

STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 23-3501-PET

Petition of Green Mountain Power for approval)
of its Zero Outages Initiative as a Strategic)
Opportunity pursuant to 30 V.S.A. § 218d and)
GMP’s Multi-Year Regulation Plan)

**Green Mountain Power’s Responses to the
Third Set of Discovery Requests Served by the Department of Public Service**

Green Mountain Power (“GMP” or “Petitioner”), by and through the undersigned counsel, hereby responds to the third set of discovery requests served by the Department of Public Service (“DPS,” PSD,” or “Department”) on April 19, 2024. Unless otherwise stated all responses refer specifically to the first phase of the Zero Outage Initiative.

General Objections

The following General Objections of Petitioner 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 AND REQUESTS TO PRODUCE

Subject to the General Objections stated above, GMP responds as follows:

Q.DPS.GMP.3-1. Please refer to page 6 of Mr. Burke's rebuttal testimony, which states, "With internal and external crews pre-positioned, we were able to restore over 65,000 customers within the first 24 hours of the storm damage starting."

- a. Will the proposed ZOI investments reduce or eliminate the cost of pre-positioning external crews?**
- b. If subpart (a) is answered in the affirmative, what are the anticipated reduced costs of contracting for this service? Please provide the quantitative analysis.**

A.DPS.GMP.3-1.

- a. Yes, when ZOI is complete, GMP will have approximately 1,000 newly storm hardened main line feeds with spacer cable and approximately 3,000 miles of single-phase underground which is currently overhead, resulting in fewer hazards on the system that cause outages. This will reduce the cost of pre-positioning crews.
- b. Conducting specific analysis of future cost savings would require knowledge of future storms and where they will hit Vermont, which is unknowable, but we know the savings will be substantial once ZOI has been completed. Please see, for example, GMP's quarterly adjuster reports including adjustments for Major Storm expense for Q2 and Q3 FY2023, filed in Case Nos. 23A-1409 and 23A-2587, and the respective Attachment 2 contained in each report, which show the scale of costs for those storms including costs related to pre-positioning.

Person/s Responsible for Response: Mike Burke, Ken Couture
Title of Person/s: VP, Field Operations, Leader of Grid Resiliency
Date: May 3, 2024

Q.DPS.GMP.3-2. Please refer to pages 6-7 of Mr. Burke's rebuttal testimony, which states, "GMP's rapid storm response for customers is only possible with advanced planning and teamwork, but at a significant cost that recurs each time an impactful storm hits. Since the start of this fiscal year, restoring our customers in response to these events has cost \$16M in non-major storm spending, double our total yearly budget which is based on a multi-year historical average with 5 months to go. Meanwhile, the Major Storms in January and April cost an estimated \$20M combined. The increased frequency of storms drives up costs to customers to simply repair the system, creating added cost pressure that many cannot afford. On a one-year recovery basis, the \$20M in Major Storm costs so far this year, on their own, would have a significantly higher rate impact to customers than the ZOI Phase 1 we are proposing. This is why lasting solutions through our ZOI are needed for customers."

- a. Does GMP anticipate a reduction in these recurring costs with the proposed Phase 1 of the ZOI investment?**
- b. If subpart (a) is answered in the affirmative, to what degree will these costs be reduced? Please provide all supporting documentation.**

A.DPS.GMP.3-2.

- a. Yes, since we are concentrating work in our hardest hit areas, upon completion of ZOI Phase 1, we estimate approximately 225-250 miles of overhead to be placed underground and approximately 250 miles of overhead main lines to be storm hardened with spacer cable. This will reduce future storm restoration costs for customers. For the underground portions, it will also reduce future costs of tree trimming and pole inspections.
- b. Please see A. DPS.GMP.2-1, 2-3, and 2-6 and materials cited therein.

Person/s Responsible for Response: Mike Burke, Ken Couture
Title of Person/s: VP, Field Operations; Leader of Grid Resiliency
Date: May 3, 2024

Q.DPS.GMP.3-3. Please refer to page 8 of Mr. Burke's rebuttal testimony, which states, "Our ZOI approach is informed by these numbers and other data, including our 4,900 reports, and Phase 1 is designed to address this disparity. As discussed further below, we are targeting work in these areas in the first phase of ZOI guided by the prioritization and criteria outlined in our climate plan, so that ZOI work helps those who need it most first. This equity driven approach ensures we are deploying measures that will keep customers safe in their homes, no matter where they live, while driving down costs for all customers in the long run."

Please provide GMP's analysis demonstrating, quantitatively, that Phase 1 of the ZOI will "drive down costs for all customers in the long run."

A.DPS.GMP.3-3.

Please see A.DPS.GMP.2-3.

Person/s Responsible for Response: Mike Burke
Title of Person/s: VP, Field Operations
Date: May 3, 2024

Q.DPS.GMP.3-4. Please refer to page 10 of Mr. Burke's rebuttal testimony, which states, "For example, National Grid in upstate New York announced a \$4 billion initiative to upgrade and rebuild more than 1,000 miles of their transmission system and Avangrid is in the midst of a multi-billion dollar hardening program in New York and is also pursuing upgrades in Maine. Con Edison in New York is also pursuing resilience improvements estimated to be approximately \$1 billion due to increased storm damage."

- a. Have these investments been approved by regulators, and if yes, what, if any, requirements around planning, metrics, and cost-recovery have been imposed?**
- b. Are any of these utilities promising zero outages as a result of these investments?**

A.DPS.GMP.3-4.

- a. To GMP's knowledge National Grid's proposed groups of projects in New York have not yet been approved by regulators. See <https://upstateupgrade.nationalgrid.com/project-hub> for a description of the status of each project that is a part of this initiative.

Components of New York State Electric & Gas's (NYSEG) and Rochester Gas & Electric's proposed Reliable Energy New York Plan appear to have been incorporated into the companies' rate plans approved in Case No. 22-E-0317, available here:

<https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=22-E-0317>. See filings in the docket for details on the terms of approval.

Con Edison's Climate Change Resilience Plan is under review in Case No. 22-E-0222, available here:

<https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=22-E-0222&CaseSearch=Search>

Central Maine Power's proposed upgrades were included in Case No. 2022-00152, details of which are available here: <https://mpuc-cms.maine.gov/CQM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2022-00152&FRM=0>. See filings in the docket for details on the terms of approval.

- b. Projects proposed in each of these cases are designed to address reliability issues but to GMP's knowledge none involve the type of innovative system wide approach GMP has proposed of coupling storm-hardening and undergrounding work together with proven residential storage programs.

Person/s Responsible for Response: Mike Burke

Title of Person/s: VP, Field Operations.

Date: May 3, 2024

Q.DPS.GMP.3-5. One of the recommendations in Mr. Jordan's direct testimony, at page 18, was for GMP to "provide a histogram for each of calendar years 2020, 2021, 2022, and 2023 indicating number of individual customers on the vertical axis and bins with total outage duration experienced on the horizontal axis." Regarding GMP's Exhibit GMP-MB-15b:

- a. Please explain why GMP provided SAIDI per the number of outages experienced, rather than the total outage duration for each individual customer.**
- b. Please explain how to interpret the exhibit as currently provided.**
- c. Please provide a revised exhibit for 2023 indicating the number of individual customers on the vertical axis and bins with total outage duration experienced on the horizontal axis.**

A.DPS.GMP.3-5.

