

**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
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Green Mountain Power Corporation’s Responses to the First 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 first set of discovery requests served by the Department of Public Service (“DPS” or “Department”) on June 20, 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.1-1: Please provide a list of all GMP owned and contracted energy storage resources including but not limited to GMP's Energy Storage System Tariff, Energy Storage Services Agreements, and GMP-owned batteries.

- a. Please quantify the cost of each peak-shaving resource (\$/kW-month) on an average annual and long-term levelized basis.**

Response: Please refer to GMP's 2024 Proposed IRP, Tables 6-5 and 6-6 (excerpt attached as Attachment DPS.GMP.1-1a) and GMP's Annual Energy Storage Programs Report, Attachment 1, filed in Case No. 25A-0222 (attached as Attachment GMP.DPS.1-1b) for lists of all GMP owned and contracted storage resources.

For subparagraph a., as described generally in the Prefiled Direct Testimony of Josh Castonguay, pages 5-16, GMP's diverse portfolio of energy storage addresses and solves many grid and customer needs, with each resource offering a range of benefits. The range of peak shaving value for current energy storage service agreements (ESSAs) is \$6/kw-month to \$13.25/kw-month. Each contracted grid-scale resource has characteristics relevant to its specific ESSA. For example, the ESSA may allocate some use of the system to GMP while the developer retains other uses, or may provide full use. The size, duration (e.g. two-hour vs four-hour dispatch), and pricing (e.g. levelized vs. escalating) of the resources also differ by ESSA. The value of GMP residential programs is within that range; for example, the current ESS tariff provides just under \$11/kw-month using the latest model. Peak shaving and the other directly monetized benefits for customers described in testimony add to the resiliency and other benefits of these systems.

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

Q:DPS:GMP.1-2: Please provide a calculation of the proposed Zone 4 tariff's cost of peak shaving (\$/kW-month) on an average annual and long-term levelized basis from exhibit GMP-JC-3.

Response: Exh. GMP-JC-3 provides the gross levelized cost for the Zone 4 tariff which results in a range from \$12.72 - \$12.93 per kW-month for model Scenario A and B. This value is comparable to the range of other peak shaving resources

without accounting for any resiliency or other benefits and demonstrates why residential energy storage is the right solution for a resiliency program.

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

Q:DPS:GMP.1-3: Please quantify any monetary resilience or T&D deferral benefits GMP's Energy Storage System Tariff provides and the costs to achieve said benefits

a. How do these compare to the expected Zone 4 tariff costs and benefits?

Response: Please refer to the Prefiled Direct Testimony of Josh Castonguay in this proceeding at 26, 28-30, and to the Prefiled Direct Testimony of Madeline Murray-Clasen at 14 in Case No. 25-0948-PET. As discussed, and consistent with prior Energy Storage System (ESS) financial analyses, resiliency benefits have not been included or relied upon in the models. In both programs, the systems have positive financial benefits to all customers even before any additional beneficial value of resiliency. With respect to T&D deferral benefits, the ESS and Zone 4 Tariff programs each model the same average state-wide value derived from AESC 24 estimates as further explained in Prefiled Direct Testimony of Josh Castonguay in this proceeding at 27-28.

Person(s) Responsible for Response: Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply; Jeremy Ravenelle, Distributed Energy Resources Leader

Q:DPS:GMP.1-4: In Case No. 23-3501-PET, witness Michael Burke states that it is very costly to restore service after significant storms and provides Exhibit GMP-MB-4 totaling GMP's Major Storm Spending from 2013-2023 to support GMP's investments in ZOI resilience measures.

a. What type of investments or cost containment efforts has GMP made to minimize restoration costs prior to pursuing ZOI measures?

Response: We have been working proactively to harden the grid, implement new technologies to support customer and community resilience, lower costs, enhance public and employee safety, and ensure continuity of our operations under

catastrophic conditions for both GMP and the communities we serve. We have taken intentional, accelerated actions, including the following:

