

**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 POST-HEARING BRIEF**

Green Mountain Power (“GMP”) submits the following brief, together with the attached Proposed Findings of Fact and Order (“PFD”), in support of GMP’s proposed Zero Outage Initiative (“ZOI”). The evidence in this case demonstrates that GMP’s comprehensive ZOI approach will benefit customers by significantly accelerating climate resiliency and reliability where they are needed most and reducing extreme climate change-driven storm costs for all customers, resulting in just and reasonable rates. This work is urgently needed to address the growing climate crisis for customers. It sets the framework for ensuring all GMP customers can stay safe and powered up, and can expect zero outages by 2030. GMP respectfully requests that the Vermont Public Utility Commission (“PUC” or the “Commission”) approve the petition so that GMP can accomplish the initial round of ZOI projects as soon as possible for customers, condition that approval on the proposed data reporting and additional service quality requirements outlined below, and issue an order authorizing up to \$280 million in ZOI investments for customers under GMP’s Multi-Year Regulation Plan (“MYRP” or “Plan”).

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**I. Introduction & Background**

GMP’s proposed Zero Outage Initiative is designed to provide continued improvement on GMP’s distribution system for customers and, when paired with energy storage, deliver zero outages for customers by 2030. The proposal before the Commission seeks to implement the first component of this work now for customers in those communities that need this reliability and resiliency work the most because they have been hit hardest by storms made stronger and more frequent by climate change – including several severe storms that have hit while this case is

being reviewed. ZOI relies on proven methods of undergrounding, storm-hardening overhead lines, and installing customer-sited storage. These are all solutions that have been shown to improve safety, reliability, and resilience for customers while reducing outages and associated escalating storm restoration costs. When implemented comprehensively across circuits, these measures will help bend the curve of climate change driven storm costs and reduce future vegetation management cost and other overhead line related expenses. This will also deliver a more equitable, resilient, and safer grid for all customers, one that can better support Vermont's clean and dynamic energy future.

GMP has included well-established regulatory guardrails in its proposal to ensure benefits are delivered to customers in a cost-effective manner. This includes GMP and the Department of Public Service's ("DPS" or "Department") long-standing and agreed individual capital project documentation process (with alternatives analysis, financial analysis, and cost benefit analysis, as required), plus a regulatory accounting method that ensures projects will only be placed into rates once they are completed, generating benefits for customers, and approved by the Commission. These regulatory mechanisms are paired with a robust set of data reporting, developed with Department feedback in mind, that will track progress and measure performance of ZOI investments for customers.

GMP has also agreed following this proceeding to incorporate the Department's recommendation to add a ZOI-specific layer to the GMP Service Quality and Reliability Plan ("SQRP") so that GMP shares the risk associated with the performance of ZOI projects. All of this ensures that ZOI projects will be implemented in those areas where they deliver the greatest

benefit first, will be fully documented for Commission review, and will be delivered using cost-effective solutions, resulting in just and reasonable rates for all customers.

Customers need this work now. In the year prior to filing ZOI, from December 2022 to October 2023, GMP customers experienced an unprecedented six major storms, which led to tens of thousands of outages, some of which lasted for days, resulting in significant disruption to customers' lives and more than \$45M in major storm costs.<sup>1</sup> Then, in the months after filing ZOI this trend of increasing significant weather events only continued. Since October 2023, customers experienced an additional ten significant regional storms, leading to several separate multi-day events, and resulting in almost \$20M in additional major storm damage (and more than \$18M in minor storm costs, far above the amount budgeted).<sup>2</sup> Altogether, major and minor storm costs for customers over the past 18 months approach \$90M, far above the estimates of potential storm costs incorporated into GMP's most recent MYRP just two years ago. And this climate-change driven extreme weather is predicted to keep increasing, resulting in more outages, more costs for customers, and more direct impact on customers lives and safety if unaddressed with these proven solutions.

Vermont is not alone in this challenge. Utility customers face increasing costs and safety threats all over the country for repair from damaging storms happening with more frequency and ferocity due to climate change. For example, Central Maine Power ("CMP") recently filed a rate increase it reports is driven by more than \$220 million in storm-related costs from 2022 and 2023. In response to these unsustainable increases in storm response, the Maine PUC plans to

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<sup>1</sup> Michael Burke, GMP ("Burke") pf. at 20; Exh. GMP-MB-4.

<sup>2</sup> Burke pf. reb. at 6; Exh. GMP-MB-10.

explore measures for CMP to proactively enhance grid resilience for long-term affordability.<sup>3</sup> In New Hampshire, Eversource has recently proposed a \$182 million increase in its distribution rates to support infrastructure improvements and grid modernization. This includes efforts to enhance reliability, integrate renewable energy sources, and improve resilience against severe weather events.<sup>4</sup> Connecticut utilities and regulators are similarly pursuing resilience investments, recognizing the increase in storm damage and costs caused by climate change.<sup>5</sup> Mr. Burke's testimony notes other examples in Massachusetts, Rhode Island and New York.<sup>6</sup>

These proceedings and many others nationwide<sup>7</sup> demonstrate that utilities, with the support of regulators, are investing significantly in grid hardening efforts to improve resilience and reliability for customers. Typically, these initiatives include strategic undergrounding, storm hardening above ground lines, constructing redundant loops, and using operational technology for infrastructure such as reclosers. These filings show a growing recognition of the need to change the way utilities approach storm repair and do more to proactively mitigate the impacts of severe weather and climate change on the power grid to benefit customers.

The coordinated approach GMP proposes here – implementing undergrounding, storm hardening, plus customer-sited storage comprehensively by zone designation across circuits – is

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<sup>3</sup> <https://www.pressherald.com/2024/06/12/cmp-bills-to-go-up-this-summer-after-regulators-approve-rate-hikes-tied-to-storm-costs/>

<sup>4</sup> <https://www.utilitydive.com/news/eversource-new-hampshire-proposes-182-million-distribution-rate-increase-PBR/719071/>

<sup>5</sup> <https://www.govtech.com/em/preparedness/connecticut-utilities-prepare-for-severe-hurricane-season>

<sup>6</sup> Burke pf. reb. at 9-10.

<sup>7</sup> See, e.g., <https://www.utilitydive.com/news/pge-sce-vegetation-management-resilience-california-wildfires/646163/>, <https://www.fpl.com/reliability/storm-secure-underground-program.html>, <https://www.power-grid.com/td/outage-management/hawaiian-electric-focuses-on-wildfire-safety-in-190m-grid-plan/#gref>

uniquely comprehensive and builds upon Vermont's head start on resilience initiatives. With the Commission's review and support, Vermont has been a leader in distributed, managed resources, including: implementing one of the first innovative pilot programs, which led to the first in the nation residential energy storage system ("ESS") and bring your own device ("BYOD") tariffs; the first utility renewable-only microgrid; support for participation in frequency regulation markets; deployment of whole neighborhood, all-electric resilience solutions; and approval and integration of GMP's initial Climate Plan, upon which ZOI is built. As a result of these and similar efforts, Vermont is in an exceptional position to leverage innovation and experience further to directly benefit customers, enabling a system-wide approach that can be deployed right now, not only addressing mounting costs from damaging storms but also transforming the grid for the challenges of this century.

ZOI is designed to do just that. It meets customers' needs for a more resilient and reliable system, while supporting further electrification, decarbonization, and all the increasingly technology-dependent aspects of our lives – from work, to school, to health, and beyond. The ZOI investments facilitate an electric grid here in Vermont that includes customer and community-sited renewable and storage resources to stay powered up no matter the challenge (cyber, regional grid, storms) – all while also lowering the need for very expensive transmission upgrades<sup>8</sup> and supporting Vermont's longer term economic and quality of life goals.<sup>9</sup> There are

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<sup>8</sup> Tr. 6/11/24 at 131 (Castonguay); see also, VELCO Long Range Transmission Plan (2024) at 69, available at [https://www.velco.com/sites/default/files/2024-06/2024%20VL RTP%20to%20PUC\\_FINAL.pdf](https://www.velco.com/sites/default/files/2024-06/2024%20VL RTP%20to%20PUC_FINAL.pdf); ISO NE 2050 Transmission Study fact sheet available at [https://www.iso-ne.com/static-assets/documents/100008/2024\\_02\\_14\\_pac\\_2050\\_transmission\\_study\\_factsheet.pdf](https://www.iso-ne.com/static-assets/documents/100008/2024_02_14_pac_2050_transmission_study_factsheet.pdf).

<sup>9</sup> See, e.g., Vermont Department of Public Service, Vermont 10-Year Telecommunications Plan, June 7,

no doubt continued cost pressures for customers, including the tens of millions of dollars of yearly storm costs we have experienced and many others drivers also out of GMP's control. Here, through ZOI, there is something proactive GMP and the Commission can do to address it, and for just a fraction of the annual rate impact that customers have and will continue to experience if unaddressed.

Department witnesses acknowledge the increasing severity of storms, particularly over the past two years since GMP's MYRP was approved. Nearly all also acknowledge that climate change is driving these storms and is likely to result in more severe impacts for customers in the future. The Department's witnesses also agree that the types of work GMP proposes are proven techniques which will reduce outages and storm restoration costs. However, GMP and the Department disagree on the urgency with which this work must be completed for customers. GMP feels strongly that even waiting one additional year, let alone two, is simply exposing our customers to unnecessary risks – both through direct impacts to customer that these storms cause for all customers that ultimately pay the tens of millions in storm costs that occur each year. This is especially true when we know the solutions being proposed will produce immediate benefit and as discussed further, GMP is proposing to further confirm that benefit through a set of metrics and a financial penalty mechanism through our Service Quality Plan.

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2024 Draft Plan at 14, 17-18 available at [https://publicservice.vermont.gov/sites/dps/files/documents/FINAL%20Draft\\_VT%2010-Year%20Plan%202024.pdf](https://publicservice.vermont.gov/sites/dps/files/documents/FINAL%20Draft_VT%2010-Year%20Plan%202024.pdf) (finding that telecommunication policy and practice has a “deep impact” on Vermonters and is a work in progress in the state, and recommending continued action to help deploy wireline fiber).