- a. GMP interpreted the question to request the data provided in that exhibit, which highlights the number of customers who are experiencing frequent outages, the average duration of those outages grouped by the number of events, and differences across districts.
- b. Exhibit GMP-MB-15b provides the average number of hours out (SAIDI) (vertical axis) that customers experienced in 2023. This information was further grouped by the number of outages that customers experienced in 2023 (horizontal axis). The chart shows that, on average, the more outages a customer experienced, the more hours they were without power in 2023. While that may be expected, there are key differences in the results across our districts. By way of example, the average customer in the Colchester District that experienced four outages in 2023 was without power for 6.58 hours. Customers in the Springfield and Westminster Districts that experienced four outages were without power for 35.17 and 47.72 hours, respectively. The areas to be targeted by this first phase of ZOI not only experience more outages, but customers also experience significantly longer duration outages due to the inaccessibility and extent of damage experienced in these areas during severe weather events.
- c. See Attachment GMP.DPS3.Q5c.1 for the requested histogram across all GMP customers for 2023. Attachment GMP.DPS3.Q5c.2 is the same histogram for a representative urban district (Colchester) and Attachment GMP.DPS3.Q5c.3 is a

rural district (Brattleboro) histogram representing southeast Vermont where much of our Phase 1 work is focused.

Person/s Responsible for Response: Mike Burke, Ken Couture
Title of Person/s: VP, Field Operations, Leader of Grid Resiliency
Date: May 3, 2024

Q.DPS.GMP.3-6. Please refer to page 12 of Mr. Burke's rebuttal testimony, which states, "The ZOI is designed to be an extension and acceleration of GMP's Climate Plan. The Department witnesses discuss at length shortcomings they perceive regarding the ZOI, but barely mention the defined and already Commission reviewed and approved screening criteria that GMP has incorporated for the ZOI from the Climate Plan, which was in turn incorporated into our current Integrated Resources Plan (IRP)."

The Commission's 9/24/20 Final Order approving GMP's Climate Plan stated, "The Commission also recognizes that the planning process and criteria for the evaluation of climate resiliency projects is likely to evolve as GMP gains experience in implementing the Plan approved in this case. If GMP files a future multi-year regulation plan, capital spending outlined in that plan should incorporate climate and other resilience spending so that overall investment may be evaluated holistically in the context of rate impacts and tradeoffs between different goals and outcomes."

- a. Please describe the extent to which GMP has reviewed the criteria for the evaluation of resiliency projects to assess whether they are still appropriate.**
- b. Has GMP considered whether changes to state policy, such as the passage of Act 154 of 2022, that warrants updates to screening criteria to ensure equitable prioritization of resilience efforts?**
- c. Does GMP consider this ZOI to have been evaluated holistically in the context of rate impacts and tradeoffs associated with the broader MYRP? Please discuss.**

A.DPS.GMP.3-6.

- a. Yes, the project prioritization criteria identified in GMP's Climate Plan proceeding were subsequently adopted and incorporated into GMP's IRP proceeding, and they remain the criteria based on continued review of our system and areas most in need of work during Phase 1 of ZOI. GMP has a reliability program that tracks outage history, wire type, and pole age along with reviewing information on the other criteria and field crew knowledge and customer feedback, all of which helps inform our application of the criteria. Review of the data highlights the areas on our system that can no longer withstand the types of frequent severe storms our state is now experiencing and lets us know we are using the right criteria.**
- b. Act 154 of 2022, An act relating to environmental justice, establishes key policy**

goals for Vermont around engaging in work that impacts focus populations. It also sets forth directives to “covered agencies” within Vermont State Government to develop community engagement plans that describe how the agency will engage with environmental justice focus populations as it evaluates and establishes new and existing programs. ZOI is designed to serve all GMP customers with the same reliable service, no matter where they live. In the first phase, we have proposed metrics that directly speak to considerations within Act 154 about geographic areas where improvements are made, the benefits delivered to those customers as a result of the improvements, and costs of the projects. We will also capture metrics associated with the customer information we have around vulnerable customers – those who have informed us they have critical medical equipment requiring electricity, and lower income customers who are enrolled on our Energy Assistance Program (EAP). These proposed metrics for ZOI investments would assist DPS in complying with Act 154 as it shows focused work in the most vulnerable and isolated communities within Vermont.

- c. Yes. ZOI was proposed only after thorough review of the most recent impacts in rates and outages for customers, including extensive increasing storm recovery costs since the time of our last MYRP. Please see A.DPS.GMP.2-1, 2-3, 2-5, and 2-6, and materials cited therein. Our customers are facing increased costs and hardships from severe weather, including hurricane force winds, extreme flooding and frequent wet snow events that are becoming more common. The increasing costs of storm response and restoration demand we act in order to turn back the increasing pressures of severe storms, both in terms of costs and safety of our customers and team. The costs of major storm restoration in FY2023 (\$45M) along with the first half of FY2024 (\$20M) would be over a 9% rate increase if collected over that same timeframe, whereas this first phase of ZOI would be less than 2% rate effect annually when fully implemented, without including any savings that would come from ZOI, such as reduced future storm recovery and vegetation management, and the important safety and quality of life benefits they will bring. It is also critical to remember that ZOI projects will only be added to rate base after they are completed, delivering benefits to customers, and are reviewed and approved by the Commission, and that we will continue to report on outcomes as well as propose the next portion of the initiative in an iterative way that allows for review before the next phase.

Person/s Responsible for Response: Mike Burke
Title of Person/s: VP, Field Operations
Date: May 3, 2024

Q.DPS.GMP.3-7. Please refer to page 15 of Mr. Burke's rebuttal testimony, which states, "These two circuits are the right ones to prioritize for completion of the ZOI approach under the criteria adopted in the Climate Plan."

- a. Has GMP reached this conclusion based on comprehensive screening of all 20 least-reliable circuits through the Climate Plan criteria?**
- b. If yes, please provide that analysis. If not, please explain why not.**

A.DPS.GMP.3-7.

- a. Yes. GMP reached this conclusion based on considering the climate plan criteria, screening the reliability data for both circuits, and taking into account feedback from the customers in those areas along with feedback from GMP crews. The East Jamaica circuit (identified as the EJ-G7) serves the communities of Jamaica, Townshend, Wardsboro and portions of Dover and Newfane and is on the top of the list of the 20 least reliable circuits. A major section of the Wilmington area circuit, which also serves Halifax, Whitingham, and portions of Marlboro and Guilford (identified as the 56G1), if looked at alone would be the 5th least reliable circuit in 2023 (and is likely to be the worst in 2024 with the storm damage pattern so far). It is also a very long circuit serving some of the most rural parts of VT, with very little if any cell service, as reported by our crews, along with being some of the most heavily forested areas of our service territory. These circuits serve as the right starting point for this work as we continue to deploy ZOI strategies in the entire region during Phase 1. In fact, both of these circuits are also by far the two longest circuits in the most rural and isolated areas of GMP's territory. Furthermore, as previously outlined, while we'll prioritize full completion of these circuits for Phase 1 of ZOI, GMP also has projects planned for sections on all the 20 least reliable circuits.
- b. See Attachments GMP.DPS3.Q7b.1–b.3.

Person/s Responsible for Response: Mike Burke
Title of Person/s: VP, Field Operations
Date: May 3, 2024

Q.DPS.GMP.3-8. Please refer to page 16 of Mr. Burke's rebuttal testimony, which provides "Total Annual Outage Hours: EJ-G7 – 270,001 hours; 56G1 – 73,044 hours." GMP's Climate Plan also includes in this criterion, "expected benefit from hardening." Please provide, quantitatively, the expected benefit from hardening these lines.

A.DPS.GMP.3-8.

