

**STATE OF VERMONT  
PUBLIC UTILITY COMMISSION**

Case No. 18-1633-PET

Petition of Green Mountain Power for approval of     )  
a multi-year regulation plan pursuant to 30 V.S.A.     )  
§§ 209, 218, and 218d   )

**Green Mountain Power’s Responses to the  
Second Set of Discovery Requests Served by Renewable Energy Vermont**

Green Mountain Power (“GMP” or “Petitioner”), by and through the undersigned counsel, hereby responds to the second set of discovery requests served by Renewable Energy Vermont (“REV”) on February 11, 2019.

**General Objections**

The following General Objections of Petitioner GMP are incorporated by reference into its responses to each Interrogatory, Request to Produce, and Request for Admissions reproduced below, whether or not an objection is stated in any particular response. Any response to one of the Interrogatories, Requests to Produce, or Requests for Admission given below is given without waiver of any objection, whether or not an objection is stated.

1. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission reproduced below to the extent that it is overbroad, irrelevant, unduly burdensome, or not proportional to the needs of the case.
2. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission reproduced below to the extent that it calls for the disclosure of information or production of material privileged under the attorney-client, work-product, or any other applicable privilege.
3. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission reproduced below to the extent that it is unreasonably cumulative or duplicative, or calls for the disclosure of information or production of material that is obtainable from some other source that is more convenient, less burdensome, or less expensive, including, but

not limited to, information or material that is publicly available or that has already been disclosed or produced to you in connection with another proceeding.

4. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission reproduced below to the extent that it calls for the disclosure or production of confidential or proprietary information, trade secrets, or material.
5. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission reproduced below to the extent that it is vague, unintelligible, requires speculation as to the information being sought, or is otherwise incapable of a reasonable answer.
6. Petitioner objects to each Instruction and Definition listed in the requesting party's discovery requests to the extent that it exceeds the bounds of permissible discovery or is unduly burdensome.
7. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission to the extent that the request exceeds the scope of Petitioner's testimony and exhibits.
8. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission to the extent that the request would require Petitioner to conduct extensive document review, additional studies, analyses, and/or tests as part of its response.
9. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission to the extent that the request exceeds the scope of the requesting party's intervention.
10. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission to the extent that the request exceeds the scope of the issues on review.
11. Petitioner objects to each Interrogatory, Request to Produce, and Request for Admission to the extent that it calls for a legal conclusion.

**INTERROGATORIES AND REQUESTS TO PRODUCE**

**Q:REV:GMP.2-1: Identify and describe any other pilots or tariff programs currently being considered or planned by GMP that are not discussed in Mr. Castonguay's testimony, and produce all documents pertaining to same.**

Objection: GMP reasserts General Objections 1 and 5 with respect to the phrase "being considered or planned" as overbroad, vague, and not proportional to the needs of the case, and General Objection 2 to the extent that the request encompasses material protected by Attorney-Client and work product privileges. Without limiting or waiving this objection, GMP responds as follows:

A:REV:GMP.2-1: The innovative pilots or tariff programs currently being planned by GMP are listed in my testimony at page 8, lines 11–14; page 20, line 8 to page 21, line 10; and page 21, lines 17–19. These are representative of the types of pilots GMP would expect to develop during the course of the Multi-Year Regulation Plan. The purpose of the innovative pilot program is to allow learning by doing and deploying innovations, over short periods of time, in order to help spur new solutions that we expect will have success for customers. We are particularly interested in working with REV and others to develop innovative programs around EV chargers and storage devices, as stated in my testimony. As described, we are developing a third party aggregation pilot similar to the BYOD program but one that allows companies to combine multiple resources together and provide GMP with one aggregate resource. We are currently in the discussion stage with respect to this potential pilot, with REV and its members.

Person/s Responsible for Response: Josh Castonguay  
Title of Person/s: VP & Chief Innovation Executive and Power Supply  
Date: February 25, 2019

**Q:REV:GMP.2-2: Mr. Castonguay's testimony at page 8, lines 11-14 states:**

**Looking ahead, we are currently in the process of developing a tariff for standalone storage and are also investigating a new pilot program that would facilitate bundled devices that would include solar provided by third parties, battery storage, and possibly an EV and flat pricing for a total energy package. The notion is to simplify the process for customers and to begin exploring distributed generation options beyond just net metering. The goal is to create a platform that any provider could plug into and provide customers with a simple, flat price option for a resilient energy package at home.**

**With respect to these statements, please respond to the following:**

- a. Please describe in more detail both the standalone storage program and the bundled offering pilot including, as to each program:**
  - i. Number of customers eligible to participate;**
  - i. (ii) Customer classes eligible to participate;**
  - ii. (iii) Identify who will own the devices and if GMP will retain ownership, explain why;**
  - iii. (iv) Identify the customer charges being considered for the tariff and produce all documents including emails, correspondence, presentations, memoranda, workpapers, spreadsheets and financial calculations, vendor and third party pricing information and quotes, summaries and analyses regarding such charges;**
  - iv. (v) Produce all financial analysis reflecting the cost and value of the tariff and the pilot offerings, including all emails, correspondence, presentations, memoranda, workpapers, spreadsheets and financial calculations, summaries, vendor and third-party pricing information and quotes regarding such analysis;**
  - v. (vi) Explain if and how the programs will accommodate third-party aggregators;**
  - vi. (vii) If either program will not accommodate third-**

- party aggregators, explain why—not how—such limitation is in the best interests of GMP’s customers;
- vii. (viii) Explain if and how third-party products/service providers will have access to GMP customer-facing mediums (ex. bill inserts, mailings, GMP advertisings, GMP website) for providing educational, informational and advertising materials to customers about third party products and services ;
- viii. (ix) If either program will not provide such access or will limit such access, explain why access would be limited and how such limitation is in the best interests of GMP’s customers;
- ix. (x) Identify the individual and cumulative capacity of the devices being considered for each program;
- x. (xi) Explain if customers will be compensated for providing reserves for GMP to call on the devices for grid purposes and provide the financial analysis including all supporting workpapers and analysis; and
- xi. (xii) With respect to the pilot, explain if and how third parties would both participate in and be compensated for providing their products and services into the bundled offering, particularly if a provider would not be providing the entire bundled package.
- b. Produce all documents, including emails, correspondence, workpapers, presentations, memoranda.
- c. Please explain with specificity what you mean by creating a “platform that any provider can plug into.”
- d. Describe the flat prices being considered for the pilot and describe how the flat price would be designed to assure providers are fully compensated for their devices and service offerings. Provide all financial analysis and produce all workpapers, spreadsheets and financial calculations, summaries and documents regarding such analysis.

