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June 15, 2018

***By Hand Delivery and Email***

Daniel Burke, Esq.
Vermont Department of Public Service
112 State Street, 3rd Floor
Montpelier, VT 05620-2601

Re: Case No. 18-0974-TF – Tariff filing of Green Mountain Power Corporation requesting a 5.45% increase in its base rates effective with bills rendered January 1, 2019, to be fully offset by bill credits through September 30, 2019

Dear Dan:

Petitioner Green Mountain Power ("GMP") hereby submits its Responses to your First Round of Discovery Requests. Two copies of the narrative responses are produced in hard copy and two thumb drives containing the responsive documents are enclosed. A discovery certificate has been filed with the Public Utility Commission via ePUC, in compliance with Section V of the Standards and Procedures Applicable to Electronic Filing Using ePUC.[1]

Please contact me if you have any questions.

Very truly yours,

Geoffrey H. Hand, Esq.
Elizabeth H. Miller, Esq.
Victoria M. Westgate, Esq.
Dunkiel Saunders Elliott Raubvogel & Hand, PLLC

Enclosures

cc: Shap Smith, Esq.

[1] http://puc.vermont.gov/sites/psbnew/files/doc_library/epuc-procedures-amended-11-15-17.pdf. In the event the PUC orders different treatment of discovery in this matter, GMP will promptly comply.

**STATE OF VERMONT**
**PUBLIC UTILITY COMMISSION**

Case No. 18-0974-TF

| | |
|---|---|
| Tariff filing of Green Mountain Power requesting a | ) |
| 5.45% increase in its base rates effective with bills | ) |
| rendered January 1, 2019, to be fully offset by bill | ) |
| credits through September 30, 2019 | ) |

## Green Mountain Power's Responses to the First 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 first set of discovery requests served by the Department of Public Service ("Department" or "DPS") on June 1, 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

Subject to the General Objections stated above, GMP responds as follows:

**DPS1.Q1. Please provide copies of any and all work papers and supporting documentation used in the preparation of prefiled direct testimony and exhibits that have not previously been provided to the Department. Please produce all spreadsheets in native Microsoft Excel format with all cell formulas intact and all exhibits in native spreadsheets formats with cell formulas intact.**

**Objection:** GMP reasserts General Objection 2, to the extent that the request encompasses all material in GMP's possession used in the preparation of prefiled direct testimony and exhibits, including material protected by the attorney-client and work-product privileges. Without limiting or waiving this objection, GMP responds as follows.

DPS1.A1.

The following work papers and supporting documentation have already been provided to the Department in their native, intact formats, and are not being produced again with these responses:

- Power supply model (provided directly to Joan White in the Department's office on April 16, 2018).
- Lead schedules and linked source documents (sent to the Department by first-class mail on April 17, 2018).
- Capital folders (sent to the Department by first-class mail on April 25, 2018).

The additional documents that GMP is producing in response to this request are provided with GMP's electronic production and are organized into subfolders by witness:

- GMP.DPS1.Q1.Castonguay
- GMP.DPS1.Q1.Costello
- GMP.DPS1.Q1.Coyne
- GMP.DPS1.Q1.Fiske
- GMP.DPS1.Q1.Lisai
- GMP.DPS1.Q1.Nelson
- GMP.DPS1.Q1.Otley
- GMP.DPS1.Q1.Ryan

In addition, all or most of the documents produced in response to the Department's remaining discovery requests below are responsive in some degree to this request.

Person/s Responsible for Response: Each witness as listed above
Title of Person/s: See above
Date: June 15, 2018

**DPS1.Q2. Please provide copies of any documents that detail the financial and operational GMP goals, objectives, and targets for each of the last three years in the most detailed form available for:**

**a. GMP at the enterprise-level;**
**b. Each department or division within GMP.**

DPS1.A2.

Please see:

- Attachment GMP.DPS1.Q2.1 - 2015 Strategic Growth Update;
- Attachment GMP.DPS1.Q2.2 - 2016 Strategic Growth Update;
- Attachment GMP.DPS1.Q2.3 - 2018 10 Year Strategic Forecast; and
- Attachment GMP.DPS1.Q2.4 - 2018 Energy Transformation Company

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q3. Please provide detailed GMP organization charts showing for every position title:**

**a. The current incumbent (or vacant);**
**b. The superior position;**
**c. All subordinate positions;**
**d. Organization name, e.g., the department, division, or section name;**
**e. Cost center name and number.**

DPS1.A3.

GMP maintains a digital organizational chart with the requested information in an online program called Halogen. As done previously, GMP is pleased to offer log-in credentials to the Department of Public Service and its consultants for review at any time.

Person/s Responsible for Response: Mari McClure
Title of Person/s: VP, Chief Talent Officer, System & Support Operations
Date: June 15, 2018

**DPS1.Q4. Please identify each GMP organizational unit that is responsible for capital projects and its:**

**a. Scope of asset responsibilities (e.g. transmission, substations, information technology, generation, or facilities);**

**b. Capital project phase responsibilities (e.g., planning, engineering, construction, contracting, project management, contract management, plant accounting, or quality control).**

DPS1.A4.

Please see the prefiled testimony of Brian Otley, John Fiske, and Jason Lisai which provides this information in narrative form. Answering further, please see Attachment GMP.DPS1.Q4 for a listing by scope of responsibility showing the responsibility by phase.

Person/s Responsible for Response: Matthew Haley
Title of Person/s: Manager of Fixed Assets and Fleet
Date: June 15, 2018

**DPS1.Q5. Please provide copies of GMP's strategic plans for each of the years 2017, 2018, and 2019 in the most detailed forms available.**

DPS1.A5.

Please see Response DPS1.Q2.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q6. Please provide the following information regarding GMP's decision to file a rate case based on a nine-month period:**

**a. All analysis leading up to the decision;**
**b. Identify who made the final decision to use a nine-month period and when;**
**c. Provide copies of analysis, presentations or other communications provided to or with the decision maker(s);**
**d. Any forecasts or analysis prepared by GMP that compare the impacts of nine-month rate case verses a twelve-month rate case;**

**Objection:** GMP reasserts General Objections 1 and 2, to the extent that the request encompasses all "analysis" and "communications" including material protected by the attorney-client and work-product privileges. Without limiting or waiving this objection, GMP responds as follows.

DPS1.A6.

a. The purpose of using a 9-month period is to have the rate period once more coincide with the company's fiscal and tax reporting year, starting in Fiscal Year 2020, which begins in October 2019. With all of the major tax changes, it is important for GMP to have its regulatory filings coincide with the Company's tax reporting period. Having the fiscal year coincide with the regulatory year both allows the company to focus on requirements for the same 12-month timeframe and provides for efficiencies in financial reporting. GMP made a similar 9-month filing for 2009 to move to the fiscal year of the parent company. GMP did perform a high-level analysis early in its rate case process to ensure that there would be no material effect from its decision to file a 9-month rate case rather than a 12-month case. Please see Attachment GMP.DPS1.Q6.a. (Please note that this analysis was conducted in December, so the rate needs were preliminary and the tax impacts/benefits were not yet known, though the analysis directionally continued to apply.)

b. While the decision to use a 9-month period was made by members of GMP's Leadership Team, the company's Chief Financial Officer Dawn Bugbee and her finance team sought the change for the reason set forth above. The decision to use a 9-month period was finalized in early February 2018.

c. Please see Response DPS1.Q6 subpart a above.

d. Please see Response DPS1.Q6 subpart a above.

Person/s Responsible for Response: Rob Bingel; Dawn Bugbee
Title of Person/s: Manager, Forecasting & Analytics; Chief Financial Officer
Date: June 15, 2018

## General Finance Requests

**DPS1.Q7. Please provide copies of documents that detail any financial and operational goals, objectives, targets and/or other direction from Gaz Metro (or other parent entity) to GMP for each of years 2016, 2017, 2018 in the most detailed form available.**

DPS1.A7.

None exist. GMP operates independently from Gaz Metro (now Energir) (and Northern New England Energy Corporation, or "NNEEC") and receives no financial or operational goals or objectives from Energir.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q8. Please provide audited financial statements for 2016 and 2017 for GMP's parent, Northern New England Energy Corporation (NNEEC) including:**

**a. Income Statement, Balance Sheet, and Cash Flows and accompanying notes;**

**b. Segment statements associated with each subsidiary of NNEEC.**

DPS1.A8.

Please see Conf. Attachment GMP.DPS1.Q8.1 - NNEEC 2017 audited statements (FY17 & FY16) and Conf. Attachment GMP.DPS1.Q8.2 - NNEEC Subs Consolidated audited FY 2016 Financial Statements (FY16 & FY15).

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q9. Please provide a copy of any tax sharing/allocation agreement between GMP and NNEEC as well as any documents discussing how the agreement(s) is implemented.**

DPS1.A9.

Please see Conf. Attachment GMP.DPS1.Q9.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q10. Please provide a copy of any tax sharing agreements between NNEEC, Vermont Gas Systems, Portland Natural Gas Transmission System ("PNGTS") and any other subsidiaries of NNEEC, if available to GMP.**

DPS1.A10.

Please see Attachment GMP.DPS1.Q9.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q11. Please confirm that NNEEC is the ultimate tax payer (files a consolidated return), for United States Federal Income Tax, in the ownership structure of GMP.**

DPS1.A11.

Confirmed.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q12. Please provide copies of the NNEEC United States Federal Income Tax return for the three most recent years.**

DPS1.A12.

There is no FY 2017 return since FY17 will not be filed until after July 15, 2018. For prior years, please refer to the following attachments:

- Conf. Attachment GMP.DPS1.Q12.1 – NNEEC FY'14 Consolidated Federal Form 1120
- Conf. Attachment GMP.DPS1.Q12.2 – NNEEC FY'15 Consolidated Federal Form 1120
- Conf. Attachment GMP.DPS1.Q12.3 – NNEEC FY'16 Consolidated Federal Form 1120

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q13. Please provide copies of the United States Federal Income Tax return (or similar documents) used to calculate GMP tax liability for the purposes of administering the tax sharing agreement.**

DPS1.A13.

There is no FY 2017 return since FY17 will not be filed until after July 15, 2018. For prior years, please refer to the following attachments:

- Conf. Attachment GMP.DPS1.Q13.1 - GMP & Subs FY'14 Federal Proforma
- Conf. Attachment GMP.DPS1.Q13.2 - GMP & Subs FY'15 Federal Proforma
- Conf. Attachment GMP.DPS1.Q13.3 - GMP & Subs FY'16 Federal Proforma

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q14. Please provide a summary of payments made under the tax sharing agreement between NNEEC and GMP for years 2014, 2015, 2016, 2017 and 2018.**

DPS1.A14.

Payments in the amount of $440,000 were made to NNEEC during FY2012. No payments were made in FY2013 through FY2017, and none have been made in FY2018.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q15. Please describe how the premium for the merger between GMP and Central Vermont Public Service was recorded on the books of NNEEC. Please also provide the following:**

**a. Include details on the original transaction and the amounts that remain on the books as of 12/31/17**

**b. Provide any analysis used to value GMP for accounting purposes**

DPS1.A15.

a. The merger premium is calculated to be $226,845,000 and is recorded on the books of GMP's parent company, Northern New England Energy Corporation, as goodwill. Effective June 27, 2012, Central Vermont Public Service ("CVPS") became a wholly-owned subsidiary of NNEEC and merged with GMP on October 1, 2012. All of CVPS's shares were converted into the right for shareholders to receive $35.25 in cash. The cash consideration paid for the approved transaction was $481,247,000. In addition to the cash consideration paid, NNEEC agreed to make an additional capital contribution of $19,500,000 to CVPS to cover the breakup fee from Fortis and paid other costs of the transaction.

The source of the table below is NNEEC's Audited Financial Statements for the Year Ending September 30, 2012.

The following table summarizes the consideration paid and the estimated fair value of the assets acquired and liabilities assumed at the acquisition date.

| | | |
|---|---|---|
| Consideration: | | |
| Cash | $ | 481,247 |
| Capital contribution | | 19,500 |
| Fair value of total consideration transferred | | 500,747 |
| Recognized amounts of identifiable assets acquired and liabilities assumed: | | |
| Current assets | | 98,833 |
| Utility plant | | 430,850 |
| Investments | | 169,411 |
| Other assets | | 76,681 |
| Current liabilities | | (68,105) |
| Other liabilities | | (184,681) |
| Long-term debt | | (245,712) |
| Total identifiable net assets assumed | | 277,277 |
| Purchase price adjustments | | 3,375 |
| Goodwill | $ | 226,845 |

"Pushdown accounting" was not applied to reflect NNEEC's new basis of accounting for the underlying net assets acquired as part of the business combination, due to the fact that the fair value adjustments and related goodwill

are not recoverable by GMP in customer rates. Therefore, the $226,845,000 recorded as goodwill on NNEEC's consolidated financial statements, that reflects the merger premium paid, remains undiminished on the books of NNEEC.

b. GMP has not located in its files any analyses used to value the combined company at the time of the merger apart from any documentation that would have been produced in discovery by the parties as a part of Docket No. 7770.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q16. With respect to the acquisition of CVPS please describe:**

**a. The amount and cost of debt incurred by NNEEC, or it parents, to fund the purchase.**

**b. Please describe what amount acquisition debt remains at NNEEC or its parents as of 12/31/2017.**

DPS1.A16.

a. The amount of debt incurred was $260M at 4.46%, or $11.6M annually on a pre-tax basis.

b. The $260 million is still on the books. One tranche will be due in 2022 and the other one in 2024.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q17. Please describe each transaction between GMP and NNEEC for 2012, 2013, 2014, 2015, 2016, 2017 and 2018 including:**

**a. A detailed description each transaction including amount, date and purpose;**

**b. Supporting documentation for each transaction.**

DPS1.A17.

Please see Attachments:

- GMP.DPS1.Q17.1 - NNEEC
- GMP.DPS1.Q17.2 - NNEEC Shared Services
- GMP.DPS1.Q17.3 - NNEEC Dividends

Person/s Responsible for Response: Gary Sexton
Title of Person/s: Leader, GAAP Accounting
Date: June 15, 2018

**DPS1.Q18. Please provide details on GMP's executive short-term incentive compensation programs for each of the years 2016, 2017 and 2018 including:**

- **a. All plan documents;**
- **b. The participants;**
- **c. Performance metrics, targets, and bands;**
- **d. Payout pool and payout formulas;**
- **e. Actual payout calculations;**

DPS1.A18.

Please see Attachments GMP.DPS1.Q18.a, GMP.DPS1.Q18.b-e 2016, GMP.DPS1.Q18.b-e 2017, and GMP.DPS1.Q18.b-e 2018.

Notably, less than half of GMP's short term incentive compensation is in rates, and this is a part of the Base O&M platform accounts. The Base O&M platform allows for 50% of short term incentive compensation, less an additional reduction as agreed to and approved by the Public Utility Commission in Docket No. 8190. Additionally, 0% of GMP's executive long-term incentive compensation is in rates. As such, customers do not pay any of the executive long-term incentive compensation.

We believe our executive short-term incentive plan is unusual in its level of customer focus. As a certified B Corporation, we have a deep commitment to creating positive change in the relationship with our customers and communities we serve through a new model of doing business, one that delivers on a promise to provide low cost, innovative, safe, and reliable services during a period where technologies, trends, and business models are threatening to drive up costs for customers and reduce efficiency of the grid. This includes delivering on and exceeding core metrics of customer service, controlling costs and delivering savings to customers, innovating and embracing the new energy future to mitigate otherwise dramatic cost increases, and partnering with customers to provide products and services in Vermont's changing energy landscape. Overall, the level of customer focus in our short-term incentive compensation plan far exceeds the less than 50% cost included in rates.

Our executive short-term plan is designed for achievement of these key strategic, customer-focused goals in two ways.

First, the majority (60%) of executive short-term incentive performance is related solely to our most important operational metrics that are the foundation of providing top notch, superior customer service. These goals serve the basis of our "customer-obsessed" culture and are a part of GMP's Service Quality & Reliability Performance, Monitoring & Reporting Plan. They include:

- Workplace safety performance: measures how well we perform our work safely on behalf of our customers.

- System reliability and performance: measures the frequency of customer outages on our system, and the duration of any outages.

- Customer satisfaction following a transaction: measures how satisfied customers are with our service following a customer-initiated contact with us.

- Customer satisfaction overall: measures how satisfied our customers are with us in general and is annually measured by an independent, third party.

- Customer complaints: measures how many customer complaints are escalated to the Department of Public Service.

- Call answer performance: measures how well we answer customer calls, including how many are answered within 20 seconds, how many are abandoned and how many outage calls we answer.

- Billing performance: measures how well we render customers' bills, both timeliness and accuracy.

- Payment posting performance: measures how well we apply customer payments, both timeliness and accuracy.

- Meter reading performance: measures how well we complete our scheduled meter readings each month.

- Work completion performance: measures how well we complete customer-requested work when we promised to.

Second, our plan contains individual performance goals that account for the remaining 40% of short term performance. These goals are developed annually by identifying the key strategic, customer-focused goals for the fiscal year and allocating relative weight to each participant based on responsibility and accountability. These goals include:

- Enhancing communication options for customers & improving customer service: metrics in 2018 include improving our customers estimated time of restoration during outage events, improving our public online outage

portal and map information, and increasing customer online account participation.

- Achieving customer savings via continued merger synergy activities: metrics include achieving total fiscal year merger savings of over $34,000,000 in 2018.

- Achieving reasonable rates for customers: metrics in 2018 include obtaining a new regulation plan that achieves great outcomes for customers.

- Growing cost effective renewable resources and implementing cost saving power supply strategies: metrics in 2018 include (i) implementing an analytics tool focused on peak shaving to help reduce costs, (ii) seeking a hydroelectric generation opportunity, either through a cost-effective PSA or ownership opportunity, and (ii) successfully filing for a joint venture microgrid project including pairing solar and batter storage and developing microgrid controls.

- Implementing innovative programs to support our customers: metrics in 2018 include (i) developing a tier 3 pilot program for customers in partnership with low-income advocates, and (ii) deploying a level of controllable devices as well as a "bring your own device" program to allow all customers to participate in grid transformation capabilities and help manage peak costs.

- Continuing the transformation to the energy company of the future: metrics in 2018 include (i) partnering with Vermont companies to advance tier 3 commitments, and (ii) securing customers for our eV home charging program to help reduce costs and allow for greater adoption throughout the state.

- Developing opportunities to deepen relationships in the communities we serve: metrics in 2018 include (i) developing an action plan to close the gap between traditional distribution circuits and the ideal, more distributed, more renewable, two-way circuit to ensure greater reliability and lower costs, and (ii) developing a program to assist our commercial and industrial customers with self-managed efficiency programs.

These metrics demonstrate that our short-term incentive plan is squarely centered around our customers and incentivizes our leaders to continue to deliver and build on providing innovative, safe, and reliable service. Importantly, the short-term incentive plan contains a financial circuit breaker.

No short-term performance will be awarded to any executive if the financial performance of the company is not strong.

Person/s Responsible for Response: Mari McClure
Title of Person/s: VP, Chief Talent Officer, System & Support Operations
Date: June 15, 2018

**DPS1.Q19. Please provide the individual performance goals for each participant in GMP's short-term incentive program for 2016, 2017 and 2018.**

DPS1.A19.

Please see the answer to DPS1.Q18 above, and Attachments GMP.DPS1.Q18.b-e 2016, GMP.DPS1.Q18.b-e 2017, and GMP.DPS1.Q18.b-e 2018.

Person/s Responsible for Response: Mari McClure
Title of Person/s: VP, Chief Talent Officer, System & Support Operations
Date: June 15, 2018

**DPS1.Q20. Please provide details on GMP's executive long-term incentive compensation programs beginning from 2017 through each year that plans and/or plan targets have been established (minimum through 2021) including:**

- **a. All plan documents;**
- **b. The participants;**
- **c. Performance metrics, targets, and bands;**
- **d. Payout pool and payout formulas;**
- **e. Actuals payout calculations;**

DPS1.A20.

Please see Attachments GMP.DPS1.Q20.a, GMP.DPS1.Q20.c, and GMP.DPS1.Q20.b-e.

Notably, 0% of GMP's executive long-term incentive compensation is in rates. As such, customers do not pay any of the executive long-term incentive compensation. Nevertheless, the goals of our long-term incentive compensation plan are designed to strengthen the company's finances and operations, which ultimately benefits our customers.

GMP's long-term incentive plan is designed for achievement of key long-term strategic goals related to achieving overall financial strength, delivering on long-term merger savings, and delivering on investments that drive customer value. In the most recent plan update, we also incentivize achieving new revenue opportunities aligned with our customers' needs and the state's energy goals, such as offering energy as a service, and creating other new value opportunities that are increasingly important for long-term sustainability and affordable rates.

The majority (60%) of the executive long-term incentive metrics is related to building financial strength and stability through solid operating cash flow and to delivering on merger savings measured over a three-year period. Our industry is changing rapidly. In this environment, it is particularly important that we maintain solid financial metrics, such as a strong operating cash flow, because that is critical to keeping costs as low as possible for customers by ensuring GMP has a strong credit rating, access to lower borrowing and debt costs, and more favorable power supply contract costs. Additionally, maintaining strong financial metrics such as operating cash flow ensures that GMP can adequately respond when our customers and the communities we serve need us most – during major disruptive storms that are happening more and more frequently. When these disruptive events strike, having strong financial metrics with access to capital and cash ensures GMP can respond to our customers immediately, spending millions of dollars on storm recovery on demand if necessary. Similarly, our ability to deliver merger savings over a long-term period

demonstrates strong financial management and ensures we continue to drive down costs for our customers through innovation and a lean and effective operating approach.

The remaining executive long-term performance metrics are related to making investments that drive customer value, achieve new revenue opportunities aligned with customer needs and state energy policy, and create other new value opportunities that are increasingly important for long-term sustainability and affordable rates. As energy delivery becomes more distributed and more renewable, our grid network supporting and enabling that transformation becomes more complex to operate. Combined with enhanced cyber security requirements, this transformation puts more pressure on our distribution system. Keeping up means we must make critical grid investments not only to ensure the bulk system is safe and reliable for basic energy delivery to customers, but also to enable and reliably orchestrate energy delivery from distributed sources.

Our executive long-term incentive compensation plan, paired with the rest of our compensation package, ensures that our leaders consider both the immediate and longer-term implications of their decisions so that GMP can continue to help our customers dramatically reduce dependence on carbon, while at the same time, we strengthen our infrastructure and transform and adapt our business to drive down future cost pressures.

Person/s Responsible for Response: Mari McClure
Title of Person/s: VP, Chief Talent Officer, System & Support Operations
Date: June 15, 2018

**DPS1.Q21. Please provide the payouts for GMP's short-term and long-term incentive programs for 2016 and 2017 by individual. That is, please identify the "Senior Management" individuals and the proposed award for each individual. Please also list the long-term incentive payout by individual as well. Please provide the details on how each component of the payout was calculated.**

DPS1.A21.

Please see Attachments GMP.DPS1.Q18.b-e 2016, GMP.DPS1.Q18.b-e 2017, GMP.DPS1.Q20.b-e, and GMP.DPS1.Q21.

Person/s Responsible for Response: Mari McClure
Title of Person/s: VP, Chief Talent Officer, System & Support Operations
Date: June 15, 2018

**DPS1.Q22. With respect to GMP's equity in earnings of affiliates, please provide documents that detail or describe in detail for each of the five fiscal years 2013-2017, the average of each investment included in rate base in the respective year and the actual earnings on each investment during the respective years.**

DPS1.A22.

See Attachment GMP.DPS1.Q22.

Person/s Responsible for Response: Eddie Ryan; Karen Young
Title of Person/s: Controller; Budget/Forecasting Supervisor
Date: June 15, 2018

**DPS1.Q23. Please provide the following information regarding the "Reversal of Regulatory Deferral" of $12,110,472 shown in Adjustment 23:**

**a. A detailed description of the transaction and its purpose;**

**b. The amounts booked by year.**

DPS1.A23.

For the 2019 Rate Period, GMP removed the Test Period expense of $12,110,472 that had been booked to FERC Account 407.3 Regulatory Debits, since it would not be recurring in the rate period.

The $12,110,472 included two different items:

| | |
|---|---|
| Deferral of Customer Synergies in excess of amount included in Final 2017 Retail Rates | $ 646,887 |
| Deferral of Day 1 Gains included in JV Solar Equity-in-Earnings | $ 11,463,585 |

Per FERC, this account shall be debited, when appropriate, with the amounts credited to Account 254, Other Regulatory Liabilities, to record regulatory liabilities imposed on the utility by the ratemaking actions of regulatory agencies.

In the Test Period (9 months ended September 30, 2017):

GMP deferred the Day 1 Gains of $11,463,585 associated with the JV Solar projects and created a regulatory liability to return 100% of this benefit to customers over two years, 2017 and 2018. The return of the 2017 portion of the Day 1 Gains was booked as a regulatory credit amortization in our financials.

GMP also deferred $646,887 of customer synergies in excess of the amount included in the final, approved 2017 Retail Rate Filing and established a regulatory liability to be returned to customers. This amount is being returned via a credit amortization in our 2018 rates.

Person/s Responsible for Response: Eddie Ryan; Karen Young
Title of Person/s: Controller; Budget/Forecasting Supervisor
Date: June 15, 2018

## Cost of Capital

**DPS1.Q24. Please provide copies of all work papers and supporting documentation used by Mr. Coyne in the preparation of his Direct Testimony and Exhibits. Please provide all spreadsheets with cell formulas intact. Please include all exhibits in native spreadsheets with cell formulas intact.**

DPS1.A24.