- Distribution automation efforts such as advanced self-healing and remote healing networks and communications systems, and automated feeder reconfiguration to quickly detect and isolate faults
- Distribution pole and conductor hardening, such as spacer cable, insulated tree wire installations, undergrounding, and pole replacements
- Increased feeder back-up capabilities and limiting radial distribution lines feeding Vermont communities
- Relocating substations and other critical infrastructure in flood plain areas
- Relocating cross-country T&D lines to roadside locations for faster, safer and less costly restoration
- Implementing supported automated failover systems to maintain grid operations
- Fortifying data and telecom networks to withstand natural and human-caused disasters
- Improving communications, estimated restoration times, and outreach efforts during storms with Vermont towns and communities and with customers overall
- Using drones to safely and quickly accelerate damage assessment and restoration efforts
- Updating our Integrated Vegetation Management program to respond to longer growing seasons, maturing Vermont forests and infestations like the emerald ash borer, including by deploying satellite data and pre-trained AI models to optimize our program and increase efficiency
- Creating a more distributed, local, customer-focused grid, such as our Resiliency Zones, Resilient Neighborhood Pilot, Flexible Load Management program, and energy storage offerings

As the above list indicates, improving how we plan, prepare, and respond to severe weather is the focus across GMP's operations and in all our capital planning. This includes acceleration of resiliency investments in recent years in the MYRP and Climate Plan, utilizing weather forecasting data, and making logistical and operational improvements through software, analysis and storm management. All of the hard work to date has informed the comprehensive program we have proposed, necessary to support safety and resilience for severe weather and grid events.

Person(s) Responsible for Response: Mike Burke, VP, Field Operations

Q:DPS:GMP.1-5: Please estimate the amount of major storm costs that will be avoided by the Zone 4 tariff investments.

Response: This Zone 4 work is forecasted to be NPV positive for all customers. As proposed, when fully constructed, two circuits will have a complete resiliency solution, with significant additional work in the two neighboring circuits that together will impact major storm costs for the four circuits. Completing the T&D phase of ZOI with the Zone 4 energy storage will provide important data to help forecast future savings from avoided storm costs. Please also refer to the Final Order in Case No. 23-3501-PET at 23-24, 27, discussing the need to develop data on operational savings through initial ZOI projects, and response to Q:DPS:GMP.1-26, below.

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

Q:DPS:GMP.1-6: Please explain in detail how GMP calculates and allocates capitalized Administrative and General (A&G) expenses for energy storage projects under the proposed Zone 4 Energy Storage Tariff.

- a. Please include the formula or burden rate applied and the components included in the A&G allocation.**

Response: At the time of each traditional cost of service filing, GMP conducts an A&G study to determine the appropriate A&G capitalized rate to use for capital projects. Capitalized A&G ensures these costs are fairly allocated to the longer assets rather than being fully expensed in the current year. The most recent study was performed in the FY23 traditional cost of service case (Case No. 22-0175-TF) for a rate of 6.16% to be applied to capital projects in the current MYRP. Please see Attachment DPS.GMP.1-6 for this calculation. Please also see Case No. 17-3112-INV for another example in a prior rate case. The rate of 6.16% applied to energy storage capital projects is the same percentage applied to other GMP capital projects during the MYRP.

Application of this A&G rate to capital projects results in reduced O&M expenses in the rate year for customers. For example, in the FY23 COS filing, GMP's cost of service was reduced by \$6M due to A&G being capitalized. Subsequent filings have also resulted in similar reductions in the cost of service due to capitalized A&G.

Person(s) Responsible for Response: Rob Bingel, Manager, Financial Planning and Analysis.

Q:DPS:GMP.1-7: In reference to Exhibit GMP-JC-4, please explain the basis for including “Capitalized A&G” as a “Total Revenue” or benefit in the financial model.

- a. Please provide any internal or external accounting guidance GMP relies on to support this classification as a benefit in a cost-benefit test.**

Response: The treatment of capitalized A&G in the Zone 4 Energy Storage Tariff is consistent with how GMP's other capitalized energy storage programs have been modeled, reviewed, and approved, including the original Energy Storage System tariff approved in Case No. 19-3167-TF (see Exh. PUC-Info Request 1-c, with capitalized A&G) and the more recent extension of that program (see Case No. 23-1335-TF, Final Order Approving Tariff Revisions at 4 (08/17/2023) (noting financial analysis included capitalized A&G costs).

- a. Please see response above and Response to Q:DPS:GMP.1-6

Person(s) Responsible for Response: Rob Bingel, Manager, Financial Planning and Analysis.

Q:DPS:GMP.1-8: Please clarify whether the inclusion of Capitalized A&G in the “Total Revenue” section of Exhibit GMP-JC-4 reflects actual cash inflows, avoided expenditures, or some other form of economic benefit to ratepayers.

Response: The inclusion of Capitalized A&G reflects costs that, if not capitalized, would otherwise flow as expense in the rate year.

Person(s) Responsible for Response: Rob Bingel, Manager, Financial Planning and Analysis.

