

**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 the Department of Public Service**

Green Mountain Power ("GMP" or "Petitioner"), by and through the undersigned counsel, hereby responds to the second set of discovery requests served by the Department of Public Service ("DPS," "PSD," or "Department") on October 19, 2018.

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

General Requests

Q:PSD:GMP.2.1. The Department would like to better understand how GMP proposes that the Merger Savings Plan (the “O&M Platform”), approved in Docket No. 7770, will operate in the Multi-year rate plan. With respect to the O&M Platform, please respond to the following:

- a.** The Department’s records indicate that the annual savings under the O&M Platform has been true up to actual results through 12/31/2016 in docket 17-3112. Please state how GMP plans to true up for actual results from 2017 forward under the multi-year rate plan.
- b.** Please provide a template showing the calculation GMP proposes to use to incorporate estimated merger savings in the annual base rate true up filing. If no such template currently exists, please describe whether and/or how GMP plans to incorporate estimated merger savings in the annual base rate true up filing.
- c.** Please provide a template showing the calculation GMP proposes to use true up merger savings to actual results.
- d.** Please state whether GMP has adjusted out the impact of timing differences, such as capitalized A&G, from its calculations of estimated and actual O&M synergies. If not, please describe why.

A:PSD:GMP.2.1.

- a.** The 2017 base rate filing covered the rate period October 1, 2016 to September 30, 2017 and reduced rates by estimated synergies of \$16,355,000. In GMP’s 2018 base rate filing for the rate period January 1, 2018 to December 31, 2018, GMP estimated an additional \$1,000,000 of synergies for fiscal year 2017 (above the \$16,355,000 already included in the fiscal year 2017 rate period) and therefore reduced rates in the 2018 base rate filing by accelerating the return of the estimated additional FY 2017 customer synergy savings of \$1,000,000.

The actual customer portion of additional synergies for Fiscal year 2017 was \$612,459, not \$1,000,000, more than the \$16,355,000 estimated synergies included in 2017 base rates (See Synergy Report filed with the Commission on November 15, 2017) so there was an over-refund of FY 2017 synergies of \$387,542 (the difference between \$1,000,000 and \$612,459) being returned to customers in 2018 base rates. Given the 10-year platform, GMP plans to carry this \$387,542 forward and adjust it by results in the remaining years before determining whether there is a need to collect any over-refund back from customers through a base rate filing.

The reporting of synergies for fiscal year 2018 through fiscal year 2022 will be

consistent with past methodology. GMP will file annually (November 15th of each year for the prior 9/30 fiscal year) Schedule II – Synergy Savings Calculation with the Commission for the fiscal year just ended. GMP will monitor the true-up over-/under-collections for fiscal years 2018 through 2022 synergies and will periodically assess if there needs to be a net true-up adjustment reflected in a base rate filing so there is not a significant net over- or under-collection synergy true-up balance by the end of fiscal year 2022.

- b. The methodology GMP will use to reflect synergy savings in the base rate filings under the Multi-Year Regulation Plan (“MYRP”) will be consistent with GMP’s historical methodology for including base O&M Costs and synergy savings in base rate filings and the Order issued by the Commission in Docket No. 7770. Base O&M costs adjusted to reflect the change in the Consumer Price Index for All Urban Consumers (“CPI-U”) Northeast Region will be reflected in the base rate filings. GMP will also reflect as a separate line item in the base rate filings the projected rate period customer synergies.

GMP will continue to file Schedule II – Synergy Savings Calculation with the Commission by November 15th of each year for the fiscal year just ended. When synergies are trued up, a regulatory asset or liability will be established to reflect any difference between the synergies included in base rates and actual results. See answer to subpart a above for timing of the return or collection associated with the annual synergy true-up.

- c. Attachment GMP.DPS2.Q1 is the report GMP filed with the Commission for the fiscal year ended September 30, 2017, showing the calculation that GMP uses to true up merger savings to actual results. GMP would continue to use this methodology to track synergy savings throughout the remainder of the 10-year period.
- d. No. GMP has calculated synergies using the methodology specified in the March 26, 2012 Docket No. 7770 Merger MOU between the Department and GMP and approved by the Commission, which does not call for that treatment. GMP would continue to utilize the same methodology to track merger savings throughout the remainder of the 10-year period.

Person/s Responsible for Response: Eddie Ryan, Karen Young, Dawn Bugbee
Title of Person/s: Controller; Budget/Forecasting Supervisor; Chief Financial Officer
Date: November 8, 2018

Q:PSD:GMP.2.2. Please refer to GMP’s discovery response A:PSD:GMP.1.6 and the table titled “Forecasted Investments in Affiliates in \$000s” for the following requests:

- a. Please show the historic and forecasted investments in affiliates from 2015 through 2019 that correspond to the data by row in the table;**
- b. Please characterize or describe generally how GMP calculated the forecasted values in the table. Within your response, to the extent known, please identify any factors or events that could potentially result in variances from these projected values;**
- c. Please explain whether this table accounts for depreciation in these investments. If yes, please explain why the value for first eight rows does not decrease between 2020 and 2022;**
- d. Please also clarify whether GMP contemplates that investments in new subsidiaries be reviewed and approved as part of the annual forecast refresh or in a separate regulatory proceeding;**
- e. Please also state whether GMP believes that investments in affiliates are subject to financial analysis requirements set out in Attachment 2 to the Memorandum of Understanding between the Department and GMP that was approved by the Commission in Case 17-3112.**

A:PSD:GMP.2.2.

- a. Please see Attachment GMP.DPS2.Q2.
- b. Most of Investments in Affiliates are either relatively stable, small in magnitude, or both. For that reason, the values for the first eight rows in the table below, which is the table titled “Forecasted Investment in Affiliates in \$000s” from GMP’s discovery response A:PSD:GMP.1.6, reflect 13-month test year average balances from the 2019 Cost of Service (through December, 2017)¹ that were kept constant across all three years in the preliminary forecast provided. The values by year for “JV MicroGrid” and “JV Solar” come from financial models that were developed in support of GMP’s investment in those entities. The values by year for Transco come from forecasts provided by VELCO.

Capital investments requested by the affiliates, changes in financial outcomes leading to lower or higher equity-in-earnings, or differences in distributions would cause variances in these values.

¹ The test period for the 9-month 2019 Cost of Service was January–September, 2017. Since the MYRP will go back to annual forecasts, the full test year, rather than the 9-month period, was utilized.

