

**STATE OF VERMONT
PUBLIC UTILITY COMMISSION**

Petition of Green Mountain Power Corporation for	)	
approval of its new Multi-Year Regulation Plan	)	Case No. 25-1955-PET
pursuant to 30 V.S.A. Sections 108, 209, 218, and	)	
218d		

Tariff filing of Green Mountain Power	)	
Corporation for a 7.5% rate increase effective	)	Case No. 26-0096-TF
with bills rendered on or after October 1, 2026	)	

**PREFILED REBUTTAL TESTIMONY
OF JOSHUA CASTONGUAY
ON BEHALF OF
GREEN MOUNTAIN POWER**

April 15, 2026

Summary of Testimony

Mr. Castonguay responds to the Department’s recommendations regarding customer-driven energy storage programs under GMP’s Proposed Multi-Year Regulation Plan (“MYRP” or “Proposed Plan”). He proposes potential storage performance guarantees, to be implemented through GMP’s existing Service Quality and Reliability Plan framework, in the event the Commission determines it is appropriate to implement such measures now. He also provides an update on GMP’s ESS and BYOD tariff extensions and expected Integrated Energy Storage Pilot, and on GMP and the Department’s work to identify refinements to the performance metrics to be reported under the Proposed Plan.

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**PREFILED REBUTTAL TESTIMONY OF
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I. Introduction

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

2 A1. My name is Joshua Castonguay. I am employed by Green Mountain Power (“GMP”) as
3 Vice President, Chief Innovation Officer, Generation and Power Supply

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

5 A2. Yes, I previously provided prefiled direct testimony in this proceeding on August 29,
6 2025.

7 **Q3. What is the purpose of your testimony?**

8 A3. I respond to Mr. Poor’s testimony for the Department of Public Service (“DPS” or the
9 “Department”) regarding the Customer-Driven Storage provisions of the Proposed Plan,
10 including Mr. Poor’s recommendation that GMP propose performance measures for our
11 voluntary residential energy storage programs. I also provide an update on GMP’s and
12 the Department’s collaboration to refine the Proposed Plan’s annual performance metrics.

II. Customer-Driven Storage Performance Measures

13 **Q4. Can you summarize GMP’s position in response to the Department’s**
14 **recommendations regarding Customer-Driven Storage programs?**

15 A4. GMP appreciates the Department’s recognition of the impact of our successful residential
16 storage programs, including the Energy Storage System (“ESS”) and Bring Your Own
17 Device (“BYOD”) tariffs. Together with the support of participating customers, these

1 programs now represent over 51 MW of flexible power supply resources that can be
2 deployed to the benefit of the overall grid and all GMP customers. Such resources are
3 more important than ever both as we move towards a more distributed two-way grid, and
4 because they provide a hedge against the current environment of increased transmission
5 costs.

6 The ESS and BYOD tariffed programs have detailed financial and performance
7 metrics reports, required annually pursuant to the Commission’s Order in Case No. 24-
8 1715-PET. These reports—along with updated models provided to the Commission in
9 connection with ESS tariff filings—demonstrate the consistent success of these programs
10 and their ability to deliver financial benefits to non-participating customers. For example,
11 GMP’s annual storage report filed January 30, 2026, shows that the current expected
12 overall NPV flowing to GMP customers for an ESS system installed in 2020 is \$2,951,
13 while a system installed in 2023 is \$4,313. Both estimates represent an increase in the
14 initially forecasted values of \$2,629 and \$2,749, respectively, meaning that the systems
15 are forecast to provide greater benefits for all customers compared to our initial
16 modeling. We now have more than six years operating systems under these programs and
17 have found the flexibility and use cases only continue to expand. These increasing values
18 reflect the development of new opportunities and benefits, as well as our efforts to
19 maximize the operational flexibility of energy storage resources to develop and take
20 advantage of new values, such as more effective energy arbitrage to supplement the
21 inherent variability, including price variance, in the ISO New England (“ISO-NE”) RNS
22 and FCM markets.