Reducing the number of annual outage hours in these areas will provide significant benefits for our customers. Conducting specific quantification would require knowledge of future storms and how they would have affected these areas without ZOI work, which is unknowable, but we know the benefits will be substantial once ZOI has been completed. Hardening is one part of the three-pronged ZOI approach, and together with undergrounding and energy storage, there would be very significant improved reliability, resiliency, and safety on these circuits. Also, this work will increase equity and provide important information that will shape the next phases of ZOI once Phase 1 work is completed. Please also see generally A.DPS.GMP.2-1, 2-3, and 2-6, and Mr. Burke's testimony at 17.

Person/s Responsible for Response: Mike Burke
Title of Person/s: VP, Field Operations
Date: May 3, 2024

Q.DPS.GMP.3-9. Please refer to page 17 of Mr. Burke's rebuttal testimony, which states, "The estimated cost for ZOI implementation on those two circuits alone is approximately \$60M in undergrounding and spacer cable projects, plus approximately \$20M in customer storage. On Exhibit GMP-MB-12, I have laid out current estimated costs for the EJ-G7 circuit by segment. Exhibit GMP-MB-13 provides the same information for the 56G1 circuit in central Vermont."

- a. Please clarify which GMP district (e.g., in Exhibits GMP-MB-15a and GMP-MB-15b) these two circuits are in.**
- b. How many months would it take to complete work on each of these circuits?**
- c. What were the costs to maintain and respond to storms on these two circuits over the last 10 years?**
- d. What are the SAIFI and CAIDI for these two circuits?**
- e. What proportion of outages on these two circuits historically originated on areas of the system GMP would (i) storm harden, (ii) underground, (iii) provide storage?**
- f. Will the estimated funds for customer storage serve every Zone 4 customer in these two circuits? If not, how will GMP prioritize customers?**
- g. Has GMP incorporated any "right-sizing" or other features to support achievement of state emissions and energy requirements into the design of the proposed upgrades? If yes, please provide estimates for any increased costs related to accommodating both increased electrification and, separately, increased distributed generation.**
- h. Has GMP identified specific additional circuits beyond the EJ-G7 and the 56G1 that would consume the remainder of the requested funding? If so, which circuits?**
- i. Would any work on the EJ-G7 and 56G1 circuits occur under the current MYRP's capital expenditure monetary cap approved in Case No. 21-3707-PET?**
- j. Given the costs provided for the initial two circuits of Phase 1 of the ZOI, what is GMP's current estimate of the total cost to complete Phases 1 and 2 of the ZOI by 2030?**

A.DPS.GMP.3-9.

- a. The East Jamaica circuit (EJ-G7) is located in the Brattleboro District in Southeastern Vermont. The Halifax/Whitingham circuit (56G1) is located in the Wilmington District in Southeastern Vermont.
- b. We expect the work on these circuits to be completed by the end of ZOI Phase 1, over the next 28 months.
- c. **Objections 1, 8:** GMP does not maintain the requested information on a per circuit per year or individual event by circuit basis, and therefore cannot respond to the request as drafted. See A.DPS.GMP.3-7a above regarding why these circuits were selected.
- d. See Attachment GMP.DPS1.Q3a.
- e. See Attachment GMP.DPS3.Q9e, for a summary of the number of events that originate in each Zone and the customers affected by events in each Zone. The data includes the total number of customers experiencing outages over the three-year period from 2021-2023. Note, an outage in Zone 1 will not only affect all the customers in Zone 1, but also all the customers in Zones downstream of that span. Therefore, Zone 4 customers will experience not only the outages that originate in their zone, but also all outage events that originate upstream of their zone.
- f. Yes. As explained in previous testimony, GMP will implement Zone 4 storage deployment based on actual field surveys and consideration of storm hardening or underground in the alternative, and will work with customers, but this estimated funding is intended to serve all these Zone 4 customers.
- g. Yes. GMP's ZOI does help anticipated future electrification and distributed generation. Most if not all of the areas we are addressing in ZOI Phase 1 are areas where GMP has conductor sizes in single phase areas of #6 to #2 wire size, and in main line areas, usually #2 to 1/0 wire size. When we complete work for ZOI, we will use conductors in the single-phase areas that are 1/0 and 4/0 wire size, and for main line spacer cable feeder ties we will use a 477 wire size conductor. These larger conductors are what we now use as standard practice and are sized with future load growth and distributed generation in mind.
- h. Yes, GMP has preliminarily identified work in Phase 1 ZOI on over 40 circuits. This work was selected using the Climate Plan criteria and focuses initially on critical projects on 18 of the 20 circuits in our most recent 4.900 report, plus the Wilmington area circuit for the reasons noted above. Of the most recent 20

circuits list, the two not included in our initial planning include a small circuit fed by National Grid out of NY in Arlington, VT serving 5 GMP customers, and a circuit that serves customers in Corinth, Newbury, Ryegate, and Topsham. On the first circuit we are having conversations with National Grid and looking at ways to improve service there. The Corinth area circuit is one of the few Justice 40 communities in the target areas and is planned for GRIP grant work and so it is not scoped for additional ZOI investment. See Attachment GMP.DPS3.Q7b.1. We have also preliminarily identified work on over 20 additional circuits we anticipate pursuing in Phase 1. See Attachment GMP.DPS3.Q9h.

- i. Yes, we are building projects now on these circuits, and any projects closed and in service prior to Phase 1 ZOI approval would be accounted for in the current MYRP. See Ms. Doane's direct testimony at 7. As stated in Mr. Burke's direct testimony at 34, 36, "we will do as much work as possible under our existing MYRP," so that "customers only see in rates projects that are over and above current MYRP limits."
- j. As noted in A.DPS.GMP.2-115, GMP has not estimated the total value of the investments required to deliver ZOI through 2030 in detail as we are concentrating our work first in our hardest hit areas. Technology is also rapidly changing and the solutions we will seek to implement will evolve over time, informed by the work conducted in this first phase of ZOI.

Person/s Responsible for Response: Mike Burke, Ken Couture, Josh Castonguay
Title of Person/s: VP, Field Operations, Leader of Grid Resiliency, VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-10. Please refer to page 19 of Mr. Burke's rebuttal testimony: footnote 6 appears to have been inadvertently omitted. Please provide the intended footnote, if any.

A.DPS.GMP.3-10. The reference to footnote 6 in the text was an editing error.

Person/s Responsible for Response: Mike Burke

Title of Person/s: VP, Field Operations.

Date: May 3, 2024

Q.DPS.GMP.3-11. Please refer to page 35 of Mr. Burke's rebuttal testimony and Exhibit GMP-MB-17, GMP disagrees with removing Major Storms from systemwide SAIFI and CAIDI reporting and suggests instead supplemental reporting to yearly 4.900 reporting and/or regulation plan reporting, "with additional information related to the difference in reliability metrics by circuit and the speed of customer restoration when outages occur."

- a. The suggested supplemental metrics include SAIFI/CAIDI by circuit and SAIFI/CAIDI for storage customers by circuit, on circuits where ZOI investments have been made. Given that the goal of ZOI is to eliminate all outages by 2030, including ostensibly outages from Major Storms, why should Major Storms not be included in these circuit-specific metrics?**
- b. The overall ZOI metrics include "EAP customers participating in ZOI storage" and "Critical Medical Customers participating in ZOI storage." Can these metrics be included in the ZOI-by-circuit report?**
- c. Does GMP have suggestions for any environmental justice/equity metrics, such as percentage of ZOI investments supporting the focus populations (ex. low income, customers with critical medical needs, etc.)?**
- d. Please describe GMP's plans to engage with customers during Phase 1 of the ZOI to evaluate the success of the project, including how it will engage both communities and customers receiving and those not receiving ZOI investments.**
- e. Please discuss how GMP will assess whether they are engaging with the customers most impacted by resilience and reliability events and whether ZOI investments are meeting their needs.**
- f. Please discuss whether information from those engagement efforts could be tracked in the ZOI metrics.**

A.DPS.GMP.3-11.

