

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

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 Executive.

4 **Q2. Please describe your educational and business background.**

5 A2. I have been employed by GMP since 2003, working in engineering until 2009, and then
6 moving into various leadership positions throughout the organization, including the
7 control center and the transmission and distribution line department, among other
8 responsibilities. In 2017, I became Vice President, Chief Innovation Executive leading
9 generation, engineering, and the team working on our innovative technology and service.
10 I graduated from the University of Maine in 2003 with a Bachelor of Science in Electrical
11 Engineering Technology.

12 **Q3. Have you previously testified before the Public Utility Commission?**

13 A3. Yes, I have provided testimony on behalf of GMP in a number of proceedings, including,
14 most recently, GMP’s 2019 Rate Case (Case No. 18-0974-TF), GMP’s Multi-Year
15 Regulation Plan proceeding (Case No. 18-1633-PET), GMP’s BYOD & ESS joint tariff
16 proceeding (Case Nos. 19-3167-TF & 19-3537-TF), GMP’s Climate Plan proceeding
17 (Case No. 20-0276-PET), and GMP’s petition to modify its service territory in support of

1 GlobalFoundries U.S. 2 LLC’s request to operate a self-managed utility (Case Nos. 21-
2 1109-PET & 21-1107-PET).

3 **Q4. What is the purpose of your testimony?**

4 A4. In conjunction with GMP’s FY22 Annual Base Rate filing for the last year of its Multi-
5 Year Regulation Plan, I provide a summary of GMP’s request for approval of additional
6 capital investments in GMP’s tariffed Energy Storage System (“ESS”) program under the
7 New Initiatives provision in the Plan.

8 **Q5. Can you summarize GMP’s request with respect to New Initiative Investments?**

9 A5. GMP is seeking approval for additional New Initiative investments in order to meet
10 customer demand for the ESS Tariff program in FY22. To date, the ESS Tariff has been
11 fully subscribed, and GMP expects continued strong customer interest and full enrollment
12 over the term of the Tariff. This will result in an additional \$8.4 million capital
13 investment in the ESS program during FY22. With this level of proposed capital
14 investment, New Initiatives and GMP’s ongoing Innovative Pilot programs are forecasted
15 to be \$10.5 million in FY22, totaling \$22.5 million over the term of the Plan. As a result,
16 GMP is requesting authorization for \$7.5M in New Initiative investments above the
17 preset \$15M three-year investment level. This authorization will have a limited rate
18 impact in FY22 of approximately 0.09%, but will allow GMP to continue this popular
19 program, which provides net positive benefits for all customers over the lifetime of the
20 deployed storage systems and is in line with the customer participation authorized by the
21 Commission when it approved the ESS Tariff in 2020. For context, GMP estimates that

1 the additional 500 ESS installations proposed in FY22 will generate approximately \$1.5
2 million in net benefits for customers over the life of the systems.¹

3 **Q6. For background, can you explain how New Initiative investments are handled under**
4 **the MYRP?**

5 A6. New Initiatives are a specific component of GMP's MYRP and focus on voluntary
6 customer energy transformation projects that generate revenue or reduced costs for all
7 GMP customers.² New Initiatives may include investments made as part of an Innovative
8 Pilot Program, but also cover traditional tariffed offerings or other capital projects that
9 meet this definition. Capital investments in New Initiatives are included in rate base and
10 are a component of GMP's overall fixed capital expenditures over the course of the Plan.
11 As part of GMP's locked three-year capital investment of \$256.5M, GMP forecasted
12 including in rates \$5M in annual capital investment on New Initiatives, or \$15M over the
13 term of the Plan. However, as explained below, the Plan includes a specific provision for
14 Commission review and approval of proposed capital investments above this amount.
15 That provision of the Plan—Section (IV)(A)(1)(iv)—provides as follows:

16 To the extent that GMP proposes capital investments for New Initiative
17 projects above the annual \$5M cap in the coming fiscal year, it shall file
18 known and measurable documentation, including appropriate financial
19 analysis, for the proposed expenditures in its Annual Base Rate filing.
20 These projects shall be limited to transformative customer-facing energy
21 projects that require an initial upfront capital investment by GMP and are
22 forecasted to contribute a net positive benefit to non-participating

¹ See Schedule G-3 in GMP's FY22 Annual Base Rate filing, Case No. 21-1963-TF (copy of ESS FY22 Capital Folder).