Record evidence shows that full implementation of the first component of ZOI work as planned by GMP can benefit more than 50,000 GMP customers now, across more than 40 circuits, including the 20 least reliable circuits on GMP's system. Crucially, this work covers areas that represent approximately 33% of the total outages experienced by customers<sup>10</sup> over the past three years on just 16% of GMP's system. GMP has scoped the initial projects for these circuits and has worked to ensure it can secure the materials and contractors necessary to rapidly deploy this work over the next two years. Once completed, customers at the tail end of the reliability curve will experience extremely reliable service, an equitable outcome after taking the brunt of damage these last few years.

By contrast, the Department's alternative recommendations call for a primary approach that would significantly delay the initiation of this proven work by more than two years to accommodate further planning, and secondary approaches that lack both the scale and urgency needed for customers. GMP agrees that further ZOI planning can and should be incorporated into future Integrated Resource Plans ("IRP") and future regulation plans, but this can proceed in tandem with – and be further informed by – appropriately scaled work to improve customers' lives and reduce future storm costs now. While GMP appreciates the Department's qualified support for ZOI work on two specific circuits, that work would directly benefit just 5,000 customers and would not have the scope needed to bend the curve on the level of extreme storm costs and safety risks all customers in these areas are experiencing now.

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<sup>10</sup> Tr. 6/11/24 at 51 (Burke).



As discussed in more detail below, customers need action now to address these significant impacts. GMP's proposed approach, including a protective regulatory accounting mechanism, required project documentation, extensive data reporting, and a new SQRP addition to share risks based upon DPS recommendations, will ensure that customers benefit from this work. GMP therefore respectfully requests that the Commission approve this petition, with proposed conditions described further below.

## **II. Legal Standard**

The ZOI is proposed under the Strategic Opportunities provision in Section IV(A)(6) of GMP's MYRP, which provides that GMP may petition for PUC approval of increased investments for customers when "either unexpected circumstances or new strategic opportunities arise that provide material benefit to customers." MYRP at Section IV(A)(6). This provision specifically identifies new opportunities to increase resiliency of the distribution system and measures to better integrate distributed energy systems in the grid as qualifying potential strategic opportunities:

Strategic opportunities here may include, but are not limited to, categories of investments that provide new opportunities to increase the resiliency of the distribution system or help to better monitor, manage, and operate the distribution system for more effective integration of distributed energy systems and loads that were not reasonably anticipated at the onset of the Plan. These opportunities help to advance GMP's objectives of lower-cost service to customers and increased integration of distributed energy resources.

*Id.* A petition for approval under this section requires "demonstrating that the proposed investments, expenses, and revenue for unexpected circumstances or new strategic opportunities are in customers' best interests and will result in just and reasonable rates in the long run." *Id.*

As described further below, GMP's proposed ZOI work meets these standards. The extent of climate-driven storm impacts has increased dramatically since the MYRP was approved in 2022 – imposing impacts on customers through multi-day outage events at a scale not anticipated at the time the plan was approved, as well as costs well beyond the \$6M annual storm restoration fund established in the Plan at the time. In the face of these increasing impacts, GMP has designed ZOI to increase the resiliency of the distribution system for customers, particularly prioritizing those areas of the system hardest hit by climate change driven storms.

It is uncontested that the type of T&D work GMP is proposing will increase the reliability and resiliency of the system, and therefore will reduce storm restoration costs for all customers when future storms hit these storm hardened areas. This is in addition to the operating cost savings that customers will see due to reductions in expenses such as tree trimming and other overhead system-related expenses once sections of the distribution system are undergrounded. The residential storage measures proposed to be implemented in Zone 4 through ZOI also have a well-established track record of helping customers safely ride through outages when they occur while generating benefits for all GMP customers by giving GMP flexible resources to better manage power supply costs and incorporate distributed resources into the grid to help support electrification.

GMP has proposed a regulatory accounting approach, previously used in both the Climate Plan and the Broadband Deployment Rider, which ensures that costs will not be included in rates until projects are completed and delivering benefits to customers and are reviewed and approved by the Commission. If fully implemented, the cost of this initial set of ZOI work will be less than 2% annually through the years it is completed, well below the scale

of recent major storm restoration work. In FY23 alone those costs would have resulted in a more than 7% rate impact if collected over one year;<sup>11</sup> costs already incurred in FY24 have driven this even higher.<sup>12</sup>

The Department acknowledges that the types of investments GMP proposes will improve reliability and resiliency for customers and are targeted in areas that are experiencing the worst impacts from extreme weather.<sup>13</sup> The Department also acknowledges that additional resiliency work for customers is needed, that some further spending would qualify under the Strategic Opportunity exception in the MYRP, and that there is no specific “magic number” for establishing the scope of this exception.<sup>14</sup> Nevertheless, the Department makes a procedural argument that essentially suggests not using the established mechanisms of the MYRP to continue to adapt and provide what is clearly needed for customers in the face of these storms, while putting forward as alternative potentially terminating the MYRP early<sup>15</sup> – causing greater disruption and uncertainty and asking customers to pay for ZOI investments up front rather than once they are completed and producing benefits. That path is contrary to the purpose of the MYRP and the Strategic Opportunity exception, which contemplates cost-effective resiliency investments such as the ZOI.

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<sup>11</sup> Burke pf. at 21.

<sup>12</sup> As described by Mr. Burke, all of these costs would equate to about 12% increase in rates if collected over one year, though the storms have spanned two fiscal years and GMP took steps to mitigate the impact for customers by seeking to delay collection by spreading it over multiple years. Tr. 6/11/24 at 27 (Burke).

<sup>13</sup> Bill Jordan, DPS (“Jordan”) pf. at 11; Kevin Mara, DPS (“Mara”) pf. at 14, 17.

<sup>14</sup> Tr. 6/11/24 at 181-182 (Poor).

<sup>15</sup> Anne Margolis, DPS (“Margolis”) pf. surreb. at 11; Tr. 6/11/24 at 189 (Margolis).

Given the extreme impacts customers are experiencing, GMP's proactive approach to applying the Strategic Opportunity exception is in customers' best interest and will result in just and reasonable rates. This exception was specifically incorporated into the existing MYRP, which the Commission found to meet the standard of 30 V.S.A § 218d and is intended to address exactly the types of challenges customers face now.

**III. GMP'S ZOI Proposal Confronts the Rapidly Intensifying Climate Crisis and Will Result in Just and Reasonable Rates for Customers.**

As outlined in testimony, GMP's ZOI approach represents a new way of evaluating and implementing measures on a comprehensive circuit-by-circuit basis to improve reliability and resiliency for customers, using proven techniques. The scale of climate crisis compels this comprehensive approach, and the need is clear. The uncontested evidence in this proceeding demonstrates the extreme restoration costs customers have incurred in the past several years, as well as the significant quality of life impacts climate change driven storms are imposing on customers.

Department witnesses recognize that more work is needed to address these increasing storms. Ms. Margolis acknowledges the impact of the six major storms that hit GMP customers from December 2022 to September 2023, since the time GMP's current MYRP was approved.<sup>16</sup> Mr. Poor similarly recognized these significant storms, agreed that these storms are driven by climate change, and acknowledged that an increase in storms will increase impacts on

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<sup>16</sup> Margolis pf. at 9.

customers.<sup>17</sup> Mr. Mara notes specifically that “the recent high-frequency of storms highlights the need to start a program of improving reliability and resiliency.”<sup>18</sup> Finally, Mr. Jordan expresses these concerns most succinctly in his testimony, which mirrored his comments in the Commission’s 2023 Storm Workshop, in which he explained:

I just wanted to mention .... three obvious trends that everybody is seeing but I just wanted .... to put it all together.

The first one is that trees are getting taller. Vermont is 70 to 80 percent forested. Every year the trees are growing 6 inches or two or three feet. As time goes on there are more and more trees that are tall enough outside the right of way to fall on to the lines within the right of way.

The second trend is that storms -- severe storms seem to be getting more frequent. And so putting those two together, the likelihood of outages, especially for overhead construction seems to be increasing. And then the other trend is that we seem to be becoming more and more dependent upon electricity especially now with phones that are over fiberoptic instead of the old copper lines and people working from home. And so the consequence of outages is also increasing in my mind.

And so it seems like we are in challenging times, and as Commissioner Allen said, we are all in this together. And we all have to be thinking outside the box. Business as usual isn’t necessarily going to work. And so we just need to be continually innovative to solve these issues and keep the power on for customers who depend upon it.<sup>19</sup>

Mr. Jordan’s summary hits with clarity the challenge customers are facing and is borne out in what GMP’s customers are now regularly experiencing. Throughout days-long storm events, GMP’s customer care team reaches out to, monitors, and with the help of town emergency personnel supports critical care customers who rely on electricity to power oxygen

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<sup>17</sup> Tr. 6/11/24 at 172-173 (Poor).

<sup>18</sup> Mara pf. at 16.

<sup>19</sup> See Tr. 9/22/23 at 115-117 (Jordan) (Case No. 23-0834-INV (Storm Workshop)); Tr. 6/11/24 at 107-109 (Jordan) (discussing Storm Workshop); see also Jordan pf. at 8-9.

devices or other critical medical equipment. GMP regularly hears from customers in these events who are vulnerable – recently home from the hospital, caring for a newborn or their elderly parents, or battling cancer – and unable to relocate during extreme weather.<sup>20</sup> In over 30 community meetings regarding the work proposed here, GMP heard from hundreds of customers reacting to the ferocity of recent storms and wanting to know how quickly more resiliency work can be implemented.<sup>21</sup> GMP's field crews see and bear these impacts with every storm, facing hurricane force winds, deep snow, falling trees, and blocked roads, sometimes pausing work due to unsafe conditions, in order to restore power to their communities.<sup>22</sup>

GMP agrees continued innovation is needed to meet these challenges for customers. The way the grid operated in the past simply is not adequate in this new climate change driven paradigm. GMP proposed ZOI to confront this climate crisis directly, charting a path for better and safer outcomes for customers in the face of ever-increasing risks. ZOI provides critical resiliency work, at the right scale, focused in the right places, in order to provide the greatest benefit for customers, with appropriate measures to protect customers and ensure these benefits are delivered. It should be implemented as soon as possible to deliver these needed improvements for customers now.