- a. GMP already reports SAIFI/CAIDI both with and without Major Storms in its 4.900 reports and will continue to do so, and we are open to providing this data inclusive of major storms in our proposed annual ZOI metrics. However, as outlined in Mr. Burke's and Ms. Doane's testimony, GMP does not believe it is appropriate to incorporate Major Storms into the SQRP standards for SAIFI/CAIDI and apply a penalty mechanism to this metric as proposed by the Department.**

- b. Yes, GMP is open to reporting these metrics by circuit.
- c. GMP has proposed ZOI metrics to track both critical care customers, as well as customers participating in the EAP. See Exhibit GMP-MB-17, Metrics #59 & #60.
- d. Customer feedback and engagement is central to this work and GMP will continue to grow the strong relationships developed with towns over the past few years and continue the in-person meetings with town leaders and community members to engage throughout all phases of the project. We will build upon the most effective strategies used to engage customers and communities in the Resiliency Zones of Grafton, Rochester, and Brattleboro and combine Town Hall meetings, presentations to select boards, planning and zoning committees, and letters, phone calls, and in-person visits with customers. The effectiveness of the project will be evident in the reduced outages experienced by customers.

All GMP customers are benefiting from the ZOI investments, even in communities not receiving storm hardening or undergrounding as part of Phase 1. In fact, many communities have already seen the benefits of this work if they live in areas that have undergrounding or storm hardening – and that work has been paid for by all customers, including those experiencing damage from multiple storms. When ZOI is complete and the grid is strengthened, all customers benefit through the reduced costs of storm restoration and by using the expanded fleet of energy storage systems.

- e. GMP will continue assessing and prioritizing those most impacted by resiliency and reliability issues using the identified criteria, including outage data, and other information including, for example, the state municipal vulnerability index underway now. As the number of outages experienced by these communities goes down, the communities on the list will evolve and the ZOI metrics will support the success of the ZOI investments.
- f. GMP is open to discussing how best to report on ongoing community engagement efforts. Success of ZOI will be clear through customer experienced outages dropping and the ZOI metrics.

Person/s Responsible for Response: Mike Burke, Josh Castonguay
Title of Person/s: VP, Field Operations; VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-12. Please refer to page 42 of Mr. Burke's rebuttal testimony, which states, "All of this will also lead to electric service at a cost that not only is just and reasonable compared to the repeated, increasing costs of storm repair and maintenance, but also more equitable for customers, as costs will go down over time and all GMP customers will be more safe and more secure in their homes." Please provide the underlying quantitative analysis that supports this assertion, including the expected O&M and storm repair and maintenance costs but for this proposed ZOI investment.

A.DPS.GMP.3-12.

Please see A. DPS.GMP.3-8 above and A. DPS.GMP.2-1, 2-3, 2-5, and 2-6, and materials cited therein.

Person/s Responsible for Response: Mike Burke
Title of Person/s: VP, Field Operations
Date: May 3, 2024

Q.DPS.GMP.3-13. Please refer to page 7 of Ms. Smith's rebuttal testimony, which states, "We have tens of thousands of conversations with our customers each year. In 2023, GMP customer service representatives had more than 163,000 phone conversations with customers."

- a. What percentage of these calls were from customers struggling to pay their electric bills?**
- b. Please provide demographic information that GMP collected regarding these calls, the subject discussed, and describe whether they are representative of GMP's customer base as a whole.**

A.DPS.GMP.3-13.

- a. Of the more than 163,000 conversations customer service representatives had with customers in 2023, 64,025 calls (39.3%) were initiated for general billing and payment questions – a broad category which includes multiple topics from routine payment by phone, to questions about solar net-metering credits, and, in some cases, situations where we work with customers who are facing financial challenges. We do not maintain a summary or breakdown of the specific topics discussed within that category.
- b. We do not collect and maintain demographic information when customers reach out to us about their accounts or keep breakdowns categorizing the specific subject discussed.

Person/s Responsible for Response: Tiana Smith
Title of Person/s: Leader of Electrification and Sustainability
Date: May 3, 2024

Q.DPS.GMP.3-14. Please refer to page 13 of Ms. Smith's rebuttal testimony that states, "The feedback at every one of these meetings was overwhelmingly positive, recognizing the ferocity of the storms that have hit Vermont and caused damage in communities statewide. The most common questions we received were how quickly and when will more work start, the specific plan for each town, and how can towns collaborate with GMP on these efforts. Time was of the essence and what they wanted to know was 'when can this happen?' At no point in our outreach and information gathering process did community members question whether this work is needed." Please describe the following about the regional engagement events discussed on pages 11-13 of Ms. Smith's testimony:

- a. GMP's approach to engaging with customers around the ZOI at each of the events. For example, did GMP ask participants at each event a specific set of questions? If so, did any of those questions focus on resilience or reliability?**
- b. How the feedback from each event was recorded and tracked.**
- c. How did GMP incorporate the feedback from the events into the ZOI proposal.**
- d. How GMP conducted outreach for the events and how GMP assessed the extent to which these events reached customers most impacted by recent storm events.**
- e. The extent to which GMP discussed costs and/or expected rate impacts associated with the ZOI initiative.**
- f. The extent to which GMP discussed and requested feedback on how ZOI initiatives would be prioritized.**

A.DPS.GMP.3-14.

- a. The structure of each of the events was deliberate and consistent: GMP staff visited communities to listen to their pain points during storms and outages – these were shared organically and not with question prompts from GMP. We then presented how storms are changing and our planned strategies for keeping power on despite climate impacts: undergrounding, storm hardening, and energy storage.
- b. These meetings were public and would be available on town websites where meetings were recorded as part of the town's open meeting process.

- c. The feedback from these numerous events, in addition to the ongoing feedback from customers, was foundational to the ZOI filing, and served to bolster the commitment that ZOI is an equitable solution to resiliency and reliability for all customers regardless of location, usage, or income level. It was apparent through those meetings that having power – especially during the winter – is a critical need and central to the health and safety of Vermonters.
- d. GMP went to communities that had been hard hit by storms. We worked with towns on the coordination of the events and in many cases, these were publicly warned as part of a town's selectboard meeting with a title typically including "GMP Winter Storm Updates," and many showed up to discuss their experience during the 2022-2023 winter storm season.
- e. GMP explained the increasing costs of storm restoration and that the strategies around undergrounding, storm hardening, and storage would lead to cost savings for customers in the longer term through reduced power supply costs, avoided storm restoration costs, and reduced vegetation management where lines were undergrounded, in addition to the benefits, safety, and peace of mind it would provide directly to customers and communities by avoiding these outages in the first place.
- f. GMP shared that the prioritization of the ZOI investments at the events would be based on the criteria noted in the climate plan, including outage data.

Person/s Responsible for Response: Tiana Smith

Title of Person/s: Leader, Electrification and Sustainability

Date: May 3, 2024

Q.DPS.GMP.3-15. Please refer to page 5 of Ms. Doane's rebuttal testimony, which states, "Instead, tracking and reporting on performance of ZOI projects should be required as GMP proposes, but additional information is needed to ensure that any performance-based mechanisms that may be used in the future are properly designed and are clearly tied to the positive customer outcomes we all seek to achieve."

Please provide examples of performance-based mechanisms that are "clearly tied to positive customer outcomes," as well as the "additional information" that is needed.

A.DPS.GMP.3-15.

