STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 21-____-NMP

Petition of Putney Green Acres Solar LLC,	)
pursuant to 30 V.S.A. §§ 248 and 8010, for a	)
certificate of public good to install and operate a	)
500 kW (AC) solar electric generation facility to be	)
located in Putney, Vermont	)

PREFILED TESTIMONY AND EXHIBITS OF MARTHA STASKUS ON BEHALF OF PUTNEY GREEN ACRES SOLAR LLC

Exhibit List

Exhibit PGAS-MS-1	Martha Staskus Resume
Exhibit PGAS-MS-2	Site Plan
Exhibit PGAS-MS-3	Elevation Drawings
Exhibit PGAS-MS-4	Equipment Data Sheets
Exhibit PGAS-MS-5	Agency of Natural Resources Brownfield Certification
Exhibit PGAS-MS-6	Orderly Development, Aesthetics, and Historic Sites Assessment
Exhibit PGAS-MS-7	GMP Feasibility Study and Letter Required by PUC Rule 5.107(C)(10)(a)
Exhibit PGAS-MS-8	Sound Analysis
Exhibit PGAS-MS-9	Rail Crossing ROW
Exhibit PGAS-MS-10	Response to 45-Day Notice Comments

Q1. Please state your name, occupation, and business address.

A1. My name is Martha Staskus. I am Chief Development Officer of Norwich Technologies, Inc. ("Norwich Solar"), which has offices at 15 Railroad Row, Suite 101, White River Junction, Vermont 05001. Norwich Solar is the selected contractor to install and operate the 150 kW ground mounted solar electric generation array (the "Putney Green Acres Solar Project" or "Project") for Putney Green Acres Solar LLC (the "Applicant").

Q2. Please describe your educational background and professional experience.

A2. My background and professional experience are presented in my resume which is offered with my testimony as Exhibit PGAS-MS-1.

Q3. What is the purpose of your testimony?

A3. My testimony describes the Project, the proposed installation schedule, and addresses the following Section 248(b) and (s) review criteria applicable to the Project: orderly development, aesthetics, historic sites & municipal screening (30 V.S.A. § 248(b)(1), 30 V.S.A. § 248(b), & 30 V.S.A. § 248(s)); system stability and reliability and impacts on the transmission system (30 V.S.A. §§ 248(b)(3) and (b)(10)); noise (30 V.S.A. § 248(b)(5)); greenhouse gas emissions (30 V.S.A. § 248(b)(5)); public health & safety (30 V.S.A. § 248(b)(5)); solar setbacks (30 V.S.A. 1 § 248(s)); waste disposal (10 V.S.A. § 6086(a)(1)(B)); water conservation

(30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(1)(C)); sufficiency of water and burden on existing supply (30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(2) & (3)); soil erosion (30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(4)); transportation systems/traffic (30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(5)); educational and municipal impacts (30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(6) & (7)); development affecting public investments (30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(9)(K)). I also provide a summary of comments received in response to the 45-day notice, explain the Project's preferred site status, and present the decommissioning plan.

Project Development and Ownership

Q4. Please describe the role that Norwich Solar has with respect to development and ownership of the Putney Green Acres Solar Project.

A4. Norwich Solar, the project developer of the proposed facility, is a Vermont-based company that offers its solar research, development, and installation services to individuals, schools, municipalities, businesses, and non-profits, both in Vermont and New Hampshire. Part of Norwich Solar's business portfolio aims to meet the demand from retail electric customers and investors alike for small, distributed renewable energy systems. We develop a wide variety of solar projects for a wide variety of customers and help marry customer demand with investor availability.

In this case, Norwich Solar created Putney Green Acres Solar as a Vermont-limited liability company that will own the completed facility that is being developed on land that was previously permitted under Act 250 for use as a paper mill sludge landfill by the Putney Paper Company. The landfill has since been capped and the property has limited development potential and marketability. Suitable for a solar array, Norwich Solar submitted an application with the Agency of Natural Resources Brownfields Reuse and Liability Limitation Act ("BRELLA") program to redevelop a portion of the parcel with solar. Norwich Solar is facilitating these arrangements for Putney Green Acres Solar, LLC to make beneficial use of the brownfield site in a low-impact and environmentally sound manner while creating an opportunity for Green Mountain Power customers to earn net metering credits. Norwich Solar expects to sell the limited liability company, and thus the Project, to an investor or investors who share an interest in using brownfield sites for distributed generation projects.