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<sup>20</sup> Tiana Smith, GMP (“Smith”) pf. reb. at 9-11; Exh. GMP-TS-1.

<sup>21</sup> Smith pf. reb. at 11-13.

<sup>22</sup> Donald Mills & Kyle Buxton, GMP (“Mills & Buxton”) pf. reb. at 3-5; Burke pf. at 14-16.

a. *GMP's ZOI proposal is a comprehensive approach that delivers the right set of resiliency measures for customers.*

To implement this critical work for customers, GMP evaluates each circuit on its system as it implements a comprehensive set of resiliency measures by zone. This starts by dividing each circuit into appropriate zones, including main line distribution feeders that tie substations together and travel out to the first protective devices on an electrical circuit (Zone 1); three phase radial tap lines (Zone 2); long single-phase distribution lines that serve dozens of customers or more (Zone 3); and single phase lines that serve smaller groups of customers, typically 1 to 10 customers (Zone 4).<sup>23</sup>

In each of these zones the most cost-effective measures will then be applied to deliver zero outages for customers. In Zone 1, which is typically three-phase distribution service and represents the backbone of the T&D system closer to population centers, GMP expects to primarily utilize storm hardening techniques, including spacer cable and tree-wire, reclosers, and other automated technology.<sup>24</sup> In Zones 2 and 3, which represent sections of distribution lines between protective devices, undergrounding is expected to be the preferred solution, using new more efficient and less costly installation methods, with storm hardening where undergrounding is not feasible or cost-effective.<sup>25</sup> In Zone 4, which typically include single phase lines feeding

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<sup>23</sup> Burke pf. at 28.

<sup>24</sup> Burke pf. at 29.

<sup>25</sup> Burke pf. at 30. Mr. Burke's rebuttal testimony incorporated information also conveyed in the PUC's workshop regarding the trenching, laying, and backfilling machine GMP has secured to perform this work. It can lay multiple lines of cable-in-conduit at once and is an enormous improvement over prior cable-in-conduit methods for this undergrounding work. Burke pf. reb. at 32-33; Exh. GMP-MB-16.

the fewest number of customers per mile, GMP will implement the ZOI through customer storage solutions where more cost effective than T&D solutions.<sup>26</sup>

Although this comprehensive by zone approach is new, the measures implemented are not – they are proven solutions that have worked well over many years to reduce outages across GMP's system. As described in Mr. Burke's testimony, GMP has deployed these types of projects across portions of its system with significant improvements in reliability and resilience for customers.<sup>27</sup>

During the unprecedented storms over the last several years, some Vermonters have already experienced the benefits this work provides and did not experience an outage as a result of the work in GMP's Climate Plan and GMP's other innovative programs.<sup>28</sup> Since 2020, GMP has installed over 330 miles of spacer cable, tree wire, and other storm-hardening work on distribution lines, which has dramatically reduced outages in these portions of lines.<sup>29</sup> An additional 50 miles of underground lines have been installed since 2020, and these areas of the system experienced no damage during the most recent severe storms.<sup>30</sup> Further proof of the benefit of this type of T&D work include significant improvements already seen around the Sharon, Strafford and Lincoln, Vermont areas.<sup>31</sup> Even though GMP has not yet completed full

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<sup>26</sup> Burke pf. at 30.

<sup>27</sup> Burke pf. at 10-11, 22; Burke pf. reb. at 11, 15-16; Tr. 6/11/24 at 109 (Jordan).

<sup>28</sup> Burke pf. at 10; Tr. 6/11/24 at 86 (Burke); Exh DPS-BJ-10 (Attachment GMP.DPS3.Q5c.1 - noting 89,981 customers experienced zero outages in 2023).

<sup>29</sup> Burke pf. at 10.

<sup>30</sup> Burke pf. at 11.

<sup>31</sup> Burke pf. at 10; Burke pf. reb. at 11; Exh. GMP-MB-5 (Lincoln Area Before & After Storm hardening); Exhs. GMP-MB-6 & MB-11 (Outage heat maps).



ZOI build out on these circuits, the individual projects implemented have reduced damage and outages in these areas substantially.<sup>32</sup>

This work has continued under GMP's MYRP. In the area in and just south of Townshend, Vermont, GMP's storm heat map previously showed oranges and reds due to the many outages in winter 2022/2023; since completing a significant section of the Route 30 corridor upgrade, outages in that immediate area have already decreased, with more improvements on the horizon as the corridor is completed.<sup>33</sup> The proposed work under the first component of ZOI will allow GMP to accelerate this work significantly in those areas hardest hit by storms across more than 40 circuits.

In addition to T&D work, storage for customers in Zone 4 is a critical component of this comprehensive initiative. As with GMP's proposed T&D work, customer storage solutions have been proven to deliver improved reliability for participating customers, while generating benefits for all customers. Approximately 3,000 customers have GMP-managed storage systems leased or owned through GMP's ESS tariff, the BYOD tariff, or a pilot program. Many storage customers who live in areas hit hard by recent storms stayed powered up while GMP repaired damage to infrastructure that caused outages for their neighbors.<sup>34</sup> As we have shown, these storage systems can cover the majority of their own costs by reducing power supply expenses paid for by all customers. And this is based just on what we measure today – when we include the future benefits enabled by new market uses not yet quantified the benefit only grows.<sup>35</sup> Safety too is

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<sup>32</sup> Exh. GMP-MB-5; Tr. 6/11/24 at 85-86 (Burke).

<sup>33</sup> Burke pf. reb. at 11.

<sup>34</sup> Burke pf. at 11.

<sup>35</sup> Josh Castonguay, GMP ("Castonguay") pf. at 26, 29; Tr. 6/11/24 at 130-131(Castonguay).

enabled by these storage systems. In extreme weather events, many customers find themselves dealing with emergencies in addition to whether they have power or not; if they are able to stay warm and safe in their homes during these events, that is one less emergency for customers to manage.

The Zero Outages Initiative will ramp up delivery of customer storage systems directly to those who live in areas of rural Vermont hardest hit by the damages these storms so that they too stay on. These types of customer systems, plus microgrids and community-level storage, are critical tools to not only help customers avoid the impacts more frequent, damaging storms cause but also stay connected when the regional grid is threatened by other events, all while helping manage the grid even more effectively for all customers, and with equity.<sup>36</sup> The ZOI approach also maintains flexibility going forward to incorporate changes in storage technology, including, for example, vehicle-to-grid systems as that technology becomes widely available, and as may be provided by GMP or others to keep customers powered up and connected to the grid.<sup>37</sup>

The Department's technical experts agree that the types of T&D investments proposed here will improve reliability and resilience for GMP customers. Mr. Mara testified that the type of storm hardening GMP proposes will improve reliability and resiliency of the system for customers, and similarly that targeted undergrounding is a valuable tool that can be used effectively to improve system reliability.<sup>38</sup> Mr. Jordan also testified that the type of work included in ZOI is the appropriate type of work to bring greater reliability to GMP customers.<sup>39</sup>

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<sup>36</sup> Burke pf. at 11.

<sup>37</sup> Castonguay pf. at 26; Tr. 6/11/24 at 134-137, 142 (Castonguay).

<sup>38</sup> Mara pf. at 14, 17.

<sup>39</sup> Jordan pf. at 11.

Although Mr. Mara and Mr. Jordan question how storage should be accounted for under the Commission's current definition of an "outage" in Rule 4.900, and have requested certain data reporting on battery performance, they do not dispute that storage can help customers stay powered up when grid outages occur, nor do they dispute that focusing this storage work in Zone 4 is the appropriate approach now. Mr. Jordan, in particular, acknowledged the overall benefits of the comprehensive approach GMP proposes, noting that "[t]he ZOI, with its three-pronged approach of storm-hardening overhead lines, placing more lines underground, and energy storage will certainly help to reduce the frequency and duration of outages, especially for those customers 'on the tail end of the curve.'"<sup>40</sup>

To ensure ZOI work is delivering benefits in those areas it is needed most, GMP will continue to apply established project selection and prioritization criteria approved in Climate Plan and incorporated into GMP's IRP. These criteria include:

- Type, age, condition, and location of asset;
- The number of customers served by each circuit;
- Outage hours and overall reliability of the existing line and infrastructure;
- Review of where the project falls within the 20 least reliable circuits; and
- The critical facilities and community resources served by the circuit.

GMP's project selection will balance these criteria along with information directly from field workers and continued assessment of outage improvements based upon factors such as permitting, construction timing, and prioritizing multiple project benefits where possible.<sup>41</sup> In

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<sup>40</sup> Jordan pf. at 11.

<sup>41</sup> Burke pf. at 25-26.

addition, GMP has committed to review indicators of community vulnerability, such as the CDC's Social Vulnerability Index ("SVI") and the Vermont Climate Council's newly released Municipal Vulnerability Index ("MVI"). As discussed further below, the comprehensive documentation required for each individual ZOI capital project, along with the proposed regulatory accounting approach, provides for thorough review of ZOI work before it is approved to be included in rates, ensuring that the projects selected are appropriate and meet these identified criteria to best serve customers.

*b. GMP's proposed ZOI work is the right scale for customers and is focused on customers and areas that need to be addressed first.*

In this first component of ZOI work GMP proposes up to \$250M in T&D projects, together with up to \$30M in customer storage solutions, in order to deliver improved reliability, resiliency and related storm cost savings to all customers. To implement this work quickly for customers in the most critical and impacted areas, GMP has already completed high-level project planning on 41 circuits identified using the above selection criteria. This includes the two circuits on which GMP plans (and the Department agrees) to complete all zones within the circuit to demonstrate ZOI effectiveness (EJ-G7 and 56G1), but goes well beyond those circuits to ensure that customers in all of GMP's hardest hit areas start to see improvements soon, leading to associated reductions for all customers in storm restoration costs.<sup>42</sup>

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<sup>42</sup> Tr. 6/11/24 at 87 (Burke); Exhs. GMP-Cross-1 and GMP-Cross-2.

