STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Tariff filing of Green Mountain Power Corporation for approval of a Zone 4 Energy Storage Program Service tariff to be effective with bills rendered on or after May 30, 2025	)	Case No. 25-0719-TF

Green Mountain Power Corporation's Responses to the Second Set of Discovery Requests Served by the Vermont Department of Public Service

Green Mountain Power Corporation ("GMP" or "Petitioner"), by and through the undersigned counsel, hereby responds to the second set of discovery requests served by the Department of Public Service ("DPS" or "Department") on July 14, 2025.

General Objections

The following General Objections of GMP are incorporated by reference into its responses to each Interrogatory, Request to Produce, and Request for Admissions reproduced below, whether or not an objection is stated in any particular response. Any response to one of the Interrogatories, Requests to Produce, or Requests for Admission given below is given without waiver of any objection, whether or not an objection is stated.

1. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission reproduced below to the extent that it is overbroad, irrelevant, unduly burdensome, or not proportional to the needs of the case.

2. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission reproduced below to the extent that it calls for the disclosure of information or production of material privileged under the attorney-client, work-product, or any other applicable privilege.

3. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission reproduced below to the extent that it is unreasonably cumulative or duplicative, or calls for the disclosure of information or production of material that is obtainable from some other source that is more convenient, less burdensome, or less expensive, including, but not limited to, information or material that is publicly available or that has already been disclosed or produced to you in connection with another proceeding.

4. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission reproduced below to the extent that it calls for the disclosure or production of confidential or proprietary information, trade secrets, or material.

5. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission reproduced below to the extent that it is vague, unintelligible, requires speculation as to the information being sought, or is otherwise incapable of a reasonable answer.

6. Petitioner objects to each Instruction and Definition listed in the requesting party's discovery requests to the extent that it exceeds the bounds of permissible discovery or is unduly burdensome.

7. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission to the extent that the request exceeds the scope of Petitioner's testimony and exhibits.

8. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission to the extent that the request would require Petitioner to conduct extensive document review, additional studies, analyses, and/or tests as part of its response.

9. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission to the extent that the request exceeds the scope of the requesting party's intervention.

10. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission to the extent that the request exceeds the scope of the issues on review.

11. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission to the extent that it calls for a legal conclusion.

INTERROGATORIES

Q:DPS:GMP.2-1: Question DPS.GMP.1-1 requested quantification of "the cost of each peak-shaving resource ($/kW-month) on an average annual and long-term levelized basis." GMP's response describes "the range of peak shaving *value* for current energy storage service agreements (ESSAs)" (emphasis added) and of residential value. Please provide the cost of each peak shaving resource.

a. More specifically, please provide the gross cost and the net cost (net of quantifiable value streams to ratepayers) for all GMP owned and contracted energy storage resources. Please provide in the same format as the gross levelized costs as described in Exhibit GMP-JC-3 and GMP's response to DPS.GMP.1-2.

Response: Using the word "value" instead of "cost" was a typographical error. The figures presented in $/kW-month in response to Q:DPS:GMP.1-1 are the costs for the respective peak shaving resource, as requested in that question and above.

a. Models previously provided for the residential programs show gross and net costs on a present value basis. See Exh. GMP-JC-3 (ZOI Storage Program); Attachment GMP.DPS.2-1a (current ESS Model, previously provided as Exh. GMP-MMC-1 in Case No. 25-0948-PET). For a summary of gross and net costs for GMP's current energy storage service agreements (ESSAs), see Attachment GMP.DPS.2-1b. Models showing gross and net costs for GMP's owned energy storage systems were provided in CPG proceedings related to each resource. See e.g., Case No. 17-5003-PET (GMP MicroGrid-Milton); Case No. 17-5236-PET (GMP MicroGrid-Ferrisburgh); Case No. 18-2902-PET (GMP Essex Solar/Storage); Case No. 17-2813-PET (Panton Battery); Case No. 22-4009-PET (Troy Battery).

Person(s) Responsible for Response: Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply.

Q:DPS:GMP.2-2: Question DPS.GMP.1-5 requested estimation of the amount of major storm costs that will be avoided by Zone 4 tariff investments. GMP did not provide an estimate in response, instead referring to the Commission order in case No. 23-3501-PET discussing the need to develop more data. Please confirm that GMP has not made a quantitative estimate of the specific amount of storm costs that will be avoided by the proposed Zone 4 Tariff investments.