Q:DPS:GMP.1-9: Has GMP included similar Capitalized A&G allocations as benefits in the cost-benefit analysis of other regulated programs (e.g., ESS, BYOD, ESAP)?

a. If so, please provide those examples and any justification offered.

Response: Yes, as described above, this has been applied in the model for these programs and is consistent across capital projects. Capitalized A&G ensures these costs are fairly allocated to the longer-lived assets rather than being fully expensed in the current year. See also Response to Q:DPS:GMP.1-6 and 1-7.

Person(s) Responsible for Response: Rob Bingel, Manager, Financial Planning and Analysis.

Q:DPS:GMP.1-10: Please explain whether the A&G labor and overheads capitalized to the Zone 4 program would otherwise be applied to other capital projects.

a. If so, does this reallocation affect the scope, timing, or costs of those other projects?

Response: No. As noted above in Response to Q:DPS:GMP.1-6, the fixed Capitalized A&G rate of 6.16% was developed for the FY23 cost of service and is applied to capital projects during the current MYRP. If these costs for the Zone 4 Energy Storage Tariff were not capitalized, they would flow through as an expense in that rate year.

a.) N/A.

Person(s) Responsible for Response: Rob Bingel, Manager, Financial Planning and Analysis.

Q:DPS:GMP.1-11: Is GMP asserting that the Zone 4 Energy Storage program creates incremental ratepayer value specifically due to the capitalization of A&G?

a. If so, please explain what new value is created by this accounting treatment and how it differs from rate recovery of other capital projects.

Response: No. Instead, GMP is simply treating the capitalization of A&G for this storage program consistently with the approved approach for other storage programs and capital projects as an element of the overall financial model.

Person(s) Responsible for Response: Rob Bingel, Manager, Financial Planning and Analysis.

Q:DPS:GMP.1-12: Please provide a revised version of Exhibit GMP-JC-4 that excludes the “Capitalized A&G” line item from the revenue/benefit section and shows the resulting Net Present Value under Assumption Sets A and B.

Response: Please see Attachment DPS.GMP.1-12 for the requested version of Exh. GMP-JC-4. This version of the model removes the capitalized A&G benefit as well as the associated capital cost in the revenue requirement related to this allocation to reflect this adjustment. The overall net impact is a modest increase in the net present value, demonstrating that while this A&G modeling approach is consistent with GMP's approved accounting and practice, it has relatively limited effect on the overall assessment of individual program benefits.

Person(s) Responsible for Response: Rob Bingel, Manager, Financial Planning and Analysis.

Q:DPS:GMP.1-13: Please explain whether GMP believes that redeploying internal labor or overhead from other projects to the Zone 4 initiative constitutes a financial benefit to ratepayers.

- a. If so, identify any cost offsets or avoided expenses that result from such redeployment.**

Response: As noted in Responses to Q:DPS:GMP.1-6 through 1-8, GMP's modeling method is consistent with how prior storage programs were modeled and approved and reflects an assignment of A&G costs to capital projects which otherwise would be reflected as an expense in the rate year. It does not include any internal labor.

Person(s) Responsible for Response: Rob Bingel, Manager, Financial Planning and Analysis.

Q:DPS:GMP.1-14: Has GMP performed any analysis to demonstrate that labor or overheads being capitalized to the Zone 4 program were under-utilized prior to redeployment?

a. If so, please provide that analysis.

Response: See Response to Q:DPS.GMP.1-13 above.

Person(s) Responsible for Response: Rob Bingel, Manager, Financial Planning and Analysis.

Q:DPS:GMP.1-15: Does GMP agree that in the absence of measurable avoided costs or external revenues, treating capitalized internal labor as a “benefit” in a cost-benefit test may lead to overstatement of program value?

a. Please explain your position.

Response: See Response to Q:DPS.GMP.1-13 above. As noted, internal labor is not included; the approach applies the same overhead to this capital investment program as to others. The program as modeled produces a net positive benefit for customers under a range of reasonable scenarios with or without the standard assignment of Capitalized A&G.

Person(s) Responsible for Response: Rob Bingel, Manager, Financial Planning and Analysis.

Q:DPS:GMP.1-16: Please state whether GMP has conducted a formal least-cost alternatives analysis comparing the Zone 4 Energy Storage Tariff to other solutions that could deliver equivalent or greater reliability, resiliency, and grid benefits.

a. If so, please provide the results of that analysis.

b. If not, please explain why such an analysis was not conducted.

