdowns and supply chain challenges. Meanwhile, overall participation in the BYOD tariff has not yet approached the 5 MW per year that was approved by the PUC, despite the fact that the offered incentive remains one of the most robust in the country. This indicates that there continues to be a need for market development in battery storage and justifies an extension of both GMP’s direct participation in the market through utility-owned equipment via the ESS tariff and the customer-owned model through the BYOD tariff. As we are already seeing the impacts of climate change in Vermont, these tariffs will continue to provide a way for customers to install clean backup energy, offering resilience against outages and reducing emissions from both backup generators and the grid during peak times.

In the past year, the systems in these programs, along with the battery systems in all of the preceding battery pilots, provided \$1.9M in savings for all customers when deployed for peak events—and some systems also provided value through the Frequency Regulation market, a first-of-its-kind deployment of this type of aggregation within ISO-NE’s market. Continuing this work is critical in the face of climate change. Extending the term of both these programs will allow for the market to stabilize and grow as we continue to emerge from the effects of the pandemic and will support the continued deployment of a fleet of distributed batteries to be used

¹ GMP has indicated in its filing the forecasted revenues and costs on an NPV basis, per installed Energy Storage System, and the costs over three years if participation is at the maximum allowed limit of 5 MW per year as set forth in the ESS tariff. Total revenues and costs will depend on the actual number of customers that participate in the offering. For the BYOD service, participation is assumed to be 10% (or 0.5 MW per year) which reflects recent participation levels for that service.

to reduce Vermont's carbon footprint by reducing demand at peak times. These extensions will provide energy services companies, working with GMP, with the opportunity to bring the battery market to greater maturity while aiding Vermont's important climate goals.²

On February 1, 2021, GMP filed a 2020 Annual Evaluation for its MYRP, including data related to GMP's Energy System Storage tariff and Bring Your Own Device tariff, as required in Case Nos. 19-3167-TF and 19-3537-TF, respectively. GMP will continue to report on the ESS and BYOD metrics required by the PUC under the current MYRP and the proposed plan under review, if the tariffs are extended as requested.

Brief Description of BYOD Tariff

Details of the BYOD program were described in detail in Case Nos. 19-3537-TF and 19-3167-TF. Participating customers will purchase and install a compatible energy storage system and, upon installation, enroll their system into GMP's Energy Management Platform, providing GMP access to the energy storage system to manage during peak events. Customers also may choose a self-consumption option, providing GMP access to the energy storage system's data for measurement and verification purposes.

Customers will have the option to allow GMP to manage their system during called peak events for a duration of either three or four hours. In exchange, GMP will provide an upfront incentive of \$850 per kW for a three-hour resource, and \$950 per kW for a four-hour resource. For any systems sited within a constrained area of GMP's grid, according to GMP's solar map at the time of installation, there will be an additional \$100 per kW incentive provided, raising the three-hour and four-hour resources to \$950 per kW and \$1,050 per kW, respectively. A software integration fee of \$3.97 per month, as well as any manufacturer-specific communication fees (which are outside GMP's control) will be billed to the customer on their monthly GMP utility bill as a non-bypassable charge. There is an additional monthly charge of \$12.70 per kW for systems that fail to operate or communicate as required.

For customer clarity, GMP has added language on tariff sheet 311 that BYOD systems will be required to enable grid charging so that customers can deliver on their commitment for energy sharing that enabled their upfront incentive. This will ensure BYOD customers are not left with a battery that has been discharged for load management purposes per their agreement, and has not had an opportunity to recharge via solar generation only before extended inclement weather could produce potential outages. The Customer Lease Agreements will also be conformed to provide this clarification.

GMP has provided full financial workpapers for the benefit of review by the Commission and Department. GMP's workpapers detail the method utilized to determine the one-time upfront incentives and are calculated using the most up-to-date forecast of costs and power supply

² GMP notes that nearly 200 battery installations have been performed by Vermont-based energy service companies and our expectation is that this will continue to grow as supply chain disruptions are lessened.

benefits. Overall, as shown in the attached workpapers, the incentive structure means that nonparticipating customers will benefit from participating customers' energy storage systems, and the program as a whole is expected to provide an overall net positive value for all customers.

The tariff will continue to be offered for up to 5 MW of installed energy storage capacity per calendar year. GMP has chosen the 5 MW annual size in order to assure a contained, phased approach of storage deployment onto the system. This will also assure that the storage assets reach their end-of-lives in a staggered fashion that allows for steady replacement of systems. We note that the BYOD has not reached its storage capacity limit since inception but believe it is important to keep the 5 MW limit to allow for greater participation from the customers working with energy services companies going forward.

Rule 2.401(c) Data – BYOD

As shown in the required statement of costs and revenues under Commission Rule 2.401(c) (attached), each kW of energy storage provided to GMP by participating customers is projected to have a positive net present value for all customers. The accounting required under Rule 2.401(c) shows a negative net present value in the early years of the program as a result of the payment of upfront incentives to participating customers; however, the overall value as a result of the increased distributed resources will deliver a positive value to all GMP customers. We have shown the BYOD participation at 0.5 MW rather than the full 5 MW limit based on recent participation data.

Brief Description of ESS Tariff

Details of the ESS program were described in detail in Case Nos. 19-3537-TF and 19-3167-TF; no changes are proposed in this filing.³ The ESS continues to be well subscribed by customers throughout our service territory and continues to deliver benefits to both participating and non-participating customers. We believe that customers continue to want the benefit of battery storage as a method of backup power during this time of climate change and we provide this tariff as a way for customers to do so for a time-limited period while development of a small-scale deployment market continues to be fostered.

Customers participating in the GMP Energy Storage System offering will lease an Energy Storage System owned by GMP which will be installed in their home by manufacturer certified contractors. Customers can choose to pay a monthly lease charge of \$55, or an upfront one-time lease payment of \$5,500 per Energy Storage System.

The extension of the tariff will continue the limit of up to 5 MW of installed capacity per calendar year. This equates to about 500 customers per calendar year. Similar to the BYOD

³ Any further changes proposed to the ESS tariff or the BYOD tariff would similarly require Commission review and approval; GMP expects to continue to monitor overall customer interest to determine if a request to raise the per-year caps is appropriate, and will also monitor other costs and benefits of the programs, such as the level of implied incentive, lease cost, and early termination fee, among others, as more systems are deployed.

program, GMP has chosen the 5 MW annual size in order to limit yearly capital outlays; to better visualize and control grid changes and associated peak management as more systems come online; and to stagger the end dates for these systems.

As with the BYOD program, GMP has provided full financial workpapers for the benefit of review by the Commission and Department. Overall, as shown in the attached workpapers, the financial model demonstrates that the program as a whole is expected to provide an overall net positive value for all customers.

Rule 2.401(c) Data – ESS

As shown in the required statement of costs and revenues under Commission Rule 2.401(c), each individual Energy Storage System is projected to have a positive net present value for all customers.

Conclusion

We are excited to propose extension of these two battery storage programs for customers as part of our commitment to offer customers resiliency in a way that benefits all customers by sharing savings, cutting carbon emissions, and strengthening the greater grid through coordination and management of individual resources.

We thank the Commission for its review. We have informed the Department of Public Service and understand they will review and comment within the established time period. We have also informed Renewable Energy Vermont of this filing in light of its participation in Case Nos. 19-3537-TF and 19-3167-TF when these tariffs were established. If you have any questions or need further information, please contact me.

Sincerely,



Josh Castonguay
Vice President, Chief Innovation Officer

cc: Department of Public Service (via email and ePUC)
Renewable Energy Vermont (via email)