Response: Confirmed, for the reasons explained in response to Q:DPS.GMP.1-5. Specifically, these investments are forecasted as NPV positive for all customers such that any storm response savings would increase that value to customers. These investments are planned as part of the comprehensive work across zones that will be done on these four identified circuits, leading to savings from the collective effect of work across zones that will enable us to adjust our storm planning and response —which will be evaluated as circuits are completed consistent with the Commission's Order. In addition to the expected storm response savings, Zone 4 Energy Storage Systems will also provide improved customer and employee safety during storms, key goals which further increase the already positive value beyond what has been quantified. See also response to Q:DPS:GMP.1-5.

Person(s) Responsible for Response: Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply.

Q:DPS:GMP.2-3: Question DPS.GMP.1-16 discusses formal least-cost alternatives analysis comparing Zone 4 Energy Storage Tariff to other solutions that could deliver equivalent reliability, resiliency, and grid benefits. GMP responded by citing its previously filed responses to the Commission's information request of May 6, 2025, specifically its response to PUC Info Request 5 and Attachment PUC-Info Request-5 (filed May 12, 2025, Case No. 25-0719-TF). This narrative compares the cost of energy storage to the cost of single-phase undergrounding with an example for four Zone 4 segments showing that: "(i)n total, undergrounding these four taps was estimated at $960,500, compared to $421,200 for the energy storage solution."

a. Do other infrastructure investments such as undergrounding provide identical benefits to customers as compared to installing an energy storage solution?

b. If not, what are the differences – and were those differences considered in the analysis referenced above?

c. In the event of an outage, will GMP still need to repair or replace storm-damaged infrastructure – including distribution lines – for Zone 4 energy customers? If so, should those costs be included in a comparison of solutions?

Response:

a. No, while Zone 4 Energy Storage and T&D infrastructure investments both provide resiliency and reliability benefits they are not identical. As noted in responses to Q:DPS:GMP.1-16 and 1-19, potential alternatives to Zone 4 Energy Storage do not provide equivalent grid and customer benefits and meet the resiliency and safety objectives.

b. As discussed in Mr. Castonguay's prefiled testimony at 7-8, energy storage provides peak shaving and ancillary benefits to all customers, and can also help GMP respond to other widespread regional grid outages such as load shedding events ordered by ISO-NE. Zone 4 Energy Storage will continue to power the customer whether the outage event occurs within the Zone 4 area or outside of it, while infrastructure hardening can prevent outages that would have otherwise occurred due to events in the hardened area. See also response to Q:DPS:GMP.2-2 above.

c. Yes, GMP will still repair these lines but will be able to do so in a more cost-effective, efficient manner with storage installed in Zone 4. The comparison model is on an upfront capital basis to give a direct, equivalent, and easily comparable cost. As noted above and in answer to Q:DPS:GMP.2-2, energy storage provides benefits that are not a part of the direct capital investment comparison; differences in costs avoided from outage response and other maintenance also are not included there, and would not be capable of accurate comparison until there is more experience across completed zones to assess the outages avoided and restoration optimization that would occur, as described in response to Q:DPS:GMP.1-5.

Person(s) Responsible for Response: Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply.

Q:DPS:GMP.2-4: In response to question DPS.GMP.1-17, GMP notes that it "considered several other potential methods in connection with Zone 4, including distribution line undergrounding, widening rights-of-way and easements for increased vegetation management, tree trimming acceleration, and centralized storage options" and goes on to explain qualitatively why some of these options are not viable.

a. Please confirm whether GMP conducted any quantitative analysis to evaluate widening or expanding the rights-of-way in connection with Zone 4, for example: evaluating the cost of expanding the rights-of-way in the proposed Zone 4 areas and the benefits associated with reduced storm damage. If yes, please provide that analysis. If no quantitative analysis was completed, please explain why.

b. GMP states that "even with tree trimming, the storm damage is from vegetation outside the right of way." Is GMP asserting that accelerated tree-trimming within the current right-of-way would have zero impact the amount of storm damage? In other words, is all storm damage from vegetation attributable to vegetation outside the right of way?

c. If the answer to subpart b. above is no, then how much damage is attributable to vegetation from within the current right-of-way, and what is the value of accelerated tree-trimming?

