

**STATE OF VERMONT
PUBLIC UTILITY COMMISSION**

Petition of Norwich Turnpike Solar, LLC for a)
certificate of public good pursuant to 30 V.S.A.)
§§ 248 and 8010, authorizing installation and)
operation of a 150 kW (AC) photovoltaic group) Case No. 20-____-NMP
net-metering system at 645 Turnpike Road,)
Norwich, Vermont)

**PREFILED TESTIMONY OF
MARTHA STASKUS ON BEHALF OF
NORWICH TURNPIKE SOLAR, LLC**

June 24, 2020

Ms. Staskus’ testimony describes the Norwich Turnpike Solar, LLC solar project and schedule, and addresses the following applicable Rule 5.100 requirements and Section 248 criteria: Rule 5.107 advance notice requirements; system stability and reliability and impacts upon the transmission system (30 V.S.A. §§ 248(b)(3) and 248(b)(10)); historic sites (30 V.S.A. § 248(b)(5)); greenhouse gas emissions (30 V.S.A. § 248(b)(5)); noise (30 V.S.A. § 248(b)(5)); public health & safety (30 V.S.A. § 248(b)(5)); solar setbacks (30 V.S.A. § 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 (10 V.S.A. § 6086(a)(2) & (3)); soil erosion (30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(4)); (30 V.S.A. § 248(b)(5) 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) and (7)); primary agricultural soils (30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(9)(B)); and development affecting public investments (30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(9)(K)).

TABLE OF CONTENTS

1. Introduction.....1

2. Project Description, Location and Schedule3

3. Rule 5.105 Advance Notice & Comments.....9

4. Preferred Site Designation [PUC Rule 5.103]11

5. System Stability and Reliability and Impacts on the Transmission System [30 V.S.A. §§ 248(b)(3) and 248(b)(10)].....12

6. Historic Sites [30 V.S.A. § 248(b)(5)].....13

7. Noise, Greenhouse Gas Emissions/Air Purity [30 V.S.A. § 248(b)(5)]14

8. Public Health & Safety [30 V.S.A. § 248(b)(5)]15

9. Solar Setbacks [30 V.S.A. § 248(s)]15

10. Waste Disposal [10 V.S.A. § 6086(a)(1)(B)]16

11. Water Conservation [10 V.S.A. § 6086(a)(1)(C)]16

12. Sufficiency of Water and Burden on Existing Supply [10 V.S.A. § 6086(a)(2) & (3)]17

13. Soil Erosion [10 V.S.A. § 6086(a)(4)].....17

14. Transportation Systems/Traffic [10 V.S.A. § 6086(a)(5)]18

15. Impacts on Educational Services and Municipal Services [10 V.S.A. § 6086(a)(6) and (7)]18

16. Primary Agricultural Soils [10 V.S.A. § 6086(a)(9)(B)]18

17. Development Affecting Public Investments [10 V.S.A. § 6086(a)(9)(K)]19

18. Conclusion20

EXHIBITS

Exhibit MS-1
Exhibit MS-2
Exhibit MS-3
Exhibit MS-4
Exhibit MS-5
Exhibit MS-6
Exhibit MS-7

Curriculum Vitae of Martha Staskus
Project Site Plan
Elevations
Equipment Datasheets
Preferred Site Designation Letters
GMP Fast Track
Sound Analysis

**STATE OF VERMONT
PUBLIC UTILITY COMMISSION**

Petition of Norwich Turnpike Solar, LLC for a)
certificate of public good pursuant to 30 V.S.A.)
§§ 248 and 8010, authorizing installation and)
operation of a 150 kW (AC) photovoltaic group) Case No. 20-____-NMP
net-metering system at 645 Turnpike Road,)
Norwich, Vermont)

**PREFILED TESTIMONY OF
MARTHA STASKUS ON BEHALF OF
NORWICH TURNPIKE SOLAR, LLC**

1 **1. Introduction**

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

3 A1. My name is Martha Staskus. I am the Vice President of Development of Norwich Solar
4 Technologies (“Norwich Solar”), which has offices at 15 Railroad Row, Suite 101, White
5 River Junction, Vermont 05001. Norwich Solar is the selected contractor to install and
6 operate the 150 kW ground mounted solar electric generation array (“Project”) for Norwich
7 Turnpike Solar, LLC (the “Applicant”).

