

**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 rate plan

**PREFILED SURREBUTTAL TESTIMONY OF
ANNE MARGOLIS
ON BEHALF OF THE
VERMONT DEPARTMENT OF PUBLIC SERVICE**

May 13, 2024

Summary: My testimony responds to observations and recommendations made by Green Mountain Power Corporation's witnesses on Zero Outages Initiative ("ZOI") planning, project selection criteria, and metrics. I also recommend that future ZOI work or phases be folded into the existing planning paradigm of Integrated Resource Planning and Multi-Year Rate Planning. Finally, I propose the Vermont Public Utility Commission ("Commission") open a proceeding to develop a resiliency evaluation and metrics framework for use statewide.

Ms. Margolis Sponsors the Following Exhibits:

Exhibit DPS-AM-5 List of Initial Test Metrics

Exhibit DPS-AM-6 A.DPS.GMP.1-26

1 **Q1. Please state your name and occupation.**

2 A1. My name is Anne Margolis. I am Deputy Planning Director for the Vermont Department
3 of Public Service (“Department”). My business address is 112 State Street, Montpelier,
4 Vermont.

5 **Q2. Have you previously submitted testimony in this proceeding?**

6 A2. Yes, I previously provided prefiled direct testimony on March 15, 2024, on current and
7 emerging frameworks for resilience planning and measurement as well as planning and
8 measurement improvements and next steps to ensure the ZOI proposed by Green Mountain
9 Power Corporation (“GMP” or “Company”), if approved, offers benefits and protections
10 for ratepayers.

11 **Q3. What is the purpose of your testimony today?**

12 A3. I respond to testimony from Michael Burke, Joshua Castonguay, and Tiana Smith
13 regarding ZOI planning, project selection criteria, and reporting metrics. I also recommend
14 future climate resilience initiatives be exclusively contained to the existing planning and
15 spending frameworks of GMP’s Integrated Resource Plan (“IRP”) and Multi-Year Rate
16 Plan (“MYRP”) so that all proposed planning and spending can be evaluated regularly and
17 holistically. Finally, I recommend the Commission open a proceeding to allow stakeholders
18 across the state to transparently develop resilience valuation frameworks and evaluation
19 metrics.

20

21 Mr. Poor’s surrebuttal testimony reinforces the Department’s **“Option I”** preference,
22 which would require GMP to undertake focused ZOI engagement and planning work

1 before proceeding with project selection and investment. Mr. Poor also offers a new path
2 forward – “**Option III**” – which would conditionally allow GMP to invest up to
3 approximately \$80 million (\$60 million in undergrounding and spacer cable projects plus
4 \$20 million in customer storage) to comprehensively address resilience on the EJ-G7 and
5 56G1 circuits as a proof of concept, during which time GMP would engage with its
6 customers and other stakeholders specifically on ZOI costs and benefits, project selection
7 criteria, and resilience metrics while simultaneously collecting project-specific cost and
8 benefit information and testing numerous potential metrics through the collection of
9 baseline and ongoing measurements. These could be used to inform and evaluate any future
10 proposed phases of ZOI.

11 **Q4. GMP already has authorization to invest in climate resilience solutions in its MYRP.**
12 **What then is the rationale for the ZOI?**

13 A4. GMP argues the ZOI is responsive to the pace and scale of storms in recent years that
14 makes pursuit through the Strategic Opportunities Exemption valid and necessary.
15 However, this is the same rationale used by GMP when it proposed its Climate Plan in
16 2020, which opens,

17 GMP’s Climate Plan (“Plan”) provides a framework for GMP’s
18 continuing efforts to prepare for and proactively respond to the
19 significant impacts climate change driven storms are having on
20 GMP’s systems and our customers. Climate change has already led
21 to an increase in the frequency and severity of storms in GMP’s
22 service territory, and those impacts are only expected to intensify in
23 the future, leading to increased costs and decreased reliability for
24 customers, if not addressed. This Plan represents GMP’s
25 recommendation for a proactive effort to confront these challenges
26 head on and move beyond business as usual. The Plan provides clear
27 goals to create a more reliable and resilient energy system for
28 customers that can better withstand and more quickly recover from