The 41 circuits prioritized in this first set of GMP's ZOI include most of GMP's "20 least reliable circuits," as identified in GMP's recent Commission Rule 4.900 report. GMP proposes approximately \$125M of T&D investments on vulnerable lines on these worst-performing circuits, including completing a full ZOI build out on the EJ-G7 circuit.<sup>43</sup> Figure 1 below depicts that work, and is excerpted from Exh. GMP-Cross-1.

Circuit	District	UG Project Miles	OH Projects Miles	20 Worst Rank (per 4.900 Report)	Feeder L/O's 5 yrs	Currently Scoped Projects Per Circuit	Current Est Cost	Circuit	Customer Count
EJ-G7	Brattleboro	56.7	24.1	1	4	36	\$ 35,720,000.00		2648
CH-G11	Springfield	4.6	3.75	2	4	3	\$ 5,845,000.00		1635
SH-G35	Royalton	5.75	6	3	18	3	\$ 5,925,000.00		1269
DM-G6	Brattleboro	16	46.7	4	7	10	\$ 22,660,000.00		1919
CV-G65	Springfield	2.5	5.5	5	2	2	\$ 4,600,000.00		333
BV-G44	Springfield	1.75	5.25	6	11	4	\$ 4,200,000.00		788
LO-G26	Springfield	0	1.25	7	8	1	\$ 875,000.00		999
EL-G40	White River	5.8	7.45	9	12	6	\$ 6,955,000.00		1017
WK-G81	Royalton	0	5	10	4	1	\$ 3,500,000.00		1319
BV-G43	Springfield	0	3	11	12	1	\$ 2,100,000.00		711
LO-G27	Springfield	0	5.7	13	6	1	\$ 3,990,000.00		1878
CH-G10	Springfield	3	1.2	14	7	2	\$ 1,740,000.00		1249
EB-Y38	Royalton	1.4	4.75	15	12	2	\$ 3,745,000.00		251
69G1	Westminster	5.75	9	16	4	6	\$ 8,025,000.00		1685
WK-G82	Royalton	0	6	17	12	1	\$ 4,200,000.00		1039
TH-G16	White River	2.25	5.25	18	7	3	\$ 4,350,000.00		1121
BS-G32	Brattleboro	0	5.25	19	4	2	\$ 3,675,000.00		3276
ST-G45	Royalton	3.05	3.15	20	1	4	\$ 3,120,000.00		1062
<b>Total</b>		<b>108.55</b>	<b>148.3</b>		<b>135</b>	<b>160</b>	<b>\$ 125,225,000.00</b>		

Fig. 1: ZOI work planned on "20-least reliable" circuits

<sup>43</sup> As noted in discovery sent to the Department, one circuit on the Rule 4.900 list is not on this chart because it qualified for application to a U.S. DOE grant funding opportunity under Justice 40 criteria; in the event no funding is available, GMP would work it into the initial ZOI planning.

The remaining 20+ circuits proposed for ZOI investments in this first component are experiencing reliability outcomes just outside of the 20-least reliable list. This group of circuits includes the 56G1, which contains segments that would be ranked among the most reliability-challenged circuits but falls just outside of the 20-least reliable list because of the more urban nature of the circuit in Zone 1.<sup>44</sup> The distribution line work that GMP has scoped on these circuits is depicted in Figure 2 and is estimated at approximately \$106M of work on Zones 1-3.<sup>45</sup>

Circuit	District	OH Projects Miles	UG Project Miles	Feeder L/O's 5 yrs	Currently Scoped Projects Per Circuit	Current Est Cost Circuit
<b>56G1*</b>	Wilmington	4	50.35	6	20	\$ 23,795,000.00
<b>69G2</b>	Westminster	4.5	3.15	5	5	\$ 4,095,000.00
<b>SB-G91</b>	Rutland	6.3	0	8	2	\$ 4,410,000.00
<b>74G1</b>	Westminster	8	6	21	5	\$ 7,400,000.00
<b>CS-G34</b>	Royalton	10.5	3.1	1	2	\$ 9,520,000.00
<b>BE-G29</b>	Royalton	1.7	6.65	1	6	\$ 3,185,000.00
<b>72G1</b>	Wilmington	7	5.5	13	6	\$ 6,740,000.00
<b>WK-G83</b>	Royalton	8.5	0	5	1	\$ 5,950,000.00
<b>EN-G26</b>	Sunderland	10.4	9.1	5	5	\$ 10,010,000.00
<b>WI-G31</b>	Springfield	2.6	7.9	3	4	\$ 4,190,000.00
<b>GM-G62</b>	St. Johnsbury	2.25	0	3	1	\$ 1,575,000.00
<b>VR-G58</b>	Brattleboro	6	0	1	1	\$ 4,200,000.00
<b>EL-G41</b>	White River	2.5	0	7	1	\$ 1,750,000.00
<b>27G6</b>	Montpelier	2.15	0	8	2	\$ 1,505,000.00
<b>NT-G52</b>	Brattleboro	1.5	0	7	1	\$ 1,050,000.00
<b>3G2</b>	Montpelier	1.75	0	7	1	\$ 1,225,000.00
<b>NT-G53</b>	Brattleboro	3.6	0	9	2	\$ 2,520,000.00
<b>27G5</b>	Montpelier	6.5	0	10	2	\$ 4,550,000.00
<b>3G1</b>	Montpelier	1.9	0	6	1	\$ 1,330,000.00
<b>27G7</b>	Montpelier	2.1	0	6	1	\$ 1,470,000.00
<b>3G3</b>	Montpelier	1.9	0	7	1	\$ 1,330,000.00
<b>BS-G33</b>	Brattleboro	3	0	1	1	\$ 2,100,000.00
<b>BS-G31</b>	Brattleboro	3.5	0	7	1	\$ 2,450,000.00
<b>Total</b>		<b>98.15</b>	<b>41.4</b>	<b>141</b>	<b>52</b>	<b>\$ 106,350,000.00</b>

Figure 2: Planned work outside of the 20-least-reliable circuits, Exh. GMP-Cross-2

<sup>44</sup> Burke pf. reb. at 16; Tr. 6/11/24 at 89-91 (Burke)

<sup>45</sup> Tr. 6/11/24 at 89-91 (Burke); Exh. GMP-Cross-2.

Together, through this high-level project planning, GMP has already identified approximately \$230M in T&D investments that could be implemented for customers during the current MYRP period, through FY26.<sup>46</sup> With the proposed \$30M in customer storage investments, this planned work would significantly reduce or eliminate outages for over 50,000 customers, all who are in the most impacted circuits in the state based on the criteria set forth in GMP's ZOI proposal.<sup>47</sup> These circuits also align with communities that the CDC Social Vulnerability Index, used earlier as part of GMP's Climate Plan selection criteria for community-wide resiliency solutions, indicating that these areas have higher vulnerability and would benefit more from resiliency work.<sup>48</sup> And importantly this work also covers areas that represent approximately 33% of the total outages on GMP's system over the past three years.<sup>49</sup>

Both Mr. Jordan and Mr. Mara expressed that GMP's ZOI work is targeting the right areas. Mr. Jordan noted that, while GMP is meeting all its reliability metrics on a system-wide basis, there are still customers experiencing significant outages in many areas of GMP service territory that may not be "adequate service" when viewed on an individual basis.<sup>50</sup> He expressed the opinion that it is specifically for these customers that GMP's ZOI proposal is designed to serve.<sup>51</sup> This point is emphasized by the histograms GMP prepared at Mr. Jordan's request showing by circuit the SAIFI and CAIDI for individual customers, including breaking the data

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<sup>46</sup> Tr. 6/11/24 at 91 (Burke). As the charts show, accomplishing just the work on the first list of Rule 4.900 circuits (\$125.2M) plus the 56G1 circuit (\$23.8M) would mean an investment of approximately \$150M.

<sup>47</sup> Tr. 6/11/24 at 55 (Burke).

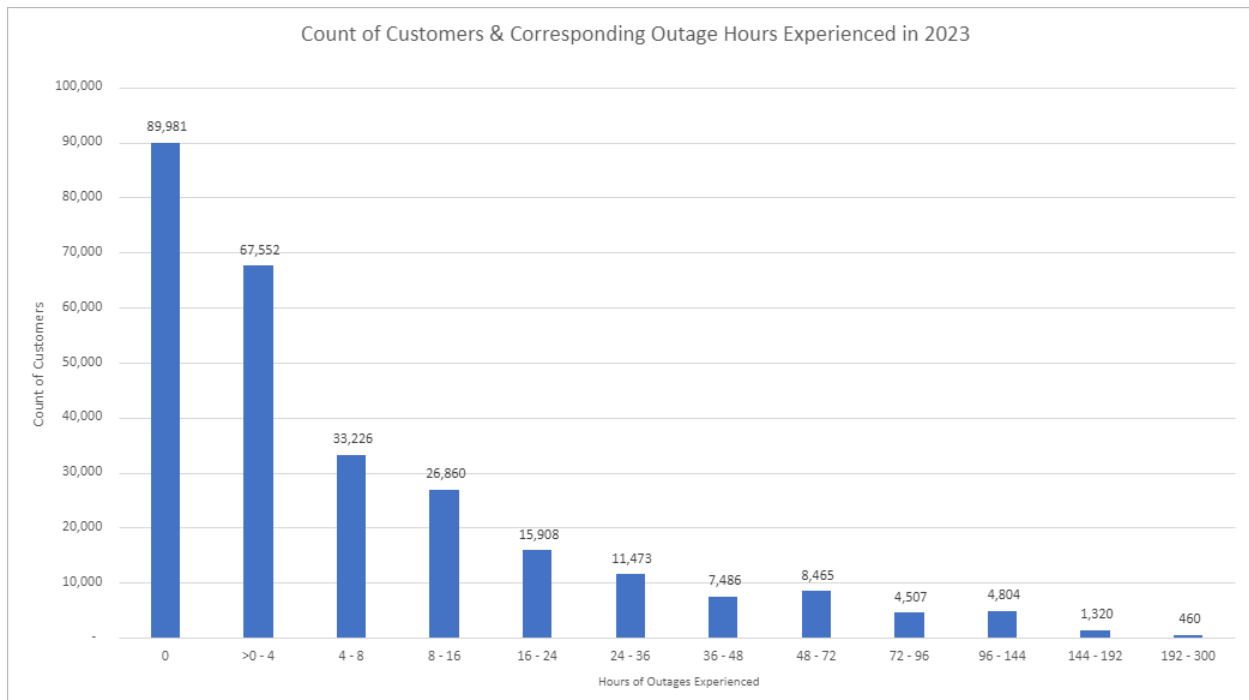
<sup>48</sup> Tr. 6/11/24 at 28-29 (Burke).