Response: Yes, GMP performed this analysis, which is presented in response to PUC Info Request 5, filed May 12, 2025, and re-attached here for reference as Attachment DPS.GMP.1-16 (the attachment combines the narrative responses and the relevant workpaper, Exh. GMP-Info Request-5). That analysis supports

residential energy storage as a least cost resiliency solution at the customer density experienced in Zone 4 compared to a T&D hardening alternative based on the number of customers served off that section of distribution. The analysis builds upon significant initial scoping and design of the Zero Outages Initiative which identified residential storage and T&D hardening as the potential solutions to deliver resilient, reliable service to customers.

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

Q:DPS:GMP.1-17: Please identify and describe any alternative technologies, programs, or infrastructure strategies GMP evaluated or considered in connection with the Zone 4 resiliency objectives.

a. If no alternatives were considered, please explain why not.

Response: Please refer to Q:DPS:GMP.1-16. As noted in the referenced PUC Info Request 5, GMP is continually evaluating new alternatives, including other energy storage technology. We 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.

As discussed throughout, energy storage is a more cost-effective option to undergrounding in these areas, providing Zone 4 customers with resiliency while importantly benefiting the greater grid. These areas are low-density residential areas, with primarily narrow, rural roads and correspondingly narrow vegetation clearance opportunities. Even with tree trimming, the storm damage is from vegetation outside of the right of way. This vegetation continues to pose a significant threat to Zone 4 areas with longer growing seasons and continued maturing of Vermont's forested rural areas. Additionally, these Zone 4 rural areas are without centralized community services making centralized storage options difficult or unavailable, and such options would still require significant T&D hardening compared to localized, residential storage.

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

Q:DPS:GMP.1-18: Please provide any cost-effectiveness comparison or modeling GMP has performed to evaluate centralized energy storage systems relative to the distributed residential battery deployments proposed under the Zone 4 Storage Tariff, including assumed capital and O&M costs, dispatch values, and locational grid benefits.

a. If no such comparison was performed, please explain why not.

Response: Please refer to GMP's Response to the Commission's Information Requests, filed May 12, 2025, in this proceeding, specifically Info Request 7, which is reattached here for reference as Attachment DPS.GMP.1-16. Centralized energy storage was considered and not selected because it does not provide an alternative resiliency solution to T&D investments. A typical Zone 4 rural area is without centralized community services and would still require significant T&D hardening compared to localized, residential storage.

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

Q:DPS:GMP.1-19: Has GMP performed any marginal cost analysis or rate impact modeling to assess whether the proposed deployment in Zone 4 provides the lowest cost per avoided outage minute, avoided kWh during peak, or avoided system investment (e.g., deferred T&D upgrades)?

a. If so, please provide any results.

b. If not, please explain why such an analysis was not conducted.

Response: With respect to resiliency and reliability outcomes, please see Q:DPS:GMP.1-16, which refers to the analysis of the capital investment required by the two feasible alternatives at this time—residential energy storage and undergrounding or other hardening projects.

With respect to monetary grid benefits, the analysis was to select a resiliency solution for Zone 4 areas. Monetary benefits were an important factor in selecting the energy storage solution, which is uniquely able to provide these benefits as a resiliency resource. There are no alternatives now that offer competitive monetary benefits that also meet the resiliency requirements for the program.

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

Q:DPS:GMP.1-20: In GMP's view, what constitutes the appropriate cost-effectiveness standard for evaluating the Zone 4 Storage Tariff under Vermont's least-cost planning statutes and related regulatory principles (e.g., 30 V.S.A. §§ 202a, 218c, 218d(a)(1), Commission Rule 4.400)?

- a. Please explain how the proposal meets that standard.
- b. If GMP believes a least-cost standard does not apply in this context, please explain why.

Response: **Objection 11.** This request calls for a legal conclusion. Notwithstanding this objection and without waiver, GMP responds as follows:

The intent of least-cost planning is to ensure we are incurring an amount of capital spending that is necessary for the provision of safe and reliable service. Deploying energy storage to these customers in Zone 4 meets this requirement as compared to the alternative T&D solution given the increasing frequency of major storm events and other risks on the modern grid. See Response to Q:DPS:GMP.1-16.

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

Q:DPS:GMP.1-21: Has GMP used any least-cost planning framework, model, or tool from its Integrated Resource Plan (IRP) process to evaluate or prioritize the Zone 4 proposal?

- a. If not, please explain why not and whether GMP believes this project should be considered outside of IRP least-cost planning protocols.