1 This demonstrated and consistently positive performance means that there is no
2 reason a performance guarantee is needed. The programs pursued under the Customer-
3 Driven Storage provision are already subject to thorough Commission and Department
4 review through tariff and pilot filings, as well as continued reporting. The programs are
5 also time-limited, which allows regular evaluation and consideration of whether the
6 program should be re-approved. For example, GMP is currently proposing to extend the
7 ESS/BYOD tariffs for two years in Case No. 26-0476-TF, which provides another
8 opportunity to consider the benefits of these programs for customers.

9 There is also some risk in the Department's recommendation to impose new,
10 untested financial consequences on these programs. Any new performance framework
11 should be designed to support innovation and should treat customer storage in a manner
12 that is consistent with other comparable grid resources. Doing so will help preserve the
13 benefits these flexible resources can provide as GMP works to manage increasing energy
14 costs and ongoing cost pressures. In that environment, the right approach is one that
15 encourages continued innovation and deployment.

16 As a result, if the Commission determines it is appropriate to impose new
17 financial consequences on investments in customer driven storage now, it is important the
18 measures are consistent with existing performance measures for other investments, and
19 are implemented in a way that encourages growth and allows flexibility over time to
20 adjust standards as we learn more about the broader benefits of these resources. The
21 guarantee should also be time-limited such that it is in place only as long as may be
22 necessary to ensure that these systems continue to perform as expected.

1 With those considerations in mind, if the Commission is inclined to impose such
2 measures, I recommend the Commission consider interim performance measures
3 incorporated directly into the existing structure of GMP's Service Quality and Reliability
4 Plan ("SQRP"). I describe two potential measures below. Adding these specific measures
5 to GMP's SQRP has the benefit of using a developed framework for performance
6 guarantees, rather than attempting to create a totally new, untested framework, and
7 ensures some alignment with how performance of other customer investments are
8 tracked, measured, and guaranteed. Mr. Burke proposes a similar approach using the
9 SQRP for our ongoing resilience projects in his testimony.

10 **Q5. If the Commission were to impose performance measures for the storage programs,**
11 **what types of measures would GMP propose?**

12 A5. Performance measures should be tied foremost to the outcomes we are expected to
13 achieve for customers and should use metrics that are clear, easily and accurately
14 measurable, and reasonably within GMP's ability to influence. I propose two measures
15 focused on key indicators of energy storage system performance, both of which would be
16 incorporated into GMP's SQRP.

17 First, Mr. Poor recommends a measure relating to the financial performance of the
18 ESS tariff. Peak shaving is the primary financial benefit provided for non-participating
19 customers, and that is best measured directly through RNS peak reduction effectiveness.
20 To that end, for investments made under GMP's proposed new ESS tariff program, I
21 propose a performance measure to compare the forecasted RNS effectiveness (by total
22 peak reduction as a percentage of nameplate capacity) with the actual realized reduction

1 in the RNS peak. If actual RNS peak shaving effectiveness is below the forecasted
2 amount, that will result in financial penalties calculated through the existing SQRP
3 mechanism. This is a simple and accurate measure that directly tracks performance tied to
4 the benefits the systems provide to customers as a whole and would be straightforward to
5 implement. The forecasted effectiveness in this case would be set based on the peak
6 shaving performance value included in the model supporting authorization of the
7 extended ESS Tariff, thereby guaranteeing a level of performance that supports the
8 forecasted benefits for all customers.

9 Second, while not called for by the Department, it is also important to reflect the
10 other purpose of these energy storage systems, which is to provide dependable resiliency
11 directly to the participating customers, not just peak shaving performance for all
12 customers. We therefore also recommend a second performance measure as a
13 complement to an RNS-based measure that would require residential energy storage
14 systems to provide backup power during 95% or more of the outages these customers
15 would have otherwise experienced. This metric would go into effect and apply to ESS
16 installations under GMP's proposed ESS extension tariff in Case No. 26-0476-TF. Both
17 of these measures are reflected in Exh. GMP-MB-8, which is a redline version of the
18 SQRP and its attachments.