Response:

a. No, because expanded vegetation is not an effective alternative to this work in distribution corridors. A consistently expanded right-of-way width needed for outage reductions in distribution corridors would be resource intensive, costly, and is unlikely to be achievable. While the cost to maintain wider corridors would be significant, in our experience, another factor making expanded vegetation management in these corridors impractical is that it would be difficult to obtain expanded rights-of-way necessary for the line-miles associated with this work. For example, when GMP has attempted to widen the right-of-way for transmission lines (which are further from homes and businesses than distribution lines), even with favorable terms requiring no restrictive covenants and only permission to trim, we are often met with either strong resistance or no engagement. Vegetation management, while an important tool for routine maintenance, is not the solution for customers to address the damage from the storms we've seen hitting Vermont. The repeated costs, coupled with the increased rate of vegetation growth due to climate change, are key reasons we have not pursued vegetation management changes as an alternative to our overall zoned approach to resilience, including the Zone 4 energy storage tariff.

b & c. No, but in our experience, the majority of tree-related outages are caused by trees located outside the right-of-way falling within the right-of-way maintained under our current Vegetation Management Plan. While vegetation

management is an important piece of overall system reliability, significantly expanding the amount of tree clearing is not a feasible solution for the goals of our work across zones described in this proceeding.

Person(s) Responsible for Response: Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply; Mike Burke, VP, Field Operations.

Q:DPS:GMP.2-5: In response to DPS.GMP.1-33, GMP has asserted that its "ability to predict monthly peaks has not decreased." Even if GMP's ability to predict monthly peaks has not decreased, has GMP's ability to activate flexible resources such as storage during monthly peaks decreased, given flatter peaks as described in the response, as well as increased storms where GMP chooses not to activate such resources?

Response: The modeled decrease in peak shaving effectiveness and value presented in this tariff filing reflects the complexity of several related factors in managing or reducing peaks in the future. GMP's ability to activate peak shaving resources is not one of these factors, and has not decreased, just as our ability to predict peaks has not decreased as described in response to Q:DPS:GMP.1-33. For example, the flatter peaks described in that response may require more or longer dispatching of resources to manage the peak, and the value of peak shaving may change, even with effective forecasting and dispatching. Meanwhile, avoiding dispatching to reserve energy for storm response is a regular practice for these programs now and will continue to be. All of these factors are captured by the modeled forecast ranges and may be mitigated by offsetting factors (such as higher RNS costs).

Person(s) Responsible for Response: Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply.

Q:DPS:GMP.2-6: Please confirm that, consistent with its presentation to the Vermont System Planning Committee Geotargeting Subcommittee on July 9, 2025, Green Mountain Power has forecasted no distribution system projects that are driven by load growth.

Response: Confirmed that GMP is not currently forecasting any specific distribution system projects driven by load growth.

Person(s) Responsible for Response: Kamran Hassan, Leader of Engineering.

Q:DPS:GMP.2-7: In response to DPS.GMP.1-28, GMP notes that "critical care or other customers with medical needs and customer on the Energy Assistance Program will be prioritized in deployment."

a. Did GMP compare the concentration of customers on the Energy Assistance Program or with medical needs in the chosen circuits to the concentrations in other potential circuits?

b. Did GMP assess any other indicators of vulnerability other than income?

Response:

a. As outlined in Mr. Castonguay's testimony, the four circuits identified in the tariff were selected based on overall reliability factors and the significant outages that have been experienced on these circuits recently due to damaging storms. See Castonguay Testimony at 30. These circuits are near the top of GMP's 20 least reliable circuits list, or are immediately adjacent to circuits at the top of the list. GMP did not specifically compare the concentrations of Energy Assistance Program or medical needs customers on these circuits to other circuits, but did consider other indicators of vulnerability, including the State's Municipal Vulnerability Tool. The initial four circuits overlap communities where more than 25% of the customers are at or below two times the federal poverty level. See Castonguay Testimony at 19, 30. As noted in the testimony cited by the Department, GMP will prioritize outreach to critical care and EAP enrolled customers in these circuits to explain and work with them on their storage installations.

b. See Response to a., above.

Person(s) Responsible for Response: Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply.

Q:DPS:GMP.2-8: Referring to GMP's discovery Attachment DPS.GMP.1-1b, the Grid Transformation (ESS) pilot, which began in 2017 and is now a tariff, is described as "the original energy storage leasing program and the foundational learning for the rest of GMP's energy storage programs." Has the ESS pilot/tariff helped GMP avoid any storm response costs?

a. If yes, please quantify these avoided storm response costs.

b. If no, please explain why the ESS pilot/tariff has not provided such benefits or the data GMP deems necessary to estimate avoided storm response costs through the deployment of these same storage solutions through the Zone 4 tariff.