Response: Please see responses to Q:DPS.GMP.1-16 and 1-20. When the full financial model of the storage is taken into account, these systems are a financial benefit to all customers. GMP's 2024 IRP describes our overall Zero Outages Initiative, including this Zone 4 energy storage component, that was subject to review in Case No. 23-3501-PET. See GMP's 2024 Proposed IRP at 3-8 to 3-12.

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

Q:DPS:GMP.1-22: Please explain whether the proposed Zone 4 energy storage systems were selected over other investments based on monetized avoided costs (e.g., capacity, energy, regulation, T&D deferral).

- a. If not, please explain the decision-making framework used to support the selection of residential storage as the preferred investment.**

Response: Energy storage was chosen because it is the least-cost resiliency solution for Zone 4 areas. It was not compared for this purpose to other storage or power supply resources that do not involve resiliency. Energy storage systems result in a net benefit to all customers, supporting why energy storage is the right solution here as described in response to Q:DPS:GMP.1-2 and 1-3. .

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

Q:DPS:GMP.1-23: Has GMP conducted or commissioned any system-wide or circuit-level engineering or economic studies to evaluate whether other investments could achieve similar or better reliability metrics (e.g., SAIDI, SAIFI) at lower cost?

- a. If so, please provide the results of those studies.**
- b. If not, please explain why such studies were not undertaken.**

Response: See response to Q:DPS:GMP.1-16 above regarding analysis of feasible and available alternative investments.

The deployment of Zone 4 energy storage is proposed to accompany resiliency improvements in the other three zones, and the outcomes are part of a comprehensive approach to serve customers. Selecting projects on a system average reliability basis would not capture or respond to the reliability experienced by customers in Zone 4 and would be inconsistent with the provision of safe and reliable service for all.

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

Q:DPS:GMP.1-24: Please identify any constraints, statutory interpretations, or Commission directives GMP believes exempt this proposal from a formal least-cost alternatives analysis.

- a. **If GMP believes no such exemption applies, please state so explicitly.**

Response: See Response to Q:DPS:GMP.1-16.

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

Q:DPS:GMP.1-25: Please confirm whether the proposed Zone 4 Energy Storage Tariff constitutes the implementation mechanism for the energy storage component proposed in Case No. 23-3501-PET.

- a. **If not, please explain the relationship between the two proposals.**

Response: Confirmed.

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

Q:DPS:GMP.1-26: Please identify any evaluation frameworks GMP will use to track cost-effectiveness over time.

- a. **Please specify whether they will include performance targets or quantifiable metrics.**

Response: Yes, consistent with Case No. 23-3501-PET, Final Order at 26-27, this tariff proposal will allow the initial ZOI circuits to be evaluated as a comprehensive program to inform future investments and future metrics and evaluation, including GMP's Service Quality and Reliability Plan (SQRP). See Case No. 25-0751-PET for GMP's recently filed SQRP update, which includes

proposed ZOI storage metrics as Exh. GMP-TS-1. GMP will report on the energy storage system metrics identified within the Commission's ZOI order to provide data on deployment and resiliency performance in addition to metrics currently reported on for other energy storage programs under the MYRP. *See* Prefiled Direct Testimony of Josh Castonguay at 21-22; Case No. 23-3501-PET, Final Order at 27.

In addition, GMP reports annually on the actual financial and operational performance of its energy storage systems and uses this to update the expected future performance, so that the programs can be evaluated on common metrics over time and will include Zone 4 energy storage in that report.

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

Q:DPS:GMP.1-27: Please identify the specific performance metrics and associated reporting schedule GMP will use to assess the success of this program. Include any targets related to load reduction, reliability, or market revenue.

- a. **Please indicate whether these metrics are consistent with those used in the MYRP or other DER programs.**
- b. **If different, explain why the deviations are appropriate for the Zone 4 Energy Storage Tariff.**
- c. **Provide the specific quantitative metrics GMP will use to measure cost-effectiveness, reliability improvements, and ratepayer benefits—such as peak load reduction (kW), outage mitigation (e.g., SAIDI/SAIFI), energy cost savings, Tier 3 credit generation, and ISO-NE market revenue.**
- d. **Describe any baseline benchmarks or targets GMP has established for these metrics, and how GMP will report and evaluate progress over the program lifecycle.**

Response: See response to Q:DPS:GMP.1-26.

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

Q:DPS:GMP.1-28: How has GMP designed this program to ensure equitable access and transparent eligibility?

a. Describe any targeting criteria or outreach protocols.