² MYRP § II(A)(1) (Amended 9/3/20).

1 customers through new sources of revenue and/or cost savings over the life
2 of the program.

3 As explained by GMP witnesses during the MYRP proceeding, this provision was
4 requested and approved in recognition of several factors that uniquely apply to New
5 Initiative capital projects: (1) these are programs that by definition are forecasted to
6 create net positive benefit (“NPV”) through new sources of revenue and/or cost savings
7 for all GMP customers over the life of the investment; and (2) unlike other infrastructure
8 and budget components, the exact scale and timing of these investments are largely
9 driven by new market and technological opportunities, along with customer uptake.³
10 Without this provision, three-year capital limits would artificially restrain innovation and
11 demand in projects that both drive energy transformation and create value for all
12 customers. In the long run, customers are better served by a Plan with the flexibility to
13 meet demand for the right projects.

14 **Q7. Can you provide a brief overview of GMP’s proposed FY22 capital-based New**
15 **Initiative programs?**

16 A7. As in the first two years of the Plan, GMP continues to develop and implement a range of
17 innovative energy services which are advancing the type of energy transformation to a
18 low-carbon and resilient grid our customers want and need. By design, these are services
19 that create value for all GMP customers, including through the development of new
20 mechanisms to monetize grid and environmental services. In FY22, this work will

³ See Prefiled Direct Testimony of Brian Otley, submitted June 4, 2018 in Case No. 18-1633-PET.

1 include the ESS Tariff program, one New Initiative focused on improving fast EV
2 charging infrastructure in Vermont (DCFC chargers), and one focused on further testing
3 vehicle-to-grid systems (“V2G”). In addition, GMP will be implementing two new
4 Innovative Pilots, which will test new smart panels that can unlock benefits from other
5 connected devices for customers (the SPAN Pilot, filed with the Commission on April
6 21, 2021), and new battery storage systems (the Enphase Battery Pilot, anticipated to be
7 filed in June of 2021 and continue into FY22).⁴ Each of these programs is described in
8 more detail in Schedule G of GMP’s FY22 Annual Base Rate filing.

9 The most significant of these FY22 programs—and the one driving the need for
10 additional capital investments—is the continuation of GMP’s approved and tariffed ESS
11 battery energy storage program. This program was originally developed through a pilot
12 program, along with the associated Bring Your Own Device (“BYOD”) program. GMP
13 now offers both programs as traditionally tariffed programs to accelerate residential
14 battery storage deployment, which can be leveraged as a load management tool to help
15 provide affordable and low carbon energy for all GMP customers in addition to the
16 resiliency benefit to the installing customers, all while reducing costs for all customers.
17 Both tariffs were approved by the Commission after a thorough review in May of 2020,

⁴ In addition to these capital-based Innovative Pilots, GMP has four new Innovative Pilots that are managed through power supply costs, as outlined in Schedule G-1 in GMP’ FY22 Annual Base Rate filing.

1 based on evidence demonstrating that each program will produce net positive benefits for
2 customers.⁵

3 In last year's FY21 base rate filing, we noted the uncertainty regarding the
4 pandemic and our underway tariff programs and said we would seek Commission
5 approval in the event that FY22 investments would result in more than \$15M total over
6 the three-year term of the Plan. This testimony supports that request. The Commission
7 has previously concluded that the ESS Tariff meets the definition of a New Initiative and
8 found the program is highly likely to provide a net positive benefit for customers over the
9 life of the program.⁶ The Commission's order approved up to 500 customers annually
10 participating in that program. GMP is therefore requesting Commission approval to
11 invest \$10.5M in New Initiatives in FY22, and \$22.5M total over the course of the Plan,
12 so that GMP can support the approved ESS Tariff program at the customer participation
13 level allowed under the tariff.

14 **Q8. How have these tariffs been implemented to date?**

15 A8. Both tariffs, as authorized, include an annual installation cap of 5 MW, corresponding to
16 500 customers per year with 10 kW battery storage systems, or 1,500 over three-years.