Project Description and Location

Q5. Please describe the Project and its location.

A5. The Project is a 500 kW AC ground-mounted solar electric generation facility sited within ±2.4 acres of a larger ±20-acre parcel of open land located on River Road in Putney, Vermont. The Project location is on the south side of Interstate

91 with geographic coordinates 42.968613°N, -72.495287°W. The array will be located on the open area adjacent to the capped landfill and will be set back approximately ±215 feet from Interstate 91 North. Access to the Project site will be through an existing gravel drive off River Road with a deeded right-of-way crossing over the adjacent railroad. See Exhibit PGAS-MS-9. The host parcel is no longer subject to an Act 250 Land Use permit but had been previously permitted under Act 250 as a landfill for sludge from the Putney Paper Company mill. See Exhibit PGAS-MS-9.

The Project Limit of Disturbance (LOD) will be approximately ±8.6 acres. See the Project Site Plan – Exhibit PGAS-MS 2. Elevations are set forth in Exhibit PGAS-MS-3. The Project is typical of an installation of its type and size, comprised of photovoltaic panels on fixed-tilt ground mounted racks, anchored to the ground using purpose-built posts. The Project creates a number of benefits with local, statewide, and regional significance, including supporting renewable energy development and construction related jobs, contributing to Vermont's statewide renewable energy goals and reducing its dependence on out-of-state electricity sources.

The solar panels will be secured on fixed-tilt racking, anchored to the ground using purpose-built posts. The racking structures support the bottom of the solar panels approximately 3 feet above existing grade and the top of the solar panels at approximately 10 feet above grade. The panel racking will be arranged in

multiple rows generally running east-west with panels facing to the south. The solar array equipment, other than the crystalline panels themselves, will be galvanized metal and will have a light gray finish. The panels will have an anti-glare coating and are expected to be a dark color.

String inverters will be mounted discretely on the back side of the racking and will be compliant with IEEE 1547 Standard for Interconnection and Interoperability of Distributed Resources with Associated Electrical Power Systems Interfaces (2018) and UL 1741 SA. See Exhibit PGAS-MS-4, Equipment Datasheets.

The electric power generated by the array will travel between the rows underground in conduit to the inverters, an AC combiner panel and AC disconnect to interconnect to three (3) new pole-mounted transformers owned by Green Mountain Power Corporation ("GMP"), typical of transformers used throughout GMP's distribution system. A GMP line extension will connect the new pole-mounted transformers to GMP's existing distribution circuit. See Exhibit PGAS-MS-2. All energized equipment will be rated for outdoor use, securely shielded by locked enclosure covers, and otherwise compliant with NEC code "Guarding of Live Parts." See Exhibit PGAS-MS-4 - Equipment Data Sheets including Scrim. No exterior lighting will be installed.

Project Installation

Q6. Please explain how the Project will be installed.

A6. Installation includes trenching for underground cable in conduit, setting rack posts, followed by rack, panel and inverter attachments and wiring to connect the array components. Equipment staging and parking will occur within the Limit of Disturbance. The Project will obtain coverage under the Agency of Natural Resources, Department of Environmental Conservation Stormwater Construction General Permit prior to commencement of installation. Disturbed areas will be seeded and mulched following equipment installation.

Throughout operation, the facility will be monitored remotely, and periodic inspections and maintenance will be performed on-site. The Project site, including space between the solar panel rows, will remain vegetated and maintained with mowing or brush hogging.

Q7. How will materials and equipment be transported to the site?

A7. Project materials and equipment will be transported to the site by common transportation vehicles over Vermont state and town roads. No oversized or overweight trucks or permits are necessary. The Applicant will coordinate construction traffic across the host parcel's rail right of way to ensure that construction traffic does not interfere with or cause a safety hazard to railway operations.

Q8. What are the proposed hours for installation activities and related deliveries?