<i>Forecasted Investment in Affiliates in \$000s</i>			
	<u>2020</u>	<u>2021</u>	<u>2022</u>
Generation Vermont Yankee	\$939	\$939	\$939
Generation Maine Yankee	\$41	\$41	\$41
Generation Connecticut Yankee	\$36	\$36	\$36
Generation Yankee Atomic	\$53	\$53	\$53
Green Lantern	\$949	\$949	\$949
Transmission NE Hydro Trans	\$211	\$211	\$211
Transmission NE Hydro Trans Electric	\$1,214	\$1,214	\$1,214
Transmission VELCO - Common	\$10,215	\$10,215	\$10,215
JV Microgrid	\$37,799	\$38,598	\$36,013
JV Solar	\$51,056	\$48,588	\$45,509
Transmission TRANSCO LLC	\$621,869	\$634,574	\$646,680
Total	\$724,383	\$735,418	\$741,860

- c. The balances in Investment in Affiliates reflect GMP's original investment and any subsequent investments, GMP's share of the Affiliates' profit or loss, and GMP's share of any of the Affiliates' distributions. Depreciation is recorded on the financial statements of each Affiliate and, by impacting each Affiliate's profit or loss, thus indirectly impacts the balances in Investments in Affiliates.
- d. GMP contemplates that investments in new subsidiaries would require specific PUC approval. *See* Ryan pf. at 10.
- e. No. The Memorandum of Understanding referred specifically to capital spending. Analysis for Investments for any new Affiliates would be addressed as noted in subpart d, above. Investments in Transco/VELCO are net positive for GMP customers, by nature of the structure of ownership, the requirement to pay for transmission costs, and VELCO's regulated rate of return.

Person/s Responsible for Response: Rob Bingel
Title of Person/s: Manager, Forecasting & Analytics
Date: November 8, 2018

Q:PSD:GMP.2.3. Please refer to GMP’s discovery response A:PSD:GMP.1.6(b) regarding investments in cloud computing. Please explain in detail how “capital expensing” would be effectuated and accounted for within the proposed multi-year rate plan. For example, would GMP capitalize expenditures as expenses during a rate year? Alternatively, would GMP prepay software license fees that apply for a year and treat them as a capital expense so as to earn a return? Please also state whether and/or how the accounting treatment utilized by GMP would affecting purchasing decisions it makes on behalf of ratepayers.

A:PSD:GMP.2.3.

Software application procurements during the term of the Multi-Year Regulation Plan will evaluate and document cloud solutions against the purchase of the software (when possible) and any related equipment to select the best short- and long-term value for customers. In performing this evaluation, GMP would expect to assume that for accounting and rate making the total amount to be paid to the cloud solution service provider during the term of the subscription agreement would be prepaid and recorded to a prepaid asset, included in rate base, and amortized to expense over the term of the subscription agreement. GMP would only prepay cloud solutions if it is beneficial to customers to do so, for example because of discounts available. In any event, GMP would follow any guidance provided by the PUC in its consideration of this issue in the proposed Multi-Year Regulation Plan and would look to emerging best practices for handling this accounting treatment in this evolving area.

Person/s Responsible for Response: Eddie Ryan
Title of Person/s: Controller
Date: November 8, 2018

Q:PSD:GMP.2.4. Please explain the current forecast and forecast methodology elements and parameters that will be used as a basis for all of the items that GMP proposes to update annually, including at least the following:

- a. Debt costs;**
- b. Non-platform related O&M;**
- c. Innovative pilots;**
- d. Regulatory amortizations;**
- e. Other operating revenue;**
- f. Various tax-related items in GMP's annual cost-of-service filing;**
- g. Income taxes (federal and state);**
- h. Other taxes.**

A:PSD:GMP.2.4.

Please see prior responses A:PSD:GMP.1.70–.74, .80.

- a. Debt costs. For the forecast provided to the DPS over the summer, long-term debt rates were based upon the projected 13-month average rate expensed between December 2018 and December 2019. GMP has financial forecasting software (Utilities International or “UI”) that models the company’s expected cash position, thereby allowing GMP to project when bond issuances will need to take place. These projected issuances at an estimated interest rate were coupled with the company’s existing bonds, leading to a calculation of the expected long-term debt rate. The short-term debt costs are based upon expected line-of-credit rates. This same methodology, which has been utilized in past cost of service filings, is expected to be employed in the MYRP forecasts.
- b. Non-platform related O&M. The current forecast’s biggest non-platform accounts (AMI and KCW) reflect annualized² 2019 cost of service adjusted for inflation and payroll. This same methodology will be followed each year, as noted in Exhibit GMP-ER-1 Multi-Year Regulation Plan Attachment 1.

The current projections for Acct 929 and business development are likewise annualized and increased by expected inflation. This same methodology will be followed each year, as noted in Exhibit GMP-ER-1 Multi-Year Regulation Plan Attachment 1.

The current projections for Accretion expense and Capital Costs are based upon a

² The 2019 cost of service was 9 months long. Since the MYRP uses periods of one year for forecasting, the AMI and KCW amounts were annualized from the 2019 cost of service.

schedule. This same methodology will be followed each year, as noted in Exhibit GMP-ER-1 Multi-Year Regulation Plan Attachment 1.

- c. Innovative pilots. The current forecast, which is consistent with the 2019 Cost of Service, reflects the Energy Innovation Center's projections for revenues associated with heat pumps, heat pump water heaters, Electro Thermo Storage (a unit at one of GMP's customers), EVGo electric charging stations, Tesla batteries, and Level 2 home chargers. This same methodology, which has been utilized in past cost of service filings, is expected to be employed in the MYRP forecasts. For information on forecasting innovative capital projects, please see A:PSD:GMP.1.25 and .80.
- d. Regulatory amortizations. Current projections are based upon an amortization schedule for new and existing regulatory assets and liabilities. This methodology of developing an amortization schedule based upon new and existing regulatory assets and liabilities, which has been utilized in past cost of service filings, is expected to be employed in the MYRP forecasts which are noted in Exhibit GMP-ER-1 Multi-Year Regulation Plan Attachment 1.
- e. Other Operating Revenue. Current projections, excluding the revenue associated with innovative pilots as noted in part c above and the exceptions noted below, reflect forecasts developed based upon annualized 2019 cost of service amounts—the 2019 cost of service was 9 months long—adjusted for inflation and payroll. In the MYRP, GMP plans to use annualized 2019 cost of service amounts adjusted for known and measurable changes like inflation and payroll. Some revenue sources may be based on our most recent 12-month historical actual information.