<sup>49</sup> Tr. 6/11/24 at 51 (Burke).

<sup>50</sup> Jordan pf. at 11.

<sup>51</sup> Jordan pf. at 11.

down by district. Mr. Jordan included GMP's histograms as an exhibit to his surrebuttal testimony; they provide a clear picture of the outcomes GMP customers are experiencing, including the contrast between a built-up urban district and a rural district weathering the most damaging storms:



*Figure 3: Systemwide histogram from Exh. DPS-BJ-10*

As Mr. Jordan noted in surrebuttal, this data demonstrates that some customers in the areas GMP is targeting ZOI work experienced between 192 and 300 hours of outages in 2023, equal to more than 12 full days without service, which is extremely disruptive in Mr. Jordan's view.<sup>52</sup>GMP has explained how it is using this data to prioritize areas for ZOI, and Mr. Jordan expressed his support for that approach. He urged GMP to prioritize bringing those customers on

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<sup>52</sup> Jordan pf. surreb. at 4-5; Exhs. DPS-BJ-10 & 11.



the tail end of the curve to improved reliability, which is exactly what the initial ZOI projects identified by GMP are designed to do.<sup>53</sup> Mr. Mara generally shares these views, noting that the greatest impacts from storms have focused on areas with poor performance, that GMP is focusing on these rural circuits with poor performance, and that he expects proposed hardening activities to improve reliability and resiliency of the system.<sup>54</sup>

The data introduced on these points illustrates how ZOI will bring greater equity in service for GMP's customers. More than 80,000 GMP customers had a zero-outage experience in 2023, mostly in GMP's more urban circuits, indicating that zero outages is in fact experienced by many GMP customers and an achievable goal. However, that experience is not evenly distributed, with circuits in rural more forested areas experiencing far lower levels of reliability, particularly in southern Vermont, as the data shows.

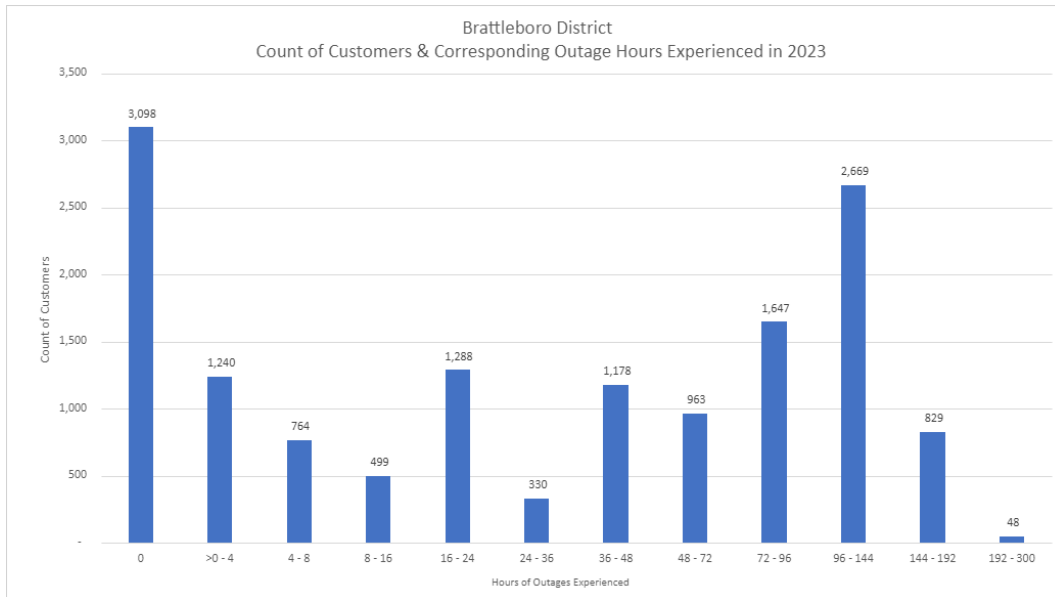
For example, in GMP's Brattleboro District more than 64% of customers experienced four or more outages in 2023, and almost 40% experienced eight or more outages,<sup>55</sup> with more than half the customers in the district experiencing more than 36 outage hours annually as shown in the following histogram:

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<sup>53</sup> Jordan pf. surreb. at 4; Tr. 6/11/24 at 87-91 (Burke).

<sup>54</sup> Mara pf. at 14, 16

<sup>55</sup> Burke pf. reb. at 8.

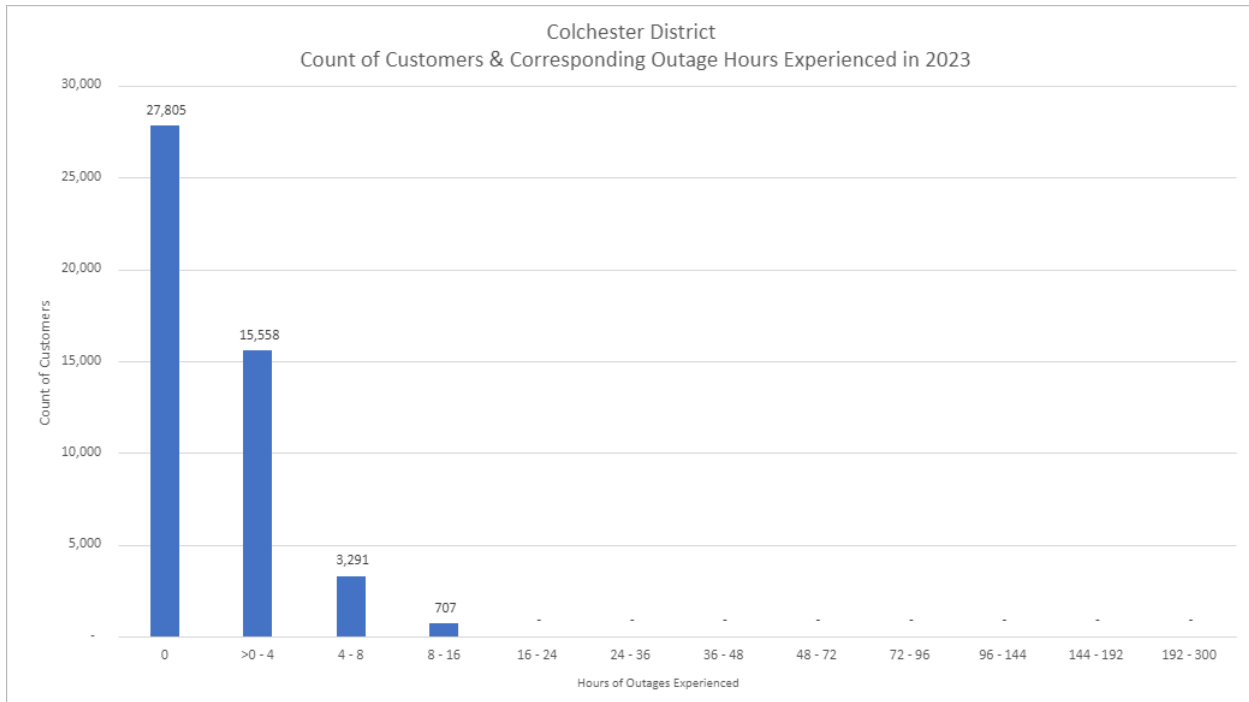


*Figure 4: Brattleboro District histogram from Exh. DPS-BJ-10*

Other rural districts, including Royalton, Springfield, Westminster and Wilmington, also see high outage events per customer, particularly compared to districts like Colchester, where only 2% experience more than 4 outages a year,<sup>56</sup> and only 1.5% experience more than 8 total outage hours annually:

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<sup>56</sup> Burke pf. reb. at 7-8.



*Figure 5: Colchester histogram from Exh. DPS-BJ-10*

Those customers at the “tail end” of this reliability curve, as Mr. Jordan describes them and as shown on Figure 3, deserve a similar level of service regardless of where they live. Unfortunately, as indicated by GMP’s evaluation of MVI and SVI data, customers in these areas with lower reliability also tend to be more vulnerable on income and other metrics, which only further highlights the critical importance of advancing this work as soon as possible to address these inequities and keep people safe. GMP’s ZOI provides a plan to do just that—delivering substantially improved service for 50,000 customers on GMP’s least reliable circuits in the next two years, while also creating system-wide savings in reduced storm restoration costs for all customers. The histograms in Exhibit DPS-BJ-10 reinforce why the targeted approach being proposed in ZOI is an equitable way to assure all customers can experience what a large number

of customers already do, zero outages. In the case of Colchester, those customers have the benefit of a system that has been storm hardened or buried in part as a result of economic development, road projects, and upgrades needed due to population growth and in those cases projects costs are paid for by all GMP customers. ZOI will deliver that same level of reliability to customers that may not be located in areas with such economic development occurring.

Based on the selection and screening criteria used to develop the initial list of ZOI projects, as well as the proven success of these measures, GMP has confidence that as storms hit where the work is performed the benefits of the work will exceed the costs of this initial component of ZOI work.<sup>57</sup> And this work is proposed in exactly those areas of southern and central Vermont that have experienced the worst storm impacts recently, with the 41 initial ZOI circuits in areas that represent over 33% of storm outages experienced in the last three years.<sup>58</sup> GMP's experience demonstrates that undergrounding completely eliminates storm outages and trimming costs and storm hardening measures like spacer cables similarly dramatically reduces, by 90% or more, the level of outages that occur in the areas this infrastructure has been previously installed.<sup>59</sup> The ZOI approach will deliver these same reductions in outages, plus improved reliability and cost savings for customers when storms hit in these areas again.