A8. Installation activities and related deliveries will occur between 7:00 AM and 7:00 PM Monday through Friday, and on Saturdays between 8:00 AM and 5:00 PM if required to meet the Project schedule. No installation activities or deliveries will occur on Sunday, or on state or federal holidays.

Prime Agricultural Soils

Q9. How will the Project protect any prime agricultural soils disturbed by the Project's installation?

A9. Approximately 0.03± acres of primary agricultural soil will be disturbed by installation of the underground conduit for the array wiring and equipment panel. The soils shall be put back within the trench in the same layers as they were removed to maintain the integrity of the soil horizons. The Project will not have an undue adverse impact on primary agricultural soils.

Setbacks and Municipal Screening Requirements

Q10. Please explain how the Project's setbacks comply with Section 248(s)?

A10. The Project is designed to meet the statutory setbacks as shown on Exhibit PGAS-MS-2. The array is set back 50-feet from the closest property boundary and approximately 215± from Interstate 91 North, the closest roadway.

Q11. Does the Town of Putney have a solar screening ordinance applicable to the Project?

A11. No, it does not.

Decommissioning

Q12. What commitments does the Project have with respect to decommissioning when the Project is no longer in operation?

A12. The Project will be removed and safely disposed of once it is no longer in service, and the site will be restored to its condition prior to installation of the facility to the greatest extent practicable, subject to any BRELLA program and permit conditions applicable at the time the facility is decommissioned. Any primary agricultural soils disturbed in connection with decommissioning activities will be restored in the same layers as they were removed to maintain the integrity of the soil horizons.

Q13. **RECs**

A13. Will the Project transfer its renewable energy credits to the utility?

RECs will be transferred to GMP.

Q14. **Preferred Site Status**

What is the basis for the Project's claim that it is proposed for a preferred site as defined by the PUC's net-metering rule?

A14. The Project is claiming preferred site status as a closed sanitary landfill pursuant to 10 V.S.A. § 6602 that is certified by the Agency of Natural Resources as suitable for solar development. Please see Exhibit PGAS-MS-5 for the Agency's certification.

Summary of Comments on the 45-Day Advance Notice

Q15. Please summarize the comments that you received in response to the 45-day advance notice to stakeholders.

A15. We received comments from the Agency of Natural Resources and the Genesee & Wyoming Railroad Services, Inc., which is an affiliate of New England Central Railroad, Inc. (NECR) that operates the railway adjacent to the host parcel. The Project's response to the comments are provided in Exhibit PGAS-MS-10. With respect to the comments from the Agency of Natural Resources, I can confirm that the Project has satisfied the requests and reminders in the Agency's comments regarding a wetland assessment and what to show on the site plan filed in support of the application.

NECR's comments raised a question about whether the host parcel has legal access across the NECR railway. The crossing at issue is shown in the Aesthetics, Orderly Development and Above-Ground Historic Sites Assessment Report (Exhibit PGAS-MS-6) and is shown below:

Photo 3 – From along existing access road and railroad crossing into the site, view is south where the array will be in the background. Existing vegetation

The crossing is marked and has been in use for decades because the host parcel has a deeded right of way over the railroad in that location. The crossing was found to be satisfactory by Act 250 for use in connection with the former Putney Paper Company's sludge dump activities, a permit proceeding for which NECR or its predecessors were given notice. The right of way is referred to in deeds in the host property owner's chain of title that I have reviewed going back to 1946. The relevant language in the deed is quoted in my response to NECR's 45-day notice comments. Exhibit PGAS-MS-9 provides a copy of an Act 250 permit findings relative to the permit for the sludge dump and a copy of a deed in the host landowner's chain of title.

Section 248(b)(1): Orderly Development of the Region

Q16. Will the Project unduly interfere with the orderly development of the region?

A16. No, it will not. The Project is compatible with applicable policies and goals in both the Putney Town Plan, the Windham Regional Plan and Windham Regional Energy Plan. The Project will further the renewable energy policies and goals stated in both plans. On a regional basis, the Project's impacts are localized and minimal. The array has a low profile in the landscape and the character and components of the array and associated equipment is visually consistent with similar solar projects seen throughout Vermont and is suitable for the context in which the array will be located. Please refer to the section on orderly development of the region in Exhibit PGAS-MS-5.