8

9 Q2. Please describe your educational background and work experience.

10 A2. I hold a University of Vermont Bachelor of Science degree in Environmental Studies and
11 have more than 25 years of experience evaluating, siting, developing, and permitting a
12 variety of sizes of renewable energy projects. At Norwich Technologies, I am responsible
13 for the development through permitting of our clean energy projects. Previously, at
14 Vermont Environmental Research Associates, Inc (VERA), clients included private
15 landowners, electric utilities, national renewable energy development companies, as well
16 as the State of Vermont, where I was responsible for project management services ranging

1 from development through installation and operational monitoring of non-residential wind
2 and solar projects. I serve on the Town of Waterbury Planning Commission, and previously
3 served over ten years on the Development Review Board. I am a Director and Vice Chair
4 for Renewable Energy Vermont. See Exhibit MS-1 resume which sets forth my educational
5 background and professional experience in more detail.

6
7 Q3. Have you previously testified before the Public Utility Commission (“PUC” or
8 “Commission”) or in other judicial or administrative proceedings?

9 A3. Yes, I have submitted prefiled testimony to the PUC on behalf of a number of applications
10 for group net-metered solar facilities and Section 248 filings.

11
12 Q4. What is the purpose of your testimony?

13 A4. My testimony describes the Project, the proposed installation schedule, introduces other
14 witnesses submitting testimony in support of the Project, and addresses the following
15 applicable Rule 5.107 requirements and Section 248 criteria: Rule 5.107 advance notice
16 requirements; system stability and reliability and impacts on the transmission system (30
17 V.S.A. §§ 248(b)(3) and (b)(10)); noise (30 V.S.A. § 248(b)(5)); historic sites (30 V.S.A.
18 § 248(b)(5); greenhouse gas emissions (30 V.S.A. § 248(b)(5)); public health & safety (30
19 V.S.A. § 248(b)(5)); solar setbacks (30 V.S.A. § 248(s)); waste disposal (10 V.S.A. §
20 6086(a)(1)(B)); water conservation (30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(1)(C));
21 sufficiency of water and burden on existing supply (30 V.S.A. § 248(b)(5) & 10 V.S.A. §
22 6086(a)(2) & (3)); soil erosion 30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(4));

1 transportation systems/traffic (30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(5));
2 educational and municipal impacts (30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(6) &
3 (7)); and development affecting public investments (30 V.S.A. § 248(b)(5) & 10 V.S.A. §
4 6086(a)(9)(K)).

5
6 Q5. Please identify the other witnesses offering testimony in support of this filing.

7 A5. Ms. Dori Barton of Arrowwood Environmental provides testimony addressing the
8 Project's potential impacts to natural resources. Mr. Mark Kane provides testimony on
9 aesthetics, orderly development, above ground historic sites, and municipal screening
10 requirements. My testimony addresses the remaining criteria.

11
12 **2. Project Description, Location and Schedule**

13 Q6. Please describe the proposed Project and its location.

14 A6. The Project is a 150 kW AC ground-mounted solar electric generation facility sited at the
15 southern end of the larger 8.5± acre parcel located at 645 Turnpike Road, Norwich,
16 Vermont.