Please refer to the following Attachments:

- Attachment GMP.DPS1.Q24.1 – Exhibit Package
- Attachment GMP.DPS1.Q24.2 – Stock Prices, Bond Prices, Dividend Yields (Feb. 2018)
- Attachment GMP.DPS1.Q24.3 – Value Line
- Attachment GMP.DPS1.Q24.4 – Yahoo! Finance
- Attachment GMP.DPS1.Q24.5 – Zacks
- Attachment GMP.DPS1.Q24.6 – Blue Chip Financial Forecasts, Vol. 36, No. 12 (Dec. 2017)
- Attachment GMP.DPS1.Q24.7 – Bloomberg 30-day Average 30-Year Treasury Bond Yield (Feb. 2018)
- Attachment GMP.DPS1.Q24.8 – Bloomberg 30-day Average 30-Year TIPS Yield (Feb. 2018)
- Attachment GMP.DPS1.Q24.9 – Bureau of Economic Analysis (Feb. 2018)
- Attachment GMP.DPS1.Q24.10 – Bloomberg Beta
- Conf. Attachment GMP.DPS1.Q24.11 – RRA Quarterly Rate Case Statistics (Jan. 1992 – Jan. 2018)
- Attachment GMP.DPS1.Q24.12 – Bloomberg Quarterly 30-Year Bond Yields (Jan. 1992 – Jan. 2018)
- Attachment GMP.DPS1.Q24.13 – Blue Chip Financial Forecasts (Mar. 2018)
- Attachment GMP.DPS1.Q24.14 – Bloomberg Market Capitalization
- Attachment GMP.DPS1.Q24.15 – GMP FERC Form 1 (Sept. 2017)
- Attachment GMP.DPS1.Q24.16 – Market to Book Ratio of Valener (Feb. 2018)
- Attachment GMP.DPS1.Q24.17 – RRA Rank by State
- Attachment GMP.DPS1.Q24.18 – Capital Structure Analysis
- Attachment GMP.DPS1.Q24.19 – Figure 1_Authorized ROEs for Vertically Integrated Electric Utilities (Jan. 2016 – Feb. 2018)
- Attachment GMP.DPS1.Q24.20 – Figure 2_Dividend Yields for Electric Utility Stocks

- Attachment GMP.DPS1.Q24.21 – Figure 3_S&P Utilities Index and US 30-Year Treasury Bond Yields (2007-2017)
- Attachment GMP.DPS1.Q24.22 – Figure 4_ S&P Utilities Index and US 30-Year Treasury Bond Yields (June 2017 - Feb. 2018)
- Attachment GMP.DPS1.Q24.23 – Figure 5_Fed Normalization Policy Relative to cumulative Caps (2018)
- Attachment GMP.DPS1.Q24.24 – Figure 6_CME Group, FedWatch (March 22, 2018)
- Attachment GMP.DPS1.Q24.25 – Figure 7_VIX Index (2005 to present)
- Attachment GMP.DPS1.Q24.26 – Figure 9_Utility P/E Ratios vs. Proxy Group 2000 to Present
- Attachment GMP.DPS1.Q24.27 – Figure 15_Disaggregated Residential Sales Forecast 2018-2028, Itron, Inc. 2019 Forecast, Table 3

Person/s Responsible for Response: James Coyne
Title of Person/s: Senior Vice President, Concentric Energy Advisors, Inc.
Date: June 15, 2018

**DPS1.Q25. With respect to credit rating agencies (i.e., Standard and Poor's, Moody's, Fitch, etc.), please provide the following information for the last two years regarding GMP:**

- **a. Credit rating and bond rating agency reports (please also include the most recent reports for 2018, if available);**
- **b. Presentations made to the agencies;**
- **c. Any financial forecasts provided and source models or work papers;**
- **d. All correspondence with the agencies.**

DPS1.A25.

a. Please refer to the following attachments:

- GMP.DPS1.Q25.a1
- GMP.DPS1.Q25.a2
- GMP.DPS1.Q25.a3
- GMP.DPS1.Q25.a4

b. Please refer to Attachments GMP.DPS1.Q25.b1 and GMP.DPS1.Q25.b2 provided to S&P in November of 2016 and 2017, respectively.

c. Please see response to part b for financial forecasts. Source information for the financial forecasts is in the Utilities International ("UI") financial modeling software program, which is available for inspection. See Response to DPS1.Q34. Please note that the information that goes to S&P is a consolidated financial GAAP presentation, not a cost of service based report.

d. All emails between GMP and S&P through filing are in Attachment GMP.DPS1.Q25.d.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q26. Please provide all credit rating and bond rating agency reports (i.e., Standard and Poor's, Moody's, Fitch) for Gaz Metro for the last two years. Please include the most recent reports for 2018, if any.**

DPS1.A26.

Please see:

- Attachment GMP.DPS1.Q26.1 - 2016 S&P,
- Attachment GMP.DPS1.Q26.2 - DBRS 2016,
- Attachment GMP.DPS1.Q26.3 - 2017 S&P,
- Attachment GMP.DPS1.Q26.4 - DBRS 2017, and
- Attachment GMP.DPS1.Q26.5 - DBRS 2017 (updated)

Please note that Gaz Metro changed its name to Energir Inc. in 2017.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q27. Please provide copies of all articles, regulatory commission orders, rating agency reports, and other supporting documentation cited and relied upon by Mr. Coyne in his Direct Testimony and exhibits. Include copies of all articles, reports, and other documents cited in the footnotes.**

DPS1.A27.

Please see Attachments:

- Attachment GMP.DPS1.Q27.1 – GMP - Index of Citations
- Attachment GMP.DPS1.Q27.2 – 1 - 2017-11-09 - DPS-GMP MOU
- Attachment GMP.DPS1.Q27.3 – 1, 4, 5 - VT PUC Case 17-3112-INV
- Attachment GMP.DPS1.Q27.4 – 2 - SNL Maui Electric Decision Summary D-2011-092
- Attachment GMP.DPS1.Q27.5 – 3, 16 - Economic projections of Fed Reserve Brd members 3-2018
- Attachment GMP.DPS1.Q27.6 – 5 - Investigation into GMP tariff filing 8-25-2014
- Attachment GMP.DPS1.Q27.7 – 6 - FOMC Fed Reserve press release 3-15-2017
- Attachment GMP.DPS1.Q27.8 – 7 - Bureau of Economic Analysis Table 1.1.5 2-28-2018
- Attachment GMP.DPS1.Q27.9 – 8 - Bureau of Economic Analysis Table 1.1.6 2-28-2018
- Attachment GMP.DPS1.Q27.10 – 9, 11,12 - BCEI vol 43, No 3 3-10-2018
- Attachment GMP.DPS1.Q27.11 – 10 - Bureau of Labor Statistics, Table A-10. Selected Unemployment
- Attachment GMP.DPS1.Q27.12 – 14, 45, 48 - Blue Chip Vol 36 No 12 12-1-2017
- Attachment GMP.DPS1.Q27.13 – 15 - FOMC Fed Reserve press release 3-21-2018
- Attachment GMP.DPS1.Q27.14 – 17 - Federal Reserve press release - Addendum 6-13-2017
- Attachment GMP.DPS1.Q27.15 – 18 - Reuters Business News 9-15-2017
- Attachment GMP.DPS1.Q27.16 – 19, 20, 47_BCFF0318
- Attachment GMP.DPS1.Q27.17 – 21 - CME FedWatchTool 3.22.2018
- Attachment GMP.DPS1.Q27.18 – 22_Confidence and Volatility (4-2-2018)
- Attachment GMP.DPS1.Q27.19 – 23, 26, 27 - Fitch - Tax Reform Impact on Utilities 1-24-2018
- Attachment GMP.DPS1.Q27.20 – 24 - Moody-s-Tax-Reform
- Attachment GMP.DPS1.Q27.21 – 25 - Moody's changes outlooks January 19 2018

- Attachment GMP.DPS1.Q27.22 – 29 - Ben Schiller - Fast Company 9-21-2015
- Attachment GMP.DPS1.Q27.23 – 30 - Vermontbiz 3-22-2018 Home battery storage owners can reduce ...D' program
- Attachment GMP.DPS1.Q27.24 – 31 - S&P GMP Research Update
- Attachment GMP.DPS1.Q27.25 – 32 – Hope
- Attachment GMP.DPS1.Q27.26 – 34 - Brigham, Houston p317
- Attachment GMP.DPS1.Q27.27 – 35 - Harris and Marston_Estimating Shareholder Risk Premia
- Attachment GMP.DPS1.Q27.28 – 35 - Vander Weide and Carleton, Investor Growth Expectations, JPM Spring 1988
- Attachment GMP.DPS1.Q27.29 – 36 - Value Line Inv Survey 2-16-2018
- Attachment GMP.DPS1.Q27.30 – 37, 38 - 155FERC63030
- Attachment GMP.DPS1.Q27.31 – 40, 41 - PPUC R-2012-2290597 12-05-2012
- Attachment GMP.DPS1.Q27.32 – 42, 43 - D.P.U. 17-05
- Attachment GMP.DPS1.Q27.33 – 46 - FERC Opinion No. 531 at para 147 footnote 292
- Attachment GMP.DPS1.Q27.34 – 49 - Itron, Inc. 2019 GMP Budget Forecast Report
- Attachment GMP.DPS1.Q27.35 – 50, 51, 52 - Moody's regulated gas and electric utility rating methodology Dec 2013
- Attachment GMP.DPS1.Q27.36 – 53 - VT PUC, Case No. 17-3142-PET
- Attachment GMP.DPS1.Q27.37 – 54 - 2018 03 15 GMP Biennial Comments
- Attachment GMP.DPS1.Q27.38 – 55 - AME LightingTheWay Jul16
- Attachment GMP.DPS1.Q27.39 – 56 - Clean-Energy-Momentum-UCS (Apr. 2017)
- Attachment GMP.DPS1.Q27.40 – 57 - Morin - New Regulatory Finance p.45-46

Person/s Responsible for Response: James Coyne
Title of Person/s: Senior Vice President, Concentric Energy Advisors, Inc.
Date: June 15, 2018

**DPS1.Q28. Please provide a listing of the companies that Mr. Coyne excluded from his proxy group and the reason(s) for excluding each company. Please provide supporting documentation and work papers for all quantitative analyses underlying the exclusion of each company.**

DPS1.A28.

Please refer to Attachment GMP.DPS1.Q28 – Proxy Group Screening Workpapers. Note that red, highlighted fields indicate failure to meet the screening criteria and green highlighted fields indicate that the company satisfied all criteria and were selected for the proxy group.

Person/s Responsible for Response: James Coyne
Title of Person/s: Senior Vice President, Concentric Energy Advisors, Inc.
Date: June 15, 2018

**DPS1.Q29. If not provided previously, please provide copies of all Blue Chip reports cited and relied upon by Mr. Coyne in his Direct Testimony and exhibits.**

DPS1.A29.

Please see Attachments:

- Attachment GMP.DPS1.Q27.10 – 9, 11,12 - BCEI vol 43, No 3 3-10-2018
- Attachment GMP.DPS1.Q27.12 – 14, 45, 48 - Blue Chip Vol 36 No 12 12-1-2017
- Attachment GMP.DPS1.Q27.16 – 19, 20, 47_BCFF0318

Person/s Responsible for Response: James Coyne
Title of Person/s: Senior Vice President, Concentric Energy Advisors, Inc.
Date: June 15, 2018

**DPS1.Q30. Please provide GMP's capital structure, including long-term and short-term debt for 2010 – 2018. Provide all supporting documentation analyses, work papers, and spreadsheets with cell formulas intact.**

DPS1.A30.

Please see GMP.DPS1.Q30 - Attachment Cap Structure.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q31. Please provide GMP's monthly cost and amounts of short-term debt from 2010 through 2018. Provide all supporting documentation analyses, work papers, and spreadsheets with cell formulas intact.**

DPS1.A31.

Please see GMP.DPS1.Q31 - Attachment ST and Int.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q32. Referring to the spreadsheet entitled "Rate Year 2019 Capital Structure Preliminary.xlsx", please provide the following:**

**a. Please provide the basis for the interest rates for the four New Debt issues with interest rates of 4.5% through 5.25%. Please provide all assumptions, studies, and documentation that supports these interest rates.**

**b. Regarding the New Debt issues, please explain how the Company determined these amounts. Provide all assumptions, studies, and documentation that supports the amount of each New Debt issuance.**

**c. Regarding the New Debt balances, please explain the timing of their inclusion in GMP's debt balance shown on the Tab entitled "L T Debt Test Year & Rate Year".**

**d. Has GMP attempted to retire or refinance the following higher cost long-term debt issues:**

- **9/01/2020 9.64%**
- **3/01/2022 8.65%**
- **12/15/2031 8.91%**
- **5/15/2028 6.83%**
- **7/01/2036 6.53%**
- **12/15/2023 6.90%**

**If so, please describe the GMP's efforts to retire this debt. If not, explain why the Company has not refinanced or otherwise retired this debt.**

**e. Please explain the basis for GMP's bank loan balances for the rate year and test year. Provide all supporting documentation and work papers.**

**f. Please provide the basis for the monthly cost/interest rate expense for GMP's bank loans for the rate year and test year. Provide all supporting documentation and work papers.**

DPS1.A32.

a. GMP is in the process of issuing $45M in first mortgage bonds in September 2018 and December 2018. The current pricing indicator provided by Keybank Capital Markets on a 30-year bond, if it had been priced on May 18 2018, would have been in the range of 4.27% - 4.32%. This is an indicative new issue pricing that is reflective of current market conditions and subject to change at any time. Please see Attachment GMP.DPS1.Q32.a - KBCM (May 2018).

It is believed that the Federal Reserve will issue at least two 25 basis point increases this year. Based on a 4.27% to 4.32% coupon rate, as indicated above, plus an additional 50 basis points in the US Treasury Yield over the next 12-18

months and upward pressures on credit spreads, it is reasonable to project a pricing range of 4.50% to 5.25% as market stability is changing daily. This assumes GMP will secure low cost long-term debt due to our strong current credit rating. This credit rating therefore translates into direct savings for customers.

b. In general, long-term bond issuances are deferred for as long as possible until our short-term line of credit liquidity is reasonably exhausted. To save money for customers, we utilize short-term borrowings as long as possible within a reasonable bandwidth of the credit borrowing limit because the interest rate is lower than long-term bonds.

   For the bond issuances proposed in May/June of 2019, we plan to issue $90M. However, $71.3M of those proceeds will be used to pay for bonds maturing during the 9-month period.

c. In the rate year capital structure, GMP assumed new long-term debt issuance of $30M in May 2019 and $60M in June 2019. The 30-day lag between issuances is necessary due to the timing of the bond maturity dates. Interest expense was calculated based on issuance being made in the middle of each month. The 13-month average long-term debt balance included in our capital structure is based on outstanding debt at month-end. See also Response DPS1.Q32 part e below.

d. This would be cost prohibitive for customers. That is because there is a make-whole premium requirement within our first mortgage bond supplemental indentures. Approximately every two years, we request KeyBank to perform a make-whole premium calculation to determine if the market conditions are favorable to either retire or refinance high-interest-rate bonds that are outstanding. The last report, completed in July 2016, showed the premium would be $75.6 million on outstanding bonds totaling $142.0 million. It was a similar result in the 2014 study. In July 2018, we will ask KeyBank to update the premium estimate. However, based on previous reports, we do not expect the premium requirement to result in a substantially lower amount that would suggest we take action. In other words, we would incur $75.6 million of expense for customers for retiring $142 million in debt. Please see Attachment GMP.DPS1.Q32.d for the last two evaluations performed.

e. Test year balances are based on actual outstanding borrowings at the end of each month. Rate year balances are calculated based on the most recent financial model. Please see Attachments GMP.DPS1.Q32.e - ST for Short Term and GMP.DPS1.Q32.f - LT for Long Term.

f. Test year interest expense would be based on actual interest expense occurred. Rate year interest expense is based on projected average beginning–ending

outstanding borrowing for each month and projected interest rate. Please see Attachments GMP.DPS1.Q32.e - ST and GMP.DPS1.Q32.f - LT. For long term debt, interest expense on current bonds outstanding is based on their coupon rate; the interest rate assumed on the new 2019 debt issuances is 5.25%. For short term debt, GMP assumed an average interest rate of 1.83% for the rate year.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

## Capital Planning and Projects

**DPS1.Q33. With respect to GMP's capital budgets (including investments in subsidiaries) for 2017, 2018, and 2019, please provide the following information in the most detailed form available:**

- **a. The initial capital budget (or summaries) sent for review to Gaz Metro or any other corporate affiliate, parent, or superior entity;**
- **b. Any response from Gaz Metro or any other corporate affiliate, parent, or superior entity to GMP's initial capital budget(s);**
- **c. The initial capital budget (or summaries) and regular capital budget reports sent to, or presented to, the GMP Board of Directors,**
- **d. GMP's final approved capital budget for 2017, 2018, and 2019.**

DPS1.A33.

Regarding subparts (a) and (b) there are no responsive documents. GMP operates independently from Gaz Metro (now Energir) and receives no financial or operational goals or objectives from Energir. GMP's capital budgets are reviewed and approved by our board of directors. After they are approved, GMP will include the capital budget schedule as part of our annual budget submission to NNEEC for purposes of consolidation. The only financial arrangement is quarterly dividends paid to Northern New England Energy Corporation, U.S holding company of Energir, and equity infusions received from NNEEC.

Regarding subparts (c) and (d) see Attachments GMP.DPS1.Q33.1 - 2017, GMP.DPS1.Q33.2 - 2018, and GMP.DPS1.Q33.3 - 2019.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q34. Please describe GMP's long-term financial forecast model in detail and how it reflects GMP's overall business model. Within your response, please state whether GMP's financial model calculates capital expenditures needed to meet earnings, net income, or any other financial targets.**

**a. If not, please state why;**

**b. If yes, please describe how the GMP financial model incorporates capital expenditures.**

DPS1.A34.

Since 2012, GMP has been using a financial modeling/forecasting tool from UI.

We have installed the planning and budgeting module, which allows us to create financial models and forecasts along with the budgeting model that we use exclusively for capital planning.

The actual financial monitoring is done through the Oracle environment which is a fully integrated system. We have been on the Oracle platform for over 15 years. In the last 4-5 years, we have invested in a very sophisticated Business Intelligence ("BI") tool that is available company-wide.

GMP's financial model does not calculate capital expenditures needed to meet earnings, net income, or any other financial targets. The financial model is GMP's business model which is used to make decisions for capital projects in upcoming years based on what is needed to provide safe, reliable, cost-effective service to customers and then all financial metrics flow from that. As described by Mr. Otley in his testimony, every year capital budget owners forecast projects needed to continue to provide safe, reliable, cost-effective service to customers in the coming year. Every project then goes through a screening process described by Mr. Otley in his testimony (p.14-19). This final capital budget is then approved by GMP for the coming year.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q35. Please provide documents that show GMP's final long-term financial model run completed in the years 2016, 2017, and 2018 relevant to any planned capital expenditures and their impact on financial targets.**

DPS1.A35.

Due to its electronic form, GMP's financial model is available for review upon request at GMP's offices in Colchester. For the remainder of the question, see Response DPS1.Q34.

Person/s Responsible for Response: Dawn Bugbee
Title of Person/s: Chief Financial Officer
Date: June 15, 2018

**DPS1.Q36. Please describe how GMP's capacity to perform capital projects is determined on a yearly basis. Please also describe in detail GMP's capacity to perform capital projects in each of the years 2017, 2018, and 2019 and provide copies of any documents that detail such how such determinations were made by GMP, if not already provided to the Department.**

DPS1.A36.

GMP's capacity planning for capital projects is based on our successful execution of our annual capital project plans for many years as well as our past experience and a strong institutional understanding about the volume and variety of projects we can deliver in any given capital year for our customers. For our capacity planning we rely on management experience and our track record on delivering the intended project outcomes. Our capacity to execute capital projects is a factor of good scope definition coupled with resource availability and productivity, including internal employees, external contractors (when needed), and equipment availability (when needed). These resources are considered with special attention to factors that may reduce their total capacity to do work, including schedule conflicts, seasonal limitations (length of the construction seasons), storm/outage response, and professional trainings, among others. As part of streamlining the list of capital project candidates each year, capital managers run assessments to determine the combination of projects that can fit into a capital year based on the variety of project attributes contained in the overall portfolio of projects. See, for example, Response DPS10.Q42 for documents related to capital assessments.

GMP's capital project capacity from 2017 to 2019 has and will remain relatively consistent internally. In any given year, however, the combination of projects requiring internal and external labor will have an impact on the overall capacity if measured by either number of projects or budget dollars of those projects. Generally, a higher reliance of internal resources has a limiting effect on overall capacity, whereas higher reliance on external resources has an expanding effect on overall capacity.

Person/s Responsible for Response: Brian Otley
Title of Person/s: Senior VP and Chief Operations Officer
Date: June 15, 2018

**DPS1.Q37. Please provide copies of any documents prepared or maintained by GMP that detail or establish policies and procedures governing whether and how costs incurred by GMP in connection with capital projects should be capitalized or expensed. If no such written policies exist, please describe in detail the processes that GMP utilizes to determine whether costs should be capitalized or expensed.**

DPS1.A37.

Please see Attachment GMP.DPS1.Q37, which is the Capitalization Policy that is in place. As explained by Mr. Otley in his testimony, the procedures that govern all spending, whether capital or expense, originate from our annual budget and forecast process. Once the annual process is complete, approval is received and operational managers are responsible for managing their approved budget throughout the year. Internal controls related to all expenditures including purchases, expenses and employee time ensure that managers have transparency into all costs. Monthly management meetings are used to monitor and manage both capital and expense costs and for each manager to provide variance explanations if needed.

Person/s Responsible for Response: Matthew Haley
Title of Person/s: Manager of Fixed Assets and Fleet
Date: June 15, 2018

**DPS1.Q38. Please provide copies of any written policies, procedures, guidelines, and/or a detailed description of GMP's overall capital prioritization, review, approval, implementation, and control process for generation projects. Within this response, please describe any changes that GMP has implemented to its capital project review process since the completion of last year's GMP rate case in Case No. 17-3112.**

DPS1.A38.

The generation prioritization process is described in the prefiled direct testimony of Jason Lisai at 10–12. Brian Otley describes GMP's overall capital project prioritization process, and specifically addresses changes to the capital planning and documentation process since last year's rate case in his prefiled direct testimony at 14-20. Jason Lisai's Exhibit GMP-JL-5 provides a prioritization ranking of all planned generation projects for the interim and rate periods.

For examples of GMP's planning and control processes for generation projects, see the following attachments:

- Attachment GMP.DPS1.Q38.1 – Capital 10yr Forecast_5-2-18
- Attachment GMP.DPS1.Q38.2 – Generation_Capital Schedule_MAY 2018
- Attachment GMP.DPS1.Q38.3 – 141781_Little River Update_Monthly APR2018
- Attachment GMP.DPS1.Q38.4 – 14988 GMP Little River Construction Meeting Minutes #26 3-27-17
- Attachment GMP.DPS1.Q38.5 – 14988 7wk Look Ahead 3-26-18 Rev #1
- Attachment GMP.DPS1.Q38.6 – 14988 Little River Updated Project Schedule 11.2.17
- Attachment GMP.DPS1.Q38.7 – 14988 - CO Log 6-11-18

Person/s Responsible for Response: Jason Lisai
Title of Person/s: Director, Generation Operations
Date: June 15, 2018

**DPS1.Q39. Please refer to Page 14, lines 1–5 of Mr. Otley's direct testimony. With respect to the "sequenced planning process" described by Mr. Otley, please respond to the following requests:**

**a. Provide documented distribution system planning criteria used in system planning that would justify capital expenditures;**

**b. Provide documented transmission planning criteria used in system planning that would justify capital expenditures.**

DPS1.A39.

Response to parts a and b is as follows.

The "sequenced planning process" described in Mr. Otley's testimony focuses on four parts: (1) long-term strategic alignment; (2) annual capital planning; (3) annual capital project budget preparation; and (4) capital project tracking and monitoring. While GMP does not have a documented distribution or transmission system planning criteria, GMP's process to identify and select T&D individual capital projects is discussed in the testimony of John R. Fiske, starting on page 6 on line 20 through line 14 on page 7.

GMP reviews and utilizes various documents to guide our capital plan. These include the following attachments:

- Attachment GMP.DPS1.Q39.1 – GMP T&D Integrated Resource Plan
- Attachment GMP.DPS1.Q39.2 – Rutland Area Reliability Plan
- Attachment GMP.DPS1.Q39.3 – Airport Area Reliability Study
- Attachment GMP.DPS1.Q39.4 – Vermont System Planning Committee reports
- Attachment GMP.DPS1.Q44.1 – VT PUC Rule 4.900 2017 Electricity Outage Reporting
- Attachment GMP.DPS1.Q58.2 – 2018 Vermont Long Range Transmission Plan

This information is utilized to develop the Multi-Year Capital Work Plan provided in Attachment GMP.DPS1.Q58.1 which identifies projects for transmission lines, transmission substations, and distribution substations budget categories. This document is used to prioritize the projects based upon the variety of factors as listed in Mr. Fiske's testimony on page 7, lines 6-10. Prioritization is accomplished by discussing the benefits of a given project, assessing the consequences of not doing a project, and the risk to the Company and customers of deferring the project in order to complete other projects. Representatives from Engineering, Operations and Operations Technology attend planning sessions to discuss project details and decide whether deferring

certain projects is justified due to the positive benefits or higher immediacy associated with other projects. Projects that have overlapping benefits for customers are usually given higher priority over other projects. The degree of criticality will influence where a project falls in the multi-year capital plan.

For example, a substation transformer with certain failing dissolved gas test results will result in immediate replacement because power cannot flow to the customer(s) without the transformer. Similarly, an example for a distribution line would be two bad reliability lines, one is cross country and one is roadside, if all are equal most likely the cross-country line would move up in priority. The availability of resources is another important factor that is considered when prioritizing projects. Consideration is given to the breakdown of specific projects in different geographic and functional areas and to the number and type of resources necessary to complete these projects. For example, Electrical Maintenance crews are required for distribution substation projects, transmission substation projects, and some transmission line projects. Therefore, individuals from different areas of the Company discuss how the available crews can be dispatched over the year to address the entire priority list of projects. If the workload looks excessive, then decisions will be made regarding whether to defer certain projects to later years or to hire outside contractors. Please reference witness Brian Otley's testimony for more information on scoring and ranking, specifically page 16 starting on line 20.

Please see Response DPS1.Q44 for a description of the Distribution Lines and T&D blankets prioritization.

Person/s Responsible for Response: John Fiske
Title of Person/s: Leader of Engineering
Date: June 15, 2018

**DPS1.Q40. Please describe in detail how the multi-year trend of employee (and public) safety metrics support GMP's historical and planned spending on safety improvements.**

DPS1.A40.

