

STATE OF VERMONT
PUBLIC UTILITY COMMISSION

- Petition of GMP MicroGrid-Milton, LLC, pursuant to 30 V.S.A. § 248, for a certificate of public good authorizing the installation and operation of a 4.99 MW solar electric generation facility and 2 MW battery storage facility to be located off of Mears Road in Milton, Vermont.) Case No. 17-5003-PET
- Petition of GMP MicroGrid-Ferrisburgh LLC for a Certificate of Public Good, pursuant to 30 V.S.A. § 248, authorizing the installation and operation of up to a 4.99 MW solar electric generation facility and 2 MW battery storage facility to be located off of Greenbush Road in Ferrisburgh, Vermont and to be known as the “GMP MicroGrid-Ferrisburgh Project”) Case No. 17-5236-PET
- Tariff filing of Green Mountain Power requesting an increase in its base rates starting January 1, 2019, to be fully offset by bill credits through September 30, 2019) Case No. 18-0974-TF
- Petition of GMP-Essex Solar/Storage LLC for a Certificate of Public Good, pursuant to 30 V.S.A. § 248, authorizing the installation and operation of a 4.5 MW solar electric generation facility and 2 MW battery storage facility to be located off of River Road in Essex, Vermont and to be known as the “GMP-Essex Solar/Storage Project”) Case No. 18-2902-PET

MEMORANDUM OF UNDERSTANDING:
JOINT VENTURE SOLAR/STORAGE PROJECTS

Whereas, the parties to this Memorandum of Understanding (“MOU”) are Green Mountain Power Corporation (“GMP”) and the Vermont Department of Public Service (“Department”) (collectively, “the MOU Parties”); and

Whereas, GMP has petitioned the Public Utility Commission (“Commission”) to issue a Certificate of Public Good (“CPG”) under 30 V.S.A. § 248 for three Joint Venture Solar/Storage Projects (“JV Projects”) which combine solar electric generation and battery storage, comprising the following projects:

- The GMP MicroGrid-Milton, LLC project to be located in Milton, Vermont, pending before the Commission under Case No. 17-5003-PET (“the Milton JV Project”);
- The GMP MicroGrid-Ferrisburgh LLC project to be located in Ferrisburgh, Vermont, pending before the Commission under Case No. 17-5236-PET (“the Ferrisburgh JV Project”); and
- The GMP-Essex Solar/Storage LLC project to be located in Essex, Vermont, pending before the Commission under Case No. 18-2902-PET (“the Essex JV Project”); and

Whereas, GMP has also filed a traditional rate case for the period January 1, 2019 through September 30, 2019, which is pending before the Commission under Case No. 18-0974-TD (“the Rate Case”); and

Whereas, GMP has calculated that the revenue from the Regional Network Services (“RNS”), Capacity and Regulation settlement for the JV Projects will provide approximately \$8.6 million in net present value benefits for customers in the first 10 years (\$46.9 million total nominal value), based on GMP’s forecasts of the JV Projects’ battery storage performance and of future market conditions; and

Whereas, the Department has indicated that the JV Projects will promote the general good of the State of Vermont under 30 V.S.A. § 248, if the JV Projects’ benefits are sufficiently assured; and

Whereas, the Department has raised concerns in the Rate Case regarding the impact of the JV Projects on GMP’s rates; and

Whereas, GMP wishes to ensure that it can deliver the controllable aspects of battery storage performance, while providing financial assurance for customers in the event that the battery portions of the JV Projects or market expectations suffer poor outcomes, by equitably sharing risks; and

Whereas, the MOU Parties recognize that GMP has a greater degree of control over the JV Projects’ battery operational performance, and lacks significant control over market factors that affect the JV Projects’ battery financial performance; and

Whereas, the MOU Parties wish to resolve their outstanding issues related to financial performance for the JV Projects in the relevant CPG proceedings, and in the Rate Case; and

Whereas, the MOU parties also wish to resolve certain other outstanding issues with respect to the JV Projects’ compliance with the section 248 criteria; and