17
18 The array is approximately 112 feet set back from Turnpike Road. Access to the Project
19 will be via a new access off Turnpike Road. Geographic coordinates are: LAT:
20 43.745087°N LONG: 72.325463°W. Much of the land is an open field and hosts the
21 landowner's residence. For the state construction stormwater discharge permit, the Project
22 Limit of Disturbance will be approximately 1.25 acres. See the Project Site Plan - Exhibit

1 MS-2. Elevations are set forth in Exhibit MS-3. The parcel is not subject to an Act 250
2 Land Use permit.

3
4 The Project is typical of an installation of its type and size, comprised of photovoltaic
5 panels on fixed-tilt ground mounted racks, anchored to the ground using purpose-built
6 posts. The Project creates a number of benefits with local, statewide, and regional
7 significance, including supporting renewable energy development and construction related
8 jobs, contributing to Vermont's statewide renewable energy goals and reducing its
9 dependence on out-of-state electricity sources.

10
11 In accordance with PUC Rule 5.107(C)(5), the Site Plan includes the following
12 information:

13 (a) Proposed facility location and any project features;

14 (b) Approximate property boundaries and setback distances from those
15 boundaries to the corner of the nearest project-related structure, approximate
16 distances to any nearby residences, and dimensions of all proposed
17 improvements;

18 (c) Proposed utilities, including approximate distance from source of power, sizes
19 of service available and required, and approximate locations of any proposed
20 utility or communication lines;

21 (d) A description of any areas where vegetation is to be cleared or altered and a
22 description of any proposed direct or indirect alterations to or impacts on wetlands
23 or other natural resources protected under 30 V.S.A. § 248(b)(5), including the
24 limits of disturbance and the total acreage of any disturbed area;

25 (e) Detailed plans for any drainage of surface and/or sub-surface water and plans
26 to control erosion and sedimentation both during construction and as a permanent
27 measure;

1 (f) Locations and specific descriptions of proposed screening, landscaping,
2 groundcover, fencing, exterior lighting, and signs;

3 (g) Plans of any proposed access driveway, roadway, or parking area at the
4 project site, including grading, drainage, and traveled width, as well as a cross-
5 section of the access drive indicating the width, depth of gravel, paving, or surface
6 materials;

7 (h) The latitude and longitude coordinates for the proposed project; and

8 (i) The presence and total acreage of primary agricultural soils as defined in 10
9 V.S.A. § 6001 on each tract to be physically disturbed in connection with the
10 construction and operation of the net-metering system, the amount of those soils
11 to be disturbed, and any other proposed impacts to those soils.

12 The solar panels will be secured on fixed-tilt racking, anchored to the ground using
13 purpose-built posts. The racking structures support the bottom of the solar panels
14 approximately 30 inches above existing grade and the top of the solar panels at
15 approximately 10 feet above grade. The panel racking will be arranged in multiple rows
16 generally running east-west with panels facing to the south. The solar array equipment,
17 other than the crystalline panels themselves, will be galvanized steel and will have a light
18 gray finish. The panels will have an anti-glare coating and are expected to be a dark color.

19
20 String inverters, mounted discretely on the back side of the racking, will be compliant with
21 IEEE 1547 Standard for Interconnection and Interoperability of Distributed Resources with
22 Associated Electrical Power Systems Interfaces (2018) and UL 1741 SA. See Exhibit MS-
23 4, Equipment Datasheets.

24
25 The electric power will travel underground in conduit in between the rows, the inverters,
26 an AC combiner panel, and AC disconnect to interconnect via a short underground power

1 line to a new pole-mounted transformer owned by Green Mountain Power Corporation
2 (“GMP”), typical of transformers used throughout GMP’s distribution system. See Exhibit
3 MS-2.

4
5 The energized array equipment will be rated for outdoor use, securely shielded, including
6 locked enclosure covers, and otherwise compliant with NEC code “Guarding of Live
7 Parts”. See Exhibit MS-4 - Equipment Datasheets including scrim.

