STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Petition of Green Mountain Power for a Certificate of Public Good pursuant to 30 V.S.A. § 248(j), authorizing the installation and operation of a battery storage system on the GMPSolar Panton Project site located in Panton, Vermont, to be known as the "GMP Panton Battery Storage Project"	))))))	Case No. 17-2813-PET

GREEN MOUNTAIN POWER'S MOTION FOR NON-SUBSTANTIAL CHANGE DETERMINATION & REPORT ON MICROGRID EVALUATION

Green Mountain Power Corporation ("GMP"), holder of the Certificate of Public Good ("CPG") for the above-referenced project, hereby notifies the Public Utility Commission of minor proposed equipment changes to the GMP Panton Battery Storage Project ("Battery Project") that GMP seeks to install in order move forward with adding islanding potential to the Panton Battery Storage Project and provides the Commission and the Department of Public Service ("Department") with a summary of GMP's evaluation of microgrid islanding information, as required by Condition 8 of the CPG for this facility. The proposed equipment changes, described below and in the accompanying affidavits and exhibits, will allow the Battery Project to be able to island[1] a portion of the Town of Panton in the event of an outage situation. The addition of the equipment required for islanding is minor in nature, and does not have the potential to impact any of the Commission's conclusions regarding the Battery Project's compliance with the applicable Section 248 criteria. As such, GMP respectfully requests that the Commission issue a determination that these changes are non-substantial in nature. Alternatively, if the Commission does find that

[1] We note that GMP uses the terms "island" and "microgid" interchangeably to describe a network of electricity customers with a local source of supply that is normally attached to a broader distribution grid but is also able to function independently of the larger grid.

these are material or substantial changes, GMP moves for Commission approval of the changes through an amendment to the CPG.

I. Introduction & Microgrid Evaluation Report

The GMP Panton Battery Storage Project is a 1 MW/4 MWH battery energy storage system located on the same site as the 4.9 MW GMPSolar Panton Solar Project in Panton, Vermont. The Battery Project is located entirely inside of the fenced portion of the solar facility.

Because of the small size of the Battery Project and its location within the existing solar facility, GMP filed a petition for a CPG for the Battery Project pursuant to Section 248(j) on April 10, 2017. As part of the petition, GMP explained its intention to implement islanding capability for the Battery Project at some future point, so that the Battery Project would be able to disconnect a defined geographic area within the Town of Panton from the bulk grid, and provide power to this area from local distributed and stored energy during planned outages or emergency situations. See, e.g., Shields direct pft. at 3; Belarmino direct pft. at 10.

The Battery Project was issued a CPG in January 2018, and was amended on February 16, 2018 to correct minor clerical mistakes. The Battery Project was commissioned on July 31, 2018. One of the conditions to the CPG (Condition #8) is that GMP provide the Department and the Commission with an annual report for the first three years of the Project's operation that includes, among other things, a summary of insights gained by GMP regarding battery operations, market participation, or microgrid development. Previous reports were filed on December 17, 2018 and December 16, 2019.

Since the Battery Project began operating, GMP has been developing plans to add the necessary equipment and system upgrades to the Battery Project in order to facilitate islanding capability. It is GMP's understanding that to date, successful distribution circuit islanding has been

largely limited to generation technology utilizing a rotating machine, such as a diesel generator, to provide stronger fault current and stability to an islanded system. As a result, it has taken GMP several years to find the right design partner and determine the best way to create an inverter-based distribution island.

GMP has since partnered with Schweitzer Engineering Laboratories ("SEL") and TESLA to study and design the protection and control system that would allow for a safe, stable and reliable islanding system utilizing only inverter based systems such as battery storage and solar. Between SEL's expertise in protection and control systems, TESLA's understanding of the battery system, and GMP's distribution system protection experience, GMP found the right team to get the design done. As expected, the most difficult aspect of the design was to assure that while operating in island mode with a limited amount of fault current from inverter-based sources, GMP would be able to assure the system could operate safely so that all of the typical protection on the distribution circuit and in customer homes and businesses would work appropriately. With SEL's help, GMP was able to design a protection scheme that would assure the safety and reliability of the system while in island mode. GMP also learned that while operating in island mode, the system would need an alternate grounding source. This was what drove the requirement for the 1500 kVA pad-mounted grounding transformer. This transformer will assure that the system has a solid and stable ground once it transitions to islanded operation. Creating a distribution island with the Battery Project represents a significant achievement for GMP and its partners, with potential for industry-wide interest in the Project and its advancement of inverter-based islanding.

Based on the above, GMP ultimately determined that the equipment required to facilitate islanding through the Battery Project was relatively limited. Specifically, GMP determined that the necessary added equipment are a pad-mounted transformer and a recloser unit to be located

adjacent to the existing Project infrastructure, which already includes both a transformer and recloser. A Revised Site Plan showing the exact location of the proposed added equipment is included as *Attachment 1*. In addition, two pole-mounted reclosers will need to be added to existing power poles on the distribution line along Panton Road and Jersey Street, and one existing pole-mounted recloser will be replaced. See *Affidavit of Kirk Shields,* Figure 1. As explained in more detail below and confirmed in the accompanying affidavits of Kirk Shields, Paul Nadeau, Mark Kane, and Greg Dixson, these changes are non-substantial in nature and have no potential for impact—and certainly no significant impact—under any applicable Section 248 criteria.