The exceptions for the current forecast are transmission revenues, pole attachments, rents, and CIAC income. These are based upon forecasts from subject matter analysts within GMP.
- f. Various tax-related items in GMP's annual cost of service filing will be treated under the same methodology GMP has used in past years. Income-tax related items outside of the statutory income tax rate calculation, such as production tax credits, CAFC Perm, ITC amortization, etc. are calculated utilizing current rates and rules consistent with the current year's and prior years' filings. Please see the tab "Income Tax" in the Cost of Service files provided to the DPS.
- g. The calculation for federal and state income taxes is based on the statutory income tax rate adjusted for permanent differences. A working calculation is included in the Cost of Service files provided to the DPS in the tab "Income Tax".

- h. Other taxes, including municipal. Please see discovery response A.PSD.GMP.1.73.

Person/s Responsible for Response: Rob Bingel
Title of Person/s: Manager, Forecasting & Analytics
Date: November 8, 2018

Q:PSD:GMP.2.5. Please refer to GMP's discovery response A:PSD:GMP.1.10 for the following requests:

- a. Please state why GMP describes its service quality targets as “stretch” targets for metrics that GMP routinely achieves;**
- b. Please describe why GMP believes that setting “stretch” targets below historical performance levels will provide an incentive to improve service;**
- c. Please state whether GMP believes its customers should receive a proportional discount to GMP's allowed rate of return on equity (“ROE”) for performance that falls below normal or stretch targets.**

A:PSD:GMP.2.5.

- a. The service quality requirements are those standards set by the state in the Service Quality and Reliability Plan. GMP's stretch goals are internal targets and are substantially higher than the SQRP standards. We refer to these higher goals as stretch goals because they represent more difficult performance levels to achieve. While it is true that GMP has achieved these levels in past years, we had understood there to be a desire to include a performance metric in the regulation plan, and believe the proposal to include GMP's stretch goals directly in the plan is appropriate, particularly in an environment where capital spending is proposed to be capped.
- b. Delivering our current level of service to our customers requires constant, focused effort by our front-line employees and supervisors and obsessive emphasis on customers. It is not a given that we can continue to achieve the proposed performance measures as we focus on the balance between cost and performance. We believe our proposed standards will provide solid incentives for performance beyond the SQRP requirements, resulting in continued exceptional service that balances the need to control costs for all customers.

- c. No, a penalty structure already exists for performance below action level in the SQRP. The point of the proposed stretch targets is to provide incentive for service performance delivery that significantly exceeds the Service Quality Plan standards, while also establishing upper guidelines for the performance to which we aspire. GMP is ever mindful of the costs to our customers of the services we deliver. In trying to deliver the best service to our customers, we also need to protect against over-spending for the last, most difficult percentage improvements in service delivery, which have a diminishing return for our customers. We believe the stretch goals we have recommended coupled with the incentive for achieving them strikes the right balance between performance and cost.

Person/s Responsible for Response: Steve Costello
Title of Person/s: VP, Customer Service
Date: November 8, 2018

Q:PSD:GMP.2.6. Please refer to GMP’s discovery response A:PSD:GMP:1.13(c), which states that “[w]e have recommended Department review and Commission approval prior to exceeding the capital limits for this category of programs during the term of the MYRP and are confident that this is an appropriate control.” Please clarify whether GMP contemplates that the approval to exceed the cap will be reviewed and approved as part of the annual forecast refresh or in a separate proceeding.

A:PSD:GMP.2.6.

The MYRP does not specify a time for such review because we would expect that the timing could vary based upon when the opportunity arose and the PUC’s preference for review schedule. *See* Exhibit GMP-ER-1 § IV(1)(e). We are recommending that a review and approval can be done either at the time of the annual forecast refresh or in a separate proceeding, in order to be responsive to these types of opportunities as they may emerge.

Person/s Responsible for Response: Brian Otley
Title of Person/s: Senior VP and Chief Operations Officer
Date: November 8, 2018

Q:PSD:GMP.2.7. Please refer to GMP's discovery response A:PSD:GMP:1.16 for the following requests:

- a. Please state how many hours each month in the winter months GMP experiences a peak event that requires customer notification;**
- b. Please state the duration of the events when customer interruptions are called;**
- c. Please state the number of customers participating and the corresponding MW reductions that were made possible through the various innovative pilots, including the heat pump program involving the Sensibo device which adjusts heat pumps by 2 or 3 degrees during peak months.**

A:PSD:GMP.2.7.

- a. Actual peak calls each month will vary year to year with the main variability being the weather that season. During the period of October 2017 through May 2018 we called 41 peak events across a combination of the participating customer groups. Not all customer groups were called for all 41 events however. The durations for the peak events depend on the customer type or the resource being utilized. These peak events are usually called for durations between 2 and 4 hours. If we assume an average of 3 hours per event this would be a total of 123 hours for this recent winter period. As noted above, this duration will vary depending on a few factors, with temperature being one of the most critical.
- b. See response to subpart a, above.

- c. Below is the table of resources currently deployed or with contracts signed as of October, with total demand represented by those customers. If the Department is seeking specific or detailed information for particular months, peak events, or customers, the data is not held in a form that is readily capable of production (and contains customer-specific information) but could be reviewed onsite with GMP.

Load Management Pilots	Contracts Signed	Total Demand (kW)*
L2 EV Charger	226	971.8
eWater	240	103.92
CCHP Credit Union	117	29.016
Tesla Powerwall 2.0	1794	8970
Tesla Powerwall 1.0	19	66.5
BYOD	1	5
* When all units are installed		

Person/s Responsible for Response: Josh Castonguay, Melinda Humphrey
Title of Person/s: VP & Chief Innovation Executive and Power Supply; Power Marketing Analyst
Date: November 8, 2018

Q:PSD:GMP.2.8. Please refer to GMP's discovery response A:PSD:GMP:1.18. If GMP's gross plant in service additions over the term of the MYRP is less than \$265.5 million, please state whether and/or how any corresponding reductions (such as depreciation expense, property taxes, and accumulated deferred income taxes) would be captured by the ESAM or otherwise returned to ratepayers.

A:PSD:GMP.2.8.

During the term of the Multi-Year Regulation Plan, GMP will perform an annual ESAM calculation based on the rate period actual results. To the extent the actual lower rate period plant additions and their derivative effects results in the actual rate period ROE being above the ESAM dead band ROE, these additional earnings will be shared/returned to customers. If not, there will be no adjustment made.

Person/s Responsible for Response: Eddie Ryan, Karen Young
Title of Person/s: Controller; Budget/Forecasting Supervisor
Date: November 8, 2018

Q:PSD:GMP.2.9. Please refer to GMP's discovery response A:PSD:GMP:1.21. Please describe generally how GMP intends to prioritize investments within the context of the capital spending cap. In other words, how does GMP intend to classify investments that it considers to be on the margin and might subject to deferral to later years.

A:PSD:GMP.2.9.