19 **Q6. Can you describe how GMP's proposed RNS effectiveness performance measure**
20 **would function?**

21 A6. Yes. This performance measure is designed for clarity of measurement and transparency.
22 We would compare the actual achieved RNS reduction using a reconstituted peak

1 analysis against the forecasted RNS net effectiveness modeled with the current ESS tariff
2 filing for FY27 and FY28 (Case No. 26-0476-TF). The measure would be in effect over
3 ten years, reported on a calendar year basis under the SQRP, and would apply to the
4 tranche of batteries installed under that tariff; allowing for re-evaluation with the next
5 tariff or Customer-Driven Storage proposal.

6 RNS effectiveness represents a composite value of the model variables impacting
7 RNS performance, including RNS forecast accuracy, battery availability, battery capacity
8 adjusted for degradation, all represented as a percentage of nameplate capacity. For
9 example, in 2027 we are currently forecasting a net effectiveness of 44.7% accounting for
10 all of the above variables, declining annually. For a hypothetical fleet with a total of 10
11 MW, that means we would expect to achieve 4.47 MW of RNS peak reduction monthly.
12 The proposed metric would compare the actual MW reduction, averaged over 12 months,
13 to the expected MW reduction on an annual basis, with SQRP points to be calculated
14 based on the percent variance from the forecast. For example, if we averaged a 4.0 MW
15 reduction for the year in the hypothetical above, that would be an 11% under-
16 performance, resulting in approximately 11 SQRP points and a corresponding financial
17 penalty.

18 This measure is proposed for GMP's "Other Performance Measures," and is not a
19 Reliability Measure subject to the 25-point deadband, so SQRP penalties would apply to
20 any unfavorable variance. Given that these systems are expected to provide the modeled
21 benefits on average over time, and that any individual year of performance may be above
22 or below the expected annual performance, we propose that in years where the measure

1 performs better than the benchmark, a credit would be banked that could offset a
2 corresponding number of points under this measure in future years.

3 **Q7. Can you explain why GMP would propose a measure based on the peak shaving**
4 **effectiveness of the ESS program rather than the dollar value of RNS savings?**

5 A7. Yes, the proposed metric isolates the performance of the ESS program and provides an
6 accurate measure of GMP's ability to forecast and deliver savings during peaks. The
7 resulting dollar value of peak reduction is heavily influenced by exogenous factors
8 driving RNS rates, including—as discussed in detail by Maria Fischer—significant
9 weather impacts wholly outside of GMP's control. As a result, it is appropriate to
10 guarantee the extent to which GMP is delivering MWs of peak shaving compared to the
11 forecasted peak reduction; this focuses on the aspect of actual performance over which
12 we have direct control.

13 In addition, the financial model is designed to evaluate financial outcomes over
14 the full life of these systems from a range of benefit streams. This complicates the
15 tracking and measurement of overall financial outcomes year-to-year and would require a
16 more complex and much longer measurement period to accurately compare to modeled
17 outcomes. Guaranteeing RNS performance instead serves as a valuable proxy for overall
18 system performance. It represents a substantial portion of expected benefits of the
19 program, provides a good measure of annual system performance for GMP, the
20 Department, and the Commission to monitor, and is easier to track and compare to the
21 overall model on an annual basis.

1 Regardless of whether the Commission found a performance penalty necessary at
2 this time, GMP will continue to report on overall system performance through existing
3 annual reporting metrics, including its storage report, which provides updated forecasts
4 for the net present value of systems for non-participating customers (considering actual
5 performance to date and updated forecasts of future benefits). These regular reviews,
6 coupled with the short-term tariff authorizations, and required review of future annual
7 tranches of customer drive storage investments under the Proposed Plan, ensure ongoing
8 oversight of the broader expected financial benefits of the programs. If forecasted
9 financial benefits change in a material way, the program or any future annual investments
10 can be modified to address those changes. This combined approach provides customers a
11 guarantee on performance of approved systems, with financial consequences for GMP for
12 under-performance compared to forecasts, and a check on future investments.

13 **Q8. The Department also proposes that energy storage performance be reflected in the**
14 **Power Supply Adjustor by reclassifying “Transmission by Others” expense in**
15 **Component B. Do you have any response to that recommendation?**

16 A8. Yes. Ms. Fischer addresses the Department’s proposal to reclassify Transmission by
17 Others expense and explains how the Department’s proposal is inconsistent with the
18 framework of the Power Supply Adjustor because Transmission by Others expense is
19 largely driven by factors such as weather that are outside of GMP’s control. Our ability to
20 influence our transmission costs through storage, while very important and valuable in
21 the current environment, occurs on the margins of these overall costs.