1 severe storms, while also aiding in the transition to a more
2 distributed grid that helps cut greenhouse gases in pursuit of
3 Vermont’s energy policy objectives.
4

5 The Plan goes on to note that it was specifically authorized by GMP’s Multi-Year Rate
6 Plan in place at the time.¹

7
8 The ZOI petition, meanwhile, notes, “[t]hese types of storms will keep increasing in
9 frequency and severity because of climate change. The current level of available resiliency
10 investment cannot keep pace with the rate of change the state is now seeing. GMP needs
11 to be able to execute more of these projects faster for customers and communities to
12 minimize what will otherwise inevitably be future significant, recurring storm restoration
13 time and costs.”²

14
15 The ZOI, therefore, appears to be what would be expected from a revision of GMP’s
16 Climate Plan – if that were allowed. However, the Commission ordered GMP to
17 incorporate future climate resilience planning in its regular IRP and MYRP processes,
18 noting, “[t]he Commission also recognizes that the planning process and criteria for the
19 evaluation of climate resiliency projects is likely to evolve as GMP gains experience in
20 implementing the Plan approved in this case. If GMP files a future multi-year regulation

¹ Case No. 20-0276-PET, Petition of GMP for approval of its Climate Plan. Final Climate Plan, September 24, 2020, p. 2. GMP’s 2020 Multi-Year Regulation Plan specifically authorized GMP to propose a Climate Resiliency Plan “proposing additional capital expenditures and/or targeted operational & maintenance expenses for climate change mitigation or storm hardening of GMP’s transmission and distribution system.” (2020 MYRP, p. 11)

² Case No. 23-3501-PET, Petition for Strategic Opportunities Exception, October 9, 2023, p. 3; See Exhibit DPS-AM-6 (indicating that GMP has not conducted a quantitative analysis of projected costs to its system of increases to the frequency and intensity of future storms).

1 plan, capital spending in that plan should incorporate climate and other resilience spending
2 so that overall investment may be evaluated holistically in the context of rate impacts and
3 tradeoffs between different goals and outcomes.”³

4
5 GMP’s most recent MYRP was filed on September 1, 2021, and approved on August 31,
6 2022, for capital spending averaging \$119 million per year for FY23-FY26. The petition
7 noted, “[t]hese amounts will include GMP’s anticipated Plant Additions during each fiscal
8 year, including climate resiliency work similar to work described in the Climate Plan
9 approved by the Commission in Case. No. 20-0276-PET, ongoing new initiatives capital
10 projects, and forecasted amounts for GMP’s anticipated capital spending for customer
11 battery storage such as through an extension of the Energy Storage System (“ESS”)
12 program.”⁴

13
14 In its Final Order approving the MYRP, the Commission again noted the importance of
15 considering climate resilience spending holistically:

16 GMP’s proposed capital spending cap is higher than the cap
17 established in the Current Plan. Under the Current Plan, there were
18 two categories of spending – home storage tariffs and climate
19 resilience – that fell outside the cap and were reviewed and approved
20 by the Commission after the cap was established. The cap proposed
21 by GMP here includes similar spending levels as the Current Plan
22 together with spending related to climate resilience and home
23 storage tariffs. When these new categories are added capital
24 spending is roughly equal under the Current Plan and the New Plan.
25

³ Case No. 20-0276-PET, Final Order Approving Green Mountain Power Corporation’s Climate Plan, September 24, 2020, p. 16

⁴ Case No. 21-3707-PET, Petition of GMP for approval of its new Multi-Year Regulation Plan, Multi-Year Regulation Plan 2023-2026, as Amended March 30, 2023, p. 7

1 Setting an appropriate level of capital spending requires the
2 Commission to balance competing concerns. Underspending can
3 potentially impact safe and reliable service or impede the utility’s
4 ability to provide services that the public values. However, capital
5 spending in excess of capital depreciation can create upward
6 pressure on rates. The capital spending cap proposed by GMP and
7 supported by the Department here strikes a reasonable balance and
8 will allow GMP to maintain its system while moderating overall
9 upward rate pressures. The Commission looks forward to reviewing
10 the level of actual spending that occurs and contextualizing the level
11 of capital spending within measurable performance outcomes such
12 as storm resilience, service quality, and customer satisfaction.”⁵
13

14 The 2023 (current) MYRP does not include another specific outside-the-cap Climate
15 Resiliency Plan spending opportunity. It does offer, as did the 2020 MYRP, an Unexpected
16 Circumstances and Strategic Opportunities Exemption. However, it is not at all evident that
17 the Commission anticipated this Exemption would be used for additional climate resilience
18 spending, or another Climate-Resiliency-Plan-like initiative, or in an amount that exceeds
19 the entire remaining two years’ worth of MYRP spending and that promises to be just the
20 first installment of a \$1.5+ billion overall investment.