8
9 In summary, the principal Project components include:

- 10 • Multiple rows of solar panels¹ mounted on a racking system anchored to the
11 ground;
- 12 • Twelve (12) string inverters each having a capacity of 12.5 kW (AC), for an
13 aggregate nameplate capacity of 150 kW (AC);
- 14 • Underground electric cable in conduit connecting the panel rows, string inverters,
15 AC combiner panel and AC disconnect pedestal;
- 16 • A 150 kVA pole-mounted transformer on a GMP distribution pole and connection
17 to the existing GMP distribution system;
- 18 • Access off Turnpike Road; and

¹ The exact number and wattage will be determined at time of procurement.

- 1 • All energized equipment will be rated for outdoor use, securely shielded,
2 including locked enclosure covers and otherwise compliant with NEC code
3 “Guarding of Live Parts”.

4
5 Q7. Please briefly describe Project installation and maintenance.

6 A7. Installation includes trenching for underground cable in conduit, setting rack posts,
7 followed by rack, panel and inverter attachments and wiring to connect the array
8 components. Equipment staging and parking will occur within the Limit of Disturbance.
9 Disturbed areas will be seeded and mulched following equipment installation. The Project
10 will obtain coverage under the Agency of Natural Resources, Department of
11 Environmental Conservation’s Construction Stormwater General Permit prior to
12 commencement of installation.

13
14 Throughout operation, the facility will be monitored remotely and periodic inspections and
15 maintenance will be performed on-site. The Project site, including space between the solar
16 panel rows, will remain vegetated and maintained with mowing or brush hogging
17 conducted without the use of chemical herbicides.

18
19 Q8. Does the Project require secondary containment for the release of coolant from the new
20 GMP transformer?

21 A8. No. The Project will use a GMP pole-mounted distribution transformer that will utilize
22 mineral oil. This type of distribution transformer is deployed throughout GMP’s service

1 territory, and is in compliance with GMP's specifications (Distribution Standard #T-01,
2 3.1, 12/13) that meet or exceed ANSI C57.12.00-2010, C57.12.20-2005, C57.12.90-2006
3 and all other applicable ANSI, IEEE, EEI, NEMA, and OSHA Standards.

4
5 Q9. Please describe how equipment will be transported to the site.

6 A9. Project materials and equipment will be transported to the site by common transportation
7 vehicles by way of I-89 or I-91, and over Vermont state and town roads to the site. No
8 oversized or overweight trucks or permits are necessary. All deliveries will be in
9 accordance with applicable permits and requirements.

10
11 Q10. What is the schedule for construction and commencement of operation?

12 A10. The Project is planned to be installed and commissioned within one year of issuance of the
13 Certificate of Public Good.

14
15 Q11. What are the proposed hours for installation activities and related deliveries?

16 A11. Installation activities and related deliveries will occur between 7:00 AM and 7:00 PM
17 Monday through Friday, and on Saturdays between 8:00 AM and 5:00 PM if required to
18 meet the Project schedule. No installation activities or deliveries will occur on Sunday, or
19 on state or federal holidays.

20

1 **3. Rule 5.105 Advance Notice & Comments**

2 Q12. Commission Rule 5.107(B) & (C)(11) requires an Applicant proposing a net-metering
3 project to certify that parties entitled to receive a 45-day advance notice were provided 45-
4 day notice and to summarize any comments received in response to the 45-day notice filing
5 for a project. Please summarize any comments received for this Project in response to the
6 45-day letters served.

7 A12. The Applicant served the advance notice letter on March 24, 2020 to all those entitled to
8 notice under Commission Rule 5.107(B). The Project received comments from the
9 Vermont Agency of Natural Resources (“ANR” or “Agency”) and from three adjoining
10 property owners, Michael and Amy Staggs, Whitecloud Seano Harrison and the Upper
11 Valley Land Trust.