GMP's Service Quality Plan includes certain safety metrics that are reported each year. These metrics include GMP's OSHA recordable injury rate, among others. In the years 2014 to 2017, GMP's OSHA recordable injury rate fell each year, from 6.85 in 2014, to 6.10 in 2015, to 5.61 in 2016, and to 5.59 in 2017. We believe our investment in safety training and equipment, including the capital projects that have safety components in them, is delivering on GMP's safety objectives, both for employees and the public.

Answering further, GMP puts safety at the core of its culture. Whether for employees, customers, partners, contractors, suppliers, stakeholders, or any other entities that interact with our activities, we work hard to prioritize a culture that puts safety and the accountability for safety of self and others front and center. Safety incidents are interesting to track and learn from over time. One of our strongest lessons has been that a strong safety focus and culture is never complete and one can never rest. When we make good progress on a certain safety front such as trips and falls, another front will show up in our measurements such as tick bites or underground dig-ins. We work in an ever changing and dynamic environment, so there is no formulaic solution to address safety. Ensuring optimal safety requires creating a safety culture that is vigorously reinforced. While our safety statistics and performance over the past several years has been solid and improving, we can never be satisfied, or complacency will set in. GMP has invested in equipment, training, education, and awareness messaging as part of our investment in operating safely. While these things are important and are good investments year over year, I think the best thing we've done related to safety is simply talk about it openly and honestly and often. Every GMP meeting begins with a group pledge of "I am GMP safety." Each week our entire workforce re-confirms their individual commitment to striving for an incident-free week as part of our company-wide weekly Monday morning kick-off meeting. And, most importantly, we have changed the culture such that when a safety incident does occur, the person involved in the incident helps their co-workers by sharing the incident details and how the incident might have been prevented in the interest of learning and raising awareness rather than feeling judged. We expect to continue our investment in safety as a fundamental component of our culture and our capital planning.

Person/s Responsible for Response: Brian Otley
Title of Person/s: Senior VP and Chief Operations Officer
Date: June 15, 2018

**DPS1.Q41. Please provide, in a native Microsoft Excel format to the extent available, a summary of the last ten years and next five years of capital expenditures for each GMP department or division by the major categories of capital expenditures for each department or division and the total capital expenditures for each year.**

DPS1.A41.

Please see Attachment GMP.DPS1.Q41. Years 2009 to 2017 are actual capital expenditures and years 2018 to 2022 are projected capital expenditures, excluding spending for the innovative Tesla pilot in FY18.

Person/s Responsible for Response: Matthew Haley
Title of Person/s: Manager of Fixed Assets and Fleet
Date: June 15, 2018

**DPS1.Q42. Please provide copies of contemporaneous documentation for each of the capital projects included in GMP's Tariff Filling for 2018 and 2019 that describes project scope, justification, expected benefits, internal reviews, and project approvals that have not previously been provided to the Department, if any such documents exist. Specifically, please provide the following:**

- **a. Financial analysis produced prior to project approval, including alternatives and quantification of projected project benefits;**
- **b. Analysis supporting quantification of project benefits, or for completed projects, measurements of actual project benefits;**
- **c. Minutes, presentations or other records from meetings where the project was discussed or approved by management;**
- **d. Project Plan(s) including: scope descriptions and initial budget; schedule with critical path analysis; work breakdown structures; change control process and documentation; risk registers or logs;**
- **e. Provide spending inception to date and estimates to complete;**
- **f. All project variance reports for scope, schedule and budget.**

DPS1.A42.

Regarding subparts a, b, d, & e please see the individual project capital folders provided to DPS on April 25, 2018.

In response to part c, formal meeting minutes are not taken. Please see Attachments GMP.DPS1.Q42.1 through GMP.DPS1.Q42.8 for the capital project work papers that are used during our Capital Management Team meetings to track potential projects and develop a final proposed capital spending budget for ultimate GMP Board approval. Please also see Exhibit GMP-BO-1 which describes the process for development of the capital budget.

In response to part f, the variance reports, scheduling, and budget information vary by department based on the type and size of work to be completed. In all cases, each department manages its capital plan to ensure projects are completed within the approved total at the departmental level. Please see Response DPS1.Q38, and Attachments GMP.DPS1.Q42.9 and GMP.DPS1.Q42.10 for examples of variance analysis related to large projects.

Person/s Responsible for Response: Matthew Haley
Title of Person/s: Manager of Fixed Assets and Fleet
Date: June 15, 2018

**DPS1.Q43. Please describe the process or methodology in place to prioritize the capital spending for 2018 and 2019.**

**a. Show how each project is ranked;**
**b. Describe how GMP determined which projects were selected to be included in the budget;**
**c. Provide a list and brief description of the projects not selected to be included in the budget.**

DPS1.A43.

a. Consistent with testimony provided during the previous rate proceeding, GMP does not utilize a "one through n" ranking system to assign and rank value to each capital project. GMP works at the capital department and capital management team level to identify the highest value project candidates for our customers and then develops that list of project candidates into effective annual capital plans that balance the important work necessary to deliver high quality services with the time, budget and resource capacities the company has to deliver good execution on each project within the fiscal year. As explained in Brian Otley's testimony on page 17, we do categorize each project by whether it is "Required," "Recommended," or "Strategic." The categorization for each project is listed on the capital summary exhibits for each department. See Exhibits GMP-BO-7, GMP-JL-5, and GMP-JRF-2

b. Please refer to the prefiled testimony of Brian Otley in this proceeding, specifically the answer to Q11, for a description of GMP's overall capital planning and project selection process.

c. Please see Attachment GMP.DPS1.Q42.5, which includes a column indicating capital project candidates that were not included in the recommendation for the rate period.

Person/s Responsible for Response: Brian Otley
Title of Person/s: Senior VP and Chief Operations Officer
Date: June 15, 2018

**DPS1.Q44. Please describe GMP's blanket capital project prioritization processes. If such processes have not been prepared by GMP, please so state. If GMP has prepared such processes, please provide the following information:**

**a. A detailed description of the process;**
**b. Contemporaneous documentation of the process;**
**c. The scoring and/or ranking scheme.**

DPS1.A44.

Four departments currently use capital blankets – Generation, IT, Facilities, and T&D.

With respect to the Generation Blanket, please see Response DPS1.Q45.

The IT blanket is categorized as "Required" and used for smaller or emergent procurements that cannot be accurately predicted at the time of the rate filing but are necessary for continuity and improvement of operations during the period. Due to GMP's extended use of technology systems to automate many of its work processes, including at the front lines of our service delivery, we experience a certain level of failure among the technology components and devices we use to operate. The blanket allows us to appropriately manage short-term needs as they arise so that we can keep our workforce properly equipped to deliver services to our customers in the manner that they expect it. Prioritization of IT blanket work is fluid as we balance the emergent needs with the needs that can be planned within the short timeframes we have between procurement and implementation. Due to the rapid innovation that occurs among the technologies we rely upon, we can take advantage of pricing improvements or performance improvements through short cycle procurements. Generally, longer procurement cycles produce less effective results from a cost and performance perspective. We do not maintain a formal project prioritization process underneath the capital blanket, relying more on our knowledge of areas of potential equipment failures based on our past experience with the various technologies we've deployed.

The facilities capital blanket is used similarly to the IT blanket in that it provides a way for GMP to make smaller, more emergent capital purchases during the year that are not able to be forecasted during the capital planning process. The Facilities blanket is based on a five-year average of blanket actuals in order to reflect the level of required budget needed over time.

Regarding T&D blankets, as described in the testimony of John R. Fiske, page 20, starting on line 16, the T&D blankets include (1) Distribution Equipment Purchases, (2) Distribution Lines (3) Distribution Substations, and (4)

Transmission Lines and Transmission Substations categories. This response addresses prioritization of these blanket capital projects.

The Distribution Equipment Purchase blanket is for transformers, meters, and regulators and capacitors. This equipment is necessary for proper customer service and reliability. These expenditures are to install new or replace failed or deteriorated equipment to maintain system capability and reliability. Since there are no alternatives to having this equipment, the blanket capital Distribution Equipment Purchases are rated as "Required." (Please refer to Brian Otley's testimony, at 17 starting on line 5 for an explanation of project rating.)

The blankets within Distribution Substations and Transmission Lines and Transmission Substations are to cover unforeseen failures or other safety or reliability risks associated in these areas. Therefore, GMP scores or ranks these projects as "Required" as the projects typically involve replacing or repairing failed or deteriorated equipment that needs to be addressed immediately.

The Distribution Line blanket and Distribution Line projects are described in John Fiske's testimony, starting on page 23, line 19 and ending on page 24, line 21. The priority of Distribution Line projects is driven by the category under which the project falls, but all are "Required" projects. For category 1 projects, Responder (Outage Management System), ArcGIS (ESRI Global Information System) and Business Intelligence systems are utilized to prioritize distribution line reconstruction and rebuild projects for improving safety, efficiency, and reliability. The Responder system is utilized to collect customer and system information, the ArcGIS is utilized to create and maintain asset data used in Responder, and Business Intelligence is utilized to query the Responder data to generate reports to aid in the identification of circuits with the worst performance as well as customers who have experienced a high number of outages over a short period of time. These reports help GMP decide which projects should be undertaken. Category 1 project prioritization and ranking for Distribution Line Blanket projects is explained in the Company's 4.900 Electricity Outage Reporting beginning on page 19. Refer to Attachment GMP.DPS1.Q44.1 – VT PUC Rule 4.900 2017 Electricity Outage Reporting. For category 2 projects, customer-requested projects, GMP prioritizes these projects based upon when the job is ready for construction, and customer has paid. For Category 3 projects, state and municipality initiated road or bridge construction, GMP prioritizes these projects based upon when the job is ready for construction, which is driven by the road or bridge construction schedule. For Category 4 projects, third party reconstruction, GMP prioritizes these projects based upon when the job is ready for construction, which is driven by the third-party attachment tariff.

Person/s Responsible for Response: John Fiske; Brian Otley
Title of Person/s: Leader of Engineering; Senior VP and Chief Operations Officer; Director, Generation Operations
Date: June 15, 2018

**DPS1.Q45. Please provide the prioritization score or ranking for each 2018 and 2019 generation blanket capital project. If no such information has been prepared by GMP, please so state.**

DPS1.A45.

The type of prioritization and scoring suggested here are inapplicable for generation blanket capital projects: therefore, no such information has been prepared. Blanket projects, by their nature, are unplanned, short-notice projects that often are required to mitigate unplanned emergencies or other similar events. GMP uses a 5-year historical average to identify the budget for this group of projects, which the DPS and the PUC have consistently supported. The budget is intended to cover the small capital improvements that arise throughout the year when operating a fleet of generation facilities. These small unplanned capital improvements generally address failures of mechanical equipment such as a bearing, failure of electrical components – such as switches or transducers, or miscellaneous, unforeseen work required for worker safety and safe, compliant and reliable operation of generating stations.

Person/s Responsible for Response: Jason Lisai
Title of Person/s: Director, Generation Operations
Date: June 15, 2018

**DPS1.Q46. Please describe in detail how each unit or team with oversight of GMP capital projects monitors and manages capital project performance (e.g., schedule and budget variances, scope and cost change orders, operational savings achieved, customer service improvements achieved, or kilowatt hours saved). Within this response, please describe any changes that GMP has implemented to its capital project oversight processes since the completion of last year's GMP rate case in Case No. 17-3112.**

DPS1.A46.

As explained in Mr. Otley's testimony on page 18, GMP has two levels of oversight during the fiscal year on capital project execution and management. The first level of oversight occurs at the department level for each capital team. At the team level, leaders have recurring check-ins and reviews of the status of capital projects recently completed, in process, or soon to begin. These reviews look at tracking of project performance including trending toward targets for schedule, scope, resources and budget. For examples of the type of tracking and variance tools used for larger capital projects, see Responses DPS1.Q38 and DPS1.Q42 and attachments referenced therein. It is at these discussions that modifications to the annual plan are considered, including evaluations of projects needed but not budgeted and re-visiting priorities for the resources being managed at that time. The second level of oversight occurs at the capital management team level on a monthly basis. The capital management is comprised of leaders of each capital department plus a few other GMP leaders and convenes monthly during the fiscal year to do an overall review of the company's performance against capital plans. At this meeting, we evaluate our overall capital trend against plan and review individual project performance based on where we are in the fiscal year and what the trends look like to complete our commitments. Priorities across capital departments are assessed in this meeting and cross-department modifications to the plan are considered when necessary.

Modifications GMP has made to our oversight processes include discussions about how best to manage scope changes to projects that may occur prior to project start or during the execution of the project, which are likely to have impact on schedule, resources and budget.

Person/s Responsible for Response: Brian Otley
Title of Person/s: Senior VP and Chief Operations Officer
Date: June 15, 2018

**DPS1.Q47. Please describe in detail the quantitative performance improvements (e.g., availability, employee safety, forced outage rate, capacity factor, etc.) expected as a result of implementation of the 2017, 2018 and 2019 capital plans.**

DPS1.A47.

Please refer to the individual project capital folders for an explanation of the financial and other benefits that will result from each project. This information can be found on the financial analysis tab. In addition, if the project has quantifiable benefits supported by a calculation, an excel spreadsheet is included in the quantifiable benefits folder.

Person/s Responsible for Response: Matthew Haley
Title of Person/s: Manager of Fixed Assets and Fleet
Date: June 15, 2018

**DPS1.Q48. Please identify any external consultants that have been retained by GMP since 2013 to review GMP's capital planning and project management processes. Please provide copies of any written reports, assessments, presentations, or recommendations provided to GMP by such consultants. If GMP has not retained any external consultants to review its capital planning and project management processes, please so state.**

DPS1.A48.

Since 2013, GMP has not retained external consultants to review capital planning and project management processes. GMP has PMI-certified project management resources in-house and through contractors that serve on project teams throughout the organization.

Person/s Responsible for Response: Brian Otley
Title of Person/s: Senior VP and Chief Operations Officer
Date: June 15, 2018

**DPS1.Q49. Please provide copies of any written reports, assessments, presentations, or recommendations prepared by GMP's internal staff regarding capital planning and project management processes that were completed since 2013. If no such documents exist, please so state.**

DPS1.A49.

GMP reasserts General Objections 1 and 2, to the extent that the request encompasses all "assessments" and "recommendations" including material protected by the attorney-client and work-product privileges. Without limiting or waiving this objection, GMP responds as follows:

Other than the documentation identified or provided herein and as exhibits to testimony, there are no additional documents responsive to this request.

Person/s Responsible for Response: Brian Otley
Title of Person/s: Senior VP and Chief Operations Officer
Date: June 15, 2018

**DPS1.Q50. With respect to growth-related plant, please provide a detailed description of the cost related to customer growth for 2018 and 2019 included in the rate filing including:**

**a. What components of the cost-of-service model contain customer growth costs and in what amounts;**

**b. How the cost-of-service model can be adjusted to exclude customer growth costs.**

DPS1.A50.

a. With respect to growth related plant, the growth estimates based on 2017 would be as follows:

| Budget Category | Percent Growth | 2018 | 2019 | Average |
|---|---|---|---|---|
| Transformers | 48.3% | $1,793,543 | $1,742,489 | $1,768,016 |
| Regs and Caps | 1.0%^ | $10,307 | $10,441 | $10,374 |
| Meters | 31.5% | $270,927 | $262,660 | $266,794 |
| Distribution Line Extension | 10.76% | $3,111,551 | $2,924,677 | $3,018,113 |
| Distribution Line Projects | 1.0%^ | $167,982 | $170,166 | $169,074 |
| TOTAL | | $5,354,310 | $5,110,433 | $5,232,371 |

^ less than 1% but rounded up to 1.0%

b. The following COS Tabs and Adjustments would need to be updated to exclude customer growth costs from the 2019 Rate Period Filing, excel file GMP COS Filing 4-13-18

i. COS RB Summary Tab,
Cell E63 – Revenue from Ultimate Consumers would need to be updated to reflect beginning retail revenue with no growth.

ii. RB Tab,
RB Adjustment No 3, Distribution Plant Adds;
RB Adjustment No 8, Construction Work in Progress; and
RB Adjustment No 14, Accumulated Depreciation would need to be updated to reflect removal of growth impacts.

iii. COS Tab,
COS Adjustment No 1, Purchased Power, net;
COS Adjustment No 2, Production Fuel;
COS Adjustment No 4, Transmission by Others; and
COS Adjustment No 5, Other Transmission-Related Costs would all need to be updated to reflect new retail load projections.

iv. COS Tab,

COS Adjustment No 13, Depreciation Expense would need to be updated to reflect removal of growth impacts

v. ADIT Tab would need to be updated to reflect removal of growth impacts.

vi. Income Tax, Gross Revenue and Lead Lag Tabs. Verify calculations on these tabs have automatically updated for changes above.

The Company has estimated the impact of removing growth from the filing to be 0.3% increase. See Attachment GMP.DPS1.Q50b.

Person/s Responsible for Response: John Fiske; Eddie Ryan
Title of Person/s: Leader of Engineering; Controller
Date: June 15, 2018

**DPS1.Q51. Please provide the following information for the St Albans Digester project, please provide the following information:**

**a. A description of the costs incurred, inception to date, and their purpose;**
**b. Whether any of these costs have been included/recovered in rates.**
**c. The disposition of the costs that have not been included/recovered in rates.**

DPS1.A51.

a. A summary accounting of the project costs, along with descriptions of the costs and their purposes is provided as Attachment GMP.DPS1.Q51.

b. GMP has not requested recovery of any incremental costs related to the St. Albans Digester project in any base rate filings to date.

c. $437,383.90 of the costs are in FERC Account 18226, Unrecovered plant and regulatory study costs. $1,805,310.60 of the costs are in FERC Account 18300, Preliminary survey and investigation charges, and $219,376 .72 of the costs were expensed to Platform accounts in FY 2017. The $219,376.72 represent GMP internal labor and employee costs. The status of this project is currently under review and a determination of its viability will be made before September 30, 2018.

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

**DPS1.Q52. Please refer to Page 8, line 5, of Mr. Otley's direct testimony. With respect to GMP's vehicle replacements discussed by Mr. Otley, please provide the following:**

- **a. The percentage of buckets trucks were replaced with the purchase of 8 bucket trucks;**
- **b. The percentage of digger trucks were replaced with the purchase of 2 digger trucks;**
- **c. Records of downtime for the bucket trucks and digger trucks replaced for the two years prior to replacement;**
- **d. Identify the capital budgets for vehicle replacements are included in 2019 rate period. Please provide downtime or other maintenance records which help justify the replacement of line vehicles/equipment.**
- **e. Provide book capital cost for fleet vehicles, total depreciation for these vehicles, and net cost of these vehicles.**
- **f. Provide depreciation rates used for vehicles and trailers.**

DPS1.A52.

a. Currently in our fleet we have 82 bucket trucks, as a percentage the 8 trucks being replaced would be 9.8%.
b. Currently our fleet includes 20 digger trucks, as a percentage the 2 being replaced would be 10%.
c. Please see Attachments GMP.DPS1.Q52.1 to GMP.DPS1.Q52.15. We do not track the actual down time of the vehicles, however, the maintenance costs for the 10 trucks discussed above for the last 5 years was $483,758. The actual down time for this type up vehicle can vary greatly due to the type and specific use of the vehicle. The replacement parts for the aerial units are proprietary and, in many cases, need to be purchased from out of state vendors, which could take days to weeks. The attachments related to the repair orders include a down time amount, but this amount does not actually represent all of the down time in all cases as the time shown represents the duration between when the repair order is created and closed.
d. The units to be replaced in 2019 include 4 bucket trucks and 1 digger. The budgeted amount for the replacement of theses trucks is $1,644,246. As discussed above the actual down time related to specific vehicles is not tracked. The maintenance costs for the past 5 years were $263,267.
e. The book cost of vehicles as of May 31, 2018 was 33,453,734 the accumulated depreciation as of the same period was ($10,201,124) for a net book value of $23,252,610.
f. The Oracle financial system uses the group depreciation methodology. A 6.03% depreciation accrual rate is applied to all assets in FERC Account 3920.

Person/s Responsible for Response: Matthew Haley

Title of Person/s: Manager of Fixed Assets and Fleet
Date: June 15, 2018

**DPS1.Q53. Please refer to Page 12, lines 9–12 of Mr. Otley's direct testimony, where Mr. Otley states that "there are modifications in some projects between last year and this year due to updated budget items becoming actuals, or a change in supplier . . . ." Please identify or provide a list of any capital projects that have had or will have budget modifications between last year's rate case and GMP's filing in this case. Please also provide the following information:**

- **a. For each project, provide the change the capital requirements;**
- **b. For each project, provide a justification for the change in capital requirements;**
- **c. For each project, provide any changes in the retirement value of the project.**

DPS1.A53.

Subparts a, b, & c - Please see Attachment GMP.DPS1.Q53 for project specific changes between the 2018 and 2019 filings. The response to this question used the same methodology as the criteria for the ESAM filing. All variances are noted, and projects with a variance of plus or minus 15% include a narrative explanation.

Person/s Responsible for Response: Matthew Haley
Title of Person/s: Manager of Fixed Assets and Fleet
Date: June 15, 2018

**DPS1.Q54. Please provide a list of any capital projects that were included in GMP's rate filing last year (in Case No. 17-3112), but have been deferred out of the current rate year. For each such project, please provide a justification.**

DPS1.A54.

Please see Attachment GMP.DPS1.Q54 - GMP.DPS1.Q56 for a listing of projects that have been deferred out of the 2018 filing with justification. Please note that some projects have been deferred out of the 2018 period to accommodate agreed upon lower spending that was not project specific.

Person/s Responsible for Response: Matthew Haley
Title of Person/s: Manager of Fixed Assets and Fleet
Date: June 15, 2018

**DPS1.Q55. Please refer to Page 19, lines 3–7, where Mr. Otley describes replacement of planned projects. Please identify any projects that were included in GMP's rate filing last year (Case No. 17-3112) which GMP determined to be unfeasible but were replaced with another cost-effective, high value project. Within your response, please also provide the following information for the replacement projects:**

- **a. Date the replacement project was approved for capital expenditure;**
- **b. Project rating (required, recommended, or strategic);**
- **c. Supporting documentation for the project (if not previously provided to the Department), including a description of the project, justification for the project, alternatives considered, and actual construction costs.**

DPS1.A55.

Please see Attachment GMP.DPS1.Q54 - GMP.DPS1.Q56 for a listing of projects that had replacement projects with justification.

Person/s Responsible for Response: Matthew Haley
Title of Person/s: Manager of Fixed Assets and Fleet
Date: June 15, 2018

**DPS1.Q56. Please provide a list of any capital projects that were included in GMP's rate filing last year (in Case No. 17-3112) that have been cancelled or are on hold indefinitely. For each such project provide a justification for the cancellation and/or hold and state the total final budget for the project.**

DPS1.A56.

Please see Attachment GMP.DPS1.Q54 - GMP.DPS1.Q56 for a listing of projects that have been cancelled out of the 2018 filing with justification and final budget amounts.

Person/s Responsible for Response: Matthew Haley
Title of Person/s: Manager of Fixed Assets and Fleet
Date: June 15, 2018

**DPS1.Q57. Please refer to Page 12, lines 12–16 of Mr. Otley's direct testimony, where Mr. Otley states the "that the interim period in this case is 15 months, and therefore does not align perfectly with the 12-month rate period from last year, so the total numbers in the interim period are not directly comparable to the 2018 rate year period." Please describe in detail the actual numbers that underlie the comparisons described by Mr. Otley between the 12 and 15 month interim periods.**

DPS1.A57.

The rate year for the 2018 Rate Case was the calendar year 12 months January to December 2018 with a gross plant in service amount of $82,285,281 (as filed). The interim period for the 2019 Rate Case is a 15-month period from October 2017 through December 2018 with a gross plant in service amount of $119,927,191.

Person/s Responsible for Response: Matthew Haley
Title of Person/s: Manager of Fixed Assets and Fleet
Date: June 15, 2018

**DPS1.Q58. Please refer to Page 15, lines 11–13 of Mr. Otley's direct testimony. Please provide copies of the long-range T&D plan and 10-Year Generation Capital Plans referenced by Mr. Otley.**

DPS1.A58.

Please see:

- Attachment GMP.DPS1.Q58.1 – Multi-Year Capital Work Plan;
- Attachment GMP.DPS1.Q58.2 – 2018 Vermont Long Range Transmission Plan;
- Attachment GMP.DPS1.Q38.1 – Capital 10yr Forecast

Person/s Responsible for Response: John Fiske; Jason Lisai
Title of Person/s: Leader of Engineering; Director, Generation Operations
Date: June 15, 2018

## Operating Expenses

**DPS1.Q59. With respect to tree trimming, please provide for each of the fiscal years 2011 through test year 2017 the following information:**

**a. The amount spent annually**

**b. The miles of right-of-way completed**

DPS1.A59.

Data is provided for 2012 through the 2017 test year period, as GMP does not have access to the 2011 CVPS information.

| Year | Spending (Fiscal) | Miles (Calendar) |
|---|---|---|
| 2012 | 13,478,482 | 1,258 |
| 2013 | 13,146,644 | 1,284 |
| 2014 | 12,629,869 | 1,301 |
| 2015 | 11,825,704 | 1,304 |
| 2016 | 12,575,212 | 1,367 |
| 2017 | 14,414,685 | 1,644 |
| 2017 Test* | 10,605,559 | 1,210 |

* Spending is test year Jan 2017 - Sep 2017

Person/s Responsible for Response: Gary Sexton
Title of Person/s: Leader, GAAP Accounting
Date: June 15, 2018

## Power Supply

**DPS1.Q60. Please refer to Page 13, lines 3–4 of Mr. Smith's prefiled direct testimony, where Mr. Smith states that "Transmission expenses were adjusted to reflect a recent VELCO forecast and recent ISO-NE projections for regional transmission rates . . . ." Please provide a copy of the VELCO forecast of ISO-NE Projections relied on by Mr. Smith in support of this assertion.**

DPS1.A60.