Whereas, the MOU Parties also wish to outline a process and criteria for the selection of future storage projects greater than 1 MW, and to set forth the process for reviewing the performance of the JV Projects;

Therefore, the MOU Parties agree as follows:

Future Project Selection

1. Before selecting any future storage project greater than 1 MW, GMP will conduct a:
 - a. System-Wide Analysis.
 - i. GMP will undertake a system-wide analysis with no bias toward any particular resource or solution to develop a list of key distribution system criteria that will help

identify locations where storage capabilities (including batteries) and flexible loads would provide, in addition to economic benefits:

- A. Distribution system benefits (reliability, resilience, power quality).
 - B. Facilitation of integration of distributed energy resources.
- ii. The system-wide analysis will be designed to take into account relevant factors including but not limited to the following criteria:
- I. Current loading (min/max);
 - II. Connected DG capacity as a percentage of circuit capacity; and
 - III. Reliability metrics such as circuit level average interruption frequency and duration performance.
- iii. GMP will consult with the Department prior to conducting the above analysis, including regarding appropriate use of industry-accepted methods of analysis, and GMP will work with the Department as GMP develops its analysis to help prevent potential disputes.
- b. Individual Project Analysis. For any individual project proposed, GMP will undertake an individual project analysis, including the following steps.
- i. Identify expected value streams for the project and how these are quantified or qualitatively evaluated, as appropriate. The factors to be analyzed in this determination include:
 - A. Economic benefits (e.g., capacity and Regional Network Services (“RNS”) reduction).
 - B. Distribution system benefits (e.g., reliability, resilience, power quality).
 - C. How the project facilitates integration of distributed energy resources.
 - D. The potential for third-party cost and benefit sharing (e.g., if a critical facility such as a hospital would gain a resilience benefit, a contribution from the hospital to the overall cost of the project could be explored).
 - ii. Identify and estimate all expected costs to achieve the project’s expected value streams.
 - iii. Conduct a rigorous and transparent least-cost, best-fit alternatives analysis for these factors to determine whether different actions could produce similar benefits, recognizing that different projects produce different specific benefits that do not fully overlap, by:

- A. Evaluating or, when appropriate, competitively soliciting customer-side solutions, including load management or aggregation of customer loads by third parties.
- B. Considering rate design alternatives or targeted (location-based) incentives that deliver similar capabilities.

Among the criteria that GMP will consider in assessing alternatives are time to market/time to construct benefits and complexity of implementation.

- c. The presumption is that a competitive procurement for delivering the proposed project and/or all of its major components will be conducted. As an alternative, GMP can conduct periodic procurement solicitations for specific system needs related to these types of projects.

Financial/Performance Assurance

- 2. **Generally.** GMP will provide a Financial/Performance Assurance with regard to the JV Projects. The purpose of the Financial/Performance Assurance will be to measure GMP's actual operational management of the battery storage assets over time, as defined below, and to identify positive or negative variances from GMP's forecasts for value realized by customers, in order to appropriately allocate between GMP and customers variances exceeding a specified threshold.
- 3. **Terms.**
 - a. Annually GMP will prepare and submit to the Department a 10-year actual net present value ("NPV") calculation using the spreadsheet contained in Exhibit 1 to this MOU. In each year, the actual NPV will consist of the actual JV Projects' results for years completed and the values originally forecasted by GMP for the balance of the 10 years (as set forth in Exhibit 1).
 - b. Within 6 months following the end of operating years 5 and 10, GMP will prepare a 10-year NPV calculation based upon *actual* RNS, Capacity and Regulation settlement data for the JV Projects' batteries for the completed years and the forecasted values for the remainder years (the "actual battery 10-year NPV"). The actual battery 10-year NPV will be compared to the 10-year RNS, Capacity and Regulation battery NPV as forecasted in the financial model attached as Exhibit 1 (which is substantially identical to the project forecasts submitted in the JV Projects CPG proceedings).
 - c. At both the 5- and 10-year measurement period, if the actual battery 10-year NPV benefits are 0-15% above or below the forecasted values, then the batteries are deemed to be on track to meeting the estimated lifetime NPV benefits and the Financial/Performance Assurance will not apply.