12
13 The Agency provided comments on May 6, 2020 requesting conditions to avoid potential
14 impacts to jurisdictional wetlands natural resource boundaries. As to wetlands, the Agency
15 requested that the Applicant’s proposed order and CPG include the following conditions:

16 The Project shall avoid impacts to Class II wetlands and 50-foot wetlands buffer
17 zones, or the CPG Holder shall obtain and comply with the provisions of a Vermont
18 Wetlands Permit for any activity that is not an Allowed Use designated in Section
19 6 of the Vermont Wetland Rules.

20
21 Where the Project is within 100 feet of any Class II wetlands buffer zone
22 boundaries, prior to site preparation and construction, maintenance involving earth
23 disturbance and decommissioning, the CPG Holder shall install a continuous line

1 of visible flagging outside the buffer zone boundaries identifying wetland buffer
2 zones as protected areas.
3

4 At least one month prior to commencement of site preparation/construction and
5 decommissioning, the CPG Holder shall send photos to the district Wetlands
6 Ecologist to demonstrate that wetland flagging is correctly placed.
7
8

9 The Agency also requested that the Applicant note on the Site Plan that “visible flagging
10 will be installed outside the wetland buffer where the Project limits lie within 100-feet of
11 the buffer boundary prior to construction, maintenance involving earth disturbance and
12 decommissioning.” The Agency also requested that the plans accurately note all
13 jurisdictional natural resource boundaries and setbacks. The Applicant’s Site Plan, Exhibit
14 MS-2 incorporates the notes requested by ANR. The first two of three conditions are
15 included in the Applicant’s proposed Order and CPG submitted with this Application. The
16 third condition is not practical and adds undue additional delay to commencement of site
17 preparation and installation.
18

19 Michael and Amy Mr. Staggs reside at 608 Turnpike Road, across the street from the
20 proposed Project site. Mr. Staggs contacted me regarding potential views of the Project
21 from the Staggs’ residence. The Applicant retained SE Group to review the potential for a
22 negative visual impact which I shared with the Staggs. We also met on site with Mr. Staggs
23 on May 5, 2020. As noted in the report prepared by SE Group for this Application, views
24 of the Project from the Staggs residence will be largely screened by existing roadside
25 vegetation and topographic changes. See Exhibit MDK-2. Regardless, the Applicant

1 proposes additional plantings along the eastern side of the access to further mitigate a
2 potential negative visual impact.

3
4 Mr. Harrison submitted a public comment with the Commission on April 27, 2020. He
5 stated that as an adjoining landowner, he wanted “to express [his] full support for this
6 project.” He also stated that

7 [p]rojects Filed such as this are beautiful to see, and a powerful addition to our
8 community, helping to provide energy security into the future. We will be lucky
9 to have it.

10
11 Please refer to the public commented posted in Case No. 20-0783-AN.

12
13 The Upper Valley Land Trust indicated they had “studied our fee lands for suitable solar
14 array sites, and Brookmead was the location which ranked the highest. So this site makes
15 sense to us.”

16
17 **4. Preferred Site Designation [PUC Rule 5.103]**

18 Q13. Does the site meet the definition of a Preferred Site, pursuant to PUC Rule 5.103?

19 A13. Yes. The Norwich Town Plan Policy 3-2 states:

20 For solar generation projects sized from 15kw to 500 kw the presumption is that all
21 of Norwich meets the Public Utility Commission definition of ‘preferred site’,
22 notwithstanding the existing areas of local concern including the Ridgeline
23 Protection Overlay Area, Shoreline Protection Overlay Area and the historic village
24 district as identified in the Norwich Land Use Regulations.

25
26 Please refer to the Town Plan excerpts included with Exhibit MDK-2. The Town has
27 reviewed the location and concluded it is consistent with the Norwich Town Plan. While

1 not required under PUC Rule 5.103(7) in this situation, the Two Rivers Ottauquechee
2 Regional Planning Commission (“TRORC”) has also designated the Project location as a
3 Preferred Site. Please refer to Exhibit MS-5.