GMP used a February 2018 VELCO forecast (please see Attachment GMP.DPS1.Q60.1) for the VELCO VTA and VELCO Specific Facilities charges included in the rate filing. It was assumed that GMP's share of VELCO VTA charges would be 78.7%.

For regional transmission expenses ("RNS") in January through May 2019 GMP used the current prevailing rate for June 2017 – May 2018. This rate was used because there were no ISO projections available that included the impact of the recent federal income tax rate change from 35% to 21%, which we expected would reduce the cost of service for RNS facilities. The actual rate for this period is now known to be $110.44 per kW-year, vs the $111.96 rate used in the case. In the period from June through Sept 2019 GMP has forecasted an RNS rate of $115.69, 3.3% higher than the estimated January through May rate.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q61. Please refer to Page 13, line 16 of Mr. Smith's prefiled direct testimony, where Mr. Smith states that "[t]his volume reflects forecasted GMP retail sales for the period, as developed by the consulting firm Itron." Please provide a copy of the Itron load forecast reports and any associated spreadsheets relied upon by Mr. Smith in support of this assertion.**

DPS1.A61.

Please see Attachment GMP.DPS1.Q61.1. This energy sales forecast was produced by Itron, Inc.; estimated non-PTF transmission and distribution losses, plus GMP company use were added to sales to yield GMP's projected energy requirements ("retail load") for the forecast period. Please see Exh. GMP-DCS-10 – Retail Sales and Load at System Boundary. The losses and company use volumes are based on calculated 2017 values.

Person/s Responsible for Response: Rob Bingel
Title of Person/s: Manager, Forecasting & Analytics
Date: June 15, 2018

**DPS1.Q62. Please refer to Page 17, lines 9–12 of Mr. Smith's prefiled direct testimony, where Mr. Smith states that "GMP later put in place an additional 75 MW, three-year bilateral capacity purchase for delivery in FCA10 through FCA12." With respect to this testimony, please provide the following:**

**a. A copy of the power purchase agreement ("PPA") for this purchase;**
**b. State when GMP executed the full PPA;**
**c. Any documentation of the cost/benefit analysis, least-cost alternatives analysis or financial analysis GMP relied on when it executed the PPA.**

DPS1.A62.

a. See Attachment GMP.DPS1.Q62.1.
b. November 2, 2015
c. In October 2015, GMP conducted a capacity solicitation where we requested offers for short-term, fixed-price capacity from the leading regional suppliers. After ranking the proposals we received for least cost over the requested hedging period (see Attachment GMP.DPS1.Q62.2) we awarded Dynegy this purchase of 75 MW through a three-year Capacity Load Obligation Bilateral. Additionally, in evaluating the cost/benefits of the advance purchase contract for capacity to lock in the purchase price of our unmet capacity requirements rather than allowing them to clear in the upcoming FCAs, GMP considered both the expected size of our unmet capacity requirement and the cost of the contract proposal relative to our forecast of expected clearing prices. Further description and documentation of this capacity market analysis is described in the testimony of Douglas Smith in Docket No. 8445 (following the agreement to purchase additional capacity from NextEra Seabrook) earlier in this same year.

Person/s Responsible for Response: Chris Cole
Title of Person/s: Director, Market Operations
Date: June 15, 2018

**DPS1.Q63. Please refer to Pages 16–17 of Mr. Smith's prefiled direct testimony. Please describe how GMP projected the 2018 peak coincidence discussed by Mr. Smith. Please provide copies of any documentation relied upon by GMP to make this projection.**

DPS1.A63.

In the rate period, GMP's Forward Capacity Market obligations are drawn from two FCA periods, FCA 9 (June 2018 to May 2019) and FCA 10 (June 2019 through May 2020). The specific capacity obligation for each period is meaningfully dependent on the observed GMP peak coincidence with ISO New England occurring in the year (summer) prior to the FCA period (along with other factors including regional capacity requirement, HQICC, etc.). For the rate year both of these peak-based capacity obligations are projected by GMP.

For FCA 9 GMP has made projections of our FCA obligations by using preliminary results of the coincident peak of our loads at the time of the ISO peak from the summer of 2017 and applied this peak ratio to ISO New England' published total regional capacity requirement. Notably for FCA 9 both the regional peak for 2017 and GMP's 2017 coincident peak came in significantly below values we observed in 2016 and below values we previously forecasted for the period. As a result, GMP's forecasted monthly FCA obligations for the FCA 9 portion of the rate year are expected to be 852 MW[1] (vs. a 936 MW actual obligation in FCA 8).

For the FCA 10 rate period obligation months (June- Sept 2019), GMP has projected the upcoming summer 2018 ISO peak coincidence and applied this ratio or "percent share" to the ISO values for total regional capacity obligation in FCA 10. Underpinning our projection for the FCM 10 monthly obligation (and our 2018 peak coincidence) is the assumption that we will maintain the same share (2.42%) of total ISO peak coincident load in summer 2018 as occurred in 2017. Specifically, this results in an expected 2018 GMP peak of 622 MW (assuming an ISO peak of 25,633 MW) and a GMP capacity obligation of 852 MW.

The rationale for using this FCA 9 share again for the FCA 10 obligation is that while GMP has had, and is expected to continue to have, greater behind the meter ("BTM") penetration than the overall pool, GMP's 2017 coincident load share was lower than it might have been had there been normal summer peak temperatures. Additionally, there are a number of other factors contributing to

[1] GMP has recently seen a preliminary 879 MW capacity obligation value for June 2018 through May 2019 due to a higher overall peak requirement than estimated. This will increase GMP's rate period costs by an estimated $1.25 million. If GMP's share remained at 2.42% (as in the rate filing) and its obligation remains at the 2018-2019 879 MW level, that would add an additional $1 million of rate period cost.

uncertainty regarding the 2018 peak coincidence that could increase or decrease GMP's resulting FCM obligation in FCA10. On the one hand, GMP's penetration of BTM generation may continue to outpace the penetration pool-wide; this would tend to reduce GMP's share of summer afternoon loads and the annual ISO peak load. On the other hand, there is also a reasonable chance that the hour of the ISO peak will move to hour-ending 18 (or conceivably, though much less likely, even later); this would reduce the relative benefit of over-weighted BTM in the GMP service territory, and therefore probably increase GMP's share of the annual ISO peak load. Similarly, a review of the 2017 ISO peak hour (a key driver of GMP's FCA 9 obligation) indicates that GMP's fraction of the peak load was low compared to recent years. On the other hand, the output of solar PV sources in GMP's territory during the ISO peak hour was also unusually low - indicating that if the summer 2018 ISO peak occurs during sunnier conditions in Vermont, higher solar PV output in GMP's territory will reduce GMP's ISO settlement load more than in 2017.

For additional documentation of GMPs forecast of capacity obligations please see the Excel file previously provided to DPS on April 15, 2018 titled, "7._Capacity_Model_ 2019_RC", in the tab labeled, "Annual Requirements".

Person/s Responsible for Response: Chuck Watts; Chris Cole
Title of Person/s: Power Supply Analyst; Director, Market Operations
Date: June 15, 2018

**DPS1.Q64. Please refer to Page 21 of Mr. Smith's prefiled direct testimony. Please state whether GMP reduced the FCA and RNS obligations to reflect the addition to GMP's supply of new net-metering, standard-offer, and the JV Microgrid projects. If yes, please identify or refer to the area of the GMP power supply model where those adjustments are reflected.**

DPS1.A64.

As described in the answer to DPS1.Q63, increases in GMP behind the meter ("BTM") generation deployment was taken into consideration in the projection of GMP's load coincident with ISO's 2018 peak load for FCA. However, no reductions were projected from the battery portion of the JV Microgrids on the 2018 coincident peak for FCA. Regarding RNS obligations, while increases in BTM installed capacity is assumed in the rate case, it is assumed that there is no impact from these increases on monthly network peak loads and therefore no reduction in RNS obligations. Separately, reductions in these monthly network peak loads from the addition of JV Microgrids have been assumed, and they can be found in the Excel file previously provided to DPS on April 15, 2018, titled, "Transmission Forecast Model 2019_RC" in tab labeled, "Loads and Rates." As a result of very substantial BTM solar installations in recent years (yielding a total of more than 200 MW of solar PV on GMP's system), warm weather months' peak network loads have moved from (generally) early and mid-afternoon hours to evening hours, where additional BTM solar capacity provides little if any additional peak load reduction. Attachment GMP.DPS1.Q64 - VT Peak Network Load Hours shows the June through September GMP network load (peak) hours for the years 2010 through 2017, and highlights the migration of the peak hours towards the evening.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q65. Please refer to Page 22 Mr. Smith's prefiled direct testimony. Please describe how GMP developed volume estimates for net-metering deployment, both 1.0 and 2.0 systems. Please provide any workbooks or supporting documentation that you used in developing your estimates.**

DPS1.A65.

Please see Attachment GMP.DPS1.Q65.1, which, in the "Summary" tab, provides the data and outlines step-by-step the algorithm used to forecast the solar net-metering capacity utilized in the 2019 Cost of Service. Please see Attachment GMP.DPS1.Q65.2 which shows the historical solar net-metering output by both customer class and "own use" or "excess" classification. GMP provided Attachments GMP.DPS1.Q65.1 and GMP.DPS1.Q65.2 to Itron. Itron used this data, to produce a forecast of solar net-metering output in MWh by month, customer class, and "own use" or "excess" classification. Please see pages 13-16 of Exhibit GMP-ER-14, which is Itron's Forecast Report and explains how Itron produced its forecast. Attachment GMP.DPS1.Q65.3 contains the final forecast of solar net-metering output which Itron sent to GMP.

Person/s Responsible for Response: Rob Bingel
Title of Person/s: Manager, Forecasting & Analytics
Date: June 15, 2018

**DPS1.Q66. Please refer to Page 23, lines 6–7 of Mr. Smith's prefiled direct testimony. Please describe how much attrition has occurred for net-metering 1.0 systems historically. Please also state whether GMP expects that the same attrition rates will apply to 1.0 systems going forward. Please provide backup documentation and copies of any documents that GMP relied on in projecting attrition.**

DPS1.A66.

Attachment GMP.DPS1.Q66 presents the rates of attrition that NM 1.0 projects have experienced - in terms of proposed project count and proposed project capacity - by application year, along with the underlying quantities.

In estimating net power costs for the rate period, GMP applied category-specific attrition assumptions to the approximately 19.3 MW of NM1.0 capacity that was still pending (i.e., had not yet achieved operation or withdrawn from the generation queue) at the time the analysis was performed. Specifically, for projects up to 15 kW we assumed an attrition rate of 7%, based on the average attrition of projects that applied between 2012 to 2015. For medium and large projects we applied attrition rates of about 28% and 18%, respectively, based on a review of the pending projections and application of judgment by GMP's distribution generation coordinators with respect to the volumes of pending capacity that would achieve commercial operating during 2018. This information is contained in Attachment GMP.DPS1.Q65.1, Tab "NM1.0"; the attrition rates for the 2012 to 2015 projects is summarized in the Tab "Attrition."

Person/s Responsible for Response: Michael Butler, Douglas Smith
Title of Person/s: Distributed Generation Coordinator; Chief Power Supply Executive
Date: June 15, 2018

**DPS1.Q67. For net-metering systems that were proposed or interconnected in calendar years 2017 and systems for the period January 1, 2018–May 31, 2018, please provide the following information (by month):**

**a. capacity interconnected that month;**
**b. capacity proposed for interconnection that month.**

**Within each of these two larger categories, please provide:**

**c. capacity by renewable energy credit ("REC") disposition**
**d. capacity by siting adjustor applicable and**
**e. capacity by category under which each system was filed (I, II, III, IV, or Hydro).**

DPS1.A67.

a. Attachment GMP.DPS1.Q67 (Tab A) presents the amount of net-metered generation capacity that was proposed in GMP's territory in each month since January, 2017, along with the amount of capacity that was interconnected in each month. Please note that all proposed net-metering capacity during this period was proposed under the terms of NM 2.0, while the majority of the capacity interconnected was proposed under the terms of NM 1.0. Also, nearly all of the non-solar capacity is hydroelectric.

b. Please refer to (a) above.

c. For net-metered generation projects proposed since January 2017 (i.e., under the NM2.0 framework), the cumulative assignment of RECs is as follows:

| | Total Capacity | RECs Retained | RECs Assigned to GMP |
|---|---|---|---|
| Proposed Projects | 56,056 kW | 781 kW (1.4%) | 55,275 kW (98.6%) |
| Interconnected Projects | 11,454 kW | 210 kW (1.8%) | 11,244 kW (98.2%) |

d. Siting adjustors are determined by NM 2.0 category; please refer to (e) below.

e. Attachment GMP.DPS1.Q67 (Tab E) presents the monthly amount of Net-Metering 2.0 capacity, by NM 2.0 category, that was proposed and installed in each month since January, 2017. Please note that the category of net-metered projects with capacity over 15 kW and up to and including 150 kW is set by the PUC and as such is undetermined until the project has been issued a CPG.

Person/s Responsible for Response: Michael Butler
Title of Person/s: Distributed Generation Coordinator
Date: June 15, 2018

**DPS1.Q68. Please provide historical data for the 2014-2017 period regarding the percentage of net-metered systems in the interconnection queue were installed and connected (on a capacity basis). For example, in Case No. 17-3112, GMP provided the following chart. If possible, please provide a similar chart, but on a capacity (kW or MW) basis rather than number of systems.**

| Green Mountain Power Net Metering Applications 2014-2016 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year | Inactive Systems | | Pending Systems | | Active Systems | | Total Applications |
| | Count | Percentage | Count | Percentage | Count | Percentage | |
| 2014 | 92 | 8.0% | 13 | 1.1% | 1050 | 90.9% | 1155 |
| 2015 | 90 | 6.2% | 116 | 7.9% | 1257 | 85.9% | 1463 |
| 2016 | 48 | 1.6% | 807 | 26.5% | 2194 | 71.9% | 3049 |
| | | | | | | | |
| Total: | 230 | 4.1% | 936 | 16.5% | 4501 | 79.4% | 5667 |

DPS1.A68.

Attachment GMP.DPS1.Q68 provides the requested information for each year from 2014 through 2017.

Person/s Responsible for Response: Michael Butler
Title of Person/s: Distributed Generation Coordinator
Date: June 15, 2018

**DPS1.Q69. Please refer to Page 24, lines 15–18 of Mr. Smith's prefiled direct testimony. Please describe how GMP developed siting adjuster assumptions. For example, how many MW of installed capacity would receive different types of siting adjusters? Please provide any documentation or data GMP relied on in making these projections.**

DPS1.A69.

Siting adjustor values are set by Commission Rule 5.100. As of the time of the rate case filing the adjustors were +1 cent/kWh for small projects (up to 15 kW), +1 cent/kWh for medium projects (over 15 kW through 150 kW) sited on preferred sites, -3 cents/kWh for medium projects sited on non-preferred sites, and -1 cent/kWh for large projects (those over 150 kW), which are only eligible on preferred sites. GMP made the assumption that 75% of medium projects would be located on preferred sites (in order to take advantage of the positive siting adjustor) resulting in a weighted average adjustor of medium projects of 0 cents (.75 *1 cent & .25 * -3 cents).

The VT PUC recently adjusted net-metering payment rates for new net-metering projects applying after June 30, 2018. GMP's understanding is that the siting adjustor for large projects will be reduced by 1 cent/kWh (to -2 cents/kWh) effective July 1, 2018. Also, effective June 2018, the blended statewide residential rate will be increased by about 0.5 cents/kWh, and the REC adjustor will be reduced by 1 cent/kWh (to 2 cents/kWh) this July and another 1 cent/kWh the following July.

Please see Response DPS1.Q65 for underlying forecast assumptions of the relative growth of small, medium, and large projects.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q70. Please refer to Page 25, footnote 13 of Mr. Smith's prefiled direct testimony. Please state how GMP estimated summer 2018 net-metered contributions to peak reduction. Please provide any documentation, workbooks GMP relied on.**

DPS1.A70.

As stated in Responses DPS1.Q63 & DPS.Q64, no explicit reductions to peak loads (either GMP load coincident with the annual ISO peak load or peak monthly network loads, which determine the Company's RNS charge) were made. The rate case assumption is that any additional 2018 ISO peak hour load reduction on the GMP system will be offset by increased load due to more normal (less mild) summer peak loads, resulting in a GMP share of ISO peak hour loads that is the same as its 2017 share (approx. 2.42%). While we understand that there is continued growth in behind-the-meter capacity on the Company's system, due to VT summer peak load migration to evening hours, we expect there will be no further peak monthly network loads reductions due to additional BTM solar projects.

Person/s Responsible for Response: Chuck Watts; Doug Smith; Chris Cole
Title of Person/s: Power Supply Analyst; Chief Power Supply Executive; Director, Market Operations
Date: June 15, 2018

**DPS1.Q71. Please refer to Page 26 of Mr. Smith's prefiled direct testimony for the following requests:**

**a. Please provide copies of the Sheldon Springs and LaChute PPAs;**
**b. Please state when GMP fully executed these PPAs;**
**c. Please provide copies of any documentation, cost/benefit analysis, least-cost alternatives analysis or financial analysis GMP relied on when it executed the PPAs.**

DPS1.A71.

a. See Attachments GMP.DPS1.Q71.1 and GMP.DPS1.Q71.2.

b. The PPAs were executed in July 2016, and the agreements became effective coincident with the first closing in the hydro acquisition on January 19th, 2017.

c. The PPAs were an integral part of the hydro acquisition in Docket No. 8887, and the rationale and benefit analysis is presented in the testimony of Douglas Smith, Chris Cole, and Andrew Quint (see Attachment GMP.DPS1.Q71.3 to GMP.DPS1.Q71.5). Further documentation and supporting analysis from the case is provided in Attachment GMP.DPS1.Q71.6.

Person/s Responsible for Response: Chris Cole
Title of Person/s: Director, Market Operations
Date: June 15, 2018

**DPS1.Q72. Please refer to Page 28, lines 4–11 of Mr. Smith's prefiled direct testimony for the following requests:**

- **a. How many incremental RECs does GMP estimate that Deerfield wind will add to GMP's portfolio?**
- **b. What is the imputed (or explicit) value of the Deerfield RECs?**
- **c. How much does GMP anticipate receiving for these RECs on the market?**
- **d. What is the magnitude of the "limited increase" in rates described by Mr. Smith attributable to Deerfield?**
- **e. When did the Deerfield Wind project receive a CPG?**
- **f. When did GMP execute fully on the Deerfield wind PPA (including prices)?**
- **g. Please provide any documentation, cost/benefit analysis, or financial analysis GMP relied on when it executed the Deerfield wind PPA.**

DPS1.A72.

a. Please see the Excel file provided to DPS on April 16, 2018 titled, **"**2._LT_PPA_Resources_2019_RC", in the tab labeled, "Deerfield", for Iberdrola-generated production capacity factor estimate table (by month, by hour). The forecast 2019 full year output volume is 96,914 MWh/ year.

b. The imputed REC value used by GMP in 2019 (based on an estimate of REC value expectations at the time the PPA was executed) is $24.60 per REC).

c. The Deerfield RECs are presently qualified for Massachusetts Class 1 and Connecticut Class 1 renewable programs and eligible for most "new" renewable purchasing requirements (RPS Class 1) in the surrounding New England states. GMP sells RECs for these MA and CT Class 1 programs from a number of eligible resources (now including Deerfield) and has provided price and revenue estimates for sales in 2019 in the file also provided to DPS on April 16, titled, "8. REC Model 2019 RC.xls" in tab labeled, "3_CalYR_Price-Volume_Assumpt".

d. The magnitude of retail rate impact is estimated to be roughly 0.25%.

e. For all key dates in the Deerfield Wind CPG application please see Docket No. 7250.

f. The Deerfield PPA was executed on October 9, 2015.

g. GMP evaluated the Deerfield purchase in a context where GMP seeks to address uncertainty in future power needs and the cost of future power sources using a portfolio of diverse resources; where each PPA is evaluated for how it can help accomplish portfolio goals in a cost-competitive way. Deerfield was screened against other long-term portfolio resources that could provide energy

and capacity at stable prices, while helping to meet Vermont's renewable energy goals (e.g., the SPEED program's 20% renewable supply goal by 2017) and longer-term renewable power and greenhouse gas emission profile goals in a cost-competitive way. Considering the challenges of permitting in-state wind plants generally, and the many years of process that Deerfield's owners had faced to obtain a Certificate of Public Good, we also recognized that this source could be a somewhat unique opportunity to obtain additional wind power in Vermont.

Attachment GMP.DPS1.Q72 is an analysis prepared at the time that GMP executed its PPA with the Deerfield Wind project. The analysis is based on the assumption that GMP would exercise a purchase option in year ten; if GMP does not exercise this option, the levelized cost would be the levelized PPA price of 8.8 cents/kWh. GMP negotiated this agreement with Avangrid (formerly Iberdrola) over a period of several years, and considered several different potential deal structures including ownership and a PPA. At the time the agreement was finalized GMP felt that a PPA was a reasonable resource to help manage cost and other risks; accordingly the cost/benefit analysis reflects this structure.

Person/s Responsible for Response: Chris Cole; Andrew Quint
Title of Person/s: Director, Market Operations; Power and Markets Analyst
Date: June 15, 2018

**DPS1.Q73. Please refer to Page 33, lines 13–16 of Mr. Smith's prefiled direct testimony. If GMP banks RECs for use in future compliance years, and books the expense in the year the RECs are used, please state whether it plans to collect a return on that deferred expense. Please identify or describe the specific accounting mechanism GMP plans to use for banked RECs.**

DPS1.A73.

GMP's RECs inventory account 17420 is included in the calculation of GMP's rate base, on which a return is earned. In this filing, the rate year balance of RECs inventory is equal to the test year balance.

The accounting mechanism that GMP is using for purchased and banked RECs is that we charge the allocated or direct cost of RECs to an inventory account (Oracle G/L account 17420) when the REC component of the related power purchase invoice is paid. The RECs remain in the REC inventory account until they are sold or used for compliance. Therefore, the banked RECs will remain in the balance of account 17420 between the period of time that the RECS are purchased and the time that they are ultimately utilized.

Person/s Responsible for Response: Karen Young
Title of Person/s: Budget/Forecasting Supervisor
Date: June 15, 2018

**DPS1.Q74. Please refer to Page 33, lines 17–19 of Mr. Smith's prefiled direct testimony. Please confirm that GMP plans to supply the "extra" 5% (above and beyond the RES requirements) with Tier 1 RECs. please provide the anticipated price per MWh, and total financial impact of the added 5%.**

DPS1.A74.

Yes, GMP intends to supply an extra 5% (of retail load) above the RES requirements with Tier 1 RECs; this extra 5% equals approximately 208,000 MWh. GMP expects that this will be supplied from purchased RECs with a price of $0.50 per REC for a total cost of $104,000. This additional 5 % of non-fossil fueled in GMP's power portfolio will also increase the effective MWh value of Tier 3 compliance measures; GMP has not calculated the financial value of this difference.

Person/s Responsible for Response: Chris Cole; Doug Smith
Title of Person/s: Director, Market Operations; Chief Power Supply Executive
Date: June 15, 2018

**DPS1.Q75. Please refer to Page 34, footnote 14 of Mr. Smith's prefiled direct testimony. Please confirm that for net-metering RECs that GMP plans to retire associated with net-metered systems, the 6 cents/kwh which was booked as a RES expense was not also booked as a "net-metered excess" expense.**

DPS1.A75.

Yes, the 6 cents/kWh being charged for net-metering ("NM") 2.0 RECs (used to meet RES Tier 2 obligations) has been subtracted from the total energy cost that GMP is paying for NM 2.0 generation. All NM 2.0 generation is being charged 3 cents/kWh (plus or minus the appropriate site adjustor) against the excess generation being charged to GMP at the estimated average energy price, so the total energy cost included in the rate case excludes any (NM 2.0) REC-related cost.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q76. Please refer to Page 37, line 14 through Page 39, line 7 of Mr. Smith's prefiled direct testimony. Please provide all workpapers and backup documentation GMP relied on when estimating congestion costs for the test period and rate period.**

DPS1.A76.

The 2019 rate period congestion costs in the rate filing are based on 2017 congestion costs, reflected as a % of energy revenues for each energy resource and a % of energy costs for GMP's load requirement. This percentage is then applied to the 2019 forecasted energy revenues and costs respectively. (For instance, if 2017 congestion costs related to a resource were $10 and the energy component of LMP revenue was $1,000, the congestion costs were -1% of energy revenue and that percentage was applied against energy revenue in the rate year. So, if rate year energy revenue is projected to be $2,000, then $20 of congestion cost (-1% of revenue) will be calculated for that resource.)

Test year congestion costs (and/or revenues) and their percentages are calculated in the file provided to DPS on April 16, 2018 titled, "9._Ancillary_and_Losses_Model_2019_RC.xlsw" in the tab titled, "Losses". The rate period costs are calculated in a file also provided to DPS on April 16 titled, "6._Energy_Model_2019_RC.xlsx" in the tab labeled "Losses".

Please note that for three resources – HQUS PPA, KCW, and Sheldon Springs hydro PPA – the 2017 congestion cost percentages were also reduced for the rate period to account for expected SHEI mitigations, including an AVR installed at Sheldon Springs and the removal of the estimated impacts of a 2017 Essex Statcom outage; please refer to Response to DPS1.Q77 part c.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q77. Please refer to Page 39, line 9 through page 40, line 7 of Mr. Smith's prefiled direct testimony for the following requests:**

- **a. Please state whether GMP estimated the financial impact of SHEI in the test period revenue requirement. If yes, please describe the impact;**
- **b. Please describe by how much the mitigation measures described by Mr. Smith will reduce the financial impact of SHEI in the rate period;**
- **c. Please provide any workbooks or backup documentation you relied on when estimating the costs of SHEI congestion and the degree of amelioration afforded by the mitigation measures described by Mr. Smith.**

DPS1.A77.

a. Attachment GMP.DPS1.Q77.1 is a spreadsheet analysis estimating the impacts of the SHEI constraints on GMP's revenue requirement for the period June 2016 (when ISO-NE's DNE dispatch regime was fully implemented) through November 2017. The two largest components of this impact are the value of lost KCW output (via energy, renewable energy certificates, and federal Production Tax Credits) and reduced value of energy from KCW and other sources in the SHEI area (most importantly the long-term HQUS PPA) when SHEI is constrained in the ISO-NE Day Ahead or Real Time markets. In addition, negative congestion in the SHEI area when the interface is constrained tends to modestly lower LMPs for the Vermont Load Zone (in proportion to the share of Vermont load that is located in the SHEI area), which has the potential to lower net energy costs for GMP.