GMP will continue to follow its existing capital project identification, prioritization, and selection process during the period of the multi-year plan. In this process, the primary benefit of the project is identified (safety, reliability, operational cost savings, improved customer service quality, etc.) as well as project scope, budget, schedule, resources, and risks. When we face choices about projects to undertake now, later, or not during the period we use all of this information to make those determinations, always through the lens of what is in the best interest of our customers. Our existing process is robust and considers the benefits that a project can deliver to customers as the primary criterion. We have evolved our capital project process in collaboration with the Department and have incorporated its feedback into our current process.

Person/s Responsible for Response: Brian Otley
Title of Person/s: Senior VP and Chief Operations Officer
Date: November 8, 2018

Q:PSD:GMP.2.10. Please refer to GMP's discovery response A:PSD:GMP:1.22 for the following requests:

- a. Please state the total amount of electric vehicle public charging infrastructure, home charging infrastructure, battery storage systems, heating & cooling systems, water heating systems, control systems and control software platforms that have been placed in rate base to date.**
- b. Please state the total amount of electric vehicle public charging infrastructure, home charging infrastructure, battery storage systems, heating & cooling systems, water heating systems, control systems and control software platforms that forecasts or expects to place in rate base during fiscal year 2020, fiscal year 2021, and fiscal year 2022.**

A:PSD:GMP.2.10.

- a. To date, 1360 heat pumps, 438 heat pump water heaters, and one software control platform have been installed and placed in rate base. There are 96 Level 2 public charging ports, and 14 public DC fast chargers in rate base. Residential charging infrastructure, water heater retrofit controls, and heat pump controls (Sensibos) are not placed into rate base. Energy storage systems are not yet in rate base, however, GMP requested to add the Powerwall battery program into rates starting in 2019.
- b. GMP does not anticipate placing any additional public charging infrastructure in the field, and therefore at this time we do not anticipate there will be any further units included in rate base. Similarly, retrofitted controls for water heaters and heat pumps (e.g., Sensibos) will not be placed into rate base. GMP also does not anticipate at this time rate basing any additional control software platforms in the coming years.

Below is a projection of what GMP expects to place into rate base during fiscal years 2020 through 2022 however it should be noted that these are estimates and are subject to change. In developing preliminary assumptions for purposes of setting the capital spending plan for the multiyear period, GMP utilized the same basic assumptions as set forth in the 2019 rate case (annualized, to account for the 9-mo rate period), with minor variations. For example, the units placed in rate base by year for batteries is adjusted slightly downward, based upon GMP's assumption that other offerings from third parties will offer customers more choices. GMP is also not projecting rate base growth, compared to an annualized view of the 2019 rate period, in heat pumps and heat pump water heaters, for the same reason – customer opportunity to obtain units through other means. For EVs, GMP has projected growth by year based upon current understandings of increased EV vehicle adoption. For all of these, the projections below are, like any projection, subject to modification as markets evolve, product costs change,

consumer interests change, and other factors. Many innovative initiatives are not expected to require significant capital spending. In addition, while GMP has built into its capital planning a stable and meaningful budget for these innovative products, it has also sought the ability to seek higher spending levels from the Commission in order to address the need for flexibility in this time of rapid change.

Fiscal Year:	<u>2020</u>	<u>2021</u>	<u>2022</u>
Heat Pumps with Sensibos	60	60	60
Heat Pump Water Heaters	120	120	120
Home/Business Energy Storage	500	500	500
Home L2 EV Chargers	100	150	200

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP & Chief Innovation Executive and Power Supply
Date: November 8, 2018

Q:PSD:GMP.2.11. Please refer to GMP's discovery response A:PSD:GMP:1.25. With respect to GMP's EVGo public charging stations, please state the following:

- a. Please state how many charging stations are in place;**
- b. Please state whether these charging stations should be treated as so-called "above the line" or "below the line" investments;**
- c. Please explain the difference between the eCharger innovative pilot and the EVGo innovative pilot that is contained on the spreadsheet GMP.DSP1.Q25.**

A:PSD:GMP.2.11.

- a. 96 level 2 charging ports and 14 DC fast chargers.
- b. Above the line.
- c. The EVGo pilot focused on publicly available charging infrastructure to help spur the EV market and allay range anxiety for new users, while the eCharger pilot is focused on residential, or in-home, level 2 charging. The eCharger program also includes a control aspect that allows GMP to manage the chargers during peak energy demand times to reduce power supply costs for all customers.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP & Chief Innovation Executive and Power Supply
Date: November 8, 2018

Q:PSD:GMP.2.12. Please refer to GMP’s discovery response A:PSD:GMP:1.24.a. Please explain what is meant by no difference between the accounting treatment of local and cloud-based solutions. For example, if a cloud-based solution is based on a stream of expenditures over time that closely match the stream of benefits that the cloud solution provides, would that expenditure ever involve some form of capital expense treatment? If so, please explain.

- a. Please also state whether it would be appropriate to capitalize cloud-based investments whose costs or fees cover services within a 12 month period.**

A:PSD:GMP.2.12.

Our discovery response PSD:GMP:1.24.a, which stated “we believe there should be no difference between the accounting treatment of local and cloud-based solutions,” was indicating that while locally hosted solutions have traditionally been treated as capital, and cloud-based solutions have traditionally been treated as expense, GMP does not believe that they should be treated differently from an accounting perspective. For the reasons we have outlined in testimony, we believe that as cloud-based solution delivery has become more available, the delivery model should not be a determinant in the accounting treatment of such expenditures anymore. See also response PSD:GMP.2.3.

- a. GMP will not prepay cloud solutions that are for a year or less unless it is cost beneficial to customers to do so.

Person/s Responsible for Response: Brian Otley, Eddie Ryan
Title of Person/s: Senior VP and Chief Operations Officer; Controller
Date: November 8, 2018

Q:PSD:GMP.2.13. Please refer to GMP's discovery response A:PSD:GMP:1.24.b. Please describe generally the circumstances under which GMP would prepay subscription fees. Within your response please clearly state what it means to "prepay subscription fees."

A:PSD:GMP.2.13.

Cloud-based service providers typically offer customers options for paying for their services. One common option is to pay a subscription fee each month, which covers the contracted services for that period. Another common option is to pay a future period's (often one year) subscription at one time and in advance in order to simplify administrative costs. The payment option agreed to with a cloud-base service provider is often a negotiating point in the agreement, and discounts generally are provided for prepayment. GMP's goal would be to negotiate agreements to include discounts that make it beneficial for customers to prepay the subscription fees for the entire term of the subscription. See discovery responses PSD:GMP.2.3 and PSD:GMP.2.12.