4
5 **5. System Stability and Reliability and Impacts on the Transmission System [30**
6 **V.S.A. §§ 248(b)(3) and 248(b)(10)]**

7 Q14. Will the Project have an undue adverse impact on system stability or reliability or adversely
8 impact the transmission system?

9 A14. No. Commission Rule 5.107(C)(10)(b) provides in relevant part:

10 “For systems with a capacity less than or equal to 150 kW, no letter from
11 the electric company is required as part of the application. However, if the
12 electric company finds that the interconnection of the net-metering system
13 will have an adverse effect on system stability or reliability, the electric
14 company shall convey these concerns in writing to the applicant and the
15 Commission no later than the thirty-first day following the Commission’s
16 determination that the application is complete. The electric company’s
17 filing must include a recommendation as to how the interconnection issues
18 could be resolved by the applicant. If a concern is raised, a CPG will not
19 issue until the electric company files a letter stating that the concern has
20 been addressed or the Commission finds that the proposed net-metering
21 system may be safely interconnected with the company’s distribution grid
22 without having an adverse impact on system stability and reliability. The
23 letter must also describe all improvements to the grid necessary to
24 interconnect the net-metering system.
25

26 On May 28, 2020, GMP issued the results of the Fast Track Analysis for the Project. The
27 Fast Track Report, Exhibit MS-6, indicates requirement of a Feasibility Study. On June 4,
28 2020, the Applicant entered into a Feasibility Study Agreement with GMP. Per the
29 requirements of Rule 5.07(C)(10)(b), GMP shall file recommendations within 30 days of
30 the Application having been deemed complete stating how the interconnection issues

1 identified in the Fast Track Report/Feasibility Study could be resolved by the Applicant to
2 safely interconnect the Project with GMP's distribution grid without having an adverse
3 impact on system stability and reliability.

4
5 The Applicant will pay for all improvements to the grid identified in the Feasibility Study
6 per Rule 5.507(E) and will file the Feasibility Study with the Commission once it is issued
7 by GMP.

8
9 **6. Historic Sites [30 V.S.A. § 248(b)(5)]**

10 Q15. Will the Project have an undue adverse effect on any historic sites?

11 A15. No. Please refer to Exhibit MDK-2, SE Group's Aesthetics, Orderly Development and
12 Above-Ground Historic Sites Analysis.

13
14 As to archaeology, in accordance with the VDHP *Guidelines for Conducting Archeology*
15 *in Vermont* (2017), the Applicant submitted a complete Project Review Form to VDHP on
16 March 10, 2020. As set forth in the VDHP Guidance, except for larger utility corridor or
17 complex projects, VDHP itself normally conducts site inspections on behalf of Section 248
18 applicants. If VDHP determines a site to be potentially sensitive, testing pursuant to a
19 scope of work will be prepared, and if any significant archeological areas are identified,
20 they will either be avoided, or adverse effects will be mitigated as specified in the VDHP
21 Guidance.

1 **7. Noise, Greenhouse Gas Emissions/Air Purity [30 V.S.A. § 248(b)(5)]**

2 Q16. Please describe any sources of noise associated with the proposed Project.

3 A16. The solar panels produce no noise, and the inverters and transformers produce only
4 minimal noise. The nearest residence is approximately ±219 feet from the array. A sound
5 analysis was conducted to estimate potential impacts from the Project and is provided as
6 Exhibit MS-7. The combined impact of all noise-emitting equipment is 29.4 dBA from the
7 nearest residence. During the limited installation period, sounds typical of construction
8 equipment will be generated by the light installation activities.

9
10 Q17. Will the Project have an undue adverse impact to air quality or with respect to greenhouse
11 gas emissions?

12 A17. No. In fact, as a renewable energy source powered by the sun, this Project will contribute
13 to reducing greenhouse gas emissions to the extent it displaces fossil-fueled generating
14 resources. Any limited air emissions or greenhouse gas emissions associated with
15 construction will be primarily from any fossil-fueled vehicles and equipment used for
16 deliveries, worker transportation, and construction activities. The emissions are typical of
17 construction projects, are short-term and subject to state regulations, and will not be
18 adverse.