Performance-based mechanisms could include a number of different categories, including but not limited to establishing targets for customer reliability standards or percentage of low-income customers benefiting from ZOI measures, for example. GMP has proposed tracking these and other types of metrics in Phase 1 and believes it would be appropriate to report on the metrics and outcomes achieved through Phase 1 to develop information on the success of these measures; this could be used as baseline data if it is ever found to be appropriate to establish any financial-based performance mechanisms in future years. This baseline information is the type of "additional information" referenced in cited testimony.

Person/s Responsible for Response: Mike Burke, Laura Doane
Title of Person/s: VP, Field Operations; Manager of Operational Finance
Date: May 3, 2024

Q.DPS.GMP.3-16. Please refer to page 4 of Mr. Castonguay rebuttal testimony that notes ZOI will “be more cost-effective than the status-quo.”

Please provide a detailed cost-effectiveness analysis, including all assumptions of the status quo, to support this statement, in native format. If not provided, please admit that there is no quantitative analysis to support this statement.

A.DPS.GMP.3-16.

Mr. Castonguay was referring to the cost-effectiveness of the ZOI approach as a whole, which has been explained by Mr. Burke and addressed in responses A.DPS.GMP.1-67, 1-127 1-151, and 2-1.

In addition, with respect to the specific cost-effectiveness of customer storage as opposed to status-quo solutions explained by Mr. Castonguay in his direct and rebuttal testimony, please refer to A.DPS.GMP.1-44, including the attachments thereto, in particular Attachment GMP.DPS1.Q44b at 7-8. Please also refer to the discussion of the Grafton Resiliency Zone Pilot in Mr. Castonguay's direct testimony at 21-22, 27-28.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-17. Please refer to page 6 of Mr. Castonguay's rebuttal testimony, which states, "During this time, the ESS tariff will continue for customers who are not located in the rural areas subject to our Phase 1 ZOI. In the future, based on the results of Phase 1 and incorporating new technological advances in energy storage and electric transportation, we anticipate a comprehensive statewide energy storage solution for all GMP customers." In the ESS tariff, beneficiaries elect to pay for extra resilience. In the proposed Phase 1 of the ZOI, extra resilience is paid for by non-beneficiaries. What is the justification for this cross-subsidy?

A.DPS.GMP.3-17.

Objection 5. GMP objects to this request, which is argumentative insofar as it requires the respondent to assume that ZOI customer storage is a cross-subsidy. Prior discovery responses make clear that the ZOI will not result in a cross-subsidy because its purpose is to provide a level of reliable and resilient service to all GMP customers, regardless of location. Without waiving or otherwise limiting the objection, GMP responds as follows.

Please refer to A.DPS.GMP.1-127b.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-18. Please refer to page 6 of Mr. Castonguay's rebuttal testimony, which states, "We are also working on a Grid Resilience and Innovation Partnership ("GRIP") grant proposal, after initial positive feedback from the DOE. The GRIP project is designed to implement several complete Zero Outage circuits for customers specifically in Justice 40 communities, separate but complementary to the ZOI Petition. Application success is not guaranteed, but we continue to pursue any options to help customers."

- a. **Will GMP prioritize serving these communities through the ZOI if this proposal is not successful?**
- b. **Does GMP expect that either federal funding, or matching funding (or both) will be considered capital expenditures under the current MYRP as a status quo capital expenditure, or does GMP expect these costs to be part of the ZOI?**

A.DPS.GMP.3-18.

- a. Yes. The circuits that meet the criteria established for this grant opportunity and are not included in our ZOI planning as shown on Attachment GMP.DPS3.Q7b.1, but would be considered with other areas under the established climate plan criteria if that grant is not successful.
- b. If approved, we would expect to have the matching funding be part of the ZOI. However, if this proposal is successful, the resulting project may not close in Phase 1 of the ZOI.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-19. Please refer to pages 7-8 of Mr. Castonguay's rebuttal testimony, which state, "These criteria consider a range of factors, including but not limited to data in our 4,900 reports on our 20 least reliable circuits; the type, age, condition, and location of assets; the number of customers served by each circuit; outage hours and expected benefits of the ZOI approach; and the critical facilities served by the circuit. As with the T&D investments described by Mr. Burke, our customer storage deployments in Zone 4 under ZOI will be similarly informed by these criteria. In Phase 1, this means focusing a significant portion of our work on several of our least reliable circuits—starting with the two circuits that we are focusing on delivering a complete ZOI rollout during this first phase: the EJ-G7 circuit in the East Jamaica area and the 56G1 circuit in the Wilmington/Halifax/Whitingham area. Our remaining storage deployment will focus on other Zone 4 customers in areas that are among our least reliable circuits."

- a. Please clarify whether in the EJ-G7 and 56G1 circuit ZOI work, all customers located in Zone 4 would receive free battery storage systems, or whether GMP will provide free batteries for customers based on customer-level review of the selection criteria, i.e., reliability, infrastructure condition, presence critical medical equipment, etc.**
- b. If all customers in Zone 4 were to receive free battery storage systems, would customers be prioritized for installations based on criteria such as those listed in the previous question?**
- c. For the remaining storage deployments outside the identified circuits, how will customers receiving free battery storage systems be selected and prioritized?**

A.DPS.GMP.3-19.

- a. The criteria were applied to select these circuits for a complete ZOI deployment during Phase 1. Within these two circuits, all customers in Zone 4 would be offered a battery system as part of their GMP service.**
- b. Yes, where possible GMP will prioritize for installation customers within Zone 4 based on a customer level review of the selection criteria along with taking into account physical readiness for installation, installer scheduling, and other installation timing needs, including the customer's.**
- c. Similar to the East Jamaica and Halifax/Whitingham circuits, additional storage**

deployments will focus on customers in Zone 4, prioritized based on the project selection criteria described on page 25 of Mr. Burke's direct testimony as well as the factors discussed in subpart (b).

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-20. Please reference Exhibit GMP-MB-15a. Are these data for all outages or just storm outages?

A.DPS.GMP.3-20. The underlying data are for all outages.

Person/s Responsible for Response: Mike Burke, Ken Couture
Title of Person/s: VP, Field Operations, Leader of Grid Resiliency
Date: May 3, 2024

Q.DPS.GMP.3-21. Please refer to page 10 of Mr. Castonguay rebuttal testimony that provides a customer email screenshot. Please provide the entire email chain associated with this screenshot.

A.DPS.GMP.3-21.

See Attachment GMP.DPS3.Q21.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-22. Please refer to page 14 of Mr. Burke's rebuttal testimony that discusses some 1,400 customers targeted for storage solutions. For just the 1,400 customers targeted for storage solutions, what has been their average outage duration?

A.DPS.GMP.3-22.

The 1,400 customers referred to in Mr. Burke's rebuttal testimony represent the total expected number of Zone 4 customers that could be served by batteries based on the \$30M request, not individually-identified customers. GMP has initially identified customers on the two circuits, East Jamaica and Halifax/Whitingham, that we plan to complete a full ZOI deployment on in the first phase of work. During all storm events, these customers have averaged 10.1 hours per outage for the five-year period between 2019 and 2023.

Person/s Responsible for Response: Mike Burke, Ken Couture
Title of Person/s: VP, Field Operations, Leader of Grid Resiliency
Date: May 3, 2024

Q.DPS.GMP.3-23. Please refer to page 8 of Mr. Burke's rebuttal testimony that provides a table reflecting outage data. Is this data specific to storm outages or is the data provided for all outages?

A.DPS.GMP.3-23.

The underlying data are for all outages.

Person/s Responsible for Response: Mike Burke, Ken Couture
Title of Person/s: VP, Field Operations, Leader of Grid Resiliency
Date: May 3, 2024

Q.DPS.GMP.3-24. Please refer to page 8 of Mr. Burke's rebuttal testimony that provides a table reflecting outage data. Please provide tables for each year of the 5 years following the ZOI implementation projecting the impact of the ZOI.