Objection: GMP reasserts General Objections 1 and 2 to the extent that the request for documents is overbroad and burdensome and is not

proportional to the needs of the case, and encompasses material protected by the attorney-client and work-product privileges. Without limiting or waiving this objection, GMP responds as follows:

A:REV:GMP.2-2:

- a. The responses below describe the standalone storage pilot and bundled offering program offering to the extent these have been developed:
  - i. As both programs are still under development, the specific scope of customer eligibility has not yet been determined.
  - i. Residential and Small Commercial classes.
  - ii. Solar, EVs, and EV chargers would be owned by the customer, and it is anticipated that storage devices would be owned by GMP. However, as noted below in part (v) GMP also anticipates a related third party aggregation pilot which would allow for a different ownership structure, similar to the BYOD program.
  - iii. Customer charges have not yet been determined. For any tariff filings, REV will have the opportunity to provide comment during the Tariff regulatory process, and GMP has offered to include REV in review prior to pilot filings too.
  - iv. The programs are still under development. See General Objections reasserted above.
  - v. Third party aggregators will be able to participate through a separate pilot for aggregation similar to BYOD, as mentioned above. The aggregation pilot that is currently in development will allow developers to aggregate individual customer resources and present GMP with one aggregate bundle of available energy resources for dispatch.
  - vi. See response to (v) above.
  - vii. GMP anticipates joint marketing efforts for this program, similar to the joint marketing that will occur for GMP's revised BYOD program, on which we are working with REV and is set to include a joint press event, press release, bill insert, social media postings, and a blog post to boost customer awareness among other ideas. A copy of the BYOD marketing

plan has already been provided to REV. Additional opportunities for joint marketing may be developed in conjunction with REV or participating third parties.

- viii. GMP remains open to discussing further joint marketing opportunities, keeping customers' best interests in mind, including consideration of the cost of the marketing and sharing those costs with third parties.
  - ix. Both programs are still under development and this information has not yet been determined.
  - x. GMP reasserts General Objection 5 as to the meaning of the term "reserves" which is vague and unclear. Without limiting or waiving the objection, GMP responds as follows. If by "reserves" REV means compensation for the value of shared access and capacity the devices can provide to support GMP grid management efforts, then yes. The parameters have not yet been developed to establish the level of such value.
  - xi. Under the pilot, GMP anticipates that the third party will be compensated by selling their product to customers and typically charging a margin on the product they offer (whether the whole bundle or a part of the bundle). As noted above, specific details are still under development.
- b. See reasserted General Objections 1 and 2 above.
- c. GMP is referring to a software platform, such as GMP's current GridLogic and Virtual Peaker energy resource management platforms, where devices can be integrated, and GMP can directly dispatch the resources to provide value such as peak reduction.
- d. See reasserted General Objections 1 and 2 above. Without limiting or waiving these objections, GMP responds as follows. Our customers are always our first priority and so we are investigating flat pricing to determine whether it would be beneficial to participating customers (due to ease and simplicity, for example, and the opportunity to benefit depending upon their usage profile) and to non-participating customers (due to the potential for smoother or even increased payments from flat fee customers toward common costs). GMP feels that this is a model that has been utilized for other services and may be appropriate for energy services; any pilot incorporating flat pricing would be limited in scope to determine if it is of interest to customers. In terms of benefits for providers, they

will continue to determine the price for their products and services and it will be up to them to assure appropriate margins.

Person/s Responsible for Response: Josh Castonguay

Title of Person/s: VP & Chief Innovation Executive and Power Supply

Date: February 25, 2019



**Q:REV:GMP.2-3: With respect to Mr. Castonguay’s testimony at pages 8-9 regarding its “EV charging offerings”, please respond to the following questions:**

- a. Confirm that the pilot referenced is the Residential EV Charring Service Innovative Pilot filed by GMP on June 30, 2017.**
- b. Admit that the pilot’s 18-month term expired in January, 2019.**
- c. Produce the status update filed with the PUC upon completion of the pilot, and produce all financial analysis and workpapers, in native format, supporting GMP’s final status update.**
- d. With respect to the July 2, 2018 GMP eCharger Innovative Pilot – Update and produce all financial analysis and workpapers, in native format, supporting GMP’s final status update.**
- e. Explain why the pilot was limited to residential customers.**
- f. Describe in detail the EV charging tariff offering discussed at the bottom of page 8 to top of page 9 of Mr. Castonguay’s testimony, including:**
  - ii. Identify customer classes eligible to participate;**
  - iii. Identify who will own the devices and if GMP will retain ownership. Explain why;**
  - iv. Identify the customer charges being considered for the tariff and produce all workpapers, spreadsheets and financial calculations, vendor and third party pricing information and quotes summaries and analyses regarding such charges;**
  - v. Produce all documents regarding the financial analysis of the cost and value of the tariff, including all emails, correspondence, presentations, memoranda, workpapers, spreadsheets and financial calculations and analyses, summaries, vendor and third-party pricing information and quotes regarding such analysis;**
  - vi. Explain if and how the programs will accommodate third-party aggregators;**
  - vii. If either program will not accommodate third-party aggregators, explain why—not how—such limitation is in the best interests of GMP’s customers.**

Objection: GMP reasserts General Objections 1 and 2 to the extent that the requests for documents are overbroad and burdensome and not proportional to

the needs of the case and encompasses material protected by the attorney-client and work-product privileges. Without limiting or waiving these objections, GMP responds as follows:

A:REV:GMP.2-3:

- a. Confirmed.
- b. Admitted.
- c. Under the Pilot Data Collection and Reporting Plan submitted by GMP in Case No. 17-3232-INV, the final report is not due until 60 days after completion of a pilot, in order to allow for analysis and preparation, which GMP has not yet conducted.
- d. Our final status update is not due until March 15, 2019 so documents have not yet been compiled.
- e. This pilot was specifically designed to test the uptake and interest for residential customers. GMP started with residential customers for simplicity, however, would note that in some instances businesses purchased EV cars and chargers were provided as residential installation.
- f. GMP has not yet finalized or filed the tariff and would expect to have the financial and other information required for a tariff filing when presented to the Public Utility Commission (“PUC” or “Commission”). As described above, GMP is also open to other programs or services for EV charging and supported the PUC’s recent report to the legislature recommending that commercial providers be permitted to offer EV chargers without PUC regulation. GMP also notes that the recently proposed BYOD update provided to REV for review also included an option for EV chargers to receive a credit in a similar fashion to batteries.