1 My comments relate to the Department’s overlapping proposals to reclassify these
2 expenses while also recommending performance measures for the ESS program based
3 largely on variance in the same transmission costs. Both recommendations are based on
4 GMP’s ability to partially influence transmission costs—and in particular RNS—through
5 the dispatch of ESS systems and are therefore duplicative as both an incentive and
6 penalty. If the Commission is inclined to impose any performance measure, it should be a
7 single direct measure focused and tailored to the desired outcome and the limits of
8 GMP’s ability to control that outcome. For the reasons explained in Ms. Fischer’s and my
9 own testimony, the SQRP measure that I propose can meet these objectives; the
10 Department’s recommendation regarding shifting costs to Component B does not.

11 **Q9. Do you have any further updates you wish to provide to the Commission at this**
12 **time?**

13 A9. Yes, our FY27 Rate Case testimony described two upcoming storage filings related to
14 Customer-Driven Storage programs commencing with the Proposed Plan period: the two-
15 year extension of the ESS and BYOD tariffs as discussed above and our proposed
16 Integrated Energy Storage (“IES”) pilot program. The ESS/BYOD tariff extensions were
17 filed on March 13, 2026, in Case No. 26-0476-TF, together with a request for additional
18 capital investments in the ESS program under the Current Plan, in Case No. 26-0477-
19 PET. These filings are currently being reviewed by the Commission; the Department has
20 recommended that both requests be approved without further investigation. See
21 Department of Public Service Recommendation, filed April 13, 2026, in Case Nos. 26-
22 0476-TF and 26-0477-PET.

1 We have also been working to refine an Integrated Energy Storage pilot to ensure
2 it provides the best opportunity for additional learning and incorporates the latest
3 technological developments. With this pilot, we seek to advance understanding how
4 storage can pair with a fully hardened circuit to benefit all customers, with a focus on
5 future grid developments. Our energy storage work confirms the central role storage has
6 as a grid asset as our electric system is increasingly distributed and flexible. Widely
7 distributed storage resources are as vital to Vermont's ability to achieve a degree of
8 independence from regional and national grid impacts and disturbances as they are to
9 providing resilience to customers and communities. This pilot is an important opportunity
10 to explore the optimal ways to deploy residential storage in this role as a grid asset. We
11 plan to test several applications in the IES pilot to better inform how future storage
12 programs should be designed. This includes evaluating the extent to which energy storage
13 resources can replace and improve upon existing metering equipment, as well as
14 monitoring the overall storage backup duration required in grid hardened areas. The pilot
15 will continue to focus on portions of the EJ-G7 circuit to test energy storage combined
16 with the T&D investments authorized in Case No. 23-3501-PET and provide further
17 insight into customer needs in Zone 4 areas. We are finalizing the pilot based on these
18 considerations and advances in technology and look forward to providing this full
19 proposal to the Commission, after consultation with the Department so that it can be
20 reviewed with our capital request in the FY27 Rate Case.

III. Proposed Plan Performance Metrics

1 **Q10. Your direct testimony noted that GMP would work with the Department on**
2 **updating the annual performance metrics filed under the Current Plan; do you have**
3 **any updates regarding those metrics?**

4 A10. Yes. After each annual performance metric report under the Current Plan, GMP and the
5 Department meet to review the results for the year. This year, while meeting to review
6 our FY25 MYRP metrics report in Case No. 26A-0214, GMP and the Department
7 discussed potential refinements. GMP is currently working with this feedback to propose
8 discrete edits for the Department to review. We do not have revisions to share with the
9 Commission yet, but will continue to collaborate with the Department and will share any
10 proposal with the Commission in this proceeding when available.

11 **Q11. Does that conclude your testimony at this time?**

12 A11. Yes, it does.

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

Dated at Colchester, Vermont on the 15th day of April, 2026.

A handwritten signature in black ink, appearing to read 'Josh Castonguay', written over a horizontal line.

Josh Castonguay