21 **Q5. Is the ZOI spending similar to the MYRP or Climate Plan resilience spending in other**
22 **ways?**

23 A5. Yes. In addition to accelerating the pace of grid hardening, GMP argues that the ZOI should
24 use the same project screening criteria approved for use in its Climate Plan, which include:

- 25 • Type, age, condition, and location of asset;
- 26 • The number of customers served by each circuit;

⁵ Case No. 21-3707-PET, Final Order Approving Base Rate Increase and New Multi-Year Regulation Plan, pp. 12-13

- 1 • Outage hours and overall reliability of the existing line and infrastructure;
- 2 • Review of where the project falls within the 20 least reliable circuits; and
- 3 • The critical facilities and community resources served by the circuit⁶

4 However, GMP also noted the following in its Climate Plan petition:

5 While the general planning timeframe for the Plan is five years,
6 GMP expects that this Plan, and the projects selected under the
7 approved criteria will evolve over time, as will be required to
8 address the evolving challenges presented by climate change.
9 Therefore, while GMP seeks [Commission] authorization of a
10 specific review and approval process for Climate Plan projects
11 during the remaining years of the Regulation Plan, the Climate Plan
12 does not prescribe a specific process for authorizing Climate Plan
13 projects after the term of the Regulation Plan. The expectation is that
14 the criteria used to select these projects will become integrated into
15 GMP's regular planning processes moving forward, and the
16 Commission will have the opportunity to consider how this
17 integration may occur during GMP's next traditional rate case,
18 which will be filed in January of 2022, together with any
19 accompanying regulation plan proposal. As a result, GMP's Climate
20 Plan will not continue as a standalone document beyond the term of
21 GMP's existing Regulation Plan, but serves as an important bridge
22 to continue this critical resiliency work during the term of the
23 regulation plan."⁷
24

25 GMP now argues that developments since the Climate Plan and current MYRP necessitate
26 pursuit of the \$1.5+ billion ZOI as a Strategic Opportunity Exemption: “[t]hese proposed
27 accelerated investments were not yet contemplated or foreseen during the MYRP
28 proceeding, when GMP's existing capital spending limits were set, but instead are dynamic
29 responses to increasingly severe weather, the increasing impacts to customers, and the

⁶ Case No. 23-3501-PET, Prefiled Rebuttal Testimony of Michael Burke, April 15, 2024, p. 13

⁷ Case No. 20-0276-PET, Petition of GMP for approval of its Climate Plan. Final Climate Plan, September 24, 2020, P. 3.

1 tremendous storm-related expenses that have occurred in the past year. The Act 47
2 distribution line exemption from Act 250, which provides a mandate and opportunity to do
3 this work now in response to these recent storms, also was not foreseen during the MYRP
4 proceeding.”⁸ It is difficult to ascertain that GMP did not contemplate or foresee the
5 impacts of climate change during MYRP development when the Company’s justification
6 for the Climate Plan was so grounded in the “evolving challenges presented by climate
7 change” and “increasingly frequent and intense climate change driven storm events [that]
8 threaten to undermine the high quality, reliable service GMP has consistently provided to
9 customers.”⁹

10
11 Additionally and on one hand, GMP argues that developments over the past few years
12 necessitate significantly increased spending on climate resiliency projects. On the other
13 hand, GMP proposes to use the same project selection criteria developed in 2020 – which
14 both GMP and the Commission anticipated would evolve over time.¹⁰ In my opinion, it is
15 time to re-examine these criteria to determine whether changes should be made to reflect
16 other developments over the past few years, such as the passage of Act 154 of 2022,
17 Vermont’s Environmental Justice Law. Department witness Ms. Claire McIlvennie
18 provides additional details on this law and how it could be incorporated into the ZOI, in
19 her testimony.