   Over the 18-month period, the estimated impact on GMP's cost of service from congestion of the SHEI (reflecting each of these components) was an increase of about $5.9 million. For the 9-month test period January 2017 through September 2017, the corresponding estimated increase was about $3.7 million. While these are approximate figures - based on assumed monthly average market values for lost energy and RECs ($25/MWh), and they do not capture the lagged impact of REC revenues on GMP's revenue requirements through the NEPOOL GIS system – they yield a reasonable indication of the net costs during this period.

b. GMP estimates that in the rate period power costs presented in this case, SHEI impacts have been reduced by a total of roughly $2 million based on these adjustments (roughly 0.75 million due to the installation of Automatic Voltage Regulation at the Sheldon Springs hydro plant, and by roughly 1.25 million due to a normalizing adjustment to remove the estimated impacts of the Essex Statcom outage during the test year. Attachment GMP.DPS1.Q77.2 contains this estimate. Of course, actual SHEI impacts (and the benefits of measures to reduce them) in the rate period will depend significantly on actual outcomes for

factors including wind and hydro conditions, transmission outages, and energy spot market prices.

c. Please refer to responses (a) and (b) above for workbooks supporting the historical cost of SHEI constraints to GMP and its customers, and estimated reductions in SHEI impacts during the test period, respectively. Attachment GMP.DPS1.Q77.3 contains a workpaper showing the derivation of increases for rate period KCW output, along with associated reduction in congestion costs for GMP resources in the SHEI area, as a result of the adjustments for Sheldon AVR implementation and removal of the 2017 Essex Statcom outage.

   The historical analysis also utilizes an estimate of potential output from KCW that was not produced due to congestion of the SHEI. GMP estimated this lost generation based on a comparison of KCW's EcoMax quantity (a very short-term forecast of potential output, based on actual wind conditions and the number of available turbines) to its actual output during 5-minute intervals when SHEI was constrained. This analysis is commercially sensitive, but GMP can share it with Department staff in person.

Person/s Responsible for Response: Doug Smith
Title of Person/s: Chief Power Supply Executive
Date: June 15, 2018

**DPS1.Q78. Please refer to Page 40, lines 2–3 of Mr. Smith's prefiled direct testimony for the following requests:**

**a. Please provide a timeline for construction and a budget for the Sheldon Springs AVR project;**

**b. Please state whether GMP prepared a cost/benefit or financial analysis for the project. If yes, please provide a copy of that analysis or refer to its location in the capital folders previously provided to the Department;**

**c. Please state whether the project will benefit other generators in the SHEI area in addition to GMP (and joint-owned project). If yes, please state whether GMP estimated the magnitude of those benefits for other generators and provide the result of that estimate.**

DPS1.A78.

a. The currently anticipated timeline for the construction and commissioning of the AVR project is as follows:

| | | |
|---|---|---|
| Order Issuance / Receipt | April 6th , 2018 | |
| Engineering Design | April 15th, 2018 | |
| Pre-Outage Construction | July 9th, 2018 | July 20, 2018 |
| Commence Construction | Outage Start Date | July 23, 2018 |
| Construction Completion | Outage Start Date + 3 weeks | August 10. 2018 |
| Commissioning / SAT | Within 5 days of Construction Completion, per Unit | August 15 U1, August 20 U2 or vice versa |
| Delivery of As-Built Drawings | Within 30 days of Commissioning | September 15 U1, September 20 U2 or vice versa |

This schedule reflects physical construction and commissioning of the AVR project. In parallel, GMP and VELCO will work to ensure that the benefits of the project are reflected in ISO-NE's determination of SHEI operational limits as soon as practical thereafter.

The capital cost for the project (primarily direct costs to the vendor, along with associated supporting labor from Enel and GMP personnel) is presently anticipated to be approximately $1 million. In addition, to the extent that required outage time for the affected Sheldon Springs generating units reduces the plant's generation during the construction period, GMP will pay for some amount of deemed energy (lost output) that would otherwise have been purchased under the PPA if the AVR project were not being implemented.

b. Conf. Attachment GMP.DPS1.Q78.1 contains a benefit/cost screening of the Sheldon Springs AVR project, based on data for the 18-month period June 2016 through November 2017. This analysis uses estimates of lost KCW generation during the period (and the shape of that lost generation, presented in terms of a

duration curve) to estimate the amount of KCW generation that could be recovered if Sheldon AVR were implemented, along with an estimate of the congestion relief that this change would provide.

In this case, Sheldon Springs AVR, which is depicted on the Summary tab and elsewhere as "Solution A", was assumed to enable the recovery of an average of 4 MW of KCW generation during periods of SHEI congestion[2]. The analysis indicated that in the 18-month historical period, the project would have saved over $900,000 (considering both recovered KCW output and relief of negative congestion). Based on an assumed total project cost of $1.3 million, the analysis showed a simple payback period of about two years for the project.

The actual financial benefits from potential SHEI solutions will, of course, depend on outcomes for a range of factors (e.g., wind and hydro conditions, energy spot market prices, transmission outages that reduce the SHEI limits) that are uncertain. We also recognized that congestion in the historical period was aggravated by the Essex Statcom refurbishment project which is not expected to occur regularly. On the other hand, future SHEI congestion will sometimes be aggravated by other types of transmission outages that did not occur in the historical period (for example, a significant outage of the PV-20 tie with New York was required in December 2017, the first month after our analysis period). This analysis and context indicated that the payback period for the Sheldon Springs AVR project is likely to be short (i.e., a few years or less). Considering that many other potential SHEI solutions would require much larger investments and much longer lead times, and that some time will be required to evaluate the full range of solutions, GMP concluded that the project represents a low-regrets and low-cost investment on behalf of our customers.

c. GMP expects to be the primary beneficiary of the project by a large margin, in part because we are confident that KCW is the primary source that is presently reducing output when SHEI is congested. In addition, GMP receives most of the energy that is delivered in the SHEI area (GMP's primary sources are its share of the HQUS PPA; KCW; and the Sheldon Springs Hydro PPA), the value of which is affected by negative congestion. GMP expects that the recipients of output from other generation sources in the SHEI area (at present this overwhelmingly means other Vermont distribution utilities, through their purchases of energy from sources like HQUS and Sheffield Wind) will also

[2] VELCO's Northern Vermont Export Study indicates that the Sheldon AVR solution would provide much greater benefits (by increasing the SHEI limit) during "all lines in" conditions. We assumed an average benefit of only 4 MW to reflect the fact that there is not always sufficient streamflow available at Sheldon Springs for the plant to provide reactive support, and because some SHEI congestion occurs during conditions (e.g., outages of elements on the Vermont transmission system) when the Sheldon AVR solution is estimated to provide little (or no) increase to the SHEI limit.

benefit through reduction of negative congestion in the area. We have not estimated potential benefits to other entities.

Person/s Responsible for Response: Doug Smith
Title of Person/s: Chief Power Supply Executive
Date: June 15, 2018

**DPS1.Q79. Please refer to the "BP System" line of Exhibit GMP-DCS-3 for the following requests:**

**a. Please provide a copy of this PPA;**
**b. Please state when GMP fully executed on the PPA;**
**c. Please provide any documentation, cost/benefit analysis, least-cost alternatives analysis or financial analysis GMP relied on when it executed this PPA.**

DPS1.A79.

Please note that there is no reference to "BP System" in Exhibit GMP-DCS-3.

a. See energy trade confirmation Attachment GMP.DPS1.Q79.1.

b. December 12, 2014.

c. The "BP system" PPA is part of GMP's shorter-term energy hedging program where GMP uses market purchases of up to several years in duration, at stable prices (in combination with its longer-term portfolio sources), to match GMP's supply with projected needs and to limit GMP's projected wholesale market exposure. For example, much of the bilateral market energy purchases that will be delivered in the rate year were entered into during 2014 and 2015 - reflecting then-current market prices (or subsequently negotiated modifications) which are somewhat higher than today's outlook for spot market prices in the rate year. This "BP System" purchase from 2014 was made after evaluating the least cost proposal from a solicitation sent to twelve of the regional energy suppliers at the time (see Attachment GMP.DPS1.Q79.2 for an example of the form of the solicitation). The purchase was also reviewed in the context of available energy pricing information from regional energy brokers and traded natural gas pricing (see Attachments GMP.DPS1.Q79.3 and GMP.DPS1.Q79.4).

Person/s Responsible for Response: Chris Cole
Title of Person/s: Director, Market Operations
Date: June 15, 2018

**DPS1.Q80. Please refer to the "Other Purchases" line under "Power Purchase" on Exhibit GMP-DCS-20. Please identify or describe the items or contracts that are included in the "Other Purchases" line.**

DPS1.A80.

The "Other Purchases" line contains one energy purchase and two capacity purchases. The energy purchase is a 25 MW "7x24" short-term purchase from Citigroup in the months January, February, July, August, and September 2019, totaling 90,600 MWh. The capacity purchases include a 100 MW purchase from NextEra for all nine months at $7.13/kW-month through May and $7.31 starting in June, and a 75 MW purchase from Dynegy starting June 2019 at $7.56/kW-month.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q81. Please refer to the "Wyman" line under "Power Purchase" on Exhibit GMP-DCS-20. Please state the reason for the increase in MWh expected from Wyman as well as the increase in costs associated with Wyman from test period to rate period.**

DPS1.A81.

The increased MWh and costs for Wyman, one of GMP's joint-owned units, is due to the use of a 6-year generation average in the projection of rate period generation (please see the Excel file titled, "4._JO_Resources_2019_RC", which was previously provided to the Department on April 16, 2018, in the tab labeled, "Wyman"). As can be seen in Exhibit GMP-DCS-21, the test period production was only 658 MWh, well below Wyman's historic average. The average price projected for the rate period is just slightly higher ($1.77 per MWh, or 1.4%) than in the test period.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q82. Please refer to the "Other" line under "Purchase Power" on Exhibit GMP-DCS-21. Please identify or describe the items that are included in the "other" line. If this is a balancing adjustment analogous to the ANI Adjustment in docket 17-3112, then please describe in detail the method used by GMP to calculate the balancing adjustment reflected in the "Other" line item. Please also provide any supporting documentation for this line item.**

DPS1.A82.

Yes, the $2.661 million refers to the ANI Adjustment. This Adjustment was calculated using the same methodology applied in the Docket No. 17-3112 Adjustment. The only difference is that the Adjustment in this rate case uses a five-year average calculated for 2013 through 2017, instead of the four-year average used last year. The calculation reflects that GMP's forecast methodology uses monthly on- and off-peak loads and generation as well as energy prices, which does not account for hourly variations in volumes and prices that can be significant. Additionally, the forecast methodology does not account for differences in pricing for energy volumes that settle in the more volatile Real-Time market instead of the Day-Ahead market. The underlying analysis compares load and generation volumes settling at monthly average on- and off-peak Day-Ahead prices versus the actual settlement values reported by ISO-NE over the five-year period. These reported settlement values reflect actual volumes and prices on a nodal basis for each hour and accordingly captures variations in hourly volumes and prices as well as any load and/or generation that settled in the Real-Time market. The difference between the ANI Adjustment model net energy costs and the forecast model methodology (e.g. monthly average on- and off-peak LMPs multiplied by on- and off-peak volumes) resulted in an annual value that was then averaged across five years to arrive at an expected annual adjustment to reflect the volume and price shaping that GMP anticipates experiencing for the rate period. The calculation was provided to the Department as an attachment to an email sent to Joan White dated May 29, 2018.

Person/s Responsible for Response: Andrew Quint
Title of Person/s: Power and Markets Analyst
Date: June 15, 2018

**DPS1.Q83. Please refer to the "Losses" line under "Purchase Power" of Exhibit GMP-DCS-21. Please state why losses escalated by $927,000 from test period to rate period**

DPS1.A83.

The line item in Exhibit GMP-DCS-21 is labeled incorrectly; it should read "Losses and Congestion". The breakdown of losses and congestion costs for the test period and the rate period is as follows ($000's):

| | Test Period | Rate Period | Change |
|---|---|---|---|
| Losses | $1,960 | $2,529 | $569 |
| Congestion | $2,983 | $3,340 | $357 |
| Total | $4,983 | $5,869 | $926 |

The primary reason for higher projected losses in the rate period is higher market energy prices (as opposed to a change in the loss characteristics of the grid). In the January through September 2017 test period, the flat average Day Ahead price of energy was $29.35 per MWh. The projection for the rate period is $38.91 (See Excel file provided to DPS on April 16, 2018, titled, "6._Energy Model_2019_RC" in the tab labeled, "Energy Prices", cells AR253–AZ253).

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q84. Please refer to the load forecast report provided to the Department by GMP staff on May 15, 2018 titled "Green Mountain Power2019 Budget Forecast Report" prepared by Itron Inc. for the following requests:**

**a. Please provide Energy Futures Group 2017 electric vehicle forecast;**
**b. Please provide the updated solar capacity forecast referenced on page 1;**
**c. Please provide the "GMP adjustments for commercial Tier 3 electrification activity and other large load adjustments that would not be reflected in historical billing data."**

DPS1.A84.

a. Please see the "Electrify forecast summary" tab, Scenario 1, in Attachment GMP.DPS1.Q84.1.
b. Please see Attachment GMP.DPS1.Q65.1
c. Please see Attachments GMP.DPS1.Q84.2 through GMP.DPS1.Q84.4. Please note that for confidentiality reasons, customer names were removed.

Person/s Responsible for Response: Rob Bingel; Jeff Monder
Title of Person/s: Manager, Forecasting & Analytics; Innovation Champion
Date: June 15, 2018

**DPS1.Q85. Please provide copies of all active PPAs for energy and/or capacity for resources in GMP's portfolio.**

DPS1.A85.

Please see folder labeled Attachment GMP.DPS1.Q85 for copies of all available GMP PPAs where GMP is a signatory (Rule 4.100 and Standard Offer contracts are signed by VEPPI). A listing of the Rule 4.100 and Standard Offer contracts is available here: http://www.vermontstandardoffer.com/

Person/s Responsible for Response: Chris Cole
Title of Person/s: Director, Market Operations
Date: June 15, 2018

**DPS1.Q86. Please describe in detail and provide all work papers for the methodology used to develop the energy and capacity contributions from solar and wind facilities in the rate period.**

DPS1.A86.

In determining capacity contributions from wind resources in the rate period, GMP relied predominantly on the plant-specific capacity supply obligation ("CSO") values provided by ISO New England. Kingdom Community Wind, Searsburg, and Granite Reliable Wind are existing ISO-registered generating assets with capacity ratings and CSO's determined by ISO-NE. For the Deerfield Wind project, which recently achieved commercial operation in late 2017 and has been awarded a capacity supply obligation in FCA 10 as a new resource, we have applied the ISO-NE awarded CSO values of 8 MW to all summer FCA months and 12 MW to winter months. The monthly values for each of these resources are reflected in the Excel file labeled "7._Capacity_ Model_2019_RC", which was previously provided to DPS on April 16, 2018.

For details on the how capacity contributions were determined for the rate year from so-called behind the meter generation ("BTM") please see Response DPS1.Q63.

With respect to energy contributions from wind facilities, GMP used a combination of plant specific methods including;

- a detailed wind study (by hour by month) to project Kingdom Community Wind's generation, consistent with the values that were assumed in the original evaluation of the plant;
- the results of a study providing monthly capacity factors for Granite Reliable with on- and off-peak shares of production, which was reduced to yield annual output that is similar to historic production values;
- annual Searsburg generation is based on its average for years 2012 to 2016 and;
- An hourly profile provided by Iberdrola for the shape of Deerfield's modeled output.

A summary of the energy profile information for these sources provided in Attachment GMP.DPS1.Q86.

With respect to energy contributions form solar installations;

- Energy output is generally based on a 14.5% annual capacity factor assuming the AC (inverter) rating equals its DC (panel capacity) rating. For "overbuilt" installations - where the DC rating is higher than the AC rating - the capacity factor would be increased by the DC/AC ratio. See

Excel file titled, "2.LT_PPA_Resources_2019_RC", provided to DPS on April 16, in the tab labeled, "Solar PPAs"**.**

- The capacity factors used for the GMP Solar projects were project-specific (based on siting, panel size, panel tilt, and other factors), and are the same values presented in each project's Certificate of Public Good docket. See Excel file "2.LT_PPA_Resources_2019_RC", provided to DPS on April 16, in tab labeled, "JV Info".

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q87. Please provide a quantitative assessment of GMP's Tier II compliance strategy. For example, what are GMP's projections regarding their Tier II obligations and REC holdings for 2018, 2019, 2020, and 2021 after planned REC sales and purchases? Please provide detail by resource generation type.**

DPS1.A87.

GMP's RES Tier II strategy is designed to reach compliance in upcoming years by retiring RECs from GMPs Tier II supply in the manner that provides the greatest value to customers. Generally, we expect to first use all of our allotment of net-metering RECs. We will then retire our remaining obligations from some combination of GMP's other committed and eligible holdings. To the extent that we have excess holdings after we have met our obligations we anticipate selling the excess holdings into the MA and/or CT Class 1 renewable compliance markets. For GMP's projected supply and disposal of Tier 2 RECs see Attachment GMP.DPS1.Q87.

We presently do not anticipate making significant use of the RES Tier II banking provisions in the near term, but we will continue to evaluate market conditions to assess whether banking in future periods could be appropriate. In addition, Tier II RECs are eligible for compliance with Tier III. We expect to evaluate GMP's "pipeline" of Tier III compliance projects relative to the Tier III requirements over time, to determine whether it is appropriate to apply a portion of GMP's Tier II supply to its Tier III requirements in future years.

Person/s Responsible for Response: Andrew Quint; Chris Cole
Title of Person/s: Power and Markets Analyst; Director, Market Operations
Date: June 15, 2018

**DPS1.Q88. Please provide GMP's most current projections of wholesale energy prices, as well as projections of REC prices.**

**a. Please describe how GMP developed these projections;**

**b. Please provide copies any underlying documents and spreadsheets in native Microsoft Excel format that were used in the development of those projections.**

DPS1.A88.

a. GMP's projections of wholesale market prices for energy and REC address price outlooks with respect to near-term (approximately four years into the future) and longer-term horizons.

**Recent Forecast:**

Attachment GMP.DPS1.Q88.1 is GMP's most recent published outlook for energy and capacity market prices. This is the avoided cost outlook that GMP filed in December, 2016 as required by Vermont's new Rule 4.100. Prices are expressed in terms of monthly on- and off-peak prices for energy, and monthly capacity prices.

GMP's most recent outlook for REC market prices is presented in Attachment GMP.DPS1.Q88.2. This outlook is consistent with the outlook for regional Class 1 prices that GMP used in the context of evaluating its proposed Solar and Storage projects in late 2017 and early 2018.

GMP plans to update its wholesale market price outlook during the summer of 2018.

**Near Term Basis:**

GMP uses indicative broker sheets of forward NEPOOL energy prices (for the Mass Hub delivery point, and expressed in terms of monthly peak and off-peak prices), along with NYMEX market price quotes, as primary indicators of current energy market prices for the next several years (e.g. near-term). Attachment GMP.DPS1.Q88.3 is an example of a recent indicative energy broker sheet. In GMP's experience, these sources have been reasonable approximations of the prices at which GMP could purchase fixed-price blocks of energy for delivery in the corresponding months or years. Forward prices are not a forecast of spot market prices for the delivery period; rather they reflect the balance of supply and demand for trading blocks of energy with a specific delivery date as of a specific point in time. Based on GMP's experience these forward prices typically are consistent with a current "base case" outlook of spot market prices for a specific delivery period.

Similarly, GMP uses indicative broker sheets of forward REC market prices for neighboring states as the primary indicator of current REC market prices for delivery in future years. Attachment GMP.DPS1.Q88.4 is an example of a recent indicative REC broker sheet (for GMP's REC supply the MA Class 1, CT Class 1, and MA Class 2 are typically the most relevant). The regional REC market is much less liquid than the energy market, making the broker sheets somewhat less reliable indicators of the prices at which GMP could actually sell RECs forward especially for large volumes and deliveries three or more years in advance. To help counter the illiquidity and limited transparency in the regional REC market, GMP also subscribes to REC market outlook service offered by Sustainable Energy Advantage, a consulting firm that focuses on renewable markets in New England, as well as renewable policy issues in other regions.

**Longer Term Basis:**

There is limited market liquidity in New England for energy and RECs for deliveries taking place five or more years in advance, as reflected by the lack of broker price indications. In the absence of broker price indications GMP derives its own base case market price forecasts, using a number of sources including confidential, subscription-based services from qualified consulting firms and indicative factors such as Natural Gas futures as quoted by NYMEX. Our consultants include ESAI (primarily for energy); IHS (primarily for energy); and Sustainable Energy Advantage (primarily for REC prices and context for renewable market policy). GMP's Power Supply team members review trends in futures prices; periodic reports and briefings from our consultants; and interview the firms' experts to understand the key market factors or assumptions (e.g., supply/demand balance, environmental policies, etc.) that drive their forecasts. The context provided by our consultants is supplemented by other research or analysis performed by GMP staff to choose the base case market price outlook. The approach summarized here is the same one that GMP used to develop avoided cost outlooks for energy in Dockets Nos. 8010 and 8684 and was discussed extensively in GMP's substantive testimony in those Dockets regarding our methods, assumptions, and results.

b. Please refer to Attachments GMP.DPS1.Q88.1, GMP.DPS1.Q88.2, GMP.DPS1.Q88.3, and GMP.DPS1.Q88.4.

Person/s Responsible for Response: Andrew Quint
Title of Person/s: Power and Markets Analyst
Date: June 15, 2018

**DPS1.Q89. Please provide GMP's hourly load shape data for calendar years 2016-2017, that accounts for energy efficiency and behind-the-meter generation.**

DPS1.A89.

Please see Excel file titled, "10._Sales_&_Load_Forecast_2019_RC", previously provided to the Department on April 16, 2018, in the tab labeled, "2017 Loads", columns AB and AC. These ISO settled hourly loads are lower than total hourly loads on GMP's system because the total loads (retail sales plus Company Use plus GMP system losses plus VELCO non-PTF losses) are reduced by behind-the-meter generation (including load reducer generation sources, and Net-Metered Excess). In the calculation of projected GMP rate period loads, estimated monthly test period behind-the-meter generation (BTM Gen tab) was added back to the ISO settled loads.

The impact of projected energy efficiency measures is embedded in the projected retail sales volumes provided by Itron.

Person/s Responsible for Response: Chuck Watts; Doug Smith; Chris Cole
Title of Person/s: Power Supply Analyst; Chief Power Supply Executive; Director, Market Operations
Date: June 15, 2018

**DPS1.Q90. Please provide the time, date, and level of GMP's annual peak for the past five years.**

DPS1.A90.

The table below shows GMP's calendar year peak load with the corresponding date and hour based on ISO settlement data.

| Hour ending | Date | Peak | Load (MW) |
|---|---|---|---|
| 2013 | 14 | Jul 18 | 762.2 |
| 2014 | 18 | Jan 2 | 744.9 |
| 2015 | 19 | Jan 8 | 706.6 |
| 2016 | 18 | Jan 4 | 715.3 |
| 2017 | 18 | Dec 29 | 730.2 |

Person/s Responsible for Response: Andrew Quint
Title of Person/s: Power and Markets Analyst
Date: June 15, 2018

**DPS1.Q91. Please provide generation profiles (historical actual) for all the intermittent resources that GMP owns, jointly owns, or contracts with for energy for the most recent 3-year period.**

**Objection:** GMP reasserts General Objections 1, 3, and 6, as the request calls for the production of all historical data for these resources, without limitation and without specifying the individual types of intermittent resources. Producing all historical data for all of GMP's intermittent resources would impose an undue burden, outweighing the data's likely benefit. Without limiting or waiving this objection, GMP responds as follows.

DPS1.A91.

Subject to our objection, we are providing three years of generation history for all intermittent resources that are ISO-NE reported assets and those generators that are included in the Vermont Standard Offer Program. Please refer to Attachment GMP.DPS1.Q91.1 – Intermittent Resources.

Person/s Responsible for Response: Andrew Quint
Title of Person/s: Power and Markets Analyst
Date: June 15, 2018

**DPS1.Q92. Please provide the operational characteristics for all of GMP's owned, jointly owned, or contracted sources of energy. Such characteristics should include heat rates (if applicable), minimum run time, minimum down time, startup costs, minimum cap, and maximum cap.**

**Objection:** GMP reasserts General Objections 1 and 5. The phrase "operational characteristics" is vague notwithstanding the nonexclusive list of characteristics stated in the request. Moreover, providing such extensive information for all of GMP's sources of energy is overbroad, and not proportional to the needs of the case, and imposes a production burden that outweighs its likely benefit. Without limiting or waiving this objection, GMP responds as follows.

DPS1.A92.

See Attachment GMP.DPS1.Q92.1. We have provided files containing operational characteristics of GMP-owned thermal resources and hydroelectric resources participating in the ISO New England energy market as modeled generators (as opposed to Settlement Only or behind-the-meter resources which generally do not provide operational characteristics). Additionally, see Attachment GMP.DPS1.Q92.2 for the most recent EIA published generation technical data on GMP's jointly owned resources and contracted resources (with additional data for GMP owned sites) and Attachment GMP.DPS1.Q92.3 for certain operating characteristics of the jointly-owned McNeil generating facility.

Person/s Responsible for Response: Chris Cole
Title of Person/s: Director, Market Operations
Date: June 15, 2018

**DPS1.Q93. For joint-owned units, please provide a table with each unit and GMP's ownership stake in in that unit.**

DPS1.A93.