Person/s Responsible for Response: Brian Otley, Eddie Ryan
Title of Person/s: Senior VP and Chief Operations Officer; Controller
Date: November 8, 2018

Q:PSD:GMP.2.14. Please refer to GMP’s discovery response to A:PSD:GMP:1.67 for the following requests.

- a. Please state GMP’s expected capital bond issuances for the three years of the multi-year rate plan;**
- b. Please identify any other sources of debt other than new issuances that would contribute to the 49% to 51% of the proposed capital structure for the duration of proposed rate plan;**
- c. Please indicate to dollar value of the debt capital necessary to cover a debt component of 49% to 51% over the three years of the plan.**

A:PSD:GMP.2.14.

GMP’s preliminary forecast included the following new long-term debt issuances. Please note these are projections only; they are the Company’s best estimates as of June 2018 and are subject to change.

a.

Fiscal Year	Amount	Timing
FY 2018	\$25M	September 2018
FY 2019	\$20M	December 2018
FY 2019	\$30M	May 2019
FY 2019	\$60M	June 2019
FY 2020	\$50M	December 2019

- b. In the June forecast, GMP maximized use of its revolving credit facility to delay the need for new long-term debt issuances. The June 2018 financials assumed average annual borrowings under our credit facility of \$97M for fiscal year 2019, \$63M for fiscal year 2020, \$93M for fiscal year 2021, and \$107M for fiscal year 2022. Although not modeled in our June financials, GMP would most likely issue additional first mortgage bonds in the 2021–2022 time period to reduce the level of borrowings under our revolving credit facility.

- c. The table below shows how the absolute level of debt changes based on change in the projected debt ratio from 49% to 51%. Debt balance includes both long-term debt issuances and borrowings under the revolving credit facility.

\$000s				
Pro-forma Capital Structure	1,669,326	1,669,326	1,669,326	Total Change
Debt Ratio	49%	50%	51%	
Equity Ratio	51%	50%	49%	
Pro-forma Debt Balance	817,970	834,663	851,356	
Pro-forma Equity Balance	851,356	834,663	817,970	
Change in Debt		16,693	16,693	33,387

Person/s Responsible for Response: Karen Young, Dawn Bugbee
Title of Person/s: Budget/Forecasting Supervisor; Chief Financial Officer
Date: November 8, 2018

Q:PSD:GMP.2.15. Please refer to GMP's discovery responses A:PSD:GMP:1.67.b and c for the following requests.

- a. Please provide the calculations used by GMP to determine that a 1% increase or decrease in the debt component of GMP's capital structure would result in an over- or under-collection of \$1.27M;**
- b. Assuming that GMP does not update costs of forecasted debt and an increase or decrease in the debt component consequently materializes (such as the \$1.27M example provided by GMP in its response), would that increase or decrease be captured by the ESAM? If so, please describe the risk that this result would present to GMP or its ratepayers.**

A:PSD:GMP.2.15.

- a. Please see Attachment GMP.DPS2.Q15 for the calculation. The calculation is based on an annualized weighted average cost of capital applied to projected rate base included in GMP's 2019 Rebuttal Filing.

Please note financial and cost of service requirements provided were projections only. They are the Company's best estimates as of June 2018 and are subject to change.

- b. Any change favorable or unfavorable to the level of debt included in the Company's overall capital structure or to the weighted average cost of debt would be included in the Company's annual ESAM calculation. Depending upon the magnitude of the change, the variance may or may not cause an over- or under-collection to be included in future base rates, but may rather remain within the ESAM deadband and be entirely absorbed by GMP.

The Company does not see a benefit or need to lock in our debt forecast so far in advance when there could be greater variability in interest rates on future short-term borrowings under our revolving credit facility and new long-term first mortgage bond issuances than what has transpired over the last few years. In addition, the level of debt required could change due to multiple, major storm events occurring throughout the multi-year rate period.

Person/s Responsible for Response: Eddie Ryan, Karen Young, Dawn Bugbee
Title of Person/s: Controller; Budget/Forecasting Supervisor; Chief Financial Officer
Date: November 8, 2018

Q:PSD:GMP.2.16. Please refer to GMP’s discovery response A:REV:GMP.1-2(A). GMP’s response includes the following sentence: “However, a large portion (approximately \$29 million) of the nominal change in power costs over this period was due to a change in how resale revenues were reported, as opposed to a decline in GMP’s net power costs.” With respect to this response, please respond to the following:

- a. Please provide the supporting documentation for the \$29 million change in reporting and what components of the cost of service are implicated.
- b. Please indicate whether this change was accurately reflected in the total COS presented by GMP and provide supporting details.

Objection: GMP reasserts General Objection 5 to subpart (b). It is not clear what is meant by the phrase “accurately reflected.” Notwithstanding this objection, GMP responds as follows.

A:PSD:GMP.2.16.

- a. The table below comes from Page 11 of Mr. Winn’s prefiled direct testimony in the 2019 rate case, Case No. 18-0974-TF and is referenced in discovery response A:REV:GMP.1-2.

Comparison of Changes to GMP Cost of Service - 2013 Recorded to 2018 Settlement				
In \$1,000s				
	2013 Test Year Actual	2018 Settlement	Dollar Change	Percent Change*
Purchased Power and Production	\$322,603	\$289,154	(\$33,449)	-10.37%
Net Transmission	\$31,676	\$28,878	(\$2,798)	-8.83%
O&M Platform, Other O&M and Savings	\$117,541	\$104,571	(\$12,970)	-11.03%
Rate Base Related Costs				
Depreciation & Amortization & Other	\$45,611	\$53,270	\$7,659	16.79%
Taxes - Federal, State & Municipal	\$46,809	\$67,487	\$20,678	44.18%
Return on Utility Rate Base	\$66,673	\$98,535	\$31,862	47.79%
Less Affiliate & Other Operating Revenue	(\$33,282)	(\$21,583)	\$11,699	-35.15%
Gross Revenue & Fuel Gross Receipts Taxes	\$6,094	\$6,266	\$172	2.82%
Cost to Ultimate Consumers	\$603,724	\$626,580	\$22,854	3.79%

The 2013 Test Year Actual number that Mr. Winn notes is in fact the period between April 2012 and March 2013 which was chosen as the Test Year for the 2014 base rate filing because it was the 12-month period ending closest to the filing. The first combined CVPS and GMP base rate filing occurred for FY2013 (October 2012 to September 2013), so the period chosen for the 2014 base rate filing and Mr. Winn’s testimony reflected a period of 6 months when the two companies still were independently in existence. Nonetheless, the \$322,603,000 of Purchased Power and Production costs may be found by component in the per books balances in the table below, which was the summary sheet for the 2014

base rate filing:

COST OF SERVICE TEST YEAR ENDED March 31, 2013			
2014			
COST OF SERVICE	PER BOOKS BALANCES (1)	ADJUSTMENT COL3-COL1 (2)	PROFORMA BALANCES (3)
Operating Expenses:			
Purchased Power, Net	\$298,372	(\$48,323)	\$250,049
Production	21,600	2,803	24,403
Other Power Supply	2,031	1,100	3,131
	322,003	(44,420)	277,583
Purchased Power and Production	72,575	20,366	92,941
Transmission - Other	5,443	82	5,525
Distribution	40,839	2,787	43,626
Customer Accounting	10,300	(862)	9,438
Customer Service and Information	3,138	(583)	2,555
Sales	0	0	0
Administrative and General	53,306	1,370	54,676
Non Base O&M Costs - AMI	3,173	(2,641)	532
Non Base O&M Costs - KCW	65	(65)	(0)
Non Base O&M Costs - VMPD	226	24	250
Non Base O&M Costs - 7436 MOU	0	0	0
Business Development	391	0	391
Depreciation & Amortization	45,611	5,141	50,752
Taxes - Federal and State	22,061	8,752	30,813
- Municipal	20,815	2,705	23,520
- Other, excluding Revenue Taxes	3,333	(243)	3,090
Capital Costs	0	0	0
Total Operating Expenses	605,138	(6,333)	598,805
Return on Utility Rate Base	66,673	19,285	85,958
Total Cost of Service Before Credits	671,811	12,952	684,763
Less:			
Equity in Earnings of Affiliates	41,230	16,260	57,490
Other Operating Revenues	30,353	(8,324)	22,029
Business Development	563	0	563
YY Insurance	1,375	(1,375)	0
Interest Due From ISO-NE	0	0	0
Resales	0	0	0
Total Credits	74,181	5,361	79,542
Cost of Service to Ultimate Consumers	597,630	6,591	604,221
Gross Revenue & Fuel Gross Receipts Taxes	6,034	13	6,047
Total Cost of Service to Ultimate Consumers	603,664	6,604	610,268
Settlement Adjustment			(250)
Merger savings			(5,000)
Total Cost of Service to Ultimate Consumers			605,018
Revenue from Ultimate Consumers (all less C&I Transmission Class)			553,743
Revenue Deficiency from Ultimate Consumers (all except C&I Trans Class)			13,616
Revenue Adjustment Percentage for all except C&I Transmission Class			2.46%

The \$298,972,000 of "Purchased Power, Net" ties to a reconciliation noted in the table below, which comes from a file provided in the 2014 base rate filing ("Per Books Data TY Ended 3 31 13"):

Green Mountain Power Corporation		
Per Books Data		
Test Year April 1, 2012 - March 31, 2013		
Purchased Power		
Per Financial Statements	PB3.1	\$ 298,972,335
Less: Non-firm and borderline sales	PB3.3b	(23,800,407)
(Gain)/Loss on Disposition of RECS and Allowances	PB3.4	<u>(6,025,391)</u>
Net Purchased Power		\$ 269,146,537

Please note that “Non-firm and borderline sales” worth \$23,800,000 and (Gain)/Loss on Disposition of RECS and Allowances” worth \$6,025,000 are not included as a reduction to the \$322,603,000 value noted in Mr. Winn’s chart for the 2013 Test Year in the 2014 base rate filing. Further research revealed that \$4,886,000 of RECs, noted in the chart below, appeared in the Test Year as part of the Other Operating Revenue:

TEST YEAR: 4/1/12 - 3/31/13 RATE YEAR: 10/1/13 - 09/30/14			
Acct	Description	TEST YEAR	RATE YEAR
4500	Forfeited Discounts	\$ 373,497	\$ 373,497
4510	Miscellaneous Service Revenue, net of expense	5,706,616	2,928,427
4530	Sale of Water Rights	1,429	1,429
4540	Telephone Pole Attachments	3,708,153	3,708,153
	CATV Pole Attachments	282,656	282,656
	RECS	4,886,408	0
	Rent from Other Property	185,030	185,030
Total 4540		9,062,247	4,175,839
4560	Phase III Sales brokering commission	4,354	8,708
	Telemetry Services	8,325	8,325
	VT Yankee billing - CEO Salary for BOD Chair position	4,352	0
	Revenue related to SWHS cost allocations	161,867	0
	Billing to VELCO for overheads	1,500	0
	AFDUC Equity correction on VTA	3,791,988	0
	Other Electric Revenue-General	930,542	999,542
	CIAC	0	815,401
	Rate W/		60,000
	Unbilled Revenue	1,760,819	0
Total 4560		6,663,747	1,891,976
4561	Transmission FERC Tariff Sched 21-GMP Network Service	906,747	2,750,000
	Phase III Sales	10,712	21,424
	Metalic Neutral Return		138,256
	HQ Transmission (sale of excess)	715,788	2,000,000
	Highgate RNS revenues		6,898,348
	Y25 RNS revenues		250,252
	Other Transmission for Others-per books	6,912,568	
Total 4561		8,545,815	12,058,280
Total Other Operating Revenues		\$ 30,353,351	\$ 21,429,448

The remaining amount of RECs (\$6,025,000 - \$4,886,000 = \$1,139,000), in addition to the \$23,800,000 of Resales, do not appear in the Test Year 2013 value of \$603,724,000 for “Total Cost of Service for Ultimate Customer” found in the 2014 base rate filing. While the RECs and Resales might have been considered part of that retail revenue, it is also possible that it was an oversight that these values did not get captured in the Test Year 2013 summary sheet for the 2014 base rate filing, even though they can be traced through the supporting materials for the filing.

- b. The Cost of Service for the Rate Year 2014 was not affected by the 2013 Test Year issue noted above. The Rate Year 2014 projected costs were totaled for the year and then matched against the forecasted revenue to calculate the rate change. The Test Year 2013 values found in the “Per Books Balances” column of the

summary sheet for the 2014 base rate filing did not affect the “Pro Forma Balances” column in the same file. The supporting documentation for the 2014 COS was thoroughly reviewed during the 2014 Rate Case.

Person/s Responsible for Response: Chuck Watts, Doug Smith, Rob Bingel
Title of Person/s: Power Supply Analyst; Chief Power Supply Executive; Manager,
Forecasting & Analytics
Date: November 8, 2018

Questions in Response to Testimony of Mr. Douglas Smith

Q:PSD:GMP.2.17. Please refer to page 9, lines 8–13 of Mr. Smith’s prefiled direct testimony. Mr. Smith testifies that GMP’s current Power Supply Adjustor has “handled a wide range of actual power supply costs . . . and retail sales . . . while maintaining the appropriate incentive for GMP to limit power costs.” Please explain how a straight pass through of power contract costs provides an appropriate incentive for GMP to seek the lowest cost projects.