Person/s Responsible for Response: Josh Castonguay

Title of Person/s: VP & Chief Innovation Executive and Power Supply

Date: February 25, 2019

**Q:REV:GMP.2-4: With respect to Mr. Castonguay’s testimony at A16 concerning competitive innovative service platform offerings, please respond to the following:**

- a. At lines 15-17 on page 11 of his testimony Mr. Castonguay states that “Limiting GMP’s innovative services would negatively impact customers by reducing their ability to take advantage of real and meaningful cost savings and benefits.” Please explain in detail what cost savings you are referring to and produce all financial data, analysis and savings estimates performed by GMP.**
- b. What “other benefits” are you referring to? Please explain in detail and with specificity.**

Objection: GMP reasserts General Objections 1, 2, and 3 to the extent that the request for documents is overbroad and burdensome and not proportional to the needs of the case, asks for information already disclosed to the requesting party, and encompasses material protected by the attorney-client and work-product privileges, and General Objection 3 to the extent that the requested documents are available in GMP’s pilot filings with the Commission. Without limiting or waiving these objections, GMP responds as follows:

**A:REV:GMP.2-4:**

- a. GMP is referring to the cost savings produced by programs such as the Powerwall program, which is anticipated to save customers approximately \$2 million over the life of the program, and other benefits such as local renewable energy, residential energy back-up capacity during outages, and onsite energy participation, etc. Please also refer to all GMP pilot filings, which have previously been provided to REV, for details and financial data on customer cost savings related to these programs. Each pilot filing is provided with an explanation of the costs and benefits to all customers.
- b. “Other benefits” refer to the benefits that occur beyond the cost savings. These can include, but are not limited to, the following:
  - Utility management of distributed resources for better system resiliency, in addition to cost savings for customers;
  - Home resiliency/emergency power;

- Carbon reduction, personal and utility-wide;
- Automation and remote control capability for customers; and
- Simplicity and certainty of billing.

Person/s Responsible for Response: Josh Castonguay

Title of Person/s: VP & Chief Innovation Executive and Power Supply

Date: February 25, 2019

**Q:REV:GMP.2-5: State whether GMP allocates any overhead or any indirect costs when calculating the cost of each of its pilots. If the answer is yes, please explain what overhead and indirect costs are allocated and how the allocation is calculated. If the answer is no, please explain why no allocation of those costs is included.**

A:REV:GMP.2-5: Yes. The allocation of costs depends on the overheads that will be attributed to the program. For example, the Powerwall program included an 8% administrative and general adder on the cost as well as additional O&M costs to operate the software platforms. Other programs have ongoing operating expenses included in the financials that are provided with each pilot filing. It is important to attribute the actual costs of each program to assure customers are recognizing real value beyond the costs of the program.

Person/s Responsible for Response: Josh Castonguay  
Title of Person/s: VP & Chief Innovation Executive and Power Supply  
Date: February 25, 2019

**Q:REV:GMP.2-6: Referring to page 12, lines 5-6 of Josh Castonguay’s rebuttal testimony that GMP’s “customers tell us they want energy that is low-cost, low-carbon, and highly reliable”:**

- a. Produce documents that support Mr. Castonguay’s contention.
- b.
- c. Explain how GMP’s customers told GMP what they want.
- d.
- e. Quantify the number of customers that told GMP what Mr. Castonguay contends.
- f.
- g. State whether GMP asked customers if they would like a choice of electric service provider.
- h.
- i. State whether GMP customers have told GMP they want a choice in who provides their retail electric service.
- j.
- k. Have any GMP customers expressed to GMP that they want their electricity sourced from 100% renewable energy? If so, state the number of customers, identify which customer class(es) have expressed this desire, and produce all documents relating to same.
- l.
- m. Have any GMP customers expressed to GMP that they want their electricity sourced from a local distributed grid that would provide sustainable local benefits for Vermont communities? If so, state the number of customers, identify which customer class(es) have expressed this desire, and produce all documents relating to same.

Objection: GMP reasserts General Objection 5 as to vagueness for subsection (m). Without limiting or waiving these objections, GMP responds as follows:

A:REV:GMP.2-6:

- a. The statement is based upon my numerous interactions with our customers and those of my colleagues, not documents.
- b. [No request]
- c. The GMP team is continually engaged with customers every single day, from our field designers, commercial customer representatives, and line crews, to the call center team, which handles about 300,000 business calls a year. Also, our team, including myself, visits with homeowners, town clerks, town energy committees, lawmakers, and businesses on a regular basis.
- d. [No request]
- e. GMP has not tracked the specific number of customers who have expressed this sentiment to GMP.
- f. [No request]
- g. Not to my knowledge.
- h. [No request]
- i. See response to (g) above; we are not aware of such commentary.
- j. [No request]
- k. Some have, yes. Customers can sign up for Greener GMP and opt for 100% renewable power, or participate in our Voluntary Renewable Energy Rider (CowPower) program, which provides 100% renewable power. Approximately 2,700 customers are signed up for these two programs. Beyond enrollment in these programs, we don't have any customer tracking on such requests.
- l. [No request]

- m. The question is not clear and we do not have any customer tracking on such requests. Some communities have pursued local generation options, which customers participate in through net-metering and group net-metering.