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<sup>57</sup> Tr. 6/11/24 at 50 (Burke).

<sup>58</sup> Tr. 6/11/24 at 51 (Burke).

<sup>59</sup> Tr. 6/11/24 at 60 (Burke).

c. *The Department's alternatives would significantly delay delivering ZOI benefits to customers at the scale needed now.*

While the Department's witnesses generally agree that the type of work proposed will improve reliability and also agree that this component of ZOI work is targeted in the right areas, the Department nevertheless recommends either significantly delaying commencement of this work or delivering only a fraction of its benefits to customers immediately. Their overall position would put off initiating ZOI work for years, in favor of more study even though GMP has been deploying these types of individual projects already. The Department's preferred position (described as Option I) is that no ZOI work proceed until ZOI planning is incorporated into GMP's IRP *and* specific spending is then approved through a future regulation plan. But DPS's witnesses acknowledge that this would mean no ZOI work could commence until FY27 at the earliest – more than two years from now.<sup>60</sup> Not only would this significantly delay improved reliability for 50,000 customers in the identified project areas, but it would also scuttle GMP's work to secure materials and contractors for Vermont (and the economic activity these projects also bring), and likely increase the costs of doing these projects in the future.<sup>61</sup>

GMP has agreed that further ZOI planning and analysis should be incorporated into its future IRP work, and indeed has already started to engage with the Department on this planning.<sup>62</sup> It similarly supports the Department's request to include consideration of future ZOI work in GMP's next regulation plan proceeding. But GMP does not agree that more study is needed before it scales up these proven improvements for customers. The level of planning

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<sup>60</sup> Tr. 6/11/24 at 188-189 (Margolis).

<sup>61</sup> Tr. 6/11/24 at 96-97 (Burke).

<sup>62</sup> Tr. 6/11/24 at 153 (Smith); Tr. 6/11/24 at 178 (Poor).

already conducted is more than adequate to support the scope of work now proposed, particularly given the continuing agreed-upon project documentation standards and the fact that additional review and approval will have to occur before any specific projects are included in rates. It is not in customers' best interests to wait for further study – the climate crisis is impacting customers now. If anything, the greater risk to customers is inaction in the face of ever-increasing storms that drive up costs and create significant impacts on customers' lives. Given the other protective measures implemented in ZOI, including reporting requirements, proposed risk sharing mechanisms, and the overall regulatory accounting mechanism, ZOI work to benefit customers in the hardest hit areas of GMP's system can and should happen in parallel with agreed-upon further planning in the next IRP and beyond.

The Department's alternatives (Option II, for \$50M of investment, and Option III, for \$80M on two circuits) would at best allow GMP to proceed with limited "interim" ZOI work on just two of the 41 circuits GMP has already analyzed, capped at \$80M (the EJ-G7 and 56G1 circuits), only delivering benefits to a fraction of the customers, approximately 5,000 in total. This would prohibit GMP from proactively addressing the majority of the most reliability challenged portions of GMP's system in the next two years at the scale required, to the detriment of customers in those areas. The Department's recommendation also limits the ability to meaningfully bend the cost of storm restoration for all customers, since it would at best reach only a fraction of those in need in the next few years.

The Department also seeks an overall forward-looking cost-benefit analyses for the entire initiative. This would be rife with assumptions far beyond the type usually considered, such as where storms are going to hit and at what frequency storms will hit in future years; in addition,

there is not any adequate way to place value on how these extremely impactful storms threaten and deeply disrupt customers' lives.<sup>63</sup> Instead, GMP has provided cost-benefit analysis based on the available information—the significant storm costs already incurred and based on known, deployed capital investments—that is appropriate and more than supports this initiative. And, as noted below, individual ZOI projects will be further supported by agreed-upon financial analysis in the required capital documentation before they are reviewed by the Commission to approve whether they should be included in rates.

In short, the scale of climate-change driven damage on the system demands a much more comprehensive approach than DPS proposes. GMP has worked to scope projects and coordinate with suppliers so that it can complete this initial planned ZOI work now, and deliver these needed benefits to customers. As outlined above, it is clear that this work will reduce outages, and therefore storm restoration costs, when storms hit hardened areas. Customers in the worst performing, most vulnerable portions of the system deserve this immediate response and improved service.

*d. Required capital project documentation and GMP's proposed regulatory accounting approach protect customers and ensure ZOI projects will meet established criteria.*

As proposed, the ZOI contains several mechanisms that will ensure ZOI projects are implemented in a manner that benefits customers. First, building on the initial high-level scoping GMP has already performed for ZOI projects, for each individual ZOI project GMP will prepare all required capital documentation consistent with the GMP/DPS Memorandum of

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<sup>63</sup> Burke pf. at 37.

Understanding (MOU) approved by the Commission in Case No. 17-3112-INV (Exhibit #2 to DPS/GMP MOU).<sup>64</sup> DPS has confirmed its expectation that these standards would continue to apply.<sup>65</sup> As required by the MOU, GMP will perform a financial analysis on each ZOI capital project, including an evaluation of the best project for the area in question, and an assessment of alternatives and their costs.<sup>66</sup> Each capital folder will include consideration of the costs, benefits and least-cost alternatives to achieve the purpose of the project, and a formal cost-benefit analyses will be provided on projects above the established dollar threshold, subject to certain limited exceptions.<sup>67</sup> This will allow thorough review of any ZOI project and the basis for its selection.

Second, the Commission's approval of the ZOI Strategic Exception here does not authorize or approve any specific ZOI projects. Rather, under GMP's regulatory accounting proposal, no projects will be included in rate base until they are completed, producing benefits for customers, and have been reviewed and approved by the Commission.<sup>68</sup> This is protective for customers and consistent with the regulatory accounting approach used in both the prior Climate Plan as well as GMP's Broadband Deployment Rider, which was approved as a Strategic Opportunity under GMP's prior regulation plan.<sup>69</sup> GMP does not anticipate any significant incremental ZOI O&M expenses, but to the extent there are any, the same after-the-fact

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<sup>64</sup> Laura Doane, GMP ("Doane") pf. at 5; Tr. 6/11/24 at 34, 51-52 (Burke); Exh. GMP-LD-1.

<sup>65</sup> Tr. 6/11/24 at 174 (Poor).

<sup>66</sup> Tr. 6/11/24 at 34, 51-52, 95-96 (Burke).

<sup>67</sup> Tr. 6/11/24 at 51-52, 95-96 (Burke).

<sup>68</sup> Doane pf. at 5; Exh. GMP-LD-1.

<sup>69</sup> See Case No. 21-0546-PET, March 12, 2021 *Order Authorizing Treatment Under The Strategic Opportunities Exception*.



Commission review and approval process is required prior to placing any O&M costs in rates, with GMP bearing the burden of demonstrating that such expenses are in fact incremental and not otherwise already included in rates under the MYRP.<sup>70</sup>

The types of projects GMP will pursue under ZOI are consistent with the types of projects previously reviewed and approved by the Commission in other settings, and approval of ZOI capital projects is not automatic, as DPS seems to imply. Rather, GMP bears the risk of review at the time, and must provide documentation that gives the Commission the ability to determine whether the requested projects are appropriate under regulatory standards. This approach, coupled with extensive data reporting and proposed future SQRP performance measures on completed ZOI circuits, is protective of customers and ensures that ZOI projects are providing benefits for customers.

- e. ZOI implementation and performance will be closely tracked and measured through data reporting proposed by GMP and the Department.*

GMP and the Department agree that ZOI should include a comprehensive set of data reporting requirements to measure and track the performance of ZOI work, and the two parties largely agree on most of the items to include in this requirement. GMP originally proposed 20 data reporting items in Exhibit GMP-MB-17. The Department, through Ms. Margolis and other witnesses, responded by proposing an additional twelve potential data tracking items, plus the

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<sup>70</sup> Doane pf. at 5; Exh. GMP-LD-1. One DPS witness, Mr. Hunt, recommended a baseline of O&M costs be developed as a part of this proceeding, but did not offer a specific approach for doing so. Steven Hunt, DPS (“Hunt”) pf. surreb. at 2. Given that incremental O&M costs are unlikely, and GMP has confirmed that it bears the burden of making this showing in any rate proceeding should such costs arise, this undefined recommendation is unnecessary under the circumstances. Doane pf. reb. at 2-3.

five “performance mechanisms” Mr. Mara, Mr. Thomas, and Mr. Foley propose as penalty metrics, all of which are summarized by Ms. Margolis in her Exhibit DPS-AM-5.

With respect to the 32 data reporting items (not including DPS’s five penalty metrics) GMP and DPS are in broad agreement on the measures that should be implemented. Most of these can immediately be included in GMP’s annual performance report; only a few are either duplicative or would require further process to determine whether they should be included later. To aid in the Commission’s consideration of these items, GMP has prepared Attachment 1 to this Brief, noting the items on which GMP believes there is agreement, with notes on how GMP proposes to report these items. Attachment 1 is based on Exh. DPS-AM-5 and maintains the same item numbers used in that exhibit for the sake of clarity.

Of the 32 total recommended data reporting items, GMP believes there is agreement on 29, with just three of DPS’s proposed items requiring further process to better define, as acknowledged by Ms. Margolis during the evidentiary hearing. As indicated in Attachment 1, and as confirmed by Ms. Margolis during the hearing, GMP and DPS agreed on GMP’s originally proposed items.<sup>71</sup>

With respect to the Department’s additional twelve data reporting items, GMP agrees that nine of these can be tracked and reported, with some limited clarification on what specifically will be reported, which GMP provides on Attachment 1. Several of the Department’s proposed

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<sup>71</sup> The only difference between what was initially presented by GMP and Attachment 1 here is that GMP withdraws Item 20, which proposed to track “circuit breaker lockouts.” After review of Mr. Mara’s testimony, which expressed concern about application of this item, GMP agrees this item should not be included, and as noted would support incorporating a more refined substitute metric into a future ZOI-specific SQRP update.

items overlap with or duplicate items proposed by GMP (such as reporting SAIFI and CAIDI by circuit, with major storms included). These areas of overlap are noted on Attachment 1. Two of the metrics (Items 33 and 35) related to “critical facilities” are not specifically defined but can be reported based on identification of such facilities in the State’s MVI data, which GMP proposes, and GMP is open to further refining these in the future if needed (as would be true of any of the items).