Response: Please refer to the Prefiled Direct Testimony of Josh Castonguay at 19-21 & 30, which describes the reasons for focusing this tariff on the four circuits selected based on reliability outcomes and other data. Collectively, these circuits serve communities identified in the state Municipal Vulnerability Index as having more than 25% of customers below two times the poverty level. In addition, critical care or other customers with medical needs and customers on the Energy Assistance Program will be prioritized in deployment. This initial circuit-based eligibility simplifies the criteria, and customers will be able to see their eligibility on their customer account as described in the tariff. In addition, GMP will conduct direct outreach to inform customers of eligibility. This outreach will include additional customer engagement, resources, and a GMP team available to these customers. This outreach is described in greater detail in the referenced testimony.

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

Q:DPS:GMP.1-29: Please describe how GMP is ensuring that costs, including administrative overhead such as capitalized A&G, are being tracked and allocated in a manner that avoids double-counting or overstatement of benefits.

Response: As noted above in Response to Q:DPS:GMP.1-6 the Capitalized A&G rate was developed in accordance with established practices and previously approved methodologies and is applied consistently to capital projects in the MYRP period.

Person(s) Responsible for Response: Rob Bingel, Manager, Financial Planning and Analysis.

Q:DPS:GMP.1-30: Please explain whether GMP intends to seek future Commission review of prudence or cost-effectiveness outcomes for this program. If not, please explain how accountability will be maintained.

- a. If yes, please describe whether the post-implementation review will include reporting and analysis of the metrics identified in response to PSD-GMP-22.**

Response: Consistent with the approved ZOI accounting methodology, actual investments under this program will be subject to review and approval after they are closed to plant and prior to any inclusion in rates. Please refer to the Prefiled Direct Testimony of Josh Castonguay at 18, n. 16. Once in service, performance will be subject to annual reporting through the metrics set in the ZOI proceeding, Case No. 23-3501-PET and annual reporting on energy storage financial performance as described in greater detail in response to Q:DPS:GMP.1-26. As noted in that response, review of initial investments will also inform further implementation of the program as described in the Commission's order in the ZOI proceeding.

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

Q:DPS:GMP.1-31: Has GMP conducted any updated analysis of least-cost alternatives or benefit assumptions in light of current system conditions or market trends? If so, please provide any results.

Response: Yes. Please refer to GMP's response to the Commission's Information Requests, Info Request 3 & 4, filed May 12, 2025 and reattached here as Attachment DPS.GMP.1.16, on this subject which describes how ranges are used in the modeling that supports the least-cost analysis. See also response to Q:DPS:GMP.1-16.

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

Q:DPS:GMP.1-32: GMP indicated in Case No. 23-3501-PET that storage was a lower-cost option for Zone 4 resilience compared with hardening and undergrounding. See, e.g., Case No. 23-3501-PET, Prefiled Direct Testimony of Josh Castonguay at 25, 30 (10/9/23), Prefiled Rebuttal Testimony of Tiana Smith at 18 (4/15/24).

- a. Please provide any update to that assessment.
- b. Please provide analysis of other alternatives considered, including any combination of accelerated vegetation management efforts.
- c. Please include any analysis of savings achieved by reduced storm costs in any scenario.

Response:

- a. Please refer to Q:DPS:GMP.1-16.
- b. Please refer to Q:DPS:GMP.1-16 & 1-17.
- c. Please refer to Q:DPS:GMP.1-5.

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

Q:DPS:GMP.1-33: Has GMP's ability to predict monthly peaks decreased? If so, what is the rate of change in that ability over the last 1 year? Over the last 5 years?

Response: Our ability to predict monthly peaks has not decreased. In the interest of modeling conservatively, we forecasted in this Case that the amount of peak shaving per MW of capacity could decline as more in-state and regional peak shaving resources result in flatter peaks, as described in Mr. Castonguay's Prefiled Direct Testimony at 24-25. However, this forecast is likely very conservative due to increasing electrification (increasing the peak) and potential regional transmission buildouts (providing greater peak shaving value) that will eliminate or moderate this decline.

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

Q:DPS:GMP.1-34: Is GMP aware of investments in peak shaving technologies or flexible load management efforts being made in other New England states to reduce their share of the regional network service charges?

- a. Will investments made by stakeholders in other New England states affect GMP's ability to predict and respond to monthly peaks?**
- b. If yes, -how?**

Response: Yes, and work in other states does not impact GMP's ability to predict or respond to monthly peaks. When all New England states are successful in working together to reduce the regional peaks, the need for large transmission upgrades in the future should be reduced, benefiting all customers.