Person/s Responsible for Response: Josh Castonguay

Title of Person/s: VP & Chief Innovation Executive and Power Supply

Date: February 25, 2019



**Q:REV:GMP.2-7: Revised Exhibit BO-4 includes additional Innovation tracking metrics. With respect to the proposed metric for power supply (metrics 5 through 7), please respond to the following:**

- a. For metric #6, please identify what resources would qualify as “carbon-free”?**
- b. Does GMP consider nuclear to qualify as “carbon-free”?**
- c. Please explain why the metric would track the “carbon-free” percentage of the power supply, rather than tracking and reporting data as required by 30 VSA §8003(e), which requires the utilities to disclose “the types of technologies used, whether the energy is Vermont-based or not, and clearly distinguish between energy or tradeable energy credits provided from renewable and nonrenewable sources, and existing and new sources.”**
- d. Is GMP willing to modify this metric to track “the types of technologies used, whether the energy is Vermont-based or not, and clearly distinguish between energy or tradeable energy credits provided from renewable and nonrenewable sources, and existing and new sources?”**
- e. Identify if and where GMP reports disclosures to the Commission or its customers of the information required by 30 V.S.A. §8003(e) and produce such disclosures.**
- f. Are the emissions calculations to be reported after GMP REC sales?**
- g. With respect to metric #5, what is the source of the data being collected to develop the emissions calculation reported?**
- h. Would GMP agree to track and report the amount and total price of its annual REC sales?**
- i. With respect to metric #7, please explain why GMP chose the single highest peak, rather than the highest peaks (i.e., ten highest peaks).**

**A:REV:GMP.2-7:**

- a. This metric would include GMP power resources that are fueled by non-fossil-fuel emitting sources, including solar, wind, hydro, and nuclear power resources. GMP reported on its overall fuel mix, including the renewable and carbon free percentages of power in its 2018 Integrated Resource Plan (Chapter 5), and also**

recently on our website and on an onbill message to customers. *See* <https://greenmountainpower.com/2018/12/13/fuel-mix/>.

- b. Yes. Contracted nuclear generated power does not emit carbon as a byproduct of generation. GMP has a long-held strategy of tapering down the amount of nuclear generation in our power supply while increasing the amount of renewable generation. We are making this transition over time in order to manage it cost-effectively for customers.
- c. This metric is based on the request from the Department of Public Service (“Department” or “DPS”) (*see* Allen prefiled testimony at 40) that asked that we track the percent of our power supply that is renewable and the amount that is carbon-free. Tracking both of these metrics seems appropriate and reasonable to us.
- d. Yes.
- e. GMP reports this information in our IRP, as well as in our blog posts, and on our website. All of these delivery mechanisms are publicly available.
- f. Yes.
- g. We will calculate the kWhs by resource in our energy supply portfolio and then map each resource to its lbs CO<sub>2</sub>/kWh profile. We then do the math to calculate GMP’s overall lbs CO<sub>2</sub>/kWh delivered metric.
- h. This information is already provided quarterly to the PUC under PUC Rule 5.200. We recommend that those quarterly filings continue to be the source for this information.
- i. The single highest peak is an important event each year in that it sets GMP’s future obligation for capacity supply and therefore sets the total cost that GMP customers will pay for capacity in the following year. Forecasting this peak and taking steps to reduce GMP’s overall load during that time is one of our most important cost-lowering strategies we execute on behalf of our customers, and that is why we proposed to track it for this metric.

Person/s Responsible for Response: Josh Castonguay; Brian Otley

Title of Person/s: VP & Chief Innovation Executive and Power Supply; Senior VP and Chief Operations Officer

Date: February 25, 2019

**Q:REV:GMP.2-8: With respect to the proposed metric in Revised Exhibit BO-4 for interconnection (metric #8-9), please respond to the following:**

- a. Please explain why the metric does not include tracking of the amount of time taken to achieve each of the intervals for Fast Track Screening, Feasibility Study, System Impact Study, Facilities Study, Interconnection Agreement executed, and completion of interconnection upgrades by GMP? Does GMP agree that this would be worthwhile information to track to determine if the Rule 5.500 timelines are being met?**
- b. Please produce all information concerning the data tracking information suggested in the prior question and produce all documents relating to same.**
- c. If GMP does not currently track and keep an account of the information requested in 2-4(a), why not?**
- d. Please produce the information for all projects to date in the reporting metric and produce all documents relating to same.**
- e. Please identify the amount of money invested for non-utility electricity generation systems to interconnect to GMP's grid to date annually and the cumulative cost estimate of GMP upgrades provided annually. If the data is already broken out to reflect the respective costs of net meter and other non-net meter DG, please break out the costs accordingly as well as by project size categories (ex. <50kw; <150kW; >150 to 499kW; 500kW; >500kW**
- f. Please describe how the value of interconnections in (e) are accounted for by GMP.**
- g. If the data is not currently available to report in response to (e) and (f), please explain why?**
- h. Are upgrades to the system donated to and/or owned by GMP once the interconnection is completed and the upgrades paid for by the project?**
- i. Please indicate how much money or value of grid upgrades and enhancements GMP has received as a result of DG interconnection applications.**
- j. Is the value of these upgrades and enhancements included in GMP's rate base and does GMP earn any type of return on these values? If yes, please describe in full.**
- k. For the average days to interconnect in metric #9, please explain if the days are counted from the submission of the interconnection application, or from**

**the date on which the interconnection services agreement is executed. Would GMP consider tracking both durations?**

- 1. The metric does not propose to track improvement to remove congestion on GMP circuits. Would GMP agree to adding a metric to track its progress on addressed constraints on the grid and identifying the location of all circuits that are constrained and the cause of the constraint(s)? If not, why not?**

Objection: GMP reasserts General Objections 1, 4, 5, and 8 as portions of this request are overbroad and unduly burdensome and are not proportional to the needs of the case, would involve disclosure of confidential information, are vague and unclear, or would require GMP to undertake additional analysis. Without limiting or waiving these objections, GMP responds as follows:

A:REV:GMP.2-8:

- a. We have proposed what we believe to be the most useful tracking information for the MYRP performance report, focusing on data that can be collected, tracked, reported easily and concisely, and that clearly measures GMP's own performance, as intended. Due to the complexity of the interconnection queue, there are a number of factors that can impact the timing of review for any particular project that are outside of GMP's control, including multiple projects proposed in the same area that can delay the start of later queued projects (due to project decisions not to pursue upgrades immediately, for example) and other developer-driven reasons for delays. Providing all of the data requested in this subpart would offer no insight into the why or how; each project is interdependent on a previously queued project. This reporting will not provide a clear and accurate status of GMP's performance for interconnection timelines as intended. Moreover, detailed reporting on individual timeframes for each application, and the reason for delays, if any, would be extensive and time consuming, may require disclosing customer specific information, and is beyond the intent of the proposed MYRP report. Therefore, for purposes of this reporting requirement, we believe the status of the projects in the queue is the most useful and appropriate data point, rather than the time interval between each step for each project. We further note that the overall timeframes for interconnection review are already otherwise regulated under Rule 5.500, and where designated timelines are not met, the Rule provides for process and resolution.