Please see below.

| Unit | Ownership % | Ownership MW [*] |
|---|---|---|
| J C McNeil | 31.00% | 16.1 |
| Millstone Point 3 | 1.73% | 21.2 |
| Stony Brook GT1A, B, and C | 8.80% | 31.0 |
| Yarmouth 4 ("Wyman") | 2.92% | 17.6 |

[*] These entitlement amounts represent GMP's joint-owned share of recent ISO FCA qualified values.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q94. Please provide any and all broker sheets that GMP has received over the 12 month period of June 1, 2017 to May 31, 2018 for on-peak power, off-peak power, Class I RECs, Class II RECs, Vermont Tier I RECs, Vermont Tier II RECs, and capacity.**

DPS1.A94.

For On peak power, off-peak power see folder labeled Attachment GMP.DPS1.Q94.1. For Class I and Class II RECs, see folder labeled Attachment GMP.DPS1.Q94.2. We have not received any broker sheets for Vermont Tier I RECS, Vermont Tier II RECs, or for capacity.

Person/s Responsible for Response: Chris Cole
Title of Person/s: Director, Market Operations
Date: June 15, 2018

**DPS1.Q95. Please provide any projections prepared for or by GMP or its consultants regarding market prices for fuel oil, propane, and natural gas for the rate period (or other periods overlapping, rate year for example).**

DPS1.A95.

Please refer to Conf. Attachment GMP.DPS1.Q95.1 which is an internally prepared analysis of fuel prices. This analysis is based on confidential consultant-subscription data and publicly available information from the Energy Information Administration ("EIA") and NYMEX quotes.

Person/s Responsible for Response: Andrew Quint
Title of Person/s: Power and Markets Analyst
Date: June 15, 2018

## Transmission Costs

**DPS1.Q96. Please provide GMP's monthly MW Coincident Peak with the ISO-NE system for the years 2014-2017. Please include the MW value with and without Marginal Losses.**

DPS1.A96.

GMP's understands this question as a request for information about monthly peaks used for allocating Regional Network Service ("RNS"). Accordingly our answer is that Attachment GMP.DPS1.Q96.1 provides GMP's share of Vermont Network Load used for allocating RNS, however, it does not include portions of Network Load settled in New Hampshire and Western Massachusetts that may, and frequently does, have peaks on different days and hours than the peaks for the Vermont System. For the month of April 2017 loads served in Vermont accounted for 91% of total loads used for allocating RNS expense. We also note that portions of the load served in New Hampshire and Western Massachusetts are owned by and rebilled to Public Service of New Hampshire and Woodsville Electric. GMP has not included any information related to Marginal Losses because they are not applicable to the calculation of loads; rather they are a component of Locational Marginal Prices used in the Day-Ahead and Real-Time energy markets.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q97. Please refer to Page 4, lines 13–15 of Mr. Smith's direct testimony, where he states that the "value of additional net-metered solar generation to GMP customers in the form of transmission and distribution cost savings has significantly declined due to the shifting of Vermont peak loads toward evening hours." Please provide all supporting material and analysis relied upon by Mr. Smith to substantiate the statement.**

DPS1.A97.

GMP has provided Attachment GMP.DPS1.Q97.1 which is an analysis of solar contribution to FCM and RNS peaks based on the output of a sample of Standard Offer solar projects and the five GMPSolar projects. This spreadsheet also includes an analysis calculating the value of solar energy based on a comparison of actual hourly output multiplied by the applicable hourly zonal LMP and a calculation of the all-hours average of the zonal LMP for both the Day-Ahead and Real-Time markets. Attachment GMP.DPS1.Q97.2 is the model that GMP uses when assessing potential solar opportunities. This spreadsheet calculates the value of solar generation based on a variety of assumptions including market price outlooks; peak coincidence assumptions as informed by the data in Attachment GMP.DPS1.Q97.1; assumptions about changes in these coincidence factors over time; and various other factors such as losses and FCM Reserve Requirements.

Person/s Responsible for Response: Andrew Quint
Title of Person/s: Power and Markets Analyst
Date: June 15, 2018

**DPS1.Q98. Please refer to the workpaper "Transmission Forecast Model 2019_RC", which was previously provided to the Department, for the following requests:**

- **a. Please refer to tab "RNS Forecast," column F, rows 14–21. Please provide a detailed explanation of the growth rates which are used to project Schedule 9 Rates and please provide all supporting material and calculations used to develop the growth rates in native format.**
- **b. Please refer to tab "Sheet 1." Please provide a detailed explanation and supporting calculations and/or materials in native format regarding the percentage values in respect of the RNS and FCM impacts for: (a) TESLA, (Excel cell C27 and C28); (b) Generation (Castonguay) Initiative(s), (Excel cell C43 and 44); (c) Stafford Hill Battery, (Excel cell C58 and C59); (d) Micro-grids, (Excel cell C73 and C74).**
- **c. Please refer to tab "Loads and Rates, Aggregated NWL Actual/forecast," columns B through O, and rows 201 through 220 and provide the following:**
  - **i. Please provide a detailed description of the labels "Higher than avg loads", "Lower than avg loads" and "Changed to max evening hour" and please explain how the values underneath these labels are correspondingly impacted.**
  - **ii. Are the values in rows 203-212 actual values? If yes, have the values been modified in any manner? If no, please explain what the values represent.**
  - **iii. Do the 2017 Aggregated NWL Actual/forecast values in row 212 include the 2017 Annual Change "Reduction due to Battery Initiatives" which is provided in row 313? If not, please explain why not.**
  - **iv. Please provide a detailed explanation of the hard-coded numbers and calculations added to the 2018 Aggregated NWL Actual/forecast formulas in row 213.**

DPS1.A98.

a. These rates are estimates created by GMP. The projected rates published by the NEPOOL Transmission and Reliability Committees are shown in cells T66 through T70 of that tab. The projected rates published by the NEPOOL Committees were created before the changing of federal income tax rates, and therefore are probably overstated. (For instance, the NEPOOL projection from 2017 for 2018/2019 is $120.00, vs. the recently published actual 2018/2019 rate of $110.44, or about 9% over the actual rate.)

b. Tab "Sheet 1" does not appear in the file except as an unused (hidden) sheet that applies to 2012/2013.

c.

i. These labels refer to the same-colored cell in the table below: yellow shaded cells contain GMP network loads that are much higher than the

average for that month; purple cells contain GMP network loads that are much lower than the average for that month, and the "flesh" colored cells show values for months for which GMP network loads have moved from generally mid-afternoon hours to generally evening hours.

ii. The values in rows 202-2012 are actual values per the original ISO settlement files for those periods. ISO resettlement files likely contain (normally slightly) adjusted network loads for some months.

iii. Row 2012 contains actual values per answer ii above, and therefore would contain (reflect) any network load reductions from batteries achieved in any month(s) of 2017.

iv. These are adjustments that are meant to remove (adjust) network loads that were seen as outliers.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q99. Please provide a copy of the 2013 efficiency study, which Ms. Michelle Nelson described to Department staff during a May 31, 2018 phone conference between personnel from VELCO, GMP, and the Department, if available to GMP. Please also provide a copy of the 2015 report and presentation to the Board of Directors that Ms. Nelson also referenced during that conference, if available to GMP.**

DPS1.A99.

The referenced efficiency study performed by John M. Floyd Associates ("JMFA") commenced in September 2013 and concluded January 31, 2014 with final results reported to the VELCO Board in February 2014 through the attached presentation. Please see Attachment GMP.DPS1.Q99.1 We have also included a copy of the requested August 2015 report provided to the VELCO Board. Please see Attachment GMP.DPS1.Q99.2. As outlined in those documents, VELCO delivered $4,894,497 in savings against JMFA's original target of $5,064,486. As noted in the comments to JMFA's August 2015 report, the targeted savings included $681,600 in postponed savings related to project management resources. Those project management resources have now been transitioned out of the business so VELCO has realized those savings as well

Person/s Responsible for Response: Michele Nelson
Title of Person/s: Chief Financial Officer, VELCO
Date: June 15, 2018

**DPS1.Q100. With respect to Ms. Nelson's testimony regarding VELCO finances, please provide the allocation factors used by VELCO to allocate administrative and general expenses, with FERC account level detail, between the capital program and operating expenses for the period 2014-May 2018. Also provide dollar amounts associated with each FERC account included in administrative and general for those years.**

DPS1.A100.

Please see Attachment GMP.DPS1.Q100.

Person/s Responsible for Response: Michele Nelson
Title of Person/s: Chief Financial Officer, VELCO
Date: June 15, 2018

## Capacity Costs

**(Note: for all FCA-related questions, please provide summer and winter values as appropriate)**

**DPS1.Q101. For Forward Capacity Auction ("FCA") 6-9, please provide a summary of GMP's total Capacity Load Obligation including its value (MW), date and time of the pertinent ISO peak, and GMP's load at that time.**

DPS1.A101.

Please see the following table:

| | GMP CLO | Peak Date | Hour-end | ISO Load | GMP Load |
|---|---|---|---|---|---|
| FCA 6 | 1,020 | July 2, 2014 | 15 | 24,068 | 710 |
| FCA 7 | 968 | July 29, 2015 | 17 | 24,052 | 677 |
| FCA 8 | 937 | August 12, 2016 | 15 | 25,111 | 668 |
| FCA 9 | 879 | June 13, 2017 | 17 | 23,508 | 569 |

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q102. For FCA 10, please provide a description of GMP's forecast of its Capacity Load Obligation, including its value (MW), forecasted 2018 summer peak coincident with the ISO, other inputs required to determine that value, and the rationale of the forecast.**

DPS1.A102.

GMP's Capacity Load Obligation under FCA 10 (starting June 2019) is assumed to continue the projected obligation used for FCA 9, i.e., an obligation of 852 MW. For the rationale supporting this forecast please refer to Responses DPS1.Q63 and DPS1.Q64.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q103. For FCA 6-9, please provide the Net Regional Clearing Price applicable to GMP's Capacity Load Obligation.**

DPS1.A103.

The Net Regional Clearing Price ("NRCP") does not remain absolutely constant throughout each FCA contract year. The following table shows the lowest and highest NRCP (in $/kW-month) to GMP for FCA's 6-8 and the lowest and highest expected NRCP for FCA 9, from an ISO projection attached as Attachment GMP.DPS1.Q103 - nrcp_forecast_ccp_2018-2019. GMP is part of the "Rest of Pool" capacity zone. Please see the last section (4th line from bottom) of the file for the FCA 9 prices.

| | Lowest NRCP | Highest NRCP |
|---|---|---|
| FCA 6 | $3.17 | $3.24 |
| FCA 7 | $2.83 | $3.09 |
| FCA 8 | $7.47 | $7.71 |
| FCA 9 | $9.33 | $9.36 |

Person/s Responsible for Response: Chuck Watts; Doug Smith; Chris Cole
Title of Person/s: Power Supply Analyst; Chief Power Supply Executive; Director, Market Operations
Date: June 15, 2018

**DPS1.Q104. For FCA 10, please provide a description of GMP's forecast of the Net Regional Clearing Price applicable to GMP's Capacity Load Obligation.**

DPS1.A104.

GMP's projection of its FCA 10 Net Regional Clearing Price (NRCP) is $7.06, as taken from ISO's forecast attached as Attachment GMP.DPS1.Q104 (nrcp_forecast_ccp_2019-2020). GMP is part of the "Rest of Pool" capacity zone. Please see the 2nd to last line in the Attachment.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q105. For FCA 6-10, please provide a table of GMP's committed capacity (from owned generation, GMP's share of jointly-owned generation, purchased power including bilateral deals) for the pertinent delivery period inclusive of all applicable ISO capacity auctions. Please include capacity resource name / description, auction cleared capacity value (MW value applicable to GMP's share), applicable auction name cleared in, & applicable auction price ($ / MW-Day).**

DPS1.A105.

The Excel file labeled "7._Capacity_Model_2019_RC," which was previously provided to the Department on April 16, 2018, contains this information for most of the periods requested (except "$/MW-Day", which is not calculated or produced by the ISO). The tabs are clearly labeled as to what FCA(s) and class of capacity is included. For tabs that include more than one file for a given year, (e.g, those pertaining to aRa's and MRa's) there is an aggregation (netting) section to the right of the topmost ISO file. Please see Attachment GMP.DPS1.Q105.1 - FCA 6 Details for information that was available to GMP at the time the rate case material was assembled but not included in the excel file cited. Also, Attachment GMP.DPS1.Q105.2 - New FCA files includes related files released by the ISO since the rate case material was assembled.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q106. For FCA 10, please provide a table of any additional capacity resources GMP intends to commit to acquire in future ISO capacity auctions, including the same information.**

DPS1.A106.

GMP does not foresee making any additional bilateral capacity purchases for the FCA 10 (June 2019 –May 2020) period.

Person/s Responsible for Response: Chris Cole
Title of Person/s: Director, Market Operations
Date: June 15, 2018

## REC Commitments and RES Compliance

**DPS1.Q107. On a monthly basis, for the 9-month periods of January through September in each of 2014 through 2017, please provide a table of REC supply (GMP's allocation when applicable) from GMP entitlement generation, purchased power resource generation, or REC purchase including source name / description, qualifying REC class, REC amount, and REC price.**

DPS1.A107.

The tables in Attachment GMP.DSP1.Q107 show GMP's REC supply by month for 2014 to 2017. The information is monthly for the full calendar year as compiled from NEPOOL GIS reports and includes source name, facility type (description), REC class qualifications, and REC amount.

REC prices are not included by source as GMP REC sales are typically not resource specific, but by REC class. For the prices of GMP's REC sales by class for Vintage 2014 to Vintage 2019 see Conf. Attachment GMP.DPS1.Q109.

Person/s Responsible for Response: Chris Cole
Title of Person/s: Director, Market Operations
Date: June 15, 2018

**DPS1.Q108. On a monthly basis, for the 9-month periods of January through September in 2019, please provide a table of forecasted REC supply (GMP's allocation when applicable) from GMP entitlement generation, purchased power resource generation, or REC purchase including source name / description, qualifying REC class, REC amount, and REC price.**

DPS1.A108.

Attachment GMP.DPS1.Q108 - REC-qualified generation contains a list of projected REC-qualified generation from GMP owned and purchased resources for the period of July 2018 – March 2019 (those months of generation that will result in rate period sales of RECs), as well as projected REC-qualified generation from January – September 2019 that is expected to be used to fulfill 2019 RES obligations. The file includes the class of REC most likely sold (if sold) and whether the REC qualifies as RES Tier 1, 2, and/or 3. Most RECs qualified to fulfill Tier 2 obligations will be used for such; any leftover is projected RECs are to be sold.

The price at which a REC is sold is not based on the specific resource it comes from but on its registered class for GMP that would be the highest value class the REC qualifies for). Conf. Attachment GMP.DPS1.Q109 - REC Sales V20104 to V2019 shows the sales price(s) for Vintage 2014 through Vintage 2019 REC sales completed or contracted for.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q109. On a monthly basis, for the 9-month periods of January through September in each of 2014 through 2019, please provide a table of REC sales made by GMP including REC class, REC amount, and REC price.**

DPS1.A109.

For sales of vintage 2014 through 2019 RECs by class and vintage year see Conf. Attachment GMP.DPS1.Q109 (REC Sales V2014 to V2019). While sales can occur on a monthly basis, the delivery period for sold RECs is not specific to individual months within a REC vintage year. The prices shown are transacted prices before fees for broker services (when applicable). Not included are McNeil RECs sold by BED on GMP's behalf.

Person/s Responsible for Response: Chris Cole
Title of Person/s: Director, Market Operations
Date: June 15, 2018

**DPS1.Q110. On a monthly basis, for the 9-month periods of January through September in 2019, please provide a table of any additional forecasted REC sales to be made by GMP including REC class, REC amount, and REC price.**

DPS1.A110.

See Attachment GMP.DPS1.Q110, which comes from the tab "5_Monthly_Revenue_Forecast" from file labeled "8._REC_Model_2019_RC.xlsx", previously provided to DPS on April 16, 2018. This attachment shows the remaining REC volumes to be sold for each class (lines 20, 36, and 52). Forward sales of Vintage 2018 RECs (transferred between January and June 2019) are generally complete, while forward sales of Vintage 2019 RECs (to be transferred beginning in July 2019) are not yet complete. Remaining projected REC volumes are expected to be sold by the end of 2018.

Note that for this response and Attachment, January through September 2019 refers to the projected REC transfer month, not the month the energy was generated.

Person/s Responsible for Response: Chuck Watts; Chris Cole
Title of Person/s: Power Supply Analyst; Director, Market Operations
Date: June 15, 2018

**DPS1.Q111. On a monthly basis, for the 9-month period of January through September in 2017, please provide a table of commitment of GMP RECs for Vermont RES compliance (by Tier), including REC source name / description, REC amount, and REC price.**

DPS1.A111.

Please see Attachment GMP.DPS1.Q111, which contains the commitment of GMP RECs for Vermont RES compliance, by resource by generation month for the entirety of generation/ vintage year 2017. The REC prices included are GMP's expense associated with retiring the REC - depending on the method of purchase; this is the purchase price of the REC directly or in some cases the calculated price of the REC as part of a bundled PPA.

Person/s Responsible for Response: Chuck Watts
Title of Person/s: Power Supply Analyst
Date: June 15, 2018

**DPS1.Q112. On a monthly basis, for the 9-month periods of January through September in 2019, please provide a table of forecasted commitment of GMP RECs for Vermont RES compliance (by Tier), including REC source name / description, REC amount, and REC price.**

DPS1.A112.

Attachment GMP.DPS1.Q112 contains the requested information for both Tier 1 and Tier 2, although it should be noted that the Tier 1 requirement will first be met with RECs from GMP's power portfolio, primarily the HQUS contract plus hydro resources whose output does not qualify for premium RECs categories in surrounding states. As described in Response DPS1.Q87, the Tier 2 requirement will first be met with RECs from net-metering 2.0, which also have limited market value. Any obligation(s) remaining after using these resources will be met with qualifying RECs that have the lowest value to GMP customers. The Attachment shows all (re)source categories that provide qualifying RECs.

Person/s Responsible for Response: Chuck Watts; Chris Cole
Title of Person/s: Power Supply Analyst; Director, Market Operations
Date: June 15, 2018

## Joint-Venture ("JV") Microgrid Projects

**DPS1.Q113. Please describe in detail GMP's reasoning and/or justifications for developing three JV Microgrids simultaneously rather than completing one such project to prove the worth or value of the projects.**

DPS1.A113.

The strategy behind developing multiple projects simultaneously is designed to provide value to customers by gaining economies of scale and by capturing the maximum value of currently available tax credits. The projects are relatively small given GMP's overall customer loads, so increasing scale makes a larger impact in terms of achieving noticeable peak reductions and associated cost savings for all GMP customers.

Specifically, the major factors that influenced GMP to adopt this development strategy are:

1. *Decline of Tax Incentives*

   Until the end of 2019, an Investment Tax Credit (ITC) of about 30% of each project's capital cost is available to be monetized, which keeps that amount of capital out of ratebase and which thus provides meaningful savings for customers. The ITC that applies to the solar component also applies to the battery when it is constructed with solar, further leveraging the capital needed to develop the battery. The ITC declines by 4% each year for projects commissioned after 2019, so the proposed development timeline harvests significant tax savings for customers ahead of that decline. Relatedly, project size and transaction volume are key considerations for tax investors. Tax investors look for reasonably sizable transactions in which to deploy capital in order to minimize transaction costs for structuring the investment. Multiple projects help attract competitive partners.

2. *Urgency to Reduce Power Costs*

   Regional transmission costs are expected to continue to rise in the next several years as transmission investment continue to be made in spite of flat or declining demand. In fact, ISO-NE estimates that about $2B of transmission investment will be made by 2022. GMP has limited ability to offset the costs allocated to customers based on peak demand, except to aggressively reduce peak demand. In addition to GMP's traditional load management programs such as curtailable loads and dispatchable water heaters, GMP strives to proactively achieve monthly and annual cost reductions for customers by reducing peak loads rather than taking a wait and see approach and possibly not be able to be respond in a timely enough manner later on. GMP's Forward Capacity Market (FCM) obligations are determined based on the prior year's annual peak load, so

any load reduction achieved in a current year is not realized by the capacity market until the following year. That market dynamic illustrates the importance of taking action earlier in the planning cycle, rather than later since annual peak benefits, and associated cost offsets, will lag by a year. Monthly peak benefits however, will be achieved immediately.

3. *Rising Rate Pressures*

GMP expects to earn a significant developer fee from the three MicroGrid projects of approximately $2,600,000 that will flow directly through to customers as a rate reduction strategy. When each project is completed, its value as a constructed project (fair market value) is much higher than the sum of the cost of its parts, which raises the amount of eligible ITC for the project. The difference between fair market value and cost can be returned to the developer, GMP, in the form of a developer fee for undertaking the time and effort required to successfully develop and complete the project. GMP has proposed to pass on 100% of this developer to customers to mitigate retail rate pressure.

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

**DPS1.Q114. To the extent not already provided to the Department as part of this case, please provide copies of all executed agreements concerning the JV Microgrids, including, but not limited to, inter-affiliate agreements between GMP and its joint-venture partners, equipment purchases, power purchase agreements, and construction contracts.**

DPS1.A114.

GMP created two Vermont limited liability companies (LLCs) and purchased another LLC that together are the three individual project entities that will be jointly owned by GMP and a tax partner at a future financial closing. In its current role as project developer, GMP has executed some agreements in its own name and the project companies have also executed agreements in their names as needed until the financial closing, when the relevant agreements will be assumed by the individual LLCs.

The three LLCs that were created as special purpose entities are: GMP MicroGrid-Milton, LLC ("Milton", formerly known as Trout Brook Energy, LLC), GMP MicroGrid-Ferrisburgh, LLC ("Ferrisburgh") and GMP-Essex Solar/Storage, LLC ("Essex").

To date, the following major agreements have been executed:

| | Project | Contracting Entity | Counterparty | Type of Agreement |
|---|---|---|---|---|
| 1 | Milton | GMP | Green Peak Solar | Membership Interest Purchase & Sale Agreement (MIPSA) |
| 2 | Milton | GMP MicroGrid-Milton, LLC | Paul Mears, landowner | Land Lease |
| 3 | Milton | GMP MicroGrid-Milton, LLC | Paul Mears, landowner | 1st Amendment to Land Lease |
| 4 | Ferrisburgh | GMP | groSolar | Development Services Agreement |
| 5 | Essex | GMP | Green Lantern Development | Development Services Agreement |
| 6 | Essex | GMP-Essex Solar/Storage, LLC | RICAL, LLC | Lease Option |

These agreements are provided as Attachment GMP.DPS1.Q114.1 through GMP.DPS1.Q114.3, GMP.DPS1.Q114.5 & GMP.DPS1.Q114.6 and Conf. Attachment GMP.DPS1.Q114.4. Other construction and equipment procurement agreements will be executed as permitting milestones are achieved so as to limit the amount of cash deposits required to be paid before CPG is obtained. Power Purchase Agreements will be filed with the PUC prior to execution. Other, minor agreements (such as contracts for consulting services relating to CPG petitioner) are available upon request.

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

**DPS1.Q115. Please describe in detail the status of each of the three JV Microgrid projects. Within your response, please state the expected construction start dates and the most recently updated projection for the online date of each project.**

DPS1.A115.

The status of each project is discussed individually below:

Milton - The complete CPG application package was submitted on 11/22/17 and has undergone two rounds of discovery. The current schedule provides for a CPG determination in December 2018. If a CPG is obtained, then construction would commence shortly thereafter and commissioning could occur by the late spring of 2019.

Ferrisburgh – The complete CPG application package was submitted on 3/14/18 and entered the first round of discovery on 6/6/18. The current schedule provides for a CPG determination by February 2019. If a CPG is obtained, then construction would commence shortly thereafter and commissioning could occur in early summer of 2019.

Essex –The System Impact Study (SIS) will be completed in early July and the CPG application will be submitted immediately after the SIS is issued. Assuming a CPG proceeding takes about 9 months, a CPG could be obtained next spring. The project would be constructed and commissioned by late summer 2019, by the end of September 2019.

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

**DPS1.Q116. Please provide the most-recently updated copies of any cost-benefit analyses completed by GMP for each of the three JV Microgrid projects. If such documentation has already been provided to the Department as part of this rate case, please identify each document previously produced that documents such cost-benefit analysis.**

DPS1.A116.

The most recently updated cost benefit analyses for each of the three projects is provided as Attachment GMP.DPS1.Q116. The Excel workbook contains a project specific analysis tab for each project labelled "Milton PPA Summary," "Ferrisburgh PPA Summary" and "Essex PPA Summary." At the bottom of each analysis page in rows 33:43, there is also a table that shows the unit cost and unit values of the solar (in $/kWh) and battery (in $/kWh and $/kW-year) components for reference. The individual project information is also summarized to the portfolio level on separate tabs labelled "Total PPA Summary" and "Rate Case Summary."

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

**DPS1.Q117. Please refer to Page 7, lines 6–7 of Mr. Shields's direct testimony, where he states that "GMP performed an analysis that compared the Project NPV outcomes for customers in three scenarios." Please provide a copy of this analysis in native format together with all calculations and supporting material.**

DPS1.A117.

The analysis is provided as Attachment GMP.DPS1.Q117 in Excel workbook form.

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

**DPS1.Q118. Please refer to Page 15, lines 15–16 of Mr. Shields's direct testimony, where he states that "[t]he results of the cost benefit analysis show that the projects have a positive NPV of about $5.4 million." Please provide a copy of the referenced cost benefit analysis in native format together with all supporting material if it has not already been provided to the Department.**

DPS1.A118.

Please refer to Attachment GMP.DPS1.Q116. On the tab labelled "Rate Case Summary", cell B20, the NPV of $5,431,618 is shown as calculated by the cost benefit analysis for each of the 3 projects in the same file and summarized on this tab.

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

**DPS1.Q119. Please refer to Page 12, Table 1 and Page 16, Table 4 of Mr. Shields's direct testimony. Please provide a copy of the analysis in native format used to develop those tables together with all supporting material, if not already provided to the Department.**

DPS1.A119.

The data in the referenced tables can both be found in Attachment GMP.DPS1.Q116 on the tab labeled "Rate Case Summary." This information is calculated by the cost benefit analysis for each of the 3 projects in the same file and summarized on this tab.