⁸ Case No. 23-3501-PET, Petition for Strategic Opportunities Exception, October 9, 2023, pp. 8-9

⁹ Case No. 20-0276-PET, Petition of GMP for approval of its Climate Plan. Final Climate Plan, September 24, 2020, P. 4

¹⁰ Case No. 20-0276-PET, Petition of GMP for approval of its Climate Plan. Final Climate Plan, September 24, 2020, P. 3 and Final Order Approving Green Mountain Power Corporation’s Climate Plan, September 24, 2020, p.

1 **Q10. Do you still recommend additional process and planning to engage customers, revise**
2 **selection criteria, and develop metrics?**

3 A10. Yes, with the modification proposed in Mr. Poor's testimony that GMP be allowed to
4 proceed with comprehensive, proof of concept resiliency work on the EJ-G7 and 56G1
5 circuits conditioned upon GMP conducting additional process and planning work to engage
6 customers and other stakeholders, revise selection criteria, develop comprehensive
7 resilience metrics, collect baseline data for use in assessing multiple potential resilience
8 metrics, and gather comprehensive cost and benefits data to inform any future climate
9 resilience investment proposals and their evaluation.

10
11 GMP is actively preparing its 2024 IRP at this moment and should take advantage of the
12 opportunity to engage customers on resilience project selection criteria and metrics as it
13 engages with them on other aspects of its IRP. Ms. McIlvennie discusses this in greater
14 detail in her testimony.

15
16 I further recommend that, consistent with the requirement that GMP's Climate Plan work
17 be folded into its IRP and MYRP, ZOI, and any other future planning and spending related
18 to climate resiliency be included exclusively in GMP's IRPs and MYRPs (and not proposed
19 as a separate plan, initiative, exemption, exception, or other vehicle) so that it can be
20 evaluated holistically with other planning and spending priorities. GMP has ample
21 opportunities through existing mechanisms to address planning and spending priorities,
22 including existing priorities that warrant increased investment due to changing or

1 worsening circumstances such as storm impacts. IRPs are submitted to the Commission at
2 least every three years, with drafting starting at least a year in advance of filing. GMP is
3 actively preparing its 2024 IRP for submission this December. MYRPs have four-year
4 terms, with the current MYRP effective beginning October 1, 2022, and are generally filed
5 a year in advance – meaning the next MYRP would be filed in September 2025 and
6 developed well in advance of that. Further, GMP may request a modification of the MYRP
7 to the Commission at any time.

8 **Q11. How do you respond to Mr. Burke’s opinion that the overall Title 30 framework**
9 **demands pursuit of resilience, and Ms. Smith’s opinion that distinguishing between a**
10 **“reliability event” and a “resilience event” is unimportant?**

11 A11. I disagree in both instances. In my prefiled testimony, I described the objectives of state
12 energy policy articulated in 30 V.S.A. § 202a, which do not include resilience/resiliency.
13 Nor are these terms included anywhere in Title 30, except for in 30 V.S.A. 202d in relation
14 to the State Telecommunications Plan.¹¹ Interpreting parts of Title 30 to – in the aggregate
15 – support a mandate for resilience/resiliency is very different from having a stated policy
16 directive. Even were I to agree with the sentiment that Title 30 demands resilience, I would
17 not agree that it is to be pursued at any cost, or without the support of a robust cost-benefit
18 analysis, or at the risk of undermining stated policy directives. This “eye of the beholder,”
19 amorphous, catchall approach to a term that is being used by stakeholders to potentially
20 mean very different things does not serve anyone well, especially when it is used as a

¹¹ (9) An analysis of alternative strategies to leverage the State’s ownership and management of the public rights-of-way to create opportunities for accelerating the buildout of fiber-optic broadband and for increasing network resiliency capacity.

1 justification for a funding request. That is why the Department chose a path – supported by
2 the work of not only academia but the Department of Energy, national labs, and other state
3 regulatory bodies – of attempting to define and measure resilience, just like has been done
4 for reliability. Only by understanding what we are talking about can we understand what
5 is being paid for by and ostensibly for the benefit of ratepayers, and how successful those
6 investments are.