- b. GMP reasserts General Objections 1, 4, and 5 as it is unclear what the question is requesting, is overbroad, unduly burdensome, and not proportional to the needs of the case as there is no timeframe provided, and to the extent the question is asking for information regarding specific projects, could contain information considered confidential by the developers.
- c. See response to (a) above.
- d. GMP reasserts General Objections 1 and 5 as this question is overbroad and burdensome, and not proportional to the needs of the case and is vague and unintelligible. The phrase “in the reporting metric” is not defined or clear from the context of the question.
- e. GMP reasserts General Objections 1, 5, and 8 to the extent that it is overbroad and burdensome, and not proportional to the needs of the case, vague and unintelligible, irrelevant given the misunderstanding of how these costs are accounted for, as described further in (f) below, and would require GMP to conduct additional analysis in order to provide a response as GMP does not track this information in the format requested.
- f. Per Rule 5.500, interconnection costs are paid for by the generation project. Once an interconnection agreement has been executed, GMP pays the initial interconnection costs, and then the generator pays GMP for these costs. The payments received from the generator are netted against the costs incurred by GMP. The result is that any upgrades are carried on GMP’s books at zero cost. The same accounting is used for customer requested line extensions.
- g. See responses to (e) and (f).
- h. Similar to line extensions, GMP owns the facilities from the point of interconnection and is responsible to maintain them going forward. These upgrades completed due to generation interconnection are required because of the impact that the generator is having on the distribution or transmission system and are not “donated.”
- i. See response to (e).
- j. No. See response to (f) above. Since the net cost to customers of these upgrades is zero, there is no return earned by GMP.

- k. GMP has anticipated tracking from the time the project is ready for interconnection, meaning it has completed all its necessary documentation and prerequisites, but is open to clarifying this metric with REV.
- l. GMP is already working on addressing constraint issues through alternative means. GMP provides publicly all currently constrained distribution circuits along with the cause of these constraints through a map on GMP's website. Under the current Rule 5.500, and further confirmed in the DPS report to the Legislature under Act 139, generation projects interconnecting to the system are required to pay for any upgrades needed to safely and reliably allow the interconnection of the project. As more generation is connected, eventually proposed projects can run up against major limitations, such as a needed substation transformer or certain system protection limitations. GMP has made a recent proposal to the PUC to deal with one such common limitation, known as Transmission Ground Fault Overvoltage ("TGFOV"). This occurs when the load to generation in an area drops to 2:1 respectively (designated as "orange" on GMP's system map). Because the cost of these upgrades are fairly significant but can be caused by even small additions to a given circuit, they have become a barrier to such installations. It is unlikely that a single, small generation project would be able to pay for the total cost to remedy the problem. We therefore have put forward a proposal that would allow us to perform the work and alleviate these TGFOV constraints while sharing the cost of these improvements across all future generation that interconnect onto these specific circuits. See Response to Q:REV:GMP.2.14.

Person/s Responsible for Response: Josh Castonguay; Eddie Ryan

Title of Person/s: VP & Chief Innovation Executive and Power Supply; Controller

Date: February 25, 2019

**Q:REV:GMP.2-9: Would GMP be willing to track requests for interconnections for EV charging stations? And with respect to such tracking report**

- a. Please identify the amount of money invested individually and cumulatively to date for EV charging stations**
- b. Please identify the number of requests for interconnections for EV charging stations to date**
- c. For non-utility electricity generation systems to interconnect to GMP's grid to date annually and the cumulative cost estimate of GMP upgrades provided annually. If the data is already broken out to reflect the respective costs of net meter and other no net meter DG, please break out the costs accordingly as well as by project size categories (ex. <50kW; <150kW; >150 to 499kW; 500kW; >500kW)**

Objection: GMP reasserts General Objections 1, 3, 5, and 8 as portions of this request are overbroad and unduly burdensome and are not proportional to the needs of the case, duplicative, vague and unclear, or would require GMP to undertake additional analysis. Without limiting or waiving these objections, GMP responds as follows:

**A:REV:GMP.2-9:** GMP is willing to track and report on EV charging station interconnection requests, to the extent that it has knowledge of these requests. However, GMP will not always know that a particular request is related to EV charging stations, and customers also may interconnect EV charging stations without GMP's involvement or knowledge. For example, if a shopping mall decides to add public charging in its privately-owned parking area and connect it into the electric system of the building, we would not be made aware of such an install. Therefore, GMP's tracking data will be limited to what it would reasonably be aware of under interconnection procedures.

- a. GMP will not know the amount of investment made to purchase, install, and activate a charging station. GMP will only know the interconnection costs for stations where we have done the interconnection work, and the cost of charging infrastructure we have provided under a Tier III or similar program.
- b. Interconnection requests for EV charging stations (when received) are handled the same way a line extension or new service request are handled. We have not flagged or identified these requests as being unique for EV charging end use. Going forward, we are able to modify our process so that we can flag these

interconnection requests as being for EV charging station use so that we are able to track and report on them prospectively to the extent the requestor notifies us as such. Notwithstanding the above, GMP is aware of 104 public charging stations currently installed and 299 residential chargers currently installed.

- c. GMP reasserts General Objections 1, 3, 5, and 8 to the extent that the request is overbroad and burdensome, and not proportional to the needs of the case, duplicative, vague, and would require GMP to conduct additional analysis in order to provide a response. Without limiting or waiving these objections, GMP responds as follows: see response to Q:REV:GMP.2-8(e), (f), & (h) above.