II. Description of Changes

The Battery Project's existing equipment includes an enclosed bank of battery units, switchgear, a 1500 kVA pad-mounted transformer and a pad-mounted recloser. GMP proposes to add an additional 1500 kVA pad-mounted transformer and pad-mounted recloser containing communication equipment that would be placed on top of a new section of gravel on the east side of the Project, directly adjacent to the existing units. See *Attachment 1*. The added equipment and pad would increase the impervious surface on the site by approximately 1,140 square feet or 0.03 acres, but would not cause the total amount of impervious surface on the Battery Project site to go above one acre. The three pole-mounted reclosers would be mounted on existing GMP distribution poles in Panton and would not result in any changes to the Battery Project footprint or design. See *Shields Affidavit,* Figure 1. In addition, some additional communication equipment will be installed in the existing relay cabinet at the Panton Battery Project to assist with microgrid control and protection.

III. Memorandum of Law

Under PUC Rule 5.408, an amendment to a CPG is required for a "substantial change" in a project's approved proposal, where the change "has the potential for significant impact" with respect to any of the criteria of section 248(b) or section 248(a). In addition, CPG Condition 1 provides that "[a]ny material deviation from these plans or a substantial change to the Project must be approved by the Commission." The Commission has held in previous cases that the standard for a material deviation is effectively the same as the Rule 5.408 standard for substantial change. *Petition of Vermont Community Wind Farm LLC for a Certificate of Public Good*, Order Re Amendment Requirement and Sanctions (Docket No. 7526, at 8-9 (Jan. 6, 2010)).

As indicated below and attested to in the attached affidavits of Kirk Shields, Paul Nadeau, Mark Kane, and Greg Dixson, the addition of the limited equipment required to add islanding capabilities to the Battery Project and the corresponding distribution upgrades do not have the potential to cause significant impacts under any Section 248(b) criteria or the general good of the state under Section 248(a).

Section 248 Criterion	**Potential for Significant Impact Assessment**
Section 248(b)(1) – Orderly Development	No change from the as-approved Project, but supported by the Town of Panton. *See Attachment 2*.
Section 248(b)(2) – Need for the Project	No potential for significant impact and will increase GMP's ability to provide service to islanded Panton customers during outages. *See Shields Affidavit*
Section 248(b)(3) – System Stability/Reliability	No potential for significant impact; GMP has confirmed interconnection possible without adverse impacts (*See Nadeau Affidavit*).
Section 248(b)(4) – Economic Benefits	No potential for significant impact. *See Shields Affidavit*.
Section 248(b)(5) and (b)(8) – Environmental Considerations:	No potential for significant impact, as follows:
• Air Purity, Headwaters, Waste Disposal, Water Conservation/Use/Supply, Floodways, Streams,	No change from as-approved Project; proposed new equipment is located within the existing Project fenced area and will avoid any existing natural resources within that boundary. *See Attachment 1*.

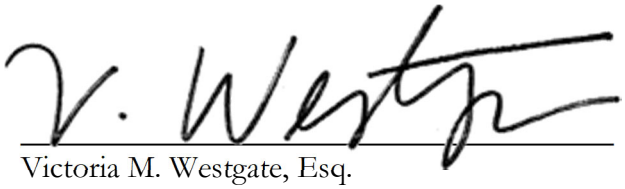
Shorelines, Wetlands, Outstanding Resource Waters, Traffic, Municipal/Educational Services, Historic Sites, RINA, Endangered Species, Public Investments, Public Health and Safety, Natural Resources, Greenhouse Gas	
• Wildlife Habitat	No potential for significant impact; installation of new equipment will comply with CPG Condition 5 regarding osprey nest on the eastern edge of the Project parcel. The proposed additional equipment is located over 1600 feet from the osprey nest and is anticipated to be installed in Fall 2020 at earliest. *See Attachment 1.*
• Water Purity	No potential for significant impact; transformer will be equipped with secondary oil containment system. *See Dixson Affidavit; Attachment 1.*
• Soil Erosion	No potential for significant impact; minor amount of additional impervious surface proposed but does not exceed one-acre threshold. *See Dixson Affidavit.*
• Aesthetics	No potential for significant impact; Project already contains like-kind equipment and will be located behind fence line and mitigation plantings. *See Kane Affidavit.*
• Primary Agricultural Soils	No potential for significant impact; minor amount of PAS soils will be stockpiled on site as needed according to soil guidelines. *See Dixson Affidavit.*
Section 248(b)(6) – Integrated Resource Plan	No potential for significant impact. *See Shields Affidavit.*
Section 248(b)(7) – Electrical Energy Plan	No potential for significant impact. *See Shields Affidavit.*
Section 248(b)(9) – Waste-to-Energy Facility	Not applicable.
Section 248(b)(10) – Transmission Facilities	No change from the as-approved Project. *See Nadeau Affidavit.*
Section 248(s) – Setbacks	No change from the as-approved Project. *See Attachment 1.*

IV. Conclusion

Based on the above, and confirmed in the attached affidavits and materials, the proposed changes to the Battery Project as approved are minor in nature and do not have the potential to cause significant impacts under any of the criteria of Section 248(b) or the general good of the State under Section 248(a). GMP therefore respectfully requests that the Commission issue a determination as soon as possible that the described changes are not a material or substantial change to the Battery Project. In the alternative, should the Commission find that these changes have the potential for significant impact, GMP requests that the Commission approve these changes based on the supporting information provided and issue an amendment to the CPG. In addition, GMP requests that the Commission and Department consider this filing as satisfying the requirements of subsection (d)(iv) to Condition 8 of the Battery Project CPG for this year.

DATED at Burlington, Vermont this 15th day of July, 2020.

BY: GREEN MOUNTAIN POWER CORPORATION



Victoria M. Westgate, Esq.
Geoffrey H. Hand, Esq.
Dunkiel Saunders Elliott Raubvogel & Hand, PLLC
91 College Street, P.O. Box 545
Burlington, VT 05401
802-860-1003
vwestgate@dunkielsaunders.com
ghand@dunkielsaunders.com