17 The requested authorization for the ESS investment is based on a full subscription of this
18 cap during FY22, or approximately 500 installations. Customer interest and uptake has

⁵ *Tariff filing of GMP for approval of an Energy Storage System tariff & Tariff filing of GMP for approval of a Bring Your Own Device tariff*, Case Nos. 19-3167-TF & 19-3537-TF, Final Order of May 20, 2020 ("ESS/BYOD Final Order").

⁶ ESS/BYOD Final Order at 2, 11, 15, 18–19.

1 been strong, and GMP has fully subscribed the first 1,000 available spots in the program
2 through the first two years under the ESS, and 72 customers have enrolled under the
3 BYOD program. However, several factors have limited the pace of installation relative
4 to the total authorization and customer demand. At the outset, the approval date of the
5 tariffs following investigation limited installations during FY21. The ongoing Covid-19
6 pandemic also impacted the rate of installation because of slowdowns in the
7 manufacturing of the Tesla Powerwall batteries due to supply chain issues, such as
8 microchips used in the ESS, among other pandemic-driven uncertainty. There are
9 currently about 250 completed installs under the ESS Tariff, which are expected to
10 continue at a pace of approximately 20 per month through the remainder of FY21, which
11 is approximately half of the originally expected pre-pandemic install rate. However, we
12 expect production and delivery of Powerwalls will soon catch up, and we will see this
13 pace increase. With more availability, GMP can serve the remainder of the 1,000
14 customers currently in the sales process and in January will be ready to open enrollment
15 to an additional 500 customers. GMP does anticipate that all 1,500 customer spaces
16 under the Tariff will be subscribed by the end of FY22, and that any remaining batteries
17 will be installed and closed to plant in FY23

18 **Q9. Will GMP's proposed FY22 investment benefit non-participating customers?**

19 A9. Yes, this investment will allow GMP to continue implementation of this approved
20 program and continue providing benefits to non-participating customers. The financial
21 analysis GMP provided during the battery tariff investigations shows that these programs

1 have a small rate impact in the first year or two following installation but ultimately
2 create a beneficial return for customers that continues over the lifetime of the battery,
3 with each installation ultimately producing a net benefit of \$2,629 for non-participating
4 customers.⁷ In addition, as noted in the ESS Tariff proceeding, we modeled the benefits
5 of these programs conservatively and believe there is a strong likelihood that the batteries
6 will produce even greater benefits. For example, GMP recently started a new Innovative
7 Pilot that uses a subset of the Powerwall aggregation in the ISO-NE Frequency
8 Regulation Market, which will provide an entirely new revenue stream from the use of
9 these batteries to further provide benefits to customers.

10 As outlined in GMP's FY22 Annual Base Rate filing, we forecast that the
11 additional \$7.5M investment above the preset \$15M for New Initiatives will have a small
12 (+0.09%) impact on base rates in FY22, but will produce an overall net benefit for non-
13 participating customers during their service life, as anticipated in the ESS Tariff approval.
14 As noted above, we anticipate \$1.5M in net benefits for non-participating customers over
15 the life of these systems if all 500 authorized and subscribed ESS systems are installed in
16 FY22.

17 **Q10. In the event that more Powerwalls are installed in FY22 than anticipated, how does**
18 **GMP propose to handle those additional investments?**

19 A10. As noted above, the Tariff limits the ESS program to 500 customers per calendar year,
20 but the exact timing of when systems close to plant in any given fiscal year is influenced

⁷ See Exh. PUC-Info Request-1.a, filed February 21, 2020 in Case No. 19-3167-TF.

1 by a number of factors outside of GMP's control, including the timing of when customers
2 sign up, the availability of Powerwalls, and the installation schedule of third-party
3 installers. GMP believes the proposed forecast of investment is reasonable for FY22
4 based on expected installation rates for the coming year. In the event that actual
5 investment in this or other customer driven New Initiatives is greater due to when
6 individual systems are installed and closed to plant, GMP will track the difference and
7 report on it, along with any proposed treatment, in its FY23 traditional rate case due next
8 January.

9 **Q11. Does that conclude your testimony?**

10 A11. Yes, it does.