Three of the items proposed by DPS (Items 24, 25 & 26) were suggested by Ms. McIlvennie and related to “environmental justice populations and municipalities” and “customer experience of outages.” As acknowledged by Ms. McIlvennie in her testimony, these items would, if appropriate to include in an annual performance report, require further process to better define what specifically would be tracked and how. Ms. McIlvennie recommends consideration of these factors in a potential state-wide resiliency docket proposed by Ms. Margolis.<sup>72</sup> These categories require better definition prior to implementing as a data reporting measures and GMP therefore has not proposed including these at this stage, but agrees the topics are important and is open to further engagement on these items in the future as appropriate, as ZOI work proceeds.

GMP does not agree with the five performance metrics and penalties recommended by Mr. Mara, Mr. Foley and Mr. Thomas, and as noted below, instead recommends ZOI performance on completed ZOI circuits should be tracked and measured through GMP’s SQR, consistent with Ms. Flint’s and Mr. Jordan’s recommendations.

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<sup>72</sup> Claire McIlvennie, DPS (“McIlvennie”) pf. surreb. at 26.

*f. ZOI Outcomes Should be Measured under GMP's Service Quality and Reliability Plan to Ensure Benefits for Customers.*

The Department witnesses propose multiple ways to ensure GMP has direct accountability for these proven investments, through five new penalty metrics that they attempt to equate with performance-based regulation, and through an amended SQRP that incorporates major storms in some manner. The penalty metrics proposed by Mr. Mara, Mr. Thomas, and Mr. Foley are not well-matched to the ZOI investments, not similar in type or scale to other approaches approved by the Commission, and are not just and reasonable to impose here.

Instead, GMP agrees with the recommendation of Department witnesses Bill Jordan and Carol Flint to amend GMP's SQRP with set outage targets that include major storms for completed ZOI areas.<sup>73</sup> In the hearing, they confirmed that this recommendation could be ordered by the Commission upon approval of the ZOI as a fast-follow process.<sup>74</sup> While GMP explained in rebuttal testimony why major storm events should continue to be excluded from GMP's system-wide SQRP, after considering Mr. Jordan's and Ms. Flint's further description and feedback in surrebuttal, GMP agrees that an addition to GMP's SQRP to account for ZOI specifically is the appropriate way to track outcomes and hold GMP responsible for results.<sup>75</sup> An addition to GMP's SQRP – that leaves intact baseline, system-wide reporting that is comparable to all other utilities here and elsewhere – is the right mechanism to accomplish this rather than the separate, new, and not well-matched or properly defined penalty metrics proposed by other DPS witnesses.

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<sup>73</sup> Jordan pf. at 16; Jordan pf. surreb. at 5; Carol Flint, DPS ("Flint") pf. at 2, 6-7; Flint pf. surreb. at 2.

<sup>74</sup> Tr. 6/11/24 at 230-31 (Flint).

<sup>75</sup> Mr. Burke testified to this at the hearing. Tr. 6/11/24 at 23 (Burke).

GMP's SQRP is incorporated into its regulation plan but exists independently from it; is continual, not time-limited; has provisions for review, amendment, and improvement; and is a well-understood framework for the calculation of utility reliability and service penalties.

A ZOI-specific set of metrics can be an additional layer to GMP's systemwide SQRP through a filing no later than six months after ZOI approval, consistent with Ms. Flint's recommendation.<sup>76</sup>

GMP would plan to confer with the Department further before filing the proposed ZOI SQRP addition. In broad outline, a ZOI addition to the SQRP could apply to completed ZOI storm hardening and undergrounding work between relevant protective devices in Zones 1-3.<sup>77</sup> As zones are completed, they could then become part of quarterly and annual reporting, subject to the performance points and monetary penalties, on the number of outages originating within each Zone, inclusive of Major Storms. This would be in addition to GMP's systemwide SQRP reporting, which would continue to be used to track overall system performance and comparison to peers.<sup>78</sup>

The record makes clear that a ZOI addition to the SQRP is better than the new penalty mechanisms described by Mr. Mara, Mr. Thomas, and Mr. Foley.<sup>79</sup> As acknowledged during the

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<sup>76</sup> Flint pf. at 6-7; Tr. 6/11/24 at 230-31 (Flint).

<sup>77</sup> For Zone 4, where it is cost-effective to utilize residential storage, GMP agrees with the Department that the effect of storage on the definition of "outage" should be further explored in a likely statewide proceeding prior to any changes in specific SQRP reporting. In the meantime, all of the annual storage-related data reporting noted above will capture the performance of GMP's residential battery deployment in Zone 4.

<sup>78</sup> As both parties noted in testimony and at hearing, an update to GMP's systemwide SQRP will soon be filed to account for other changes needed to modernize the plan, unrelated to ZOI. That systemwide SQRP will continue to use typical definitions that apply uniformly to utilities here and elsewhere, such as exclusion of major events from outage response reporting, in order to allow peer comparisons.

<sup>79</sup> Moreover, as the Department recommended imposing both their new performance metrics now, plus the follow-on SQRP update, their approach risks creating a double penalty or alternatively setting the wrong level in the SQRP to attempt to account for the effect of the performance metrics, which do not

hearing, those five penalty metrics, as well as the specific penalty mechanism itself, are entirely new to Vermont and are not based on any established standards or methodology. All three witnesses acknowledge the potential risks inherent with establishing new penalty mechanisms, including that the measures, if not set properly, could end up discouraging the exact type of work desired.

Mr. Mara also acknowledged in his testimony that state-wide measures should not be used because GMP, at this stage, is proposing targeted ZOI work in specific areas of its least reliable circuits.<sup>80</sup> Nevertheless, most of his metrics *are* state-wide, or at least apply broadly to more than half of GMP's territory he defines as "rural," including many areas that will not be addressed through this initial ZOI work, particularly if limited as the Department proposes. This includes requiring a 33% improvement on overall SAIFI/CAIDI for all 154 "rural circuits" defined by Mr. Mara, despite the fact that the Department's approach would only allow work on two of these circuits, and GMP's broader work would only address 41 circuits.<sup>81</sup> Similarly, Mr. Mara's storm cost metric is proposed to be statewide and would require overall major storm costs to be below \$13M, even though Mr. Mara acknowledged on the stand that would be virtually impossible for GMP to meet if applied now, given that storms in just the past 18 months already meet or exceed this average.<sup>82</sup> Mr. Mara's Forced Outages Per Hundred Miles of Transmission per Year (FOHMY) has similar flaws – it is based on a transmission standard but applied by him to distribution circuits. Mr. Mara acknowledged that vegetation clearing distances

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have a defined period over which they would apply.

<sup>80</sup> Mara pf. at 14; Tr. 6/11/24 at 202 (Mara).

<sup>81</sup> Tr. 6/11/24 at 201 (Mara).

<sup>82</sup> Tr. 6/11/24 at 207 (Mara).

are substantially different between transmission and distribution lines and acknowledged he did not take this factor into account,<sup>83</sup> making it quite likely that this standard could not be met in the near term. Mr. Mara also did not propose exactly how this should be tracked – by all Zone 1 circuits on GMP's system, or just those on which storm hardening has been conducted.<sup>84</sup>

With respect to battery reporting, GMP has explained why Mr. Mara is misinterpreting the data it provided.<sup>85</sup> GMP has proposed separate battery data reporting, as well as tracking overall SAIFI/CAIDI for storage customers which provide information on the points raised related to battery performance. GMP is open to further discussion on how outages should be defined when customers remain powered up because of battery storage, which both Mr. Mara and Mr. Jordan suggest should be addressed through an update to Rule 4.900. Adding a penalty metric for battery “failure to start” is unnecessary – GMP has not identified any occasion in the historical data where a battery did not respond at all during an outage<sup>86</sup> – and that penalty metric would not provide any insight into how batteries are actually performing for customers. Reporting on actual storage customer outcomes as well as other established storage reporting metrics as GMP has proposed provides measurable and appropriate metrics of success.

Mr. Mara's final penalty metric really is not tied to any substantive outcomes at all, but would impose a \$331,000 penalty simply if GMP does not file an annual report on CEMI statistics (Customers Experiencing Multiple Interruptions).<sup>87</sup> GMP has proposed filing a broader

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<sup>83</sup> Tr. 6/11/24 at 203-04 (Mara).

<sup>84</sup> Tr. 6/11/24 at 205 (Mara).

<sup>85</sup> Castonguay pf. reb. at 17.

<sup>86</sup> Castonguay pf. reb. at 17.

<sup>87</sup> Tr. 6/11/24 at 220-21(Thomas & Foley).

set of CEMI data than Mr. Mara requested (see Item #1 on Attachment 1), and has a long and consistent record of filing required reports on time, including the annual metrics reports required under the MYRP; there is no basis for requiring a separate penalty related to report filing.<sup>88</sup>

GMP would be concerned for similar reasons if the Department's SQRP proposal remained—as initially proposed—as a broad change to statewide reliability reporting, which would have the same critical shortfall of measuring performance largely on non-ZOI circuits. A more limited approach to the SQRP, as recommended by Ms. Flint and Mr. Jordan in the Department's surrebuttal and reacted to by GMP witnesses at the hearing, avoids these significant problems. As proposed, it would apply to zones where ZOI work has been completed (consistent with Mr. Mara's general recommendation that measures be targeted where the work is performed); would be based on established performance mechanisms and penalties which have been long applied and are well understood; and would be able to set data-informed performance targets. For those reasons GMP respectfully requests that the Commission reject the penalty metrics proposed by the Department. GMP instead supports adopting a ZOI-specific addition to the SQRP as an appropriate way to measure and hold GMP accountable for its performance in delivering ZOI to customers.