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

**DPS1.Q120. Please provide a breakdown of the benefits accruing to GMP's equity partners and GMP's ratepayers from each of the JV MicroGrid projects.**

DPS1.A120.

There are valuable benefits, financial and otherwise, that accrue to customers, as a result of the JV MicroGrid projects. The tax partner also realizes financial benefits as a result of its investment in the project, which creates additional financial benefits for our customers.

Benefits accruing to GMP customers include:

1) $5.4M Lower Power Costs (NPV) to Customers
These projects will lower GMP's cost of power through peak shaving (i.e. reduced capacity, transmission and ancillary services costs) during monthly and annual peak load events. Peak load shaving can provide significant savings for customers since many regional market and transmission related costs are allocated to GMP based on our pro rata share of load relative to the New England load. Every MW saved through peak reductions saves money for customers by reducing GMP's share of regional costs that are allocated out based on load.

2) $2.6M developer fee credited to Customers
GMP expects to earn significant developer fees from the three projects of approximately $2.6M that will flow directly to customers as part of an overall retail rate reduction strategy. The developer fee earned by GMP is a direct result of GMP's success in developing the projects and commissioning projects that are worth more than the cost of the sum of their parts, which creates substantial value for our customers.

3) $10.4M Day 1 Gain / Equity in Earnings credited to Customers
The tax equity partner's ability to monetize and take the ITC as a tax deduction in the year the projects are placed in service creates a significant Day 1 Gain for GMP of about $10.4M. That Day 1 Gain is immediately returned to customers as a credit against GMP's cost of service. To explain, Hypothetical Liquidation at Book Value (HLBV) accounting calculates the book income or loss that each partner would receive if the partnership were liquidated, and GMP will book a significant gain as net income after the partnership is fully funded.

4) $14.3M Lower Ratebase Addition
Since both the solar and the battery storage components of the project are eligible for federal Investment Tax Credits (ITC) of about 30% of eligible capital costs, customers will have the benefit of the completed project at a significantly reduced cost. The tax partner will contribute about $14.3M of capital to the project in return for receiving the tax attributes. The $14.3M of

capital provided by the tax partner does not go into rate base and is a cost savings to customers relative to the overall project capital budget. This is an efficient use of the ITC. If GMP were to amortize the ITC over the life of the project, it would forfeit the time value of money associated with the ITC. Having the tax investor make the investment immediately lowers project costs for customers.

Benefits accruing to the tax equity partner include:

1) ITC and tax expense savings of about $11.5M.

2) Cash distributions of net income of about $2.5M.

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

**DPS1.Q121. With respect to GMP's approach to accounting for the hypothetical liquidation at book value ("HLBV") and developer fees for the Microgrid projects, please state whether:**

- **a. All analysis by the company of alternative methods for accounting for these items.**
- **b. All communications with (to and from) the company's corporate auditor regarding this approach.**
- **c. All communications, presentations and analysis within GMP related to the choice of accounting method and its impact on GMP rates.**
- **d. Examples of other regulated utilities that use an approach that is similar to GMP's.**

DPS1.A121.

a. GMP has not performed an analysis of alternative methods of accounting for HLBV and Developer Fees because there are no alternative methods for accounting for these items. Each project LLC will be held in a tax equity partnership. Under Generally Accepted Accounting Principles (GAAP) the allocation of a tax equity partnership profit/gains and losses is done using HLBV. The developer fees are recognized as revenue when the revenue generating process is substantially complete. This occurs when key project milestones are achieved and the developer fee is paid to GMP.

   As Eddie Ryan discusses on pages 18–20 of his prefiled testimony, GMP is proposing for rate making to return to customers the day 1 gain created by HLBV in the first year, rather than amortizing the day 1 gain over the life of the projects' property, plant, and equipment. The net present value of day 1 gain using this approach is approximately $400K higher than amortizing the day 1 gain.

b. The proposed projects will be the company's second round of investments in tax equity partnerships so it has not been necessary to discuss this investment with our auditors. When GMP was contemplating the GMP VT Solar investment (1st tax equity partnership) GMP performed the research on the accounting for tax equity partnerships. As part of this research, GMP employees had phone conversations with various individuals from its auditor firm to confirm the GAAP accounting for a tax equity partnership. At the conclusion of the research an email (provided as Attachment GMP.DPS1.Q121b) was sent to GMP's auditing firm summarizing GMP's tax equity partnership accounting.

c. There were no communications, presentations or analysis related to the choice of accounting method since there were no accounting methods to choose from. GAAP requires tax equity partnerships to use HLBV accounting. GMP did prepare a rate making analysis calculating the net present value (NPV) of

returning the day 1 gains and developer fees to customers in the 1st year, over 15 years and over 25 years. See Attachment GMP.DPS1.Q117. The NPV of returning the day 1 gains and developer fees within the 1st year was greater than the NPV of the 15 and 25-year amortizations.

Although not prepared for these projects, attached is HLBV documentation prepared by an accounting firm for the GMP VT Solar tax equity partnership. See Attachments GMP.DPS1.Q121.c1, GMP.DPS1.Q121.c2 and GMP.DPS1.Q121.c3.

d. GMP is not aware of any other regulated utilities that use an approach similar to GMP's.

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

**DPS1.Q122. Please state whether it is GMP's contention that the Commission has expressly authorized GMP's proposed accounting treatment for the HLBV and Developer fee in any prior decisions or orders. If yes, please identify such decisions or orders by date and docket number.**

**Objection:** GMP reasserts General Objection 11, as the request calls for a legal conclusion.

DPS1.A122.

GMP proposed this accounting treatment for GMP JV Solar projects in 2016 in the proceeding related to 2017 base rates and provided additional information on the accounting treatment to DPS in discovery. While it was not raised to the PUC, the accounting approach was included in the final approved base rate, which was approved by the PUC in its final order.

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

**DPS1.Q123. Please state whether GMP will provide some form of financial assurance to make its rate-payers whole if the purported financial benefits of the Microgrid projects are not realized. If yes, please:**

**a. Describe how ratepayers will be compensated if the benefits are not realized; and**

**b. Describe in detail how this compensation will be monitored, met, and guaranteed.**

DPS1.A123.

GMP proposes the Project as a strategic investment on behalf of customers with rate treatment similar to other investments of this type. GMP has not proposed providing performance guarantees beyond traditional ratemaking for several reasons, as explained in the answers to the sub-questions below:

a. GMP ratemaking includes both sides of the estimated costs and benefits ledger and GMP assumes the risk of not achieving those outcomes as described above. If the estimated outcomes are not actually achieved then GMP is accountable for the proper management of those variables within its control.

b. GMP monitors the performance of its major assets. This Project will have its own set of performance metrics that will be tracked including operating and financial metrics. Monthly internal reporting will provide leading indicators of actual performance relative to predicted performance and remediation measures taken where needed. As a strategic asset, the Project is not a build-and-forget asset. It is part of a greater initiative to actively manage load and reduce costs for customers that will have very high focus and attention on it from throughout GMP.

Person/s Responsible for Response: Kirk Shields
Title of Person/s: Director, Development & Risk Management
Date: June 15, 2018

## Innovative Pilot Programs

**DPS1.Q124. Please state the total costs and revenues for the following innovative pilot programs for all years that each program was in service or otherwise offered to customers:**

**a. Heat Pump Lease Pilot;**
**b. Heat Pump Water Heater Pilot;**
**c. GMP Tesla Powerwall pilot;**
**d. ConnectDER Innovative Pilot.**

DPS1.A124.

Please see GMP.DPS1.Q124 - Program Revenue and Costs which provides the costs and revenues for each of the pilots requested. Based on agreement with the Department GMP is now using the updated energy consumption values for the Heat Pumps taken from the Department's heat pump analysis. This updated energy consumption value has been applied to all heat pumps, lowering the marginal energy revenue for the program from what previously was shown prior rate case.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP & Chief Innovation Executive and Power Supply
Date: June 15, 2018

**DPS1.Q125. Please (sic) copies of any documents that quantify or describe in detail how GMP quantifies the dollar value benefit of the innovative pilot programs to nonparticipating ratepayers for each of the following programs listed below. Please also provide copies of all internal reports and analysis of the benefits of each pilot program listed below to non-participating customers.**

**a. Heat Pump Lease Pilot;**
**b. Heat Pump Water Heater Pilot;**
**c. GMP Tesla Powerwall pilot;**
**d. ConnectDER Innovative Pilot.**

**Objection:** GMP reasserts General Objection 1. Producing "any documents that quantify or describe how GMP quantifies the dollar value benefit of the innovative pilot programs" and "all internal reports and analysis" of each pilot program without limitation is not proportional to the needs of the case, and imposes a production burden that outweighs its likely benefit. Without limiting or waiving this objection, GMP responds as follows.

DPS1.A125.

Please see Attachment GMP.DPS1.Q125 for an explanation of how GMP quantifies the dollar value benefit to nonparticipating customers. Please note that since last year when this explanation was drafted, GMP lowered the assumed kWh consumption of heat pumps based on the study conducted by the Department. Please see Attachment GMP.DPS1.Q124 for the benefit of all requested pilot programs to nonparticipating customers (the Gain row). Finally, GMP has regularly updated the Commission and Department on the benefits to nonparticipating customers in its initial pilot filings and subsequent update filings for each of the programs above, and GMP has also informally updated the Department on these programs.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP & Chief Innovation Executive and Power Supply
Date: June 15, 2018

**DPS1.Q126. Please confirm that GMP has the ability to load-control, for the benefit of all customers, each of the assets included in rate base (if applicable) for the following innovative pilot programs:**

**a. Heat Pump Lease Pilot;**
**b. Heat Pump Water Heater Pilot;**
**c. GMP Tesla Powerwall pilot;**

DPS1.A126.

a. For our heat pump pilot program, GMP is using the Sensibo Sky Infrared control hardware connected with the Virtual Peaker software platform. This technology allows the customer to have heat pump control through a smart device, and allows GMP to access the heat pump as a distributed energy resource, using it to aggregate devices for purposes of shifting energy consumption away from peak demand times. The GMP team is currently controlling 207 heat pumps via the Sensibo Sky hardware and integration with Virtual Peaker. The Sensibo Sky technology was not available when the CCHP Pilot commenced, so GMP is taking proactive steps to retroactively place these devices with each CCHP customer that was installed prior to the technology availability. Additionally, GMP is now including the Sensibo Sky with every heat pump that is installed as part of the GMP VSECU Pilot.

b. Heat pump water heater manufacturers have responded to GMP's calls to implement utility control of these assets. GMP is currently in the integration stages with a heat pump water heater manufacturer that will enable GMP to utilize these assets within Virtual Peaker. We expect to have this integration and control functionality available by the end of Q3 of this calendar year. GMP continues to work with Aquanta to test the use of its device as a possible means to heat pump water heater control. However, the onset of the heat pump water heater manufacturer's integrated control system has changed prioritization toward a direct integration with the heat pump water heater instead of through the Aquanta.

c. GMP Tesla Powerwall pilot: There are 20 existing installed Tesla Powerwall 1.0 batteries that are under GMP control. These units are accessed through the Solar Edge Dashboard specific to these units but the Powerwall 1.0 units will all be aggregated in Virtual Peaker in the coming days. There are another 420 Powerwall 2.0 batteries under GMP control as well. As part of the larger Grid Transformation Pilot, these Powerwall 2.0 batteries are accessed through Tesla's GridLogic platform. In order to create some redundancy in our systems, GMP is working with Tesla and Virtual Peaker to integrate the control of these assets as well.

Person/s Responsible for Response: Craig Ferreira
Title of Person/s: Innovation Champion
Date: June 15, 2018

**DPS1.Q127. With respect the Tesla Power Wall Capital Project (#159740) and other related projects, please provide the following information for 2016, 2017 and 2018:**

- **a. Copies of all invoices from Tesla;**
- **b. Details on when GMP paid these invoices and for what amounts;**
- **c. For invoices that GMP has paid, please describe whether GMP has actually taken delivery of the product and/or service involved.**

DPS1.A127.

a. Attachments:
   i. GMP.DPS1.Q127.1
   ii. GMP.DPS1.Q127.2
   iii. GMP.DPS1.Q127.3
   iv. GMP.DPS1.Q127.4

b. GMP has paid one invoice from Tesla for 415 Powerwalls to ensure the availability of 415 Powerwalls to GMP customers. The invoice was paid on September 19, 2017 in the amount of $2,988,000. Since the initial invoice, Tesla has invoiced GMP to track how many of the 415 Powerwalls have been delivered and installed.

c. To date, each Powerwall that has been invoiced and paid for has been installed and is operating in a customer's home. As of June 12, 2018, we have installed 445 Powerwall batteries. We await updated invoices from Tesla and will supplement upon receipt.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP & Chief Innovation Executive and Power Supply
Date: June 15, 2018

**DPS1.Q128. Please refer to the workpaper document titled "PowerWall 2.0 Pilot – Financial Analysis 3.6.18," which GMP previously provided to the Department. On page 6, it state that Tesla has "provided a performance guarantee for the peak benefits as well as a full 10-year warranty for the storage systems." Please provide a detailed description of the performance guarantee and warranty and please provide a copy of the guarantee and warranty.**

DPS1.A128.

Please see Attachment DPS1.Q128.1 which describes the Powerwall 10-year warranty. Please see DPS1.Q128.2 which is the peak reduction performance guarantee.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP & Chief Innovation Executive and Power Supply
Date: June 15, 2018

**DPS1.Q129. Please provide any cost-benefit documentation prepared and maintained by GMP for each energy transmission (sic) project discussed by Mr. Castonguay on Page 4 of his direct testimony, including the Tesla Powerwall 2.0; Residential Battery Storage; Cold Climate Heat Pumps, Heat Pump Water Heaters, Level 2 EV Home Chargers; BTM Controls; and ePark projects, which has not previously been provided to the Department as part of this case.**

DPS1.A129.

a. Tesla Powerwall 2.0 – Cost benefit documentation provided in 2019 Capital Folder.

b. Residential Battery Storage – The cost of the battery installed as part of the Residential Battery Storage was $9,800. The expected lifetime value of the system is $3,145 showing a negative benefit. This unit was installed as part of GMP research into various residential energy storage systems. Only one battery was installed, and no further units of this type were installed. See Attachment GMP.DPS1.Q129.1.

c. Cold Climate Heat Pumps – Cost-benefit documentation has been previously provided to the Department both informally and through the pilot filings and updates filed with the Commission. Further documentation can also be found in capital folders.

d. Heat Pump Water Heaters – See response above.

e. Level 2 EV Home Chargers. See Attachment GMP.DPS1.Q129.2.

f. BTM Controls – See Attachments GMP.DPS1.Q129.3.

g. ePark –Please see the attachments in the ePark 2019 Capital folder.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP & Chief Innovation Executive and Power Supply
Date: June 15, 2018

**DPS1.Q130. Please refer to Page 18, lines 11–12 of Mr. Castonguay's direct testimony, where he states that "[a]nother significant benefit of many of these projects is their contribution towards GMP's Tier III obligations under Vermont's Renewable Energy Standards". Please provide a detailed breakdown of how each energy transformation project discussed by Mr. Castonguay, and listed in the table on page 4 of his testimony, will contribute towards GMP's Tier III obligations over a five-year period beginning in January 2019. Within your response, please also include the number of Tier III credits that GMP anticipates it will receive both per measure and by program.**

DPS1.A130.

Please see Attachment GMP.DPS1.Q130 for a summary of the Tier 3 credits provided by the transformation programs.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP & Chief Innovation Executive and Power Supply
Date: June 15, 2018

**DPS1.Q131. Please refer to the workpaper document titled "GMP_Tesla-Financial Model - 3.6.18 Updated," which GMP previously provided to the Department for the following requests:**

**a. Refer to the "Annual Simulation Results" tab, and please provide a detailed description of the modeling and input assumptions used to determine the results presented together with supporting material. Please provide a copy of the results on an hourly basis in native format if available.**

**b. Refer to the "Scenarios Summary" tab, and please provide a detailed explanation of the basis used to support the "% of Fleet Expected to Fail (EOY)" values and please provide supporting material in native format.**

**c. Refer to the "Scenarios Summary" tab, and please provide a detailed explanation of the basis used to support the percentage values in respect of the following line items: (a) FCM Forecast Accuracy (% of Physical Effectiveness); (b) RNS Forecast Accuracy (% of Physical Effectiveness) (Minimum Performance or Expected); (c) Communication Availability. Please provide supporting material in native format.**

DPS1.A131.

a. The Annual Simulation Results tab was an analysis performed by Tesla to understand the impact of battery degradation over the life of the performance utilizing three 'test' years as a basis and projecting out for 15 years beyond there. This projection was then used to inform the values for the energy and reserves as the battery degraded over time. Input assumptions such as the real time LMP energy pricing during each of those test years were developed by Tesla and were not included in this model. Results on an hourly basis are not available.

b. This end of life failure rate was estimated working with Tesla and using judgement about what a reasonable failure curve would look like after the initial 10-year period. Tesla guarantees the performance of the Powerwall for 10 years. At the end of 10 years, the battery will have residual life left which we will continue to take advantage of until ultimate failure of the system. At that point, Tesla will take the battery system back and recycle the materials.

c. **FCM Forecast Accuracy:** This represents our anticipated accuracy of forecasting the FCM peak each year for the duration of the program. Our FCM Peak accuracy has been 75% over the last 4 years which was the basis for our forward looking peak prediction accuracy including knowledge that we are leveraging more sophisticated tools than we have in the past. See Attachment GMP.DPS1.Q131.c.

**RNS Forecast Accuracy:** Similar to FCM, this is our anticipated accuracy of hitting the RNS peaks over the life of the program – note that this is a combination of peak prediction accuracy, and a function of duration of

discharge event. As the peak begins to flatten out over time, we anticipate needing to extend the discharge period for the battery systems. This ultimately means that we will have less power over a longer duration to assure peak capture. Our RNS peak accuracy over the last 3 years has been approximately 68%. See Attachment GMP.DPS1.Q131.c.

**Communication Availability:** This is an estimate of battery system downtime during a peak event due to a communication issue such as an internet connectivity issue or trouble communicating with the battery systems. We estimated a 10% loss due to connectivity issues at the time of a peak event. It should be noted that in the early days of this program none of the batteries in the program failed to perform due to a communication issue.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP & Chief Innovation Executive and Power Supply
Date: June 15, 2018

**DPS1.Q132. Please refer the native Excel spreadsheet workpaper provided for Exhibit GMP-JC-3 for the following requests:**

- **a. Please refer to the Tesla Power Supply Savings tab, cells B23 and B24, which provide the percentage probability of capturing the RNS and FCM peaks respectively. Please provide a detailed explanation of how these values were calculated. Please also provide supporting material in native format;**
- **b. Please refer to the Tesla Power Supply Savings tab, cell B35, which provides the "estimated savings multiplier (reserve req. plus saved system losses)." Please provide a detailed explanation of how this value was calculated and please provide supporting material in native format;**
- **c. Please refer to the Plant in Service Tab and please provide all calculations and supporting material used to develop the information contained in this tab. This should detail the basis for the Plant in Service, Accumulated Depreciation, Tax Deprecation, State Deprecation amongst other items;**
- **d. Please refer to the tab Revenue, Sales, Tesla PowerWall, cell D15. Please provide the source document "Copy of Copy of EIC Revenue 2019-2022 – Working File v7.xlsx". Please confirm whether the assumed sales value was finalized;**
- **e. Please refer to the tab Retail Sales Impact, Assumed Non-Power Supply Margin in $/MWh, cell D11. Please provide a detailed explanation of how this value was determined and please provide all supporting material in native format that was relied upon in its calculation.**

DPS1.A132.

a. Probability of capturing RNS Peak is 67%: Probability of capturing FCM peak is 72%. See Response to DPS1.Q131 which generally explains how the probabilities are derived. Note however, that we used a slightly higher RNS peak capture rate when only looking at the single year of the model. Our expectation is that there will be a decrease in RNS peak accuracy over time resulting in the total model RNS peak accuracy of 62%.

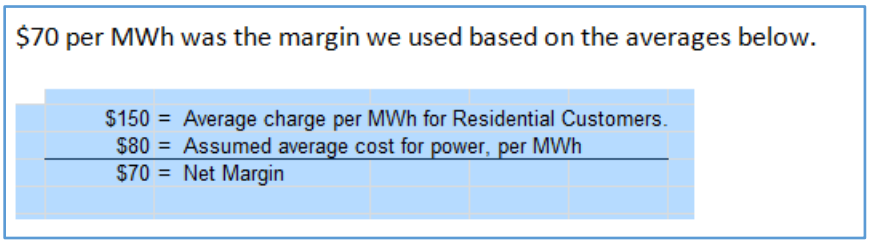
b. This value is a combination of the 'Reserve Requirement' which is tied to GMP's annual FCM obligation and the loss savings that occurs during peak conditions. Attached you will find our ISO reserve requirement calculation which has typically been in the 30-40% range but has recently hit 53%. Please see Attachment GMP.DPS2.Q132.b. Additionally, we estimate that our losses during peak times exceed 10%. The combination of this loss factor and the previous reserve requirement of approximately 40% is how we arrive at the 50% (or 1.5) value that is provided in Cell B35 of the document.

c. Please see Attachment GMP.DPS1.Q132.c.

d. Please see Attachment GMP.DPS1.Q132.d – EIC Revenue 2019-2022-Working File v7.

e. The $70 / MWh margin was developed in support of GMP's Innovative Products Tariff Filing (Docket No. 8794) and is utilized to quantify the approximate impact of the higher retail sales associated with heat pumps and heat pump water heaters. Figure 1 below contains a snapshot of the supporting material, as prepared by the analyst in the Energy Innovation Center, who no longer works at Green Mountain Power. For both consistency and simplicity, this $70 / MWh margin has been used in both the 2018 and 2019 cost of service filings.

Figure 1. Determination of $70 / MWh Margin




Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP & Chief Innovation Executive and Power Supply
Date: June 15, 2018

**DPS1.Q133. Please refer to Page 8, line 14 of Mr. Otley's prefiled testimony, where he discusses level 2 chargers at customers' homes. With respect to the level 2 chargers, please provide the following information:**

- **a. Please state the total number of level 2 chargers installed to date;**
- **b. Please state the customer share of installation cost of the level 2 chargers, if any;**
- **c. Please state the total capital improvement cost to install a level 2 chargers at a customer's home;**
- **d. The total cost of level 2 charger installations in GMP's rate base;**
- **e. Please state the number of curtailments GMP has successfully implemented for level 2 chargers during peak periods together with average duration of GMP's curtailment;**
- **f. To date, how often has GMP called upon the level 2 chargers to support the grid with capacity and/or frequency ride through capacity;**

DPS1.A133.

a. As of June 6, 2018, there are 111 Level 2 Residential chargers installed.

b. Participating customers are solely responsible for installation costs associated with the L2 chargers. This actual amount will vary by home.

c. GMP does not incur any capital costs associated with the installation of the L2 Chargers at customer homes.

d. These chargers have not been placed into rate base.

e. GMP has curtailed the L2 Chargers a total of 31 times since the beginning of the Pilot. Each curtailment lasts 3-4 hours.

f. Please see answer to e.

Person/s Responsible for Response: Josh Castonguay
Title of Person/s: VP & Chief Innovation Executive and Power Supply
Date: June 15, 2018

## Taxes

**DPS1.Q134. Please refer to Exhibit GMP-ER-1, schedule 1, for the following requests:**

**a. Please provide a copy of the exhibit GMP-ER-1 in native format:**

**b. Copies of the workpapers (in original format with all cells active) which support the detailed calculation for the Taxes – Federal and State for the column 9 Month Pro forma Balances (3) in the amount of $14,671; and**

**c. Copies of the workpapers (in original format with all cells active) which support the detailed calculation for the Taxes – Federal and State for the column Adjustment COL3-COL1 (2) in the amount of ($14,468).**

DPS1.A134.

a. See Attachment GMP.DPS1.Q134 for working Cost of Service model which includes Exhibit GMP-ER-1.

b. See Attachment GMP.DPS1.Q134, Income Tax tab for the calculation of Rate Period Income Taxes of $14,671.

c. The $14,468 represents the adjustment from the Test Period actual income tax expense of $29,139 to the Rate Period calculated expense of $14,671. See Attachment GMP.DPS1.Q134, COS tab, cells C306 – C309.

Person/s Responsible for Response: Eddie Ryan; Karen Young; George Gulian; Joann Janssen
Title of Person/s: Controller; Budget/Forecasting Supervisor; Director of Taxes; Senior Tax Accountant
Date: June 15, 2018

**DPS1.Q135. Please refer to Exhibit GMP-ER-1, Schedule 4, Deferred Costs, and please provide:**

- **a. Copies of the workpapers (in original format with all cells active) which support the detailed calculation for the Pro Forma Return of Recurring Level – Excess Deferred Tax in the amount of ($1,428);**
- **b. Copies of the workpapers (in original format with all cells active) which support the detailed calculation for the Pro Forma CAFC Perm in the amount of ($37);**
- **c. Copies of the workpapers (in original format with all cells active) which support the detailed calculation for the Pro Forma FAS 109 ITC Basis Adjustment in the amount of $5; and**
- **d. Copies of the workpapers (in original format with all cells active) which support the detailed calculation for the Pro Forma AFUDC Deferred Tax Adjustment in the amount of $4.**

DPS1.A135.