Objection: GMP reasserts General Objection 5. The undefined phrase “lowest cost projects” is vague and unintelligible. Without waiving or limit this objection, GMP nevertheless responds as follows.

A:PSD:GMP.2.17.

GMP’s current Power Supply Adjustor does not feature a straight pass through of power contract costs. Most GMP power purchase agreements flow through Component B, under which variances are shared with customers through its deadband structure. This appropriately provides an incentive for GMP to limit its power costs during the rate year. GMP has the potential to do this in a number of ways, such as offering and bidding generation and load in the ISO-NE market; short-term power and REC transactions; administration of existing PPAs; and operational decisions related to fuel procurement, power plant availability, and other factors.

The question asks about incentives for GMP to seek the lowest cost “projects,” which I take to mean long-term commitments like PPAs and owned generation sources. It is important to keep in mind that long-term resources like these are generally procured based on assessment of portfolio needs and resource cost-effectiveness over the economic life of the potential PPA or asset, and their value to customers will typically play out over much longer periods than the quarterly/annual measurement period of the Power Supply Adjustor, or the term of GMP’s proposed MYRP. Further, many of the projects that GMP pursues (e.g., new renewables, storage, or out-of-state PPAs that require a Certificate of Public Good) are developed over sufficiently long timeframes that they can be reasonably incorporated into the annual benchmark power supply costs. For these reasons, it does not appear to GMP that the Power Supply Adjustor should be viewed as a very effective tool to incentivize the choice of longer-term resources.

Person/s Responsible for Response: Doug Smith
Title of Person/s: Chief Power Supply Executive
Date: November 8, 2018

Q:PSD:GMP.2.18. Please refer to Mr. Smith’s response to question 6 on pages 6–7 of his direct testimony. Mr. Smith testifies that GMP proposes to keep “Component A” of Power Supply Adjustor unchanged in the multi-year rate plan. With respect to this portion of Mr. Smith’s testimony regarding Component A, please respond to the following requests

- a. Please describe how load management programs that have been implemented since 2006 (when Component A was initially established) have affected GMP’s ability to reduce transmission and capacity costs.**
- b. Please describe how Component A establishes incentives to manage peak loads if transmission and capacity costs are ultimately passed through to consumers.**

A:PSD:GMP.2.18.

- a. GMP has deployed load management programs—including several new ones (like the Sensibo heat pump controls, Aquanta water heater controls, pilot load response rider, residential critical peak rates, EV car chargers, and Tesla/Sonnen residential batteries) and existing ones (like the curtailable load rider, critical peak rider, and controlled water heater rate)—to reduce regional transmission charges (by limiting GMP’s net load requirements during monthly VELCO system peak hourly loads), and to reduce Forward Capacity Market obligations (by limiting GMP’s net load during annual ISO-NE peak hourly loads).
- b. Reducing costs for customers is one of our primary objectives, and peak load management is a critical tool enabling us to do so. However, because intra-year variances in actual RNS and FCM costs flow through to customers, Component A does not presently establish a direct financial incentive for GMP to manage peak loads. One reason for this design is that although GMP can influence its RNS and FCM costs through effective deployment of load management programs, those costs are more strongly influenced by exogenous factors not within GMP’s control. For example, GMP’s monthly peak loads can vary by tens of MW based on actual temperatures turning out higher or lower than normal. Similarly, GMP’s share of the ISO-NE annual peak load can vary by many tens of MW due to changes in the timing of ISO-NE’s peak hour; variations in temperature and humidity across New England; and variations in solar PV output during the peak hour.

Although Component A does not presently share the savings associated with load management programs, it is in GMP's interest to manage peak-driven RNS and FCM charges, and we have continued to do so. At a minimum, successful deployment of load management programs and tools tends to increase customer satisfaction (particularly for program participants, but also for customers generally) by limiting their cost of electricity; it can also enhance GMP's reputation and brand. These are some of the reasons why GMP has sought to limit costs through load management programs, and has offered multiple new programs.

Person/s Responsible for Response: Doug Smith
Title of Person/s: Chief Power Supply Executive
Date: November 8, 2018

Q:PSD:GMP.2.19. Please refer to page 17, line 18 through page 18, line 1 of Mr. Smith’s direct testimony. Mr. Smith testifies that “while fluctuations in the peak coincidence of solar output will tend to average out over multiple years, they can produce meaningful variances in GMP’s net power costs within a given year” with respect to FCM charges. Please describe the timing of when capacity savings are realized as a result of peak shaving and how intra-year fluctuations occur.

A:PSD:GMP.2.19.

GMP’s share of regional Forward Capacity Market (FCM) obligations for each capacity year (June through May) is determined primarily by GMP’s net load during the maximum ISO-NE hourly load from the previous year (in actual practice, this consistently occurs in summer). The solar fleet in GMP’s territory (including net-metering, PPAs, and owned projects) operates as load reducers, so actual solar output during the ISO-NE peak serves to lower GMP’s capacity obligations in the following year.

The solar fleet in GMP’s territory is presently over 200 MW of AC capacity, so fluctuations in actual solar output during the ISO-NE peak hour can potentially change GMP’s capacity obligations for the following year (starting in June) by many tens of MW. Substantial fluctuations in solar output during the ISO-NE peak can occur based on the range of potential cloud cover in Vermont during the single day and hour of the actual ISO-NE annual peak (e.g., whether or not that peak occurs on a relatively clear day or a more humid, cloudy day) or based on timing of the ISO-NE peak load—for example, whether it occurs in Hour 17 (4 to 5 p.m.) or Hour 18—because solar output tends to decline fairly rapidly from late afternoon into evening.

As discussed above, savings in capacity obligations from peak shaving measures and the output of load reducer generation are realized starting in the following June. For example, at the time GMP submitted its rate filing for the rate period January 2019 through September 2019, the ISO-NE peak for summer 2018 (and GMP's share of that peak) were not known. As a result, GMP's benchmark capacity costs for months starting in June 2019 were established on a forecast basis, and subject to significant uncertainty based on actual peak load conditions and actual output of distributed generation during the summer 2018 ISO-NE peak. This uncertainty associated with peak loads and distributed generation output increases the potential for significant variances in GMP's actual capacity-related costs (compared to benchmark) within the rate period. This is an example of how GMP's capacity costs are subject to significant short-term fluctuations that are outside of GMP's control, supporting the inclusion of capacity costs in Component A.