Vermont's success as an early adopter in deploying energy storage to manage peak-related costs is critical, as the value of peak reduction is reflected in our regional share of the RNS costs. We are aware of efforts in neighboring states to develop peak shaving resources and manage peak loads and we continue to track these developments. For example, Connecticut is requiring the procurement of approximately 5,000 MW of energy storage by 2030. GMP's growing energy storage programs will help keep pace and avoid shifting these costs to Vermont.

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

Q:DPS:GMP.1-35: Under the filed analysis, in what year did the cumulative rate payer impact net positive?

- a. Please provide answers both with and without A&G included.**

Response: The model year in which the costs and benefits over the proceeding years in total become net positive in Scenarios A and B are 12-15 years with A&G, or 12-14 years if all capitalized A&G is excluded. Please refer to Exhibit GMP-JC-3 and Attachment DPS.GMP.1-12.

Person(s) Responsible for Response: Jeremy Ravenelle, Distributed Energy Resources Leader.

Q:DPS:GMP.1-36: Please confirm that the warranty period on the proposed Zone 4 batteries is 10 years.

Response: For currently provided systems, confirmed.

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

Q:DPS:GMP.1-37: Does GMP expect that Zone 4 batteries will be operated to increase headroom for renewable energy generation deployment?

- a. **If so, will the costs of deployment for the purpose be allocated to renewable energy developers?**
- b. **How will deploying storage for this purpose impact the benefit/cost analysis of the Zone 4 tariff?**

Response: These systems will be deployed to improve resilience and to benefit the overall grid as discussed throughout. They are not being deployed for the purpose of increasing headroom at substations for renewable generation. Please see Prefiled Direct Testimony of Josh Castonguay in this proceeding at 12-16.

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

Q:DPS:GMP.1-38: Please describe any specific T&D infrastructure projects that GMP expects will be deferred due to Zone 4 battery storage.

- a. **Are these projects related to load growth?**
- b. **If so, have they been presented to the VSPC via the geotargeting subcommittee pursuant to processes adopted in Commission Dockets 7873 and 7874?**

Response: The request is unclear on which “projects” are being referred to in the question “are these projects related to load growth”. GMP assumes “projects” refers to any specific T&D infrastructure projects identified. The Zone 4 Energy Storage Tariff has been proposed as part of a comprehensive resilience plan. The T&D deferral value has been calculated equivalent to how energy efficiency is

valued, which is the appropriate way to value these distributed, small resources rather than through identifying specific avoided projects (See Q:DPS:GMP:1-39 below for a discussion of the method used). We modeled this value conservatively, assuming a two-year deferral of a project that is required seven years in the future. We know that storage reduces peak demands, which in turn reduces the need for demand-driven projects in the future. The VELCO Long Range Plan has identified potential projects throughout Vermont necessary for load growth that will likely be avoided or deferred if sufficient storage is deployed. If residential energy storage were to be proposed to defer a specific proposed transmission project, it would be presented to the VSPC and analyzed in that process as an NTA.

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

Q:DPS:GMP.1-39: Please confirm which 2024 AESC counterfactual was used to value T&D investments and whether that counterfactual assumes no energy efficiency or load management in New England.

- a. If a “no efficiency” baseline is used, why is that an appropriate assumption to use for these storage investments?**

Response: The AESC values are designed to be applied to any program that reduces peak loads, including load management as GMP proposes here, energy efficiency, or distributed generation. AESC 2024 explains that “the AESC avoided costs are based on hypothetical worlds in which no energy efficiency programs (and/or no other load management or electrification programs) are implemented going forward. For consistency in identifying the full T&D costs avoidable by energy efficiency programs, it would be desirable to start with the loads that would have occurred and the investments that would have been needed without energy efficiency efforts” (AESC 2024 p.274). Calculating the potential costs associated with not implementing these programs is consistent with understanding the counterfactual, and consistent with the use of these values to evaluate other programs including energy efficiency and distributed generation (as applicable to peaks) in addition to load flexibility.

Person(s) Responsible for Response: Jeremy Ravenelle, Distributed Energy Resources Leader; Josh Castonguay, VP, Chief Innovation Officer, Generation and Power Supply.

Q:DPS:GMP.1-40: Did GMP analyze penetration of Zone 4 customer uptake under different customer contribution levels?