Section 248(b)(3): Impact on Electric System Stability and Reliability

Q17. What impact will the Project have on electric system stability and reliability?

A17. The Project will not have an undue adverse impact on the electric system's stability or reliability. The Project is designed to interconnect safely with GMP's electric distribution system. The Applicant has budgeted for and will be responsible for paying for all necessary interconnection costs designated as Applicant's responsibility in the Feasibility Study, as required by Rule 5.500. GMP confirmed the Project's ability to safely interconnect in a letter dated January 26, 2021. Please see Exhibit PGAS-MS-7.

Section 248(b)(5): Impact on Aesthetics, Air and Water Purity, Historic Sites, Use of Natural Resources, the Natural Environment and Green House Gas Emissions, Waste Disposal, Water Conservation, Water Sufficiency and Burden on Existing Water Supplies, Soil Erosion, Traffic/Transportation, Municipal and Educational Services, Development Affecting Public Investments, and Public Health and Safety

Aesthetics and Scenic Beauty of the Area

Q18. Please explain what aesthetic impacts the Project will have on the surrounding area.

A18. The Project will not have an undue adverse impact on the aesthetics or scenic beauty of the surrounding area due to its location, design, and profile. Please see the Aesthetics, Orderly Development and Above-Ground Historic Sites Assessment Report that was prepared for the Project under my direct supervision and offered with my testimony as Exhibit PGAS-MS-6. The Report applies the Quechee Test as adopted by the Public Utility Commission in Rule 5.112.

Air and Water Purity and Pollution

Q19. Will the Project result in undue adverse impacts on air and water purity or cause air or water pollution?

A19. No, it will not. The Project will be installed in compliance with the Vermont Standards and Specifications for Erosion Prevention and Sediment Control (February 2020), and the Applicant will apply for coverage under the Agency of Natural Resources Department of Environmental Conservation Construction

General Permit. The solar array will not produce emissions, and the emissions from fossil fueled vehicles and equipment will be limited and temporary.

Natural Environment and Use of Natural Resources

Q20. Will the Project have an undue adverse impact on the natural environment?

A20. No, it will not. Please see Exhibit PGAS-DB-2.

Q21. Will the Project result in an undue use of natural resources?

A21. No, it will not. The project will use the sun to produce electricity, but will not use natural resources, such as fuel for construction vehicles, in any significant way.

Greenhouse Gas Emissions

Q22. What greenhouse gas emissions will result from the Project's installation and operation?

A22. The Project is a renewable energy source powered by the sun so it will contribute to *reducing* greenhouse gas emissions to the extent that it displaces fossil-fueled electric generation resources. Vehicles and equipment used during the Project's installation will be the source of limited and temporary greenhouse gas emissions. Those emissions will be typical of construction projects and will not be undue.

Waste Disposal

Q23. How will the Project manage waste created from its installation and operation?

A23. The Project will meet all applicable Vermont Department of Health and Vermont Department of Environmental Conservation ("DEC") regulations regarding the disposal of wastes and will not involve the disposal of wastes and will not involve the injection of waste materials or any harmful or toxic substances into groundwater or wells. The Project will not require any onsite sanitary wastewater systems, and therefore no associated injection of sanitary wastewater into the ground. The soil erosion measures described in my testimony below will avoid adverse stormwater impacts. Any waste generated during construction and operation of the Project will be disposed of in accordance with applicable DEC regulations.

Water Conservation, Sufficiency of Water, Burden on Existing Water Supply

Q24. What, if any, water conservation measures will be employed as part of the Project?

A24. The Project will not require water to operate. Any water used in connection with the Project's installation will be for dust control and germination of seeds. The Project will not cause a burden on existing water supplies and the water used for dust control and seed germination will be provided via water truck.

Soil Erosion

Q25. Will the Project reduce the capacity of the land to hold water so that a dangerous and unhealthy condition results?