19
20 Throughout its operation, the Project will generate no air pollution, with the exception of
21 a minimal amount of vehicle emissions associated with periodic site and equipment
22 maintenance visits.

1 **8. Public Health & Safety [30 V.S.A. § 248(b)(5)]**

2 Q18. Describe the impact on public health and safety.

3 A18. Unlike fossil fuel generating facilities, this solar generation project will not create waste or
4 other emissions that would be harmful to public health and safety. The Project equipment
5 and design satisfies all applicable safety codes, including NEC and NESC. The Project
6 transformer will be in compliance with GMP’s specifications (Distribution Standard #T-
7 01, 3.1, 12/13) that meet or exceed ANSI C57.12.00-2010, C57.12.20-2005, C57.12.90-
8 2006, and all other applicable ANSI, IEEE, EEI, NEMA, and OSHA Standards. The
9 Project inverters will be compliant with IEEE 1547 Standard for Interconnection and
10 Interoperability of Distributed Resources with Associated Electrical Power Systems
11 Interfaces (2018) and UL 1741 SA. Further, all Project energized equipment will be rated
12 for outdoor use, securely shielded, include locked enclosure covers, and otherwise
13 compliant with NEC code “Guarding of Live Parts”. See Exhibit MS-4, Equipment
14 Datasheets.

15
16 **9. Solar Setbacks [30 V.S.A. § 248(s)]**

17 Q19. Does the Project design comply with the minimum setback requirements that apply to a
18 150 kW ground-mounted solar electric generation?

19 A19. Yes. As illustrated on the Site Plan, Exhibit MS-2, the Project meets the 25 foot property
20 boundary setback as well as the 40 foot setback from Turnpike Road.

21

1 **10. Waste Disposal [10 V.S.A. § 6086(a)(1)(B)]**

2 Q20. Will the Project involve any discharges or injections of groundwater or otherwise adversely
3 impact water purity?

4 A20. No. The Project will not involve the disposal of wastes and will not involve the injection
5 of waste materials or any harmful or toxic substances into groundwater or wells.

6
7 The Project will meet all applicable health and environmental conservation department
8 regulations regarding reduction of the quality of the ground or surface waters. There is no
9 onsite sanitary wastewater systems, and therefore no associated injection of sanitary
10 wastewater into the ground. The soil erosion measures discussed below will avoid adverse
11 stormwater impacts. Any waste generated during construction and operation of the Project
12 will be disposed of in accordance with applicable Vermont Department of Environmental
13 Conservation regulations.

14
15 **11. Water Conservation [10 V.S.A. § 6086(a)(1)(C)]**

16 Q21. Please describe any water conservation measures.

17 A21. The Project itself will not utilize water. Any use of water will be limited to what is
18 necessary to control dust during installation, for periodic cleaning of the panels, and to
19 promote germination of seed.

20

1 **12. Sufficiency of Water and Burden on Existing Supply [10 V.S.A. § 6086(a)(2)**
2 **& (3)]**

3 Q22. Please describe the sufficiency of water and the burden on existing water supply.

4 A22. As previously stated, the Project will require limited water supply. The Project will not
5 unreasonably burden existing water supply.

6
7 **13. Soil Erosion [10 V.S.A. § 6086(a)(4)]**

8 Q23. Will the Project cause unreasonable soil erosion or a reduction in the capacity of the land
9 to hold water, so that a dangerous or unhealthy condition may result?

10 A23. No. Project installation will be performed in accordance with the *Vermont Standards and*
11 *Specifications for Erosion Prevention and Sediment Control* (2019). The Project will apply
12 for Low Risk coverage under Construction General Permit 3-9020. Please refer to Exhibit
13 MS-2.