7
8 Further, my testimony distinguished between reliability and resilience in many more ways
9 than as types of “events” as discussed by Ms. Smith. It discussed the framework used by
10 the U.S. Department of Energy to distinguish between “reliability” and “resilience,” as well
11 as to distinguish between “reliability events” and “resilience events” (generally based on
12 event duration and area of impact). The Comprehensive Energy Plan (“CEP”), and the
13 Department’s Integrated Resource Planning Guidance,¹² adopt this framework and the
14 Federal Energy Regulatory Commission (and North American Electric Reliability
15 Corporation, or NERC) definition of resilience. State Commissions, including CT Public
16 Utilities Regulatory Authority, distinguish between reliability and resilience.¹³ As the
17 National Association of Regulated Utility Commissions noted, “[t]he distinctions between
18 resilience and reliability have been delineated in the literature, but they are only beginning

¹²

<https://publicservice.vermont.gov/sites/dps/files/documents/Guidance%20for%20Integrated%20Resource%20Plans%20and%202022%28f%29%20Determination%20Requests%20-%20April%202023.pdf>, p. 23

¹³

[https://www.dpuc.state.ct.us/2nddockcurr.nsf/8e6fc37a54110e3e852576190052b64d/4bcecc163d47d814852588af005bca09/\\$FILE/171203RE08-083122.pdf](https://www.dpuc.state.ct.us/2nddockcurr.nsf/8e6fc37a54110e3e852576190052b64d/4bcecc163d47d814852588af005bca09/$FILE/171203RE08-083122.pdf), p. 35

1 to transition from academia into the regulatory process.”¹⁴ The CEP provides a starting
2 point for this transition in Vermont; this petition offers an opportunity to formalize a
3 consistent working regulatory definition for the clarity of all stakeholders.

4 **Q12. How do you respond to Mr. Burke’s and Ms. Smith’s assertion that additional**
5 **planning and engagement work around the ZOI is unnecessary?**

6 A12. I disagree. As Ms. McIlvennie discusses in her testimony, GMP’s engagement work related
7 to the ZOI has not been specifically about the ZOI, either in terms of describing the
8 initiative and its costs and benefits or in terms of gathering feedback on how projects should
9 be selected and prioritized and how success should be measured. In addition, while I
10 appreciate GMP’s desire for implementation of ZOI investments as soon as possible, I
11 respectfully disagree that they are prevented from investing in measures that address
12 resiliency and reliability now, or that the Department’s recommendation for additional
13 planning and engagement work would “significantly delay” ZOI benefits. For one thing, a
14 modest amount of additional engagement is warranted for what is currently a \$280M – but
15 ultimately a potential \$1.5B+ – request of ratepayers. For another, GMP is currently
16 investing in measures that address reliability and resiliency. In addition to investments
17 approved under the Climate Plan, GMP is authorized to spend \$115M in FY25 and another
18 \$115M in FY26 on capital expenditures explicitly including climate resiliency work under
19 its current MYRP, which is unaffected by my recommendation for GMP to update its
20 Climate Plan project selection criteria – including through meaningful engagement with its
21 customers and communities – as it prepares its 2024 IRP. GMP could be doing that

¹⁴ <https://pubs.naruc.org/pub/531AD059-9CC0-BAF6-127B-99BCB5F02198>, p. 8

1 engagement right now and using it to inform a ZOI master plan published concurrently
2 with the 2024 IRP when it is filed in December.

3
4 Further, as Mr. Poor notes in his testimony, the Department would support an **Option III**,
5 in which GMP proceeds with comprehensive “proof of concept” resilience work on the EJ-
6 G7 and 56G1 circuits, conditioned upon the engagement discussed above to update the
7 project selection criteria, develop a robust set of metrics for evaluating success, collect
8 baseline data against which those metrics can be evaluated, and gather comprehensive cost
9 and benefit data associated with the investment. This would allow a substantial amount of
10 investment to occur while the Department’s remaining concerns about planning, project
11 selection criteria, and metrics are more comprehensively addressed, which can be achieved
12 in as little as the remaining months of this year. The work that occurs during that time –
13 discussed in more detail by Ms. McIlvennie – can and should be used to inform GMP’s
14 engagement and master plan, and will form a meaningful basis for evaluating the cost-
15 effectiveness of GMP’s ZOI approach and any further phases or climate resilience
16 investment proposals.