Response: As described further in Mr. Castonguay's testimony, the purposes of the ESS Tariff and Zone 4 Energy Storage Tariff are different. Both provide important reliability benefits for participating customers and provide an overall net benefit to non-participating customers through peak-shaving and other grid management benefits. ESS is a voluntary program that is available to any GMP customer who has an interest in energy storage and therefore it is not targeted to any one location or vulnerable circuit.

a. n/a

b. As explained in response to Q:DPS:GMP.2-2 above, to save money on storm response, a comprehensive zone-based approach is needed. This is the purpose of the Zone 4 Energy Storage Tariff and distinguishes it from the ESS Tariff.

Person(s) Responsible for Response: Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply.

Q:DPS:GMP.2-9: Referring to GMP's Attachment DPS.GMP.1-1b, the Grid Transformation (ESS) pilot, which began in 2017 and is now a tariff, notes that "GMP uses these resources for grid benefits, predominantly peak shaving."

a. What, if any, quantifiable non peak-shaving grid benefits has the ESS pilot/tariff provided?

b. Please quantify any such benefits.

Response:

a. Non peak-shaving benefits currently include Frequency Regulation, Energy Arbitrage, Tier III Value, and T&D deferral.

b. For a single system on an NPV basis, these values total $4,921. Please refer to Attachment GMP.DPS.2-1a (current ESS Model, previously provided as Exh. GMP-MMC-1 in Case No. 25-0948-PET).

Person(s) Responsible for Response: Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply.

Q:DPS:GMP.2-10: Referring to GMP's response to Q.DPS.GMP.1-5, please clarify if the positive forecasted positive NPV includes any assumed reduction in major storm costs. If so, please quantify these avoided costs.

Response: It does not. As explained in responses to Q:DPS:GMP.1-5 and 2-2, the reduction in major storm costs will be an additional benefit to this positive NPV, and we expect the systems deployed in this tariff to begin providing insight on those avoided costs as part of a comprehensive resiliency approach.

Person(s) Responsible for Response: Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply.

Q:DPS:GMP.2-11: Referring to GMP's response to Q.DPS.GMP.1-5:

a. Please confirm that providing Zone 4 customers with energy storage solutions delays but does not eliminate the need for GMP to restore power to these customers in the event of an outage.

b. By how much time will Zone 4 energy storage solutions delay the need for GMP to restore power to these customers?

c. Please quantify any and all restoration costs GMP avoids with this additional time afforded by Zone 4 energy storage solutions.

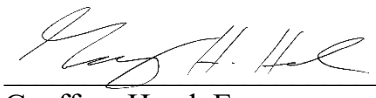
Response:
a.-c. See responses to Q:DPS:GMP.2-2, 2-3, and 2-10. Zone 4 customers with storage will remain powered up when the grid goes down. Depending on the consumption of the home, the systems can keep customers powered for multiple days. Once circuits are hardened across zones, fewer lines and customer locations will be impacted and we can plan for and implement a more efficient response

that is safer for customers and crews and which reduces contractor and crew costs in these Zone 4 areas and more broadly.

Person(s) Responsible for Response: Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply; Mike Burke, VP, Field Operations.

Dated at Burlington, Vermont this 21st day of July 2025.

As to Objections:



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I, Josh Castonguay, declare that the discovery responses that I have sponsored are true and accurate to the best of my knowledge and belief and were prepared by me or under my direct supervision. I understand that if the above statement is false, I may be subject to sanctions by the Commission pursuant to 30 V.S.A. § 30.

Dated at Colchester, VT this 21st day of July 2025.

Respondent Signature

By: _____
Josh Castonguay

I, Michael Burke, declare that the discovery responses that I have sponsored are true and accurate to the best of my knowledge and belief and were prepared by me or under my direct supervision. I understand that if the above statement is false, I may be subject to sanctions by the Commission pursuant to 30 V.S.A. § 30.

Dated at Colchester,VT this 21st day of July 2025.

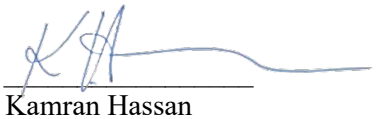
Respondent Signature

By: 
Michael Burke

I, Kamran Hassan, declare that the discovery responses that I have sponsored are true and accurate to the best of my knowledge and belief and were prepared by me or under my direct supervision. I understand that if the above statement is false, I may be subject to sanctions by the Commission pursuant to 30 V.S.A. § 30.

Dated at Colchester, VT this 21st day of July 2025.

Respondent Signature

By: 
Kamran Hassan