A.DPS.GMP.3-24.

Objection 8. GMP objects to this request insofar as it calls for additional analysis as part of its response. Without waiving or otherwise limiting the objection, GMP responds as follows.

The referenced chart was prepared based on historical data for a specific year (2023). It is impossible to provide a table with the same information by district in five future-year periods that have not yet occurred.

Person/s Responsible for Response: Mike Burke, Ken Couture
Title of Person/s: VP, Field Operations, Leader of Grid Resiliency
Date: May 3, 2024

Q.DPS.GMP.3-25. Please provide evidence of the storm hardening section of lines that were not negatively impacted by the storms that was referenced by Exhibit GMP-MB-10.

- a. Please provide the number of poles replaced.**
- b. Please provide the hours that the storm hardening line section was out of power.**

A.DPS.GMP.3-25.

Objection 5. This request is vague and requires speculation as to the answer sought. Subparts (a) and (b) appear to refer to sections of lines that “were not negatively impacted” without definition, and it is not clear what is meant by “negatively impacted” in this context. Similarly, it is not clear whether the question for number of poles replaced is referring to the initial project or during storms. For these reasons, GMP objects to this request. Without waiving or otherwise limiting the objection, we understand the question to request information on already-hardened areas that did not experience damage (“impacts”) like other areas of the system.

- a. See Objection.
- b. For examples of storm hardened project performance during storms listed in Exh. GMP-MB-10, see Attachment GMP.DPS3.Q25

Person/s Responsible for Response: Mike Burke, Ken Couture
Title of Person/s: VP, Field Operations, Leader of Grid Resiliency
Date: May 3, 2024

Q.DPS.GMP.3-26. Mr. Burke states that ZOI Phase 1 will have less of a rate impact than the one-year recovery of the \$20M in Major Storm costs.

- a. Please provide the number of customers who will be impacted by the investment in ZOI Phase 1.**
- b. For each storm listed in Exhibit GMP-MB-10, provide an estimate of the number of customers that would have been affected if ZOI Phase 1 was in place.**

A.DPS.GMP.3-26.

- a. **Objection 5.** GMP objects to this request because “impacted” is undefined and vague in the context of this question. Without waiving or otherwise limiting the objection, GMP responds as follows.

All GMP customers, approximately 275,000, will support ZOI and will also benefit from implementation of ZOI through future cost savings.

- b. **Objections 5, 8.** GMP objects to this request; GMP does not understand what is being asked for and it appears to require speculation and/or substantial additional analysis in order to answer, and further the term “affected” is undefined in the context of the question, which is asking about rate impacts. See answer to subpart a. above.

Person/s Responsible for Response: Mike Burke

Title of Person/s: VP, Field Operations

Date: May 3, 2024

Q.DPS.GMP.3-27. Please refer to page 14, lines 17-19 of Mr. Burke's rebuttal testimony, Phase 1 is purported to include 1,400 additional customers who will receive storage directly in their homes. What reduction in the \$20M storm restoration cost could have been expected if these homes had batteries?

A.DPS.GMP.3-27.

The savings associated with ZOI work come from multiple aspects, all working together to generate larger savings than any one solution, such as storage, would achieve alone. It is not possible to isolate the storm restoration savings accruing only from storage, nor is it relevant to the proposed ZOI, which will have other resilience elements supporting storage across a completed circuit. Further, as noted in A.DPS.GMP.3-27, 1,400 represents the estimated number of customers who would receive storage in Zone 4, so it is also not possible for GMP to answer this question based on the possible impacts to individual customer locations. For storm restoration cost savings generally, please see responses A.DPS.GMP.2-1, 2-3, 2-6, 2-13 and 3-2 and materials cited therein.

Person/s Responsible for Response: Mike Burke
Title of Person/s: VP, Field Operations
Date: January 29, 2024

Q.DPS.GMP.3-28. Please refer to Table 1 of Mr. Burke's rebuttal testimony:

- a. Please provide any comparison to other utilities.**
- b. Please provide similar results for the prior 5 years.**

A.DPS.GMP.3-28.

- a. **Objections 5, 8.** GMP objects to this request because it requires speculation and substantial additional analysis using data to which GMP does not have access. Without waiving or otherwise limiting the objections, GMP responds as follows:

GMP does not have access to the data necessary to prepare this level of analysis for other utilities.

- b. See Attachment GMP.DPS3.Q28b.

Person/s Responsible for Response: Mike Burke, Ken Couture
Title of Person/s: VP, Field Operations, Leader of Grid Resiliency
Date: May 3, 2024

Q.DPS.GMP.3-29.

- a. Please provide a list of other Vermont utilities implementing behind-the-meter storage programs.**
- b. For each utility, please provide the customer contribution for behind-the-meter storage.**

A.DPS.GMP.3-29.

- a. **Objection 3.**** GMP objects to this request insofar as it calls for information that is equally if not more available to the Department or publicly available. Without waiving or otherwise limiting the objection, GMP responds as follows:

GMP is aware of Vermont Electric Coop's (VEC) Flexible Load Program. It is anticipated that other Vermont utilities will implement behind-the-meter storage programs as a result of the Department's May 2023 Energy Storage Access Program (ESAP) RFP.

- b.** For VEC's Flexible Load Program, customers purchase their own batteries and receive a bill credit from VEC for enrolling the batteries in the Program. For programs under ESAP, the Department specifies that "Low-income customers will be offered systems free of charge or for a nominal charge; moderate-income customers may contribute a cost-share of up to 20%, but this should be calculated based on the utility's anticipated savings from harvesting the batteries' capabilities to reduce peak-related and other power supply costs."

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-30.

- a. Please refer to page 10, lines 14-16 of Mr. Burke's rebuttal testimony, please provide a list of each customer that experienced zero outages for circuits that lost power during the storms listed in Exhibit GMP-MB-10.**
- b. Please provide evidence of battery usage for each customer.**

A.DPS.GMP.3-30.

- a. See Attachment GMP.DPS3.Q30a for a list of customers by storm number and incident with energy storage installed that experienced no outage during the storms listed in Exhibit GMP-MB-10.
- b. See column C (Battery Backup Energy) in Attachment GMP.DPS3.Q30a to see the total kWh provided by each energy storage system for customer use during those events.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

**Q.DPS.GMP.3-31. Please refer to page 15, lines 15-18 of Mr. Burke's rebuttal testimony:
Please explain how GMP proposes to demonstrate the effectiveness of ZOI. Specifically:**

- a. What criteria will be used?**
- b. How long must the system operate to demonstrate the effectiveness of the ZOI?**
- c. How will cost be factored into the criteria?**
- d. When will this analysis be accomplished?**

A.DPS.GMP.3-31.

- a. Please see Exhibit GMP-MB-17 for the metrics GMP proposes to track in Phase 1. These metrics will be used to evaluate the effectiveness of ZOI measures and inform work in future phases.
- b. GMP believes the effectiveness of most ZOI measures will be immediate, as outages are reduced for customers, and the data on performance of these measures will be collected during each subsequent storm event after installation. Under GMP's proposed timeline, data from the first phase of ZOI implementation will be available to consider when evaluating later phases, and GMP remains open to timing these reviews to ensure steady, uninterrupted progress in installations and projects for customers.
- c. As outlined in GMP's regulatory accounting proposal, completed individual ZOI projects will be included with each annual base rate filing, along with required capital project documentation. GMP will also report any specific attributable savings from ZOI work. *See* A.DPS.GMP.3-41. This information will be available to evaluate on an annual basis and can be considered when evaluating the effectiveness of Phase 1 ZOI projects. This information will be available when considering later phases, and GMP remains open to timing these reviews to ensure steady, uninterrupted progress in installations and projects for customers.
- d. Analysis will commence as projects go into service for customers, and overall metrics will be tracked on an annual basis and reported along with GMP's annual MYRP metrics report. The first of these reports including ZOI projects will be filed January 30, 2025, and then again on January 30, 2026, which will provide at least a year and a half of data on ZOI project performance prior to evaluation of subsequent phases of ZOI. *See* Exhibit GMP-LD-1 (rev.).