- d. If the 10-year NPV benefits differ from the forecasted values by more than 15% above or below the forecasted values at each measurement period, then the following sharing mechanism will be triggered.
- i. Total positive or negative variances will be calculated as two components: Volume Variance and Market Price Variance.
- A. Volume Variance. Volume Variance will describe GMP's asset management performance. The Volume Variance on a fiscal year basis shall consist of the sum of the individual monthly RNS, Forward Capacity Market ("FCM"), and Regulation volume variances. For each of those three areas, the volume variance is defined as the difference between the actual and forecasted volumes multiplied by the original forecasted price per unit of measure. Please see the volume variance calculations in the tabs "RNS," "FCM," and "Regulation" of Exhibit 1 to this MOU.
- The Volume Variance is weighted by 80%.
- B. Market Price Variance. Market Price Variance will describe differences driven by market pricing changes for the RNS, Capacity and Regulation. The Market Price Variance on a fiscal year basis shall consist of the sum of the individual monthly RNS, FCM, and Regulation price variances. For each of those three areas, the market price variance is defined as the difference between the actual and forecasted prices multiplied by the actual volumes achieved. Please see the market price variance calculations in the tabs "RNS," "FCM," and "Regulation" of Exhibit 1 to this MOU.
- The Market Price Variance is weighted by 10%.
- ii. Total Variance.
- A. Total Variance is the sum of the weighted Volume and Market Price Variances. The "Dashboard" of Exhibit 1 to this MOU contain the formal summarized variance calculations.
- B. Total Variance on an NPV basis will be compared to the forecasted 10-year NPV for the same measurement period. In year 5, the rate adjustment (if any) will consist of the totals of the values shown for "GMP Share of Volume Variance" and "GMP Share of Price Variance" on the Dashboard tab of Exhibit 1 to this MOU. In year 10 the rate adjustment (if any) will consist of the values shown on the dashboard, net of any adjustments made in year 5.
4. At no point will the Financial/Performance Assurance provide for a positive benefit to GMP if the Total Variance is negative. Any payments eliminated in the five-year measurement period under this subparagraph will still count toward the calculation for the ten-year measurement period.

5. Funding Mechanism. If a positive or negative Total Variance in operating years 5 or 10 requires a rate adjustment, then GMP will petition the Commission to make that adjustment in the following rate year.

Project-Specific Terms

6. Before implementing islanding functions for the JV Projects, GMP will petition the Commission for approval under 30 V.S.A. § 248(j).
7. Milton JV Project. As described in testimony in the CPG proceeding for the Milton JV Project, GMP will coordinate with the Department to hold a post-construction site visit during the first leaf-off season following completion of construction of the Milton JV Project to assess the need for landscape screening. If the Department believes that additional landscape screening is required, it will notify GMP. In that case, the MOU Parties will make good faith efforts to agree upon a landscaping plan, which will be implemented by GMP. If no agreement is reached, the parties will petition the PUC for resolution. With this landscape screening condition and the other provisions as set forth in this MOU, the Parties agree that the Milton JV Project satisfies the Section 248(b) criteria and promotes the general good of the State. Upon approval of the MOU, the Commission may approve the Milton JV Project and issue an Order and CPG in accordance with the plans and specifications submitted with the Milton Project Petition, as modified by the supplemental prefiled testimony and exhibits filed by GMP and including the terms and conditions of this MOU.
8. Ferrisburgh JV Project. The MOU Parties agree that the Ferrisburgh JV Project fulfills the requirements of 30 V.S.A. § 248(b)(2), (b)(4), (b)(6), and (b)(7) upon approval of this MOU, provided that it is constructed and operated in accordance with the plans and specifications submitted with the petition, as modified by supplemental prefiled testimony and exhibits filed by GMP, and including the terms and conditions of this MOU.
9. Essex JV Project. The MOU Parties agree that the Essex JV Project fulfills the requirements of 30 V.S.A. § 248(b)(2), (b)(4) (b)(6), and (b)(7), upon approval of this MOU, provided that it is constructed and operated in accordance with the plans and specifications submitted with the petition, and including the terms and conditions of this MOU.