Note that the Attachment referenced below shows all amounts in dollars as opposed to thousands in the cost of service calculation file.

a. See Attachment GMP.DPS1.Q135, tab "FY 2019 Income Tax," cell H30

b. See Attachment GMP.DPS1.Q135, tab "FY 2019 Income Tax," cell H31

c. See Attachment GMP.DPS1.Q135, tab "FY 2019 Income Tax," cell H32

d. See Attachment GMP.DPS1.Q135, tab "FY 2019 Income Tax," cell H33

Person/s Responsible for Response: Eddie Ryan; Karen Young; George Gulian; Joann Janssen
Title of Person/s: Controller; Budget/Forecasting Supervisor; Director of Taxes; Senior Tax Accountant
Date: June 15, 2018

**DPS1.Q136. Please refer to Exhibit GMP-ER-9, line for SFAS 109 Reg Liab TCAJA Excess Tax, and please provide the following:**

- **a. Copies of the workpapers (in original format with all cells active) which support the detailed calculation for the SFAS 109 Reg Liab TCAJA Excess Tax in the amount of ($162,660,825) reflected there;**
- **b. Copies of all assumptions related to the re-measurement of the deferred taxes reserves as a result of the Tax Cuts and Jobs Act of 2017 ("TCJA") which resulted in GMP's SFAS 109 Reg Liab TCAJA Excess Tax in the amount of ($162,660,825) reflected there;**
- **c. If GMP utilizes PowerTax software for income tax purposes to develop deferred income tax reserves and annual changes, provide a copy of Report 257 as of December 31, 2017, from PowerTax reflecting the deferred tax reserves by deferred tax item prior to the re-measurement required by TCJA. If GMP uses a different tax software, please provide a copy of the report from that software that would include the detailed information requested.**
- **d. Copy of the PowerTax Report 257 or other tax software report as of December 31, 2017, which reflects the deferred tax reserves by deferred tax item after reflecting the re-measurement required by the TCJA.**
- **e. For each deferred tax item reflected on the PowerTax Report 257 or other tax software report as of December 31, 2017, identify each as either:**
  - **i. "Protected – Property-Related" – deferred tax item related to "Accelerated Depreciation" and therefore must be amortized over either the Average Rate Assumption Method ("ARAM") or the Reverse South Georgia Method ("RSGM");**
  - **ii. "Unprotected – Property-Related" – deferred tax item related to property, but not related to "Accelerated Depreciation" and therefore is not required to be amortized over either ARAM or RSGM, but can be over any reasonable amortization period;**
  - **iii. "Other" – deferred tax items which are not related to, or included in, the cost-of-service for customer rates.**
- **f. For all non-property related ADIT, please provide the following:**
  - **i. "Unprotected – Non-Property-Related" - deferred tax item not related to property, such as labor-related pensions, vacation, health benefits, deferred compensation, etc., and therefore not required to be amortized over either ARAM or RSGM, but can be over any reasonable amortization period.**
  - **ii. "Other" – deferred tax items which are not related to, or included in, the cost-of-service for customer rates.**
- **g. Copies of the projected "Protected – Property-Related" ARAM or RSGM amounts calculations for 2018 and 2019;**
- **h. Copies of the projected "Unprotected – Property-Related" Non-ARAM or RSGM amounts calculations for 2018 and 2019, including GMP's basis for its proposed amortization period;**

**i. Copies of the projected "Unprotected – Non-Property-Related" Non-ARAM or RSGM amounts calculations for 2018 and 2019, including GMP's basis for its proposed amortization period;**
**j. Copies of the projected "Other" Non-ARAM or RSGM amounts calculations for 2018 and 2019, including GMP's detailed basis demonstrating that the deferred tax items are not either directly or indirectly included in GMP's cost-of-service for transmission;**
**k. Did GMP utilize the "with and without" guidance from the IRS for the treatment of NOLs Excess ADIT as being "Protected" or "Unprotected?"**
**l. How does GMP propose to categorize the Repairs Deduction Excess ADIT item as "Protected," "Unprotected" or a combination of both depending on when the Repairs Deduction was taken for income tax purposes?**

DPS1.A136.

Note: GMP reports on a fiscal year basis, not a calendar year basis. Our fiscal year is October 1 to September 30 which is why our roll-forwards start at September 30, 2017. Due to IRC § 15, GMP must use a blended, statutory federal income tax rate for fiscal year 2018. Our federal income tax rate for FY 2017 was 35%; for FY 2018, 24.528%; and for FY 2019 it will be 21%. GMP will not know its final tax reform regulatory liability balance until after our FY 2018 tax return has been filed.

a. See Attachment GMP.DPS1.Q134 for working Cost of Service model, tab ADIT, cell M84. The projected regulatory liability balance for December 2018 shown on this attachment of $177,351,898 is an old estimate and should have been updated to reflect a beginning balance of $177,728,413. Using this updated estimated would result in a reduction to the cost of service of approximately $26,000.

b. The $162,660,825 is the 10-month average balance of the Excess Deferred Tax regulatory liability after projected return of $29,382,147 (grossed-up amount) to GMP retail customers between January 1, 2019 and September 30, 2019. The $29,382,147 represents the return of GMP protected and unprotected excess deferred taxes. Breakdown of individual components within the $29,382,147 and related assumptions can be seen on Attachment GMP.DPS1.Q135, tab K, cells A1–R8.

c. We are not familiar with the PowerTax software referenced in the question. Attached is a report rolling forward the ADIT balance from 9/30/17 to 9/30/18. GMP does not use PowerTax software. See Attachment GMP.DPS1.Q136. Deferred tax items prior to re-measurement at 9/30/2017 are found in column BG. Calculation for the impact of tax reform on the ADIT reflects the change from a 35% federal rate at September 30, 2017 to a 21% Federal rate and the

change from a blended federal rate (as required by IRC 15) of 24.5287% to 21% for FY 2018 activity.

d. GMP does not use PowerTax software. See Attachment GMP.DPS1.Q136. Deferred tax items after remeasurement at September 30, 2017 are found in column BK

e.
   i. See Attachment GMP.DPS1.Q136. Designations for "Protected – Property-Related" are found in column CC.
   ii. See Attachment GMP.DPS1.Q136. Designations for "Unprotected – Property-Related" are found in column CE.
   iii. See Attachment GMP.DPS1.Q136. Designations for "Other" are found in column CI.

f.
   i. See Attachment GMP.DPS1.Q136. Designations for "Unprotected – Non-Property-Related" are found in column CK.
   ii. See Attachment GMP.DPS1.Q136. Designations for "Other" are found in column CI.

g. See Attachment GMP.DPS1.Q135, tab K, cell A3-R3.

h. See Attachment GMP.DPS1.Q135, tab K, cell A4-R4.

i. See Attachment GMP.DPS1.Q135, tab K, cell A6-R6.

j. All revenues received from transmission customers under transmission tariffs are revenue credited back to GMP's retail customers within our retail cost of service filing so it is not necessary for GMP to breakout excess deferred taxes to be returned in future transmission tariff billings. Return of excess deferred taxes to transmission customers will result in a lower revenue credit in a future retail rate filing.

k. Yes. GMP utilized this methodology and determined 100% of the NOL was attributed to "Protected" plant.

l. GMP has categorized the repairs deduction excess ADIT as 'Unprotected Plant'

Person/s Responsible for Response: Eddie Ryan; Karen Young; George Gulian; Joann Janssen
Title of Person/s: Controller; Budget/Forecasting Supervisor; Director of Taxes; Senior Tax Accountant

Date: June 15, 2018

**DPS1.Q137. Please refer to Exhibit GMP-ER-16, Excess Deferred Taxes due to 2017 Tax Reform and COS Adj 14 Calculation of Income Tax with backup details V2 03 23 2018, tab K, and please provide the following (if not previously provided above):**

- **a. A detailed listing of all Excess ADIT items, including amounts, that compose the Protected Plant amount of ($86,920);**
- **b. Has GMP already grossed up the Excess ADIT balance that it is including in the Reg Liab for Protected Plant amount of ($86,920)? If yes, please provide copies of those calculations;**
- **c. For each Excess ADIT item GMP included in Protected Plant provide a detailed description of GMP's basis for categorizing the item as being Protected Plant;**
- **d. A detailed description of GMP's basis to amortize the Protected Plant Excess Deferred Taxes over 33 years using the Reverse South Georgia Method ("RSGM"), based on new depreciation study, in lieu of the Average Rate Assumption Method ("ARAM");**
- **e. A detailed listing of all Excess ADIT items, including amounts, that compose the Non Protected Plant amount of ($21,081);**
- **f. Has GMP already grossed up the Excess ADIT balance that it is including in the Reg Liab for Non Protected Plant amount of ($21,081)? If yes, please provide copies of those calculations;**
- **g. For each Excess ADIT item GMP included in Non Protected Plant provide a detailed description of GMP's basis for categorizing the item as being Non Protected Plant;**
- **h. A detailed listing of all Excess ADIT items, including amounts, that compose the Regulated "Other" amount of ($5,219);**
- **i. Has GMP already grossed up the Excess ADIT balance that it is including in the Reg Liab for Non Protected Plant amount of ($5,219)? If yes, please provide copies of those calculations;**
- **j. For each Excess ADIT item GMP included in Regulated "Other" provide a detailed description of GMP's basis for categorizing the item as being Regulated "Other";**
- **k. A detailed listing of all Excess ADIT items, including amounts, that GMP has categorized as "Other" and does not propose to return the excess to or recover the deficit from customers; and**
- **l. For each Excess ADIT item GMP included in "Other" provide a detailed description of GMP's basis for categorizing the item as being "Other."**

DPS1.A137.

a. See Attachment GMP.DPS1.Q136. The detail for the "Protected Plant" amount of $86,920 is found in column CC, cell CC352.

b. Yes, the Reg Liab for "Protected Plant" ($86,920) is grossed up. For calculations, please refer to Attachment GMP.DPS1.Q136, in columns BG through CK.

c. The rule for categorizing plant excess ADIT items as "Protected or Unprotected" is that protected plant ADIT items and their excess are those ADIT balances that result from using differing tax lives or tax depreciation rates than their book depreciation counterparts. These items within our protected plant category include tax over book depreciation and protected NOLs. The remaining items we have included as protected plant are the excess ADITs for CIAC, gain/loss on disposition of assets, IRC Section 263A capitalized interest, casualty loss, and cost of plant removal. The Company is proposing to amortize these costs over 33 years. If they were not being amortized over 33 years, and were instead "flowed" through to customers, they would result in an immediate increase in rates as the total of the excess ADIT of these items is a deferred tax asset.

d. GMP has reviewed its book and tax depreciation records and determined it does not have the granularity of detail required to calculate the amortization of its regulatory liability utilizing the Average Rate Assumption Method "ARAM". GMP will utilize the Reverse South Georgia Method "RSGM" of amortization as promulgated by the IRS. GMP will soon have a new depreciation study completed and has requested advice from its depreciation consultant regarding an estimate of the remaining book life of its plant assets. The consultant has indicated that, although not final, a 33 year average remaining book life of GMP's book assets is a good approximation. If, when the depreciation study is finalized, a different average remaining life is indicated, GMP will adjust the remaining regulatory liability amortization accordingly.

e. See Attachment GMP.DPS1.Q136. We are not familiar with the PowerTax software referenced in the question. Attached is a report rolling forward the ADIT balance from 9/30/17 to 9/30/18. The detail for the "Non- Protected Plant" amount of ($21,081) is found in column CE, cell CE352 of Attachment GMP.DPS1.Q136.

f. Yes, the Reg Liab for "Non-Protected Plant" ($21,081) is grossed up. For calculations, please refer to Attachment GMP.DPS1.Q136 in columns BG through CK.

g. Note, "Unprotected Plant" and "Non-Protected Plant" are the same category, referred to interchangeably. As mentioned in the reply to question l of DPS1.Q136 above, the GMP repairs deduction excess ADIT is considered non protected plant and is in fact the only item in this category. It is considered non-

protected plant because the ADIT was not the result of using differing tax lives or tax depreciation rates than the book depreciation counterparts

h. See Attachment GMP.DPS1.Q136. The detail for the Regulated "Other' Protected Plant amount of ($5,219) is found in column CK, cell CK352.

i. Yes, the Reg Liab for "Regulated – Other" ($5,219) is grossed up. For calculations, please refer to Attachment GMP.DPS1.Q136 in columns BG through CK.

j. The Regulated Other represents all Regulatory ADIT not categorized as 'Protected", "Non-Protected" or "Transco/GLC/GMP VT Solar". These items are recorded as regulated other regulatory liability because they (1) represent book to tax timing differences relating to income or expenses collected from customers (2) are deferred taxes that are included in rate base, or (3) the underlying business clearly is public utility related.

k. See Attachment GMP.DPS1.Q136. The detail for the "Non-Regulated Other" amount of ($585) is found in column CI, cell CI352.

l. The primary basis for categorizing these Excess ADIT items as "Other" is that they are non-regulated and not categorized in any other regulatory category. GMP has a total of eleven non-regulated ADIT items for which the total excess ADIT is $.5M, and these items are not included in any of the regulatory categories.

Person/s Responsible for Response: Eddie Ryan; Karen Young; George Gulian; Joann Janssen
Title of Person/s: Controller; Budget/Forecasting Supervisor; Director of Taxes; Senior Tax Accountant
Date: June 15, 2018

**DPS1.Q138. Please refer to Exhibit GMP-ER-16, Excess Deferred Taxes due to 2017 Tax Reform and COS Adj 14 Calculation of Income Tax with backup details V2 03 23 2018, tab K, and please provide the following (if not previously provided above):**

- **a. Detailed listing of all Excess ADIT items, including amounts that compose the Transco amount of ($64,509) (if available).**
- **b. Does the Transco amount of ($64,509) reflect the already grossed up Excess ADIT balance that GMP is including in the Reg Liab for Transco amount of ($64,509)? If yes, please provide copies of those calculations;**
- **c. A detailed description how the Transco amounts will flow from Transco to GMP and then to customers, i.e. is the Transco and GMP billed jointly to the customers?**
- **d. Does the Transco amount reflect both Protected and Non Protected amortization amounts in the same manner and categories as GMP? If not, please provide a detailed explanation and description of how the Transco has categorized its Excess Deferred Taxes;**
- **e. Is the Transco amortizing Protected Plant over 33 years? If not, please provide a detailed explanation?**
- **f. Is the Transco refunding the Non Protected Plant and Regulatory "Other", if applicable in the one year? If not, please provide a detailed explanation?**

DPS1.A138.

a. See Attachment GMP.DPS1.Q136. The detail for the "Transco / GLC / GMP VT Solar" amount of $64,509 is found in column CG, cell CG352. The Transco regulatory liability includes the excess ADIT for the GMP investments in the following: Transco ($60,582), GMP VT Solar ($3,635) and Green Lantern Solar ($292). Due to the format of federal and state partnership tax returns which do not provide details of the individual timing differences that give rise to the partnership ADIT, the excess ADIT balance is not broken out. It can be assumed that virtually all of the ADIT of these entities that are taxed as partnerships is due to the excess of tax over book depreciation.

b. Yes, the Reg Liab for "Transco / GLC/ GMP VT Solar" ($64,509) is grossed up. For calculations, please refer to Attachment GMP.DPS1.Q136 in columns BG through CK.

c. Transco will be utilizing the Average Rate Assumption Method ("ARAM") to amortize its regulatory liability. Under the ARAM, if timing differences for the property reverse, the amount of the adjustment to the regulatory liability for the excess deferred taxes is calculated by multiplying: (i) the ratio of the aggregate deferred taxes for the property to the aggregate timing differences for the property as of the beginning of the period in question, by; (ii) the amount of the timing differences that reverse during this period.

Transco will provide GMP with GMP's share of the amortization of the Transco regulatory liability and GMP will amortize its Transco regulatory liability by the same amount in lockstep. Therefore, the tax benefit GMP receives from the amortization of Transco's regulatory liability will be revenue credited to the benefit of GMP customers at the same time.

d. See Responses DPS1.Q138a and DPS1.Q138c above.

e. See Response DPS1.Q138c above.

f. See Response DPS1.Q138a above.

Person/s Responsible for Response: Eddie Ryan; Karen Young; George Gulian; Joann Janssen
Title of Person/s: Controller; Budget/Forecasting Supervisor; Director of Taxes; Senior Tax Accountant
Date: June 15, 2018

## Service Quality and Reliability

**DPS1.Q139. Please provide a list of all major storms (dates and duration) as defined in GMP's Service Quality and Reliability Performance, Monitoring & Reporting Plan ("SQRP") from 2014 to the present.**

DPS1.A139.

Below is a summary of the Major Storms as defined in GMP's SQRP from 2014.

| Start Date /Time | End Date / Time | Duration (days) |
|---|---|---|
| 7/3/14 4:38 AM | 7/6/14 3:12 PM | 3.44 |
| 12/9/14 3:00 PM | 12/17/14 10:00 PM | 8.29 |
| 7/23/16 3:00 PM | 7/25/16 11:36 PM | 2.36 |
| 5/5/17 3:00 PM | 5/8/17 12:30 AM | 2.40 |
| 10/29/17 7:30 AM | 11/4/17 5:30 PM | 6.42 |
| 4/4/18 3:45 PM | 4/6/18 10:00 PM | 2.26 |
| 5/4/18 6:00 PM | 5/7/18 3:30 AM | 2.40 |

Person/s Responsible for Response: Ken E. Couture
Title of Person/s: Leader of System Operations
Date: June 15, 2018

**DPS1.Q140. Please provide a list of the 10 Worst-Performing circuits on GMP's system for each year from 2014 to the present as defined in GMP's SQRP. Please also provide the following information:**

- **a. For each circuit, identify the factors underlying the performance of these circuits, and plans to improve the reliability of circuits. Provide all annual monitoring data for these circuits.**
- **b. For all capital improvements to the circuits, please provide project numbers budgets, completion dates and actual expenditures, if individual budgets exist for improvements to these circuits.**

DPS1.A140.

Please refer to Attachment GMP.DPS1.Q140 – 180612, which provides a list of the 10 Worst-Performing circuits on the tab labeled "DPS1.A14 10 Worst Circuits".

a. In the same attachment, please refer to the tab titled "DPS1.A140(a) Monitoring Data" which shows the outage events that have occurred on the 10 Worst-Performing circuits during the years in which the Circuits made the 10 Worst-Performing circuits list. Each row in the spreadsheet is an outage event. The Cause Code for each outage event identifies the root cause of the outage.

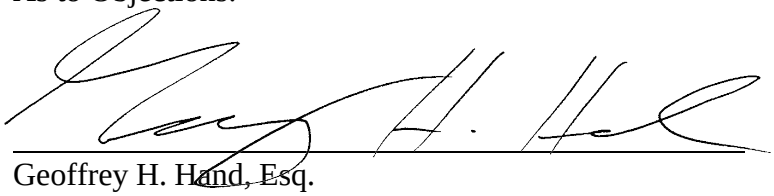
   GMP's Worst Performing circuit list is developed by ranking each circuit on its system by the number of customers affected by outages and by total customer outage hours. GMP uses the Worst Performing circuit list to serve as one of the criteria as to where and which types of investments should be made in order to improve system reliability. Please refer to the "Reliability Improvement Action Plan" in GMP's annual PUC Rule 4.900, Annual Reliability Reporting submissions for a discussion of how reliability projects are identified.

b. Please refer to the tab titled "DPS1.A140(b) Project Exp" for a list of capital improvements by Worst Performing circuit including circuit number, project number, project name/description, estimate (where available), total cost of project, and project closing date. Please note that if any monies were spent on the project during the period 2014 to present, the total lifetime project cost is included in the "total cost of the project" column.

Person/s Responsible for Response: Ken Couture; Michael Burke
Title of Person/s: Leader of System Operations; Chief Field Operations Executive
Date: June 15, 2018

Dated at Burlington, Vermont this 15th day of June, 2018.

As to Objections:



Geoffrey H. Hand, Esq.
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ghand@dunkielsaunders.com
emiller@dunkielsaunders.com
vwestgate@dunkielsaunders.com
*Attorneys for Green Mountain Power*

Dated at Colchester, Vermont this 12th day of June, 2018.

**Respondent Signature**

By: _____
Rob Bingel
Green Mountain Power

Subscribed and sworn before me this 12th day of June, 2018.

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

Dated at Colchester, Vermont this 13th day of June, 2018.

**Respondent Signature**

By: _____
Dawn Bugbee
Green Mountain Power

Subscribed and sworn before me this 13th day of June, 2018.

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

Dated at Colchester, Vermont this 13 day of June, 2018.

**Respondent Signature**

By: Michael Burke
Michael Burke
Green Mountain Power

Subscribed and sworn before me this 13 day of June, 2018.

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

Dated at Colchester, Vermont this 12th day of June, 2018.

**Respondent Signature**

By: _____
Josh Castonguay
Green Mountain Power

Subscribed and sworn before me this 12 day of June, 2018.

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

Dated at Colchester, Vermont this 13 day of June, 2018.

**Respondent Signature**

By: _____
Chris Cole
Green Mountain Power

Subscribed and sworn before me this 13 day of June, 2018.

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

Dated at RUTLAND, Vermont this 12th day of June, 2018.

**Respondent Signature**

By: _____
Ken Couture
Green Mountain Power

Subscribed and sworn before me this 12th day of June, 2018.

_____
Notary Public
Name of Notary: Joseph McKeown
Commission Expires: 2-10-19

Dated at MARLBOROUGH, MASS this 13th day of June, 2018.

**Respondent Signature**

By: _____
James Coyne
Concentric Energy Advisors, Inc.

Subscribed and sworn before me this 13th day of June, 2018.

_____
Notary Public
Name of Notary: DEBORAH-JEAN McGONIGAL
Commission Expires:

DEBORAH-JEAN MCGONIGAL
Notary Public
Commonwealth of Massachusetts
My Commission Expires
November 2, 2023

Dated at Rutland, Vermont this 12 day of June, 2018.

**Respondent Signature**

By: _____
Craig Ferreira
Green Mountain Power

Subscribed and sworn before me this 13th day of June, 2018.

_____
Notary Public
Name of Notary: Pamela L. O'Rourke
Commission Expires: 2-10-19

Dated at Rutland, Vermont this 12th day of June, 2018.

**Respondent Signature**

By: John Fiske
John Fiske
Green Mountain Power

Subscribed and sworn before me this 12th day of June, 2018.

Notary Public
Name of Notary: JOSEPH McKeown
Commission Expires: 2-10-19

Dated at RUTLAND, Vermont this 12th day of June, 2018.

**Respondent Signature**

By: George Gulian
George Gulian
Green Mountain Power

Subscribed and sworn before me this 12th day of June, 2018.

Joseph McKearin
Notary Public
Name of Notary: Joseph McKearin
Commission Expires: 2-10-19

JOSEPH McKEARIN NOTARY PUBLIC RUTLAND COUNTY VT

Dated at Rutland, Vermont this 12 day of June, 2018.

**Respondent Signature**

By: _____
Matthew Haley
Green Mountain Power

Subscribed and sworn before me this 12 day of June, 2018.

_____
Notary Public
Name of Notary: Joseph McKearin
Commission Expires: 2-10-19

JOSEPH McKEARN NOTARY PUBLIC RUTLAND COUNTY VT

Dated at Rutland, Vermont this 12 day of June, 2018.

**Respondent Signature**

By: _____
Joann Janssen
Green Mountain Power

Subscribed and sworn before me this 12 day of June, 2018.

_____
Notary Public
Name of Notary: Colleen A. Kelly
Commission Expires: 2-10-19

Dated at Colchester, Vermont this 12 day of June, 2018.

**Respondent Signature**

By: _____
Jason Lisai
Green Mountain Power

Subscribed and sworn before me this 12 day of June, 2018.

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

Dated at Colchester, Vermont this 13th day of June, 2018.

**Respondent Signature**

By: _____
Mari McClure
Green Mountain Power

Subscribed and sworn before me this 13th day of June, 2018.

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

Dated at Colchester, Vermont this 12 day of June, 2018.

**Respondent Signature**

By: _____
Jeff Monder
Green Mountain Power

Subscribed and sworn before me this 12th day of June, 2018.

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

Dated at Rutland, Vermont this 13 day of June, 2018.

**Respondent Signature**

By: Michele Nelson
Michele Nelson
VELCO

Subscribed and sworn before me this 13 day of June, 2018.

Notary Public
Name of Notary: Jaime Smyrski
Commission Expires: 2-10-19

Dated at Colchester, Vermont this 13th day of June, 2018.

**Respondent Signature**

By: _____
Brian Otley
Green Mountain Power

Subscribed and sworn before me this 13th day of June, 2018.

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

Dated at Rutland, Vermont this 12th day of June, 2018.

**Respondent Signature**

By: Andrew R. Quint
Andrew Quint
Green Mountain Power

Subscribed and sworn before me this 12th day of June, 2018.

Notary Public
Name of Notary: Bonnie L O'Rourke
Commission Expires: 2-10-19

Dated at RUTLAND, Vermont this 12th day of June, 2018.

**Respondent Signature**

By: Eddie Ryan
Eddie Ryan
Green Mountain Power

Subscribed and sworn before me this 12th day of June, 2018.

Notary Public
Name of Notary: Joseph McKearin
Commission Expires: 2-10-19

JOSEPH MCKEARIN NOTARY PUBLIC RUTLAND COUNTY, VT

Dated at Colchester, Vermont this 12 day of June, 2018.

**Respondent Signature**

By: _____
Gary Sexton
Green Mountain Power

Subscribed and sworn before me this 12 day of June, 2018.

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

Dated at Rutland, Vermont this 13 day of June, 2018.

**Respondent Signature**

By: _____
Kirk Shields
Green Mountain Power

Subscribed and sworn before me this 13th day of June, 2018.

_____
Notary Public
Name of Notary: Melissa Stevens
Commission Expires: 2-10-19

Dated at Colchester, Vermont this 12 day of June, 2018.

**Respondent Signature**

By: Douglas Smith
Doug Smith
Green Mountain Power

Subscribed and sworn before me this 12 day of June, 2018.

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

Dated at Rutland, Vermont this 12th day of June, 2018.

**Respondent Signature**

By: _____
Charles "Chuck" Watts
Green Mountain Power

Subscribed and sworn before me this 12th day of June, 2018.

_____
Notary Public
Name of Notary: Bonnie L. O'Rourke
Commission Expires: 2-10-19

Dated at Rutland, Vermont this 12th day of June, 2018.

**Respondent Signature**

By: Karen Young
Karen Young
Green Mountain Power

Subscribed and sworn before me this 12th day of June, 2018.

Melissa Stevens
Notary Public
Name of Notary: Melissa Stevens
Commission Expires: 2-10-19

**STATE OF VERMONT**
**PUBLIC UTILITY COMMISSION**

Case No. 18-0974-TF

| | |
|---|---|
| Tariff filing of Green Mountain Power requesting a | ) |
| 5.45% increase in its base rates effective with bills | ) |
| rendered January 1, 2019, to be fully offset by bill | ) |
| credits through September 30, 2019 | ) |

## LIST OF DOCUMENTS PRODUCED
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June 15, 2018

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