Person/s Responsible for Response: Brian Otley  
Title of Person/s: Senior VP and Chief Operations Officer  
Date: February 25, 2019



**Q:REV:GMP.2-10: Please describe with specificity and detail GMP’s plans to upgrade the distribution grid to allow for “partnerships with [its] customers to create more home-, business-, and community-based energy systems, as well as third-parties in the energy space that can leverage the tools and resources GMP can provide...” as Ms. Powell emphasizes at page 3 lines 11-14? Produce all documents referred to, or relied upon for your response.**

Objection: GMP reasserts General Objection 5 as the question mischaracterizes the quoted statement. Without limitation or waiver, GMP responds as follows:

A:REV:GMP.2-10: The question appears to misstate Mary Powell’s testimony. Her statement was broadly focused on a range of partnerships with customers and third parties, not just the “distribution grid” as the question suggests. We are actually looking beyond just the distribution grid when it comes to preparing the system to shift to a home-, business-, and community-based energy system. As has been continually discussed by GMP in many recent forums, including testimony in the 2019 and 2018 Rate Cases, shifting to a distributed energy model requires a brand new toolset compared to the system that has been traditionally used to manage a grid safely and reliably. This goes well beyond just poles and wires. For example, GMP has been building the necessary software tools to manage a distributed fleet of resources that can then be utilized to manage the intermittency of a distributed generation system. This platform has unlocked the ability to plug in what are known as Distributed Energy Resources (“DERs”). And with this, we are able to leverage multiple parties providing resources into this new grid that can then be managed, and value provided in exchange for these services. That said, the distribution grid itself is being utilized more than ever and will continue to be an integral part of this transition. In the face of more severe weather, we will continue investing in our distribution system to continually improve reliability to customers which naturally provides greater reliability in the use of DERs to manage the transformed grid.

Person/s Responsible for Response: Josh Castonguay & Brian Otley

Title of Person/s: VP & Chief Innovation Executive and Power Supply; Senior VP and Chief Operations Officer

Date: February 25, 2019

**Q:REV:GMP.2-11: Identify and produce the capital plan for the MYRP period that would fund the upgrades to establish the grid platform Ms. Powell describes at page 3 of her rebuttal as quoted above.**

A:REV:GMP.2-11: This spending will be included in the overall capital spending budget described in Mr. Otley's prefiled testimony, and Exhibits GMP-BO-1 & - 2. There is not a specifically named set of projects that we are recommending be executed over the Plan period, but rather, the Plan establishes a level of capital necessary to deliver strong reliability while continuing the evolution of our system to perform in the distributed, multi-directional model of energy delivery that Vermont needs, while also responding to the need to manage capital costs. Each year of the Plan, GMP will identify a set of projects to be delivered during that year, which will include projects to update aged infrastructure, increase resiliency, meet projects for the Agency of Transportation, telecommunications providers, and other requesting parties, and new initiative projects to further evolve our grid to the emerging model of energy delivery while accommodating higher levels of DERs adoption. In addition, the Plan provides the opportunity for requesting additional capital investment under certain circumstances, subject to PUC approval.

Person/s Responsible for Response: Brian Otley  
Title of Person/s: Senior VP and Chief Operations Officer  
Date: February 25, 2019

**Q:REV:GMP.2-12: How does the proposed \$85 Million cap on capital spending impact the ability of GMP to upgrade the distribution grid to allow for “partnerships with [its] customers to create more home-, business-, and community-based energy systems, as well as third-parties in the energy space that can leverage the tools and resources GMP can provide...”? Produce all documents referred to, or relied upon for your response.**

A:REV:GMP.2-12: See Response to Q:REV:GMP.2-11. It is through this capital work, ideally delivered in collaboration with our customers and partners, that GMP will continue to transition our grid to be more reliable while also accommodating higher levels of DERs as they are adopted by our customers through the good work of our partners in the market.

Person/s Responsible for Response: Brian Otley  
Title of Person/s: Senior VP and Chief Operations Officer  
Date: February 25, 2019

**Q:REV:GMP.2-13: How many customers are located in each of the red, orange or yellow constrained circuits shown on GMP's solar map? Produce all documents referred to, or relied upon for your response.**

A:REV:GMP.2-13: At present, the number of customers in each circuit is as follows:

Yellow = 12,493 customers

Orange = 65,568 customers

Red = 17,547 customers

GMP utilized our GIS system for the data, and as a result, there are no responsive documents.

Person/s Responsible for Response: Josh Castonguay

Title of Person/s: VP & Chief Innovation Executive and Power Supply

Date: February 25, 2019

**Q:REV:GMP.2-14: What is GMP’s plan to enable customers located in constrained locations to generate their own local renewable electricity and participate in GMP’s vision for home-, business-, and community based energy systems”, “so that together [GMP] can seize the opportunities before us and best serve Vermonters”? Produce all documents referred to, or relied upon for your response.**

Objection: GMP reasserts General Objections 3 and 5 as the request changed the context of the quote by improperly replacing “we” in this quote with “GMP.” The quote referred to the opportunity for customers, third parties, and GMP to work together to seize the innovative opportunities in front of us. The request also seeks information already available to the requesting party. Without limiting or waiving these objections, GMP responds as follows:

A:REV:GMP.2-14: Please see A:REV:GMP.2-10, above. In addition, here are a few recent examples. GMP has developed a cost-sharing mechanism through a recent tariff filing and has proposed this to the PUC to solve one specific generation constraint, thermal ground fault overvoltage, that because of its frequency and nature GMP believes reasonable to share among projects rather than requiring a single project to pay as under traditional cost causation principles. *See* Attachments GMP.REV2.Q14.1–GMP.REV2.Q14.6. We have also proposed to REV including a larger incentive in the BYOD pilot for storage added in constrained areas so that customers and participating third parties can benefit from helping to solve these challenges together. REV has already been provided a copy of this draft pilot, which we anticipate will be filed shortly.

Person/s Responsible for Response: Josh Castonguay  
Title of Person/s: VP & Chief Innovation Executive and Power Supply  
Date: February 25, 2019

**Q:REV:GMP.2-15: With respect to the proposed metric in Revised Exhibit BO-4 for DER (metrics #10-14), what is meant in metrics #11, 13, and 14 by “connected to GMP share(d) access platform(s)”?** Is this referring to GMP’s right to access the devices or to the third-party’s ability to share the grid platform to offer services? If not the latter, why not. Please explain in detail.