Response: Just as with the ZOI T&D projects, no customer payment is included for this alternative, and it was not analyzed in the modeling. This is consistent with the goals of the tariff and the full initiative—to provide resiliency to all customers in an equitable manner. Please also refer to the discussion in testimony regarding uptake levels in the storage pilot in Grafton. Prefiled Direct Testimony of Josh Castonguay at 20, and Response to PUC Info Request 6, filed May 12, 2025.

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

Q:DPS:GMP.1-41: Referring to the Prefiled Testimony of Mike Burke in Case No. 23-3501 at 11 (10/9/23), GMP discussed the importance of a variety of storage project types and sizes –residential but also community-scale storage and microgrids.

- a. **Is it correct that GMP's Zone 4 Storage Tariff proposes residential storage only, and if so, why?**

Response: Yes. Please refer to Response to Q:DPS:GMP.1-18.

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

Q:DPS:GMP.1-42: In Case No. 23-3501, GMP proposed to invest \$20 million of the \$30m proposed for storage investments in residential storage to complete full ZOI upgrades on the EJ-G7 and 56G1 circuits and the remaining \$10 million on storage systems elsewhere. Please provide the anticipated breakdown of the \$30m across the four identified circuits.

- a. **How did GMP select the two additional circuits (CH-G11 and DM-G6) for eligibility in the proposed Zone 4 Storage Tariff? Please discuss all factors in this analysis.**

- b. Would deployments in the two additional circuits cover all Zone 4 customers on those circuits, and if yes, did GMP consider any other approaches for allocating batteries beyond the EJ-G7 and 56G1 circuits aside from full-circuit treatment on those two additional circuits (for example, allocating any additional batteries to customers dependent upon electricity for medical devices only, but across more circuits)?**
- c. What does GMP anticipate learning from deployment in the two additional circuits that it will not otherwise learn from the deployments in the EJ-G7 and 56G1 circuits, and how would that help inform any potential future phases of ZOI?**

Response: Please refer to Exhs. GMP-MB-12 and GMP-MB-13 in Case No. 23-3501-PET, which estimate \$10.0M and \$10.7M of storage investment on the EJ-G7 and 56G1, respectively. If that full amount were deployed, the remaining \$9M will be available for customers on the CH-G11 and DM-G6 circuits and will be offered to those customers as described in Mr. Castonguay's testimony.

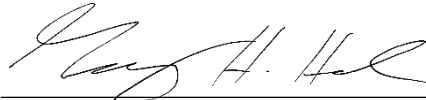
- a. GMP selected these circuits for their reliability and location. See Exh. GMP-Cross-1 in Case No. 23-3501-PET, reflecting our continued prioritization of the areas most impacted by storms, and are adjacent to the EJ-G7 and 56G1. CH-G11 and DM-G6 are ranked second and fourth on the 20 least-reliable circuit list as submitted in Case No. 23-3501-PET. All four of these circuits are planned for significant T&D hardening work at the same time, which combined with Zone 4 energy storage will reduce response needs across the area and will provide better data to evaluate future investments work going forward. They also serve populations identified in the Municipal Vulnerability Index with over 25% below two times the federal poverty line.
- b. There are approximately 1,200 customers in Zone 4 across these four circuits, which accounts for the investment requested and will allow us to serve all of them. We discussed options with the DPS in pre-filing meetings and recognized that making significant progress on concentrated areas where customers have experienced severe storm damage is the best way to gather data and to gain efficiencies that will be possible as entire areas are hardened across zones. Meanwhile, other programs like ESAP and ESS remain available for other customers.

- c. In addition to providing critical resiliency to the customers on these circuits that are experiencing reliability outcomes far below most GMP customers and are as hard hit as the neighboring EJ-G7, these deployments will provide more data over a wider area with diverse system elements. See, e.g., Case No. 23-3501, Final Order at 24 (explaining the importance of initial ZOI T&D investments to obtain on-the-ground experience and inform future proposals).

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

Dated at Burlington, Vermont this 7th day of July 2025.

As to Objections:




Geoffrey Hand, Esq.
Malachi Brennan, Esq.
SRH Law PLLC
91 College Street, P.O. Box 545
Burlington, Vermont 05401-0545
gband@srhlaw.com
mbrennan@srhlaw.com
(802) 860-1003

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, Vermont this 7th 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 7th day of July 2025.

Respondent Signature

By: Michael Burke
Michael Burke

I, Jeremy Ravenelle, 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 7th day of July 2025.

Respondent Signature

By: 
Jeremy Ravenelle

I, Rob Bingel, 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, Vermont this 7th day of July 2025.

Respondent Signature

By: 
Rob Bingel