Person/s Responsible for Response: Mike Burke
Title of Person/s: VP, Field Operations
Date: May 3, 2024

Q.DPS.GMP.3-32. The costs of undergrounding in Exhibits GMP-MB-12 and MB-13 calculate to \$332,056 per mile and \$428,000 per mile, respectively. Please explain why these costs are higher than the value of \$179,180 per mile shown in Exhibit GMP-MB-14 for undergrounding costs.

A.DPS.GMP.3-32.

As noted in Mr. Burke's rebuttal testimony on page 30, n. 14, the costs comparison calculated in GMP-MB-14 was conducted using 2021 or earlier data, and the cost of both overhead and undergrounding work has increased since that time to approximately \$300,000 per mile. See A.DPS.GMP.2-64(d). The average estimated cost per mile calculated in Exhs. GMP-MB-12 and MB-13 used this \$300,000 estimate for undergrounding work for single phase in each circuit. The average estimated cost for undergrounding three phase lines is \$700,000, and that estimate was used for projects on Exhs. GMP-MB-12 and MB-13 that involve three phase construction.

Person/s Responsible for Response: Mike Burke
Title of Person/s: VP, Field Operations
Date: May 3, 2024

Q.DPS.GMP.3-33. Please refer to Exhibit GMP-MB-12:

- a. Confirm the unit cost for storage is \$22,000 per customer in Zone 4 (455 customers with a total budget of \$10,010,000).**
- b. Confirm that the total cost for ZOI projects will average \$17,349 per customer for the 2,648 customers on Circuit EJG7.**

A.DPS.GMP.3-33.

- a. Objection 5.** GMP objects to this characterization as argumentative and potentially misleading. Without waiving or otherwise limiting the objection, confirmed that the per location cost for these units is \$22,000 in the manner described. All customers will contribute toward and benefit from ZOI implementation; see answer to subpart b. below.
- b. Objection 5.** GMP objects to this characterization as argumentative and potentially misleading. Without waiving or otherwise limiting the objection, confirmed that the basic arithmetic is generally correct based on the estimated initial cost provided; however the total cost to address this circuit is paid by all customers in GMP's territory no different than any other reliability or resiliency investment, and no different than how the customers on this circuit have paid in rates for other capital projects elsewhere in the territory over time. Likewise, all GMP customers will benefit from the cost savings associated with reduced storm restoration costs and other ZOI benefits. Across all GMP customers, this capital investment would be approximately \$168 per customer spread out over 48 years without including offsetting operational and power supply savings. Please note that the East Jamaica circuit and the Halifax/Whitingham circuit are among the longest circuits in GMP's territory, with more remote line per customer to address than comparatively shorter or more urban circuits. Further, the value the Department calculated cannot be compared on an equivalent basis with the cost to provide storage. Storage installations generate additional value to all customers beyond the resiliency value as described in Mr. Castonguay's direct testimony at 5-6, 8-10, and 23-25, and in Attachments GMP.DPS1.Q44a & b. In addition, GMP will be evaluating the costs and benefits of deploying storage to customers against the expense to harden the "last-mile" Zone 4 line, as described in Mr. Burke's direct testimony at 30, 32-33. These remote Zone 4 lines have the lowest density of customers and therefore cannot be compared on a per customer basis averaged with other zones in the circuit.

Person/s Responsible for Response: Mike Burke, Josh Castonguay.

Title of Person/s: VP, Field Operations; VP, Chief Innovation and Engineering Executive

Date: May 3, 2024

Q.DPS.GMP.3-34. Please refer to Exhibit GMP-MB-13:

- a. Confirm the unit cost for storage is \$22,000 per customer in Zone 4 (489 customers with a total budget of \$10,758,000).**
- b. Confirm that the total cost for ZOI projects will average \$13,941 per customer for the 2,439 customers on Circuit 56G1.**

A.DPS.GMP.3-34.

- a. Please see objection and response to DPS.GMP.3-33a above.
- b. Please see objection and response DPS.GMP.3-33b above. The capital investment per GMP customer for these projects would be approximately \$124 per customer spread out over 48 years without accounting for the benefits of this work.

Person/s Responsible for Response: Mike Burke, Josh Castonguay

Title of Person/s: VP, Field Operations; VP, Chief Innovation and Engineering Executive

Date: May 3, 2024

Q.DPS.GMP.3-35. Has GMP estimated the cost for ZOI applied to all rural circuits? If so, provide the details of the cost estimate.

A.DPS.GMP.3-35.

Please see A.DPS.GMP.3-9j. above. With respect to projects anticipated in Phase 1 of ZOI, please also see Mr. Burke's rebuttal testimony at pages 14-16.

Person/s Responsible for Response: Mike Burke
Title of Person/s: VP, Field Operations
Date: May 3, 2024

Q.DPS.GMP.3-36.

- a. Please explain why GMP did not propose a methodology or criteria for determining outage data for a customer with behind-the-meter storage.**
- b. Should these customers be included in the SAIFI/SAIDI calculations?**

A.DPS.GMP.3-36.

- a. GMP did propose a methodology for determining outage data for these customers. Please see Mr. Burke's rebuttal testimony at 31, describing how outages will be determined for storage customers, which will be reported using standard metrics. As described on Page 18 of Mr. Castonguay's rebuttal testimony, we would track the SAIFI and CAIDI for the customers with storage systems, which would be reported on GMP's metrics. *See* Exh. GMP-MB-17; *see also* A.DPS.GMP.3-44.
- b. We assume this question intended to refer to CAIDI, not SAIDI, and with that understanding, yes, these customers will be included in the overall SAIFI and CAIDI calculations. As noted in subpart (a) we will also track and report SAIFI and CAIDI metrics for battery customers separately in GMP's ZOI metrics report. *See* Exh. GMP-MB-17.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-37. Please refer to page 12, lines 10-12 of Mr. Castonguay's rebuttal testimony:

- a. Please provide data that demonstrates a seamless transition to the battery include actual recording information.**
- b. Please provide data demonstrating that the batteries provide whole house back (including all appliances) during all outages.**

A.DPS.GMP.3-37.

- a. As described by Tesla, the equipment functions "seamlessly," *see* <https://www.tesla.com/support/energy/powerwall/learn/how-powerwall-works> and that is backed up by our experience and the experience of customers even though the recorded data reported by Tesla's Powerhub is not at sub-second resolution. By seamless we mean that the customer does not notice a 'blink' like they typically would experience when using a generator and a transfer switch. The Powerwall with Contactor can transition from grid to island mode in a fraction of a second and typically the only way customers are aware that there is a grid outage in the area is due to the notification from GMP or the Tesla Powerwall App.
- b. **Objections 1, 7.** GMP objects to this request insofar as it misstates and exceeds the scope of Mr. Castonguay's testimony, which did not state that batteries will back up all appliances in all cases. Without waiving or otherwise limiting the objections, GMP responds as follows:

Whole-home backup is the standard installation practice, and we frequently hear from customers around storm events about the performance of their systems backing up all of the loads they need in their homes to ride out a grid outage. As an example, please refer to Attachments GMP.DPS3.Q37.1 and 37.2, which depict whole-home Powerwalls supporting two representative customers throughout lengthy outages at the level of consumption typical of non-grid outage use for these customers. Customers ultimately work with their installer to choose if their system will provide whole-home backup or have specific loads isolated from the Powerwalls (large loads that are not critical during an outage – a hot tub for example) and GMP does not track this.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-38. Please refer to page 13, lines 7-10 of Mr. Castonguay's rebuttal testimony, please provide evidence that there is no limitation on peak energy consumption for homes with storage, specifically any electric heat requirements and electric dryers.