General Terms

10. The obligations in this agreement will terminate after the 10-year measurement period.
11. GMP will use the term “microgrid” for the JV Projects and other projects only if the project is configured to, and can, connect and disconnect from the grid to enable it to operate in both grid-connected or island mode.
12. The parties recognize that significant changes in market structure could affect the ability of the JV Projects to meet the referenced financial pro-forma, i.e., a change to how FCM is calculated or ISO rule revisions, and agree that the Financial/Performance Assurance may be modified if

such significant changes to market structure occur. In the event the parties are unable to agree regarding whether a market structure change is significant for purposes of this provision and what resulting modification are appropriate, they will seek an order from the Commission on the matter.

13. In the event of force majeure, i.e., catastrophic damage/sabotage/failure, the Financial/Performance Assurance will terminate for the Project(s) affected. If the parties are unable to agree regarding whether a force majeure event for purposes of this provision has occurred, they shall seek an order from the Commission on the matter.
14. If one or more of the JV Projects is sold to another party, then this MOU will terminate at the time of sale for each JV Project sold, but will remain in effect for unsold Projects.
15. The MOU Parties agree that the Financial/Performance Assurance applies narrowly and specifically only to the JV Projects, and shall not apply more broadly now or in the future to other GMP projects, generation or power purchase choices. This MOU shall not be construed by any party or tribunal as having precedential impact on any future proceeding involving the MOU Parties, except as necessary to implement this MOU or to enforce an order of the Commission resulting from this MOU.
16. The MOU Parties agree that to the extent any testimony or evidence submitted in the Commission proceedings for the JV Projects or the Rate Case materially differs from the provisions of this MOU, the provisions of the MOU shall control.
17. Except as otherwise provided herein, the MOU Parties agree that this MOU shall be effective, and shall bind the MOU Parties hereto, only if the Commission issues an order in this case containing terms consistent with this MOU in all material respects.
18. The MOU Parties have made specific compromises to reach the agreements reflected in this MOU.
19. This MOU may be modified only upon mutual written agreement by the MOU Parties, and is subject to any necessary Commission approvals.
20. The MOU Parties agree that should the Commission reject or fail to approve this MOU substantially in its entirety, the MOU Parties' agreements set forth herein shall terminate if so requested by the Department or GMP, in which case the MOU Parties respectfully reserve the right to file briefs and reply briefs advocating different positions than those set forth in this MOU.
21. This MOU is governed by Vermont law and any disputes under this MOU shall be resolved by the Commission.
22. The Department will support issuance of the orders and findings of the Commission specified herein subject to the Department's obligations under Title 30 of the Vermont Statutes Annotated.

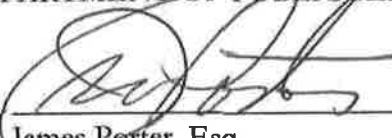
23. The parties, in accordance with 3 V.S.A. § 811, hereby waive the opportunity to file exceptions and present briefs and oral arguments with respect to a proposal for decision to be issued with respect to the JV Milton case, provided that the proposal for decision is consistent in all material respects with this MOU.

[Signature Pages Follow]

Dated at Montpelier, Vermont this 24th day of September, 2018.

STATE OF VERMONT
DEPARTMENT OF PUBLIC SERVICE

By: _____


James Porter, Esq.
Director for Public Advocacy

Dated at Burlington, Vermont this 25th day of September, 2018.

GREEN MOUNTAIN POWER

By: 

Elizabeth H. Miller, Esq.
Attorney for Green Mountain Power

By: 

Andrew Raubvogel, Esq.
Attorney for Green Mountain Power