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<sup>88</sup> The PUC of course already has authority to impose penalties for failing to comply with regulatory requirements, such as reporting obligations, if ever needed. 30 V.S.A. § 30.



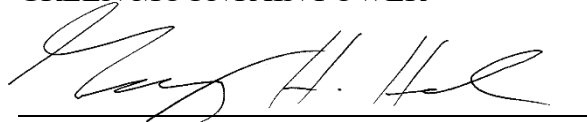
**IV. Conclusion**

For the reasons set forth above and in the attached proposed findings of fact, GMP respectfully requests that the Vermont Public Utility Commission approve the Zero Outages Initiative as proposed by GMP under the Strategic Opportunity Exception provision of GMP's MYRP.

Dated at Burlington, Vermont this 1<sup>st</sup> day of July, 2024.

GREEN MOUNTAIN POWER

By:



Geoffrey H. Hand, Esq.  
Malachi T. Brennan, Esq.  
SRH Law PLLC  
91 College Street, P.O. Box 545  
Burlington, Vermont 05402  
ghand@srhlaw.com  
mbrennan@srhlaw.com

**Attachment 1 - GMP Proposed Data Reporting**

#	Metric	Granularity	Type	Source	Agreed?/Notes on Reporting
<i>GMP-proposed ZOI metrics to report in MYRP annual reporting</i>					
1	Total Customer CEMI (Customers Experiencing Multiple Interruptions) numbers by district (0 to max)	Systemwide	Performance	GMP, Exh. GMP-MB-17	Agreed
2	GMP System Miles Undergrounded in FY	Systemwide	Attribute	GMP, Exh. GMP-MB-17	Agreed
3	GMP System Miles Storm hardened in FY	Systemwide	Attribute	GMP, Exh. GMP-MB-17	Agreed
4	Number of storage systems and total kW installed under ZOI	Systemwide	Attribute	GMP, Exh. GMP-MB-17	Agreed. Will be reported by total number of systems and kW's for Zone 4 ZOI customers.
5	Battery type/size installed under ZOI, by manufacturer	Systemwide	Attribute	GMP, Exh. GMP-MB-17	Agreed. Will be reported by count of each type installed for Zone 4 ZOI customers.
6	Number of monthly peaks during which discharge successfully occurred during the RNS peak and the total capacity available during discharge (included with ESS systems in Metric 40)	Systemwide	Performance	GMP, Exh. GMP-MB-17	Agreed
7	Whether the batteries were successfully discharged during the ISO New England annual forward capacity peak and the total capacity available during that discharge (included with ESS systems in Metric 41)	Systemwide	Performance	GMP, Exh. GMP-MB-17	Agreed
8	Financial savings from peak shaving actually achieved (included with ESS systems in Metric 42)	Systemwide	Performance	GMP, Exh. GMP-MB-17	Agreed

**Attachment 1 - GMP Proposed Data Reporting**

9	EAP Customers participating in ZOI Storage	Systemwide	Attribute	GMP, Exh. GMP-MB-17	Agreed. Customer status will be reported as of date of signup for Zone 4 ZOI Storage.
10	Critical Medical Care Customers participating in ZOI Storage	Systemwide	Attribute	GMP, Exh. GMP-MB-17	Agreed. Customer status will be reported as of date of signup for Zone 4 ZOI Storage.
11	SAIFI/CAIDI for Storage Customers by circuit (see ZOI by circuit tab)	Recommend Systemwide and by ZOI circuit	Performance	GMP, Exh. GMP-MB-17	Agreed; note that this is duplicative of #19 and will be reported once. For purposes of this reporting, GMP will include as outages Zone 4 storage that does not ride through an event for the customer. GMP supports further addressing definition of “outage” in a Rule 4.900 update proceeding.
12	% existing miles storm hardened	By ZOI circuit	Attribute	GMP, Exh. GMP-MB-17	Agreed
13	% additional (or total) storm hardened	By ZOI circuit	Attribute	GMP, Exh. GMP-MB-17	Agreed
14	% existing miles undergrounded	By ZOI circuit	Attribute	GMP, Exh. GMP-MB-17	Agreed
15	% additional undergrounded	By ZOI circuit	Attribute	GMP, Exh. GMP-MB-17	Agreed
16	% Zone 4 customer storage installed	By ZOI circuit	Attribute	GMP, Exh. GMP-MB-17	Agreed. Will be reported as installation percentage of identified Zone 4 customers within each circuit.
17	SAIFI	By ZOI circuit	Performance	GMP, Exh. GMP-MB-17	Agreed. GMP already annually reports this

**Attachment 1 - GMP Proposed Data Reporting**

					systemwide in its Rule 4.900 filing; GMP will begin measuring when projects are completed in a ZOI circuit, and will be tracked in conjunction with Items 12-16 above to measure improvement as ZOI circuits are completed. GMP will include Major Storms in this reporting; if a later ZOI-specific SQRP update is made, this could also be incorporated there.
18	CAIDI	By ZOI circuit	Performance	GMP, Exh. GMP-MB-17	Agreed. See note on #17.
19	SAIFI/CAIDI average for storage customers per circuit	By ZOI circuit	Performance	GMP, Exh. GMP-MB-17	Agreed; duplicative of Zone 4 reporting in #11, see note above.
20	<del>Circuit breaker lockouts per year</del>	<del>By ZOI circuit</del>	<del>Performance</del>	<del>GMP, Exh. GMP-MB-17</del>	GMP withdraws this suggested metric after consideration of DPS testimony and instead supports a ZOI-specific SQRP addition that measures outages that occur within/between protective devices in completed ZOI projects, which is a more specific way to measure this.
<i>PSD-proposed metrics to report in MYRP or SQRP</i>					

## Attachment 1 - GMP Proposed Data Reporting

23	CELID (customers experiencing long interruption durations - 12 hours or more in the year)	Systemwide	Performance	PSD, Jordan Surrebuttal, p. 6	Agreed; GMP would propose to report CELID-S from IEEE. GMP also supports Bill Jordan's proposal to take this up as a part of 4.900 rule-making.
24	Outages by Environmental Justice Focus Population and Municipality	Systemwide	Performance	PSD, McIlvennie PFT, p. <del>18</del> 24	Not yet defined; requires further process
25	ZOI Investment by Environmental Justice Focus Population and Municipality	Systemwide	Attribute	PSD, McIlvennie PFT, p. <del>18</del> 24	Not yet defined; requires further process. All ZOI investment geographic areas will be known and can be reviewed against any portion of state MVI data.
26	Customer Experience of Outages	Systemwide	Attribute	PSD, McIlvennie PFT, p. <del>18</del> 24	Not yet defined; GMP already conducts customer surveys as a part of the SQRP; requires further process.
30	SAIFI with major storms	By ZOI circuit	Performance	PSD, Jordan Surrebuttal, p. 6	Agreed for annual reporting; duplicative of #17; see note above.
31	CAIDI with major storms	By ZOI circuit	Performance	PSD, Jordan Surrebuttal, p. 6	Agreed for annual reporting; duplicative of #18; see note above.
32	Time to restore service	By ZOI circuit	Performance	PSD, Margolis PFT, p. 15	Agreed; overlaps #36; see note on #36.
33	Critical facilities	By ZOI circuit	Attribute	PSD, Margolis PFT, p. 16	Agreed; GMP will present critical and emergency facilities as shown in state MVI data; otherwise, not yet defined and would require further process. All ZOI investment geographic areas will be known and can be

## Attachment 1 - GMP Proposed Data Reporting

					reviewed against any portion of state MVI data.
34	Total customer minutes interrupted	By ZOI circuit	Performance	PSD, Margolis PFT, p. 16	Agreed; GMP already reports total customer hours out in its Rule 4.900 filing and can report this data by circuit.
35	Percent of critical facility outages	By ZOI circuit	Performance	PSD, Margolis PFT, p. 16	Agreed; see note on #33.
36	Time to restore 90% of customers	By ZOI circuit	Performance	PSD, Margolis PFT, p. 16	Agreed; GMP already reports time to restore to 25%, 50%, 75%, 100% during major storms in its Rule 4.900 filing and can report this data by circuit.
37	Number of customer outages exceeding 120 hours (also 24, 48, and 96 hours)	By ZOI circuit	Performance	PSD, Margolis PFT, p. 16	Agreed; histogram data GMP offered to continue reporting would include this information.
<i>DPS Performance Metrics/Penalties</i>					
21	SAIDI for rural feeders, 33% improvement	Rural circuits	Performance	PSD, Mara PFT, p. 6	Alternative proposal: GMP proposes ZOI-specific SQRP addition that measures this for completed zones.
22	SAIFI for rural feeders, 33% improvement	Rural circuits	Performance	PSD, Mara PFT, p. 6	Alternative proposal: GMP proposes ZOI-specific SQRP addition that measures this for completed zones.
27	Storm costs, rolling 5-yr average, <\$13M	By ZOI circuit	Performance	PSD, Mara PFT, p. 6	Alternative proposal: GMP has instead proposed tracking reduced outages across completed areas and a ZOI-specific SQRP addition that

**Attachment 1 - GMP Proposed Data Reporting**

					measures reduced outages for completed zones.
<b>28</b>	Battery failure to start index, <1%	By ZOI circuit	Performance	PSD, Mara Surrebuttal, p. 4	See #4-#11 data reporting above.
<b>29</b>	Forced Outages per Hundred Miles per Year (“FOHMY”), < 3	By ZOI circuit	Performance	PSD, Mara PFT, p. 6	Alternative proposal: GMP has instead proposed tracking reduced outages across completed zones.
<b>xx</b>	CEMI-8, annual report to be filed <i>(not listed on Exh. DPS-AM-5, but included in Mara and Thomas surrebuttal PFT)</i>	By ZOI circuit	Performance	PSD, Mara Surrebuttal, p. 7 PSD, Thomas Surrebuttal, p. 3-4	Alternative proposal: GMP has instead proposed providing a CEMI report across all outcomes and a ZOI-specific SQRP addition that measures reduced outages for completed zones.