A:REV:GMP.2-15: This phrase refers generally to devices that GMP is able to access, whether it accesses them directly or through a third party.

Person/s Responsible for Response: Josh Castonguay  
Title of Person/s: VP & Chief Innovation Executive and Power Supply  
Date: February 25, 2019

**Q:REV:GMP.2-16: With respect to the proposed metric in Revised Exhibit BO-4 for EV (metrics #15-16), please respond to the following:**

- a. Will GMP agree to track commercial (nonpublic) EV charging stations?**
- b. Why were commercial charging stations left out of the metrics?**
- c. Would GMP agree to track charging stations by reflecting GMP, customer or third party ownership of the charging station? If not, why not?**
- d. The transcript of the hearing in Case 18-0974 on 10-25-19 includes a colloquy among Chairman Roisman, Mr. Smith and Mr. Hand (pp. 129-132) regarding the Chairman's concerns that GMP's EV "growth projections" and whether "more optimistic" projections could be used (Chairman Roisman's words at page 130). Attorney Hand stated at page 132 lines 6-8: "MR. HAND: Mr. Chairman, just to follow up on your line of questioning, we would be happy to address that more in the multi-year plan context." Please explain where in this case GMP has addressed this issue? If not addressed in GMP's testimony or exhibits, please respond to the Chairman's question and produce all documents relied upon or referred to for same.**

**A:REV:GMP.2-16:**

- a. GMP is willing to track and report on EV charging stations that it knows about. There are several scenarios where EV charging stations can be put into service without GMP's knowledge and GMP won't be able to report on those. *See* response to Q:REV:GMP.2-9.
- b. The reason is because GMP does not always know about commercial charging stations. For example, if a commercial charging station is installed behind the meter of a commercial customer and not separately metered, then GMP would not necessarily be aware of it. We are willing to track and report all EV charging stations of which we are aware.
- c. Where GMP has access to charging station ownership information, we would certainly be willing to report on it. However, as noted above, GMP will not always know this information, so any reporting is likely to be incomplete.
- d. GMP actually addressed this issue earlier through our IRP, filed in December 2018. *See* 2018 IRP Chapter 4 at 4-17 to 4-22. The high EV adoption scenario modeled 60,000 EVs in GMP territory by 2027. There are currently fewer than 500 EVs registered in GMP territory. Under the high adoption

scenario, when factoring for the continued growth in efficiency and distributed generation, we found that the load and grid impacts were minimal and did not pose any risk to future reliability or capital planning. *See* 2018 IRP Chapter 4.

Person/s Responsible for Response: Brian Otley  
Title of Person/s: Senior VP and Chief Operations Officer  
Date: February 25, 2019



**Q:REV:GMP.2-17: With respect to Exhibit BO-7, REV understands based upon conversations with GMP counsel that GMP intends to file only the summary data of the type included in Exhibit BO-7, without back-up materials reflecting how the values reported out were calculated, or the sources used to derive the values reported. Would GMP be willing to include with its annual reporting for each metric the analysis used to develop the values or information reported, together with the source documents and workpapers used to develop its summary reports? If not, why not.**

A:REV:GMP.2-17: GMP has understood from the Department of Public Service that it is looking for metrics to be reported in a simple, streamlined format. GMP thus developed the template proposed in Exhibit GMP-BO-7 as a single-page snapshot. This template is intended to provide a summary of metrics to track over time in order to provide more transparency into some of the operating conditions that GMP manages during the course of a year, in order to track GMP's performance as intended. GMP has maintained that with respect to data tracking and reporting, there needs to be a balance in the feasibility and reasonableness of the metrics included in order to avoid new, burdensome, and costly reporting requirements for GMP and ultimately for our customers. We think Exhibit GMP-BO-7 strikes that balance. We do expect that some of the metrics provided in the template each year will spawn additional discussions, and GMP is prepared to support those discussions through the provision of additional information. Furthermore, GMP would note that many of these metrics are related to more expansive reporting that GMP files elsewhere (e.g. RES compliance filings, ESAM reporting, etc.).

To the extent that REV is interested in further defining or clarifying the basis for the values reported, as already expressed through counsel, GMP is certainly willing to discuss ways that the metric data should be calculated or reported.

Person/s Responsible for Response: Brian Otley  
Title of Person/s: Senior VP and Chief Operations Officer  
Date: February 25, 2019

**Q:REV:GMP.2-18: The revised MYRP (Exhibit GMP-ER-1 (REV) at page 33 discusses tracking metrics and annual reporting in 4 sentences, but with no detail describing the content of the annual filings, including back-up material. Please explain what materials will be included in the annual report.**

A:REV:GMP.2-18: Exhibit GMP-BO-7 contains the template for the annual report.  
See also response to Q:REV:GMP.2-17.

Person/s Responsible for Response: Brian Otley  
Title of Person/s: Senior VP and Chief Operations Officer  
Date: February 25, 2019

**Q:REV:GMP.2-19: Mr. Otley's testimony at page 7 discusses how the metrics would be reported, and describes the annual report and two public meetings. Does GMP anticipate that the annual filings will be made in this case (Case No. 18-1633) as compliance filings?**

A:REV:GMP.2-19: Yes, GMP anticipates that the annual Plan Evaluation and Performance Metric Report required under Section VIII(B) of the MYRP would be filed as a compliance filing in this case. *See* Exhibit GMP-ER-1(Rev.).