Person/s Responsible for Response: Doug Smith
Title of Person/s: Chief Power Supply Executive
Date: November 8, 2018

Q:PSD:GMP.2.20. Please refer to page 18, lines 2–4 of Mr. Smith’s direct testimony. Mr. Smith testifies that “[c]onsistent with Vermont energy policy, GMP’s energy portfolio relies much more heavily today on renewable sources than it did when the regulation plan framework was designed a decade ago.” Please describe any tools or resources that GMP has explored to manage variances or fluctuations in new power supply costs that result from the heavier reliance on renewable sources.

A:PSD:GMP.2.20.

GMP has explored the following tools or resources:

- Seek diversity of renewable supply—that is, spreading renewable supply across multiple plants and geographic locations. A diverse supply tends to limit the extent to which local fluctuations of renewable output affect the portfolio as a whole.
- Energy storage and responsive load. These resources can be targeted to limit GMP’s net load requirements (i.e., total load requirements less distributed generation operating as load reducers) during monthly and annual peak events upon which significant transmission and capacity costs are allocated. They can also, to varying degrees based on the technology or program, be deployed to increase/decrease GMP’s load requirements in response to very high/low energy market prices. This will help to mitigate some adverse impacts of fluctuations in renewable output (e.g., low renewable output during a high LMP event, or high renewable output during a low LMP event).
- GMP purchases some RECs to meet GMP’s RES requirements on an unbundled basis—that is, by purchasing a specified volume of RECs that is not linked to the hourly output of specific generating plant.
- GMP has procured renewables through a mix of PPAs (with payments generally linked to actual output) and owned plants.
- GMP has also inquired about the availability of products to “firm up” supply from intermittent sources, or to mitigate the financial consequences of fluctuations in output. We have not yet found such products that appear to be sufficiently viable and affordable to warrant pursuing at this time. It seems credible that such products could become more broadly available over time, although it is useful to keep in mind that they will likely also require a significant price premium (i.e., they will increase the expected cost of power by some amount).

Person/s Responsible for Response: Doug Smith
Title of Person/s: Chief Power Supply Executive
Date: November 8, 2018

Dated at Burlington, Vermont this 8th day of November, 2018.

As to Objections:

A handwritten signature in black ink, appearing to read "Geoffrey H. Hand", written over a horizontal line.

Geoffrey H. Hand, Esq.

Elizabeth Miller, Esq.

Alex "Sash" Lewis, Esq.

Dunkiel Saunders Elliott Raubvogel & Hand, PLLC

91 College Street

Burlington, VT 05402

(802) 860-1003

ghand@dunkielsaunders.com

emiller@dunkielsaunders.com

alewis@dunkielsaunders.com

Attorneys for Green Mountain Power

Case No. 18-1633-PET
Petitioner Green Mountain Power's
Responses to DPS Second Set of Discovery Requests

Dated at Colchester, Vermont this 5th day of November, 2018.

Respondent Signature

By:


Rob Bingel
Green Mountain Power

Subscribed and sworn before me this 5th day of November, 2018.


Notary Public

Name of Notary: Scott M Fraser

Commission Expires: 2-10-19

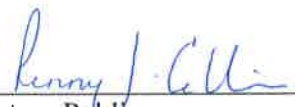
Case No. 18-1633-PET
Petitioner Green Mountain Power's
Responses to DPS Second Set of Discovery Requests

Dated at Colchester, Vermont this 2nd day of November, 2018.

Respondent Signature

By: 
Dawn Bugbee
Green Mountain Power


Subscribed and sworn before me this 2nd day of November, 2018.


Notary Public
Name of Notary: Penny Collins
Commission Expires: 2-10-19

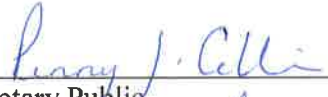
Case No. 18-1633-PET
Petitioner Green Mountain Power's
Responses to DPS Second Set of Discovery Requests

Dated at Colchester, Vermont this 6th day of November, 2018.

Respondent Signature

By: 
Josh Castonguay
Green Mountain Power

Subscribed and sworn before me this 6th day of November, 2018.


Notary Public
Name of Notary: Lenny Collis
Commission Expires: 2-10-19

Case No. 18-1633-PET
Petitioner Green Mountain Power's
Responses to DPS Second Set of Discovery Requests

Dated at Rutland, Vermont this 2nd day of November, 2018.

Respondent Signature

By:



Steve Costello
Green Mountain Power

Subscribed and sworn before me this 2nd day of November, 2018.



Notary Public

Name of Notary: JOSEPH McKeavin

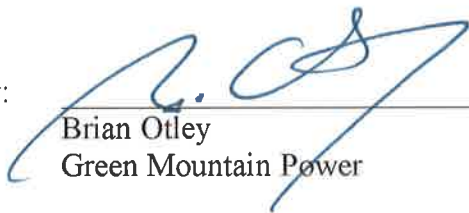
Commission Expires: 2-10-19



Dated at Colchester, Vermont this 2nd day of November, 2018.

Respondent Signature

By:



Brian Otley
Green Mountain Power

Subscribed and sworn before me this 2nd day of November, 2018.



Notary Public

Name of Notary: Penny Collins

Commission Expires: 2-10-19

Case No. 18-1633-PET
Petitioner Green Mountain Power's
Responses to DPS Second Set of Discovery Requests

Dated at RUTLAND, Vermont this 2nd day of November, 2018.

Respondent Signature

By: Eddie Ryan
Eddie Ryan
Green Mountain Power

Subscribed and sworn before me this 2nd day of November, 2018.

Joseph McKeon
Notary Public

Name of Notary: JOSEPH McKEON

Commission Expires: 2-10-19



Dated at Colchester, Vermont this 2nd day of November, 2018.

Respondent Signature

By: Douglas E. Smith
Doug Smith
Green Mountain Power

Subscribed and sworn before me this 2nd day of November, 2018.


Lenny J. Cella
Notary Public
Name of Notary: Lenny Cella
Commission Expires: 2-10-19

Case No. 18-1633-PET
Petitioner Green Mountain Power's
Responses to DPS Second Set of Discovery Requests

Dated at Rutland, Vermont this 7th day of November, 2018.

Respondent Signature

By:


Chuck Watts
Green Mountain Power

Subscribed and sworn before me this 7th day of November, 2018.



Notary Public

Name of Notary: BONNIE LOROUKE

Commission Expires: 2-10-19


Dated at Rutland, Vermont this 5th day of November, 2018.

Respondent Signature

By:


Karen Young
Green Mountain Power

Subscribed and sworn before me this 5th day of November, 2018.


Notary Public

Name of Notary: Melissa Stevens

Commission Expires: 2-10-19