A25. No, it will not. The Project will be installed in accordance with the Vermont Standards and Specifications for Erosion Prevention and Sediment Control (February 2020), and the Applicant will apply for coverage under the Agency of Natural Resources Department of Environmental Conservation Construction General Permit. Please refer to Exhibit PGAS-MS-2. During installation, temporary earth disturbance will occur from preparing the site, installing the conduit with electric cable as well as the electrical infrastructure, and racking posts. For the state construction stormwater discharge permit, the Project Limit of Disturbance (LOD) will be approximately ±2 acres.

Traffic and Transportation

Q26. Will the Project cause unreasonable congestion or unsafe conditions with respect to the use of highways, waterways, railways, airports or airways?

A26. No. The Project's installation will involve only short-term, periodic traffic impacts due to deliveries of equipment during installation typical of a small construction project. As explained above, construction traffic will be coordinated across the host parcel's rail right of way to ensure that construction traffic does not interfere with or cause a safety hazard to railway operations.

Municipal and Educational Services

Q27. What impact will the Project have on educational, municipal, and governmental services?

A27. The Project will not have an adverse impact educational, municipal, or governmental services. The Project does not require personnel to move to Putney and it will not have on-site staffing.

Historic Sites

Q28. Will the Project impact any historic sites?

A28. No, it will not. Please refer to Exhibit PGAS-MS-6. The Applicant consulted with the Vermont Division of Historic Preservation and confirmed that the site had been subject to a Phase I and Phase II archeological survey in connection with the Act 250 permit for the now-capped landfill. The Project will not have an undue adverse impact on underground historic resources because no resources of significance are present at the site.

With respect to historic structures, the Taylor House (State Historic Survey Number 1313-18) is located approximately 890 feet northwest of the Project, which will not be visible from the Taylor House. The Project will have no impact on visitors interpreting this historic site and will not have an undue adverse impact on the resource.

Development Affecting Public Investments

Q29. Will the Project materially jeopardize or interfere with the function, efficiency, or safety of, or the public's use and enjoyment of or access to any public or quasi-public investment, service or lands?

A29. No, it will not. Due to the limited amount of time required for installation, the Project will not adversely impact the public's use of proximate roadways. In addition, the following facts further support that there will be no undue adverse impacts on public investments because of this Project:

- As explained in the Project Aesthetic Assessment, the Project will not result in an undue adverse impact to aesthetics. Exhibit PGAS-MS-6.
- The Project also creates a number of benefits with local, statewide, and regional significance. For example, the Renewable Energy Credits ("RECs") will be transferred to GMP to be retired, and thus will contribute to Vermont's statewide renewable energy goals and reduce dependence on out-of-state electricity sources and regional electric transmission system.
- The Project will also benefit public investments, in that it will generate new tax revenues to the Town of Putney and to the State of Vermont Education Fund.

Public Health and Safety

Q30. Will the Project have an undue adverse impact on public health and safety?

A30. No, it will not. Unlike fossil fuel power plants, the Project will not create any waste or other emissions that would be harmful to public health and safety. The Project equipment and design satisfies all applicable safety codes, including NEC and NESC. The Project transformers will be in compliance with GMP's specifications (Distribution Standard #T-01, 3.1, 12/13) that meet or exceed ANSI C57.12.00-2010, C57.12.20-2005, C57.12.90-2006, and all other applicable ANSI, IEEE, EEI, NEMA, and OSHA Standards. The Project inverters will be compliant with IEEE 1547 Standard for Interconnection and Interoperability of Distributed

Resources with Associated Electrical Power Systems Interfaces (2018) and UL 1741 SA. Further, all energized equipment will be rated for outdoor use, securely shielded, included in locked enclosure covers, and otherwise compliant with NEC code "Guarding of Live Parts." See Exhibit PGAS-MS-4.

With respect to sound emissions, the Project will not cause undue sound. Please refer to Exhibit PGAS-MS-8. And as I explained previously, construction activities will be coordinated with the NECR railway to protect public safety while using the deeded rail crossing right of way.

Q31. Does this conclude your testimony?

A31. Yes. I declare that the above statements and those in my exhibits are true and accurate to the best of my knowledge and belief. I understand that if my statements are false, I may be subject to sanctions by the Commission for contempt.[1]

Martha Staskus

[1] Statement in lieu of notarized affidavit per PUC Emergency Rule 2.506.