17 **Q13. How do you respond to Mr. Burke’s proposed set of metrics?**

18 A13. I appreciate Mr. Burke’s inclusion of several of the example system-wide and by-circuit
19 resilience metrics I discussed. GMP proposes several circuit-specific, attribute-based
20 metrics (percent additional/total storm hardened miles, percent additional underground,
21 % Zone 4 customer storage installed) and performance-based metrics (SAIFI, CAIDI,
22 SAIFI/CAIDI average for storage customers per circuit, circuit breaker lockouts per

1 year).¹⁵ Mr. Burke also states they, “include[d] ones that will help track cumulative
2 customer hours out and recovery time,” although it is unclear which metrics in Exhibit
3 GMP-MB-17 correspond.¹⁶

4
5 My testimony provided additional examples of performance- and attribute-based metrics
6 being considered in other jurisdictions, such as:

- 7 • Critical customer energy demand not served
- 8 • Loss of assets and perishables
- 9 • Customer and community metrics such as critical facilities and environmental
10 justice community census blocks
- 11 • Metrics tracked specifically during major storms, such as total customer minutes
12 interrupted, percent of critical facility outages, time to restore 90% of customers,
13 and number of customer outages exceeding 120 hours.

14 Ultimately, my testimony recommended – and I continue to recommend – that GMP
15 undertake additional process with its customers and communities to develop an appropriate
16 suite of metrics, including both circuit-specific and systemwide metrics, and targets
17 associated with those metrics. If an initial proof of concept phase is approved during the
18 development of these metrics, I recommend a broad suite of metrics – at least those
19 included in Exhibit GMP-MB-17 as well as several of those listed above and suggested by
20 other Department witnesses – be baselined and tracked so their usefulness can be evaluated

¹⁵ Exhibit GMP-MB-17, pp. 3-4

¹⁶ Prefiled Rebuttal Testimony of Michael Burke, P. 40

1 before a final suite is selected. I have provided a comprehensive list of these initial test
2 metrics in Exhibit DPS-AM-5.

3
4 I further respectfully recommend that the Commission consider opening a Resilience
5 proceeding, to allow utilities, communities, customers, and other stakeholders across the
6 state to investigate the important questions this case raises and, ultimately, to work toward
7 a common framework for defining, valuing, measuring, and planning for resilience. Mr.
8 Jordan's testimony discusses related topics this proceeding could include. The Department
9 is willing to seek technical assistance resources to support this effort, including potentially
10 through the national labs, which are deeply engaged in resilience work and actively
11 offering related technical assistance opportunities.¹⁷ Lawrence Berkeley National Lab, for
12 example, is preparing to imminently publish a resilience planning framework and
13 standardized template for utility plans,¹⁸ which could serve to inform not only future ZOI
14 phases but statewide IRP guidance more broadly and related planning efforts such as
15 updates to the state's Hazard Mitigation Plan, Energy Security Plan, and Climate Action
16 Plan.¹⁹ GMP's ongoing resiliency work can help inform the proceeding, and ultimately,
17 outcomes from both the proceeding and GMP's resiliency work under ZOI, its IRP, and its
18 MYRP can be used to guide and assess any future potential ZOI phases.

¹⁷ See <https://emp.lbl.gov/projects/state-TA-program> for details. "Deep dive" technical assistance applications are due June 19, 2024.

¹⁸ https://eta-publications.lbl.gov/sites/default/files/schellenberg_what_resilience_plans_include_20240125.pdf

¹⁹ The 2021 Climate Action Plan recommends a metrics framework be in place by 2030 to measure the impacts of infrastructure projects on meeting climate resilient design standards, including for energy infrastructure projects – and include metrics that measure equity impact
<https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/Initial%20Climate%20Action%20Plan%20-%20Final%20-%2012-1-21.pdf>, pp. 248, 253

1 **Q14. Does this conclude your testimony?**

2 A14. Yes, it does.