A.DPS.GMP.3-38.

Objections 1, 7. This request exceeds the scope of Mr. Castonguay's testimony and seeks irrelevant information beyond the scope of discovery. Mr. Castonguay did not testify that there is no limitation on peak energy consumption for homes with storage. Without waiving or otherwise limiting the objections, GMP responds as follows.

In our experience, the standard 10 kW (nominal) Powerwall installations are right-sized for whole home backup and do not have the significant limitations Mr. Mara identified based on his understanding of systems with smaller peak output. Our customers do not report significant limitations in their use.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-39. Please refer to Mr. Mills and Mr. Buxton's rebuttal testimony and Exhibit GMP-DM-KB-1: For each photo of a tree down, what would be the impact if the tree in each photo fell on a line equipped with a space cable (broken poles, broken conductor, failed insulation, etc.)?

A.DPS.GMP.3-39.

In our experience the lines would have remained on with spacer cable, even with the trees shown in the Exhibit. It is hypothetical, but with the large size of the trees shown on pages 5, 11, and 12, they could have broken a pole, but even then, the lines could remain energized as we have seen happen. These would be prime areas for undergrounding with ZOI, keeping everyone safe.

Person/s Responsible for Response: Mike Burke, Donald Mills, Kyle Buxton
Title of Person/s: VP, Field Operations; T&D Operations Supervisor, Brattleboro District;
T&D Operations Supervisor, Middlebury & Vergennes Districts.
Date: May 3, 2024

Q.DPS.GMP.3-40. Please refer to page 6 of Ms. Doane's rebuttal testimony, please identify any mechanism in place that would provide the savings realized through the ZOI program to be directly attributed to customers other than the MYRP Major Storm Adjustor.

A.DPS.GMP.3-40.

The question is not clear as to whether it refers to savings within the current MYRP period or in the future. With respect to savings in the current MYRP period, please see page 6 of Ms. Doane's rebuttal testimony. Regarding directly incorporating ZOI savings in future rate periods there are several mechanisms that will ensure that ZOI cost savings will flow to customers. This includes standard regulatory mechanisms used in establishing rates under a traditional cost of service model, which are based on known and measurable changes to set rates for the future rate year. As savings are achieved through ZOI implementation they can be incorporated into these known and measurable changes. It is anticipated that any future plan would also include an annual base rate filing, along with adjustor mechanisms including a major storm adjustor and power supply adjustor mechanisms as are currently in place.

Person/s Responsible for Response: Laura Doane
Title of Person/s: Manager of Operational Finance
Date: May 3, 2024

Q.DPS.GMP.3-41. Please refer to page 6, line 19 and page 7, line 9 of Ms. Doane's rebuttal testimony: Please confirm that GMP will annually highlight savings realized through the ZOI program to adjust the rate in each multi-year cycle.

A.DPS.GMP.3-41.

Confirmed that any savings able to be directly attributable to ZOI work that materialize in the current MYRP period will be identified in GMP's annual base rate filings, along with ZOI specific costs. Please see Appendix 2 in Exhibit GMP-LD-1 (rev.) for how ZOI specific items will be reported in GMP's annual base rate filings. These savings will also flow through to customers in known and measurable adjustments in GMP next traditional rate case. See A.DPS.GMP.1-138.

Person/s Responsible for Response: Laura Doane
Title of Person/s: Manager of Operational Finance
Date: May 3, 2024

Q.DPS.GMP.3-42. Please refer to page 7, lines 10-16 of Ms. Doane's rebuttal testimony: Please explain why any savings generated by the ZOI projects will not be treated as an offset to the ZOI regulatory asset accounts.

A.DPS.GMP.3-42.

As outlined in Ms. Doane's rebuttal testimony on page 7, a regulatory asset account is not needed in this case. Storm savings will flow through the Major Storm Adjustor automatically. Similarly, any power supply savings associated with additional customer storage will be incorporated into each quarterly power supply adjustor. Other savings specifically attributable to ZOI will be reported annually as they occur as noted above and can be incorporated as appropriate directly into rate filings for Commission review, including the periodic traditional cost of service rate reviews that are conducted. See A.DPS.GMP.3-40, above.

Person/s Responsible for Response: Laura Doane
Title of Person/s: Manager of Operational Finance
Date: May 3, 2024

Q.DPS.GMP.3-43. Please refer to pages 12-14 of Mr. Castonguay's rebuttal testimony: Is GMP aware of any Zone 4 customers on the Phase 1 ZOI circuits with a load larger than the two Tesla Powerwall 2 batteries can accommodate?

- a. If so, how many?**
- b. If so, what is GMP's proposed Phase 1 solution for these customers?**

A.DPS.GMP.3-43.

- a. GMP is not aware of any Zone 4 residential customers on the Phase 1 ZOI circuits with a load larger than the two Tesla Powerwall 2 batteries and, based on ESS enrollments, the vast majority of customers can be served by two Powerwalls. If a customer seeks a specific individual solution greater than what ZOI provides, we can look to assist them through another battery storage program.
- b. See above.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Q.DPS.GMP.3-44. Please refer to page 31 of Mr. Burke's rebuttal testimony, which states: "If the storage customer ultimately does consume their full amount of storage and suffers an outage at that point, we would count that outage period following depletion of the battery as part of our reliability statistics." Is GMP's outage management system currently able to coordinate the meter data and the storage data to accurately track outages as described in the above-quoted testimony?

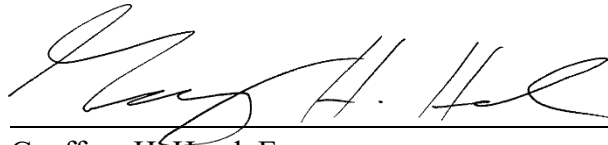
A.DPS.GMP.3-44.

While GMP's outage management system does not presently track specific storage customers that do not experience an outage due to storage, GMP is working to ensure that the outage management system and customer storage data together can allow us to report on the reliability statistics as proposed.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP, Chief Innovation and Engineering Executive
Date: May 3, 2024

Dated at Burlington, Vermont this 3rd day of May, 2024.

As to Objections:



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Attorneys for Green Mountain Power

Dated at Colchester, Vermont this 3rd day of May, 2024.


Respondent Signature

By: Michael Burke
Michael Burke
Green Mountain Power

Dated at Colchester, Vermont this 3rd day of May, 2024.

Respondent Signature

By:



Josh Castonguay
Green Mountain Power

Dated at Rutland, Vermont this 2nd day of May, 2024.

Respondent Signature

By: Laura Doane
Laura Doane
Green Mountain Power

Dated at COLCHESTER, Vermont this 3 day of May, 2024.

Respondent Signature

By: _____



Ken Couture
Green Mountain Power

Dated at 163 Acorn Lane, Colchester, Vermont this 2nd day of May, 2024.

Respondent Signature

By: *Tiana Smith*
Tiana Smith
Green Mountain Power

Dated at Middlebury, Vermont this 3rd day of May, 2024.


Respondent Signature

By: 
Kyle Buxton

Green Mountain Power

Dated at Brattleboro, Vermont this 3rd day of May, 2024.

Respondent Signature

By: 
Donald Mills
Green Mountain Power