Person/s Responsible for Response: Brian Otley  
Title of Person/s: Senior VP and Chief Operations Officer  
Date: February 25, 2019

**Q:REV:GMP.2-20: With respect to Mr. Smith's rebuttal testimony at A22 concerning the cost of net metering and his statement at page 25 lines 8-10:**

- a. Please state the net amount of the net metering power supply expense Mr. Smith is referring to and please itemize and describe each of the data inputs used to calculate GMP's Net Metering cost estimate, e.g. kilowatt-hours generated by distributed generation, customer loads, customer retail electric rates, wholesale cost of energy, etc.**
- b. Please describe the mathematic, financial, and algebraic calculations performed on each of the Net Metering Data Inputs from their raw data state as inputs to the Net Metering cost estimate to the final calculated net metering cost estimate.**
- c. Please provide the Net Metering Data Inputs used to calculate GMP's Net Metering cost estimate in electronic format, either comma separated value (CSV) or Excel format, with each data type clearly labelled, including the time period associated with each data point for each data type.**
- d. Please provide all documents, notes, emails, standard operating procedures, etc. that relate to (1) the calculation of Net Metering costs, including but not limited to the calculation of historic Net Metering costs, (2) the estimation, forecast, or projection of future period Net Metering costs, and (3) the estimation of "What If" or sensitivity calculations of Net Metering Costs that examine the impact in changes in the past or future values of Net Metering Input Data and / or potential changes in Net Metering policies and their impact on Net Metering costs.**
- e. Please provide all spreadsheets and analyses in their original electronic format, with unrestricted access to all cells and formulas, used by GMP to (1) calculate historic Net Metering costs, (2) estimate, forecast, or project future period Net Metering costs, and (3) estimate "What If" or sensitivity calculations of Net Metering Costs that examine the impact in changes in the past or future values of Net Metering Input Data and / or potential changes in Net Metering policies and regulations and their impact on Net Metering costs.**

Objection: GMP reasserts General Objections 1, 2, and 5. Identifying "all documents, notes, e-mails, standard operating procedures, etc." relating to the calculation of net-metering costs, without limitation, would be unduly burdensome and is not proportional to the needs of the case and would require GMP to disclose both material that is not relevant to this proceeding and material that is protected by the attorney-

client and work-product doctrine. Moreover, the question is vague and unintelligible. The meaning of the phrases “future period”, “historic net metering costs” and “what if” calculations are not defined or limited in any way. Nevertheless, without limiting or waiving its objection, GMP provides the following response.

A:REV:GMP.2-20:

- a. The projected annual Net-Metered Excess expense for fiscal year 2020 is about \$41 million.<sup>1</sup> This figure includes the estimated purchase cost of excess generation for both solar and non-solar projects, the adder cost for NM 1.0 vintage projects, and the siting adjustor costs/credits for NM 2.0 and 2.1 vintage projects. Please note that the cost(s) associated with RECs (NM 2.0 and 2.1 vintages) transferred to GMP are not included in this item. Rather, these costs, estimated at about \$4.4 million, are booked as part of GMP’s RES Tier 2 compliance expenses.

GMP receives a monthly projection of net-metered generation, broken down as excess or reducing the participating customers’ retail consumption, from Itron, Inc. GMP contributes installation capacity projections to Itron for this. All pricing applied to these volumes is based on PUC orders related to net-metering; some of the information is explicit (i.e., NM 1.0 solar adders for projects that applied for interconnection before January 1, 2017) and some is formulaic (i.e., “statewide blended residential electric rate”). All of this input information is shown by month in the “Input Output” tab of Attachment GMP.REV2.Q20.a – Net-Metering Cost Calculation.

- b. The Cost Outputs section of the “Input Output” tab of Attachment GMP.REV2.Q20.a shows the FY2020 calculation by month for each type of net-meter cost and their aggregation. Generally, excess net-meter costs are calculated as the excess volume multiplied by the “blended average residential electric rate,” while adjustments to these costs are calculated as the net adjustment rate (REC Adjustor rate plus Siting Adjustor rate) multiplied by the gross net-meter generation. These are added together to arrive at the net net-metering power supply expense.

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<sup>1</sup> This would rank as GMP’s second-largest purchased power expense, and third-largest power cost expense if Transmission by Others (particularly Regional Network Service) is included.

- c. *See* Attachment GMP.REV2.Q20.a. The underlying data used in the “Input Output” tab are included in the other tabs of the Attachment. (Data in the other tabs include the FY 2019 through FY 2022 periods.)
- d. With respect to (d)(1) and (d)(2), please see Attachment GMP.REV2.Q20.a for calculation of current and future periods (FY 2019 through FY 2022 periods). With respect to (d)(3), please see Attachment GMP.REV2.Q20.d.3, which contains results of three scenarios from GMP’s 2018 IRP that shows the 17-year nominal dollar difference in costs for three alternative outlooks for growth of net-metered generation: 10 MW of new installed capacity per year (low case), 20 MW (base case), and 30 MW (high case). GMP has not performed “what if” or other sensitivity calculations besides those for alternative growth paths.
- e. See response to part (d), above.

Person/s Responsible for Response: Doug Smith & Rob Bingel

Title of Person/s: Chief Power Supply Executive; Manager, Forecasting & Analytics

Date: February 25, 2019

Dated at Burlington, Vermont this 25<sup>th</sup> day of February, 2019.

**As to Objections:**




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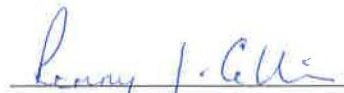
Dated at Colchester, Vermont this 15<sup>th</sup> day of February, 2019.

**Respondent Signature**

By: \_\_\_\_\_

  
Josh Castonguay  
Green Mountain Power

Subscribed and sworn before me this 15<sup>th</sup> day of February, 2019.

  
\_\_\_\_\_  
Notary Public  
Name of Notary: Penny Collins  
Commission Expires: 1.31.21



Dated at Colchester, Vermont this 20<sup>th</sup> day of February, 2019.

**Respondent Signature**

By: \_\_\_\_\_

Brian Otley  
Green Mountain Power

Subscribed and sworn before me this 20<sup>th</sup> day of February, 2019.

Penny J. Collins  
Notary Public

Name of Notary: Penny J. Collins

Commission Expires: 1.31.21

Dated at Colchester, Vermont this 20<sup>th</sup> day of February, 2019.

**Respondent Signature**

By: Eddie Ryan  
Eddie Ryan  
Green Mountain Power

Subscribed and sworn before me this 20<sup>th</sup> day of February, 2019.

Penny J. Collins  
Notary Public  
Name of Notary: Penny J. Collins  
Commission Expires: 1.31.21

Dated at Coldchester, Vermont this 15<sup>th</sup> day of February, 2019.

**Respondent Signature**

By: Douglas C. Smith  
Doug Smith  
Green Mountain Power

Subscribed and sworn before me this 15<sup>th</sup> day of February, 2019.

Lenny J. Collins  
Notary Public  
Name of Notary: Lenny Collins  
Commission Expires: 1.31.21