14
15 During installation, temporary earth disturbance will occur from preparing the site,
16 installing the conduit with electric cable as well as the electrical infrastructure, racking
17 posts and fence posts. Total Limit of Disturbance from installation activities for purposes
18 of the Stormwater Construction General Permit will be approximately 1.25± acres. Please
19 refer to Exhibit MS-2.

1 **14. Transportation Systems/Traffic [10 V.S.A. § 6086(a)(5)]**

2 Q24. Please describe the potential impact with respect to the use of public roads during
3 construction.

4 A24. There will not be any long-term transportation impacts, and only short-term periodic traffic
5 impacts due to deliveries of equipment during installation. Such deliveries will use existing
6 roads with vehicles that are commonly used on public roads. No oversized or overweight
7 trucks or permits are necessary. All deliveries will be in accordance with applicable permits
8 and requirements.

9
10 **15. Impacts on Educational Services and Municipal Services [10 V.S.A. §**
11 **6086(a)(6) and (7)]**

12 Q25. Please describe the potential impact with respect to provision of educational and municipal
13 services.

14 A25. No educational or municipal services will be burdened by the Project. The Project will not
15 require or affect educational services. Use of municipal roads to transport equipment and
16 materials will be limited in duration and similar to many other small-scale projects.

17
18 **16. Primary Agricultural Soils [10 V.S.A. § 6086(a)(9)(B)]**

19 Q26. Please address potential impacts to prime agricultural soils (“PAS”).

20 A26. The Project will impact only 0.03 acres of PAS. See the Project Site Plan, Exhibit MS-2.
21 As noted on the Site Plan, prime agricultural soils will be excavated and backfilled in the
22 same soil layers following trenching to preserve the prime agricultural soils.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27

17. Development Affecting Public Investments [10 V.S.A. § 6086(a)(9)(K)]

Q27. Act 250 Criterion 6086(a)(9)(K) provides:

A permit will be granted for the development or subdivision of lands adjacent to governmental and public utility facilities, services, and lands, including highways, airports, waste disposal facilities, office and maintenance buildings, fire and police stations, universities, schools, hospitals, prisons, jails, electric generating and transmission facilities, oil and gas pipe lines, parks, hiking trails and forest and game lands, when it is demonstrated that, in addition to all other applicable criteria, the development or subdivision will not unnecessarily or unreasonably endanger the public or quasipublic investment in the facility, service, or lands, or materially jeopardize or interfere with the function, efficiency, or safety of, or the public's use or enjoyment of or access to the facility, service, or lands.

Please address whether any such public investments are in the vicinity of the Project, and whether the Project will unnecessarily or unreasonably endanger the public or quasi-public investment in any facility, service, or lands, or materially jeopardize or interfere with the function, efficiency, or safety of, or the public's use or enjoyment of, or access to any such facility or service.

A27. The Project will not unnecessarily or unreasonably endanger public or quasi-public investments in facility, service, or lands, or materially jeopardize or interfere with the function, efficiency, or safety of the public's use or enjoyment of, or access to any such facility or service. Due to the limited amount of time required for installation, the Project will not adversely impact Turnpike Road or the public's use of that roadway.

In addition, the following facts further support that there will be no undue adverse impacts on public investments as a result of this Project:

- 1 • As explained in the Project Aesthetic Assessment, the Project will not result in an
2 undue adverse impact to aesthetics. Exhibit MDK-2.
- 3 • The Town has designated the site as a preferred site for this solar facility. Exhibit
4 MS-5.

5 The Project creates a number of benefits with local, statewide, and regional significance.
6 For example, the RECs will be transferred to GMP to be retired, and thus will contribute
7 to Vermont’s statewide renewable energy goals and reduce dependence on out-of-state
8 electricity sources and regional electric transmission system. Finally, the Project will also
9 benefit public investments, in that it will generate new tax revenues to the Town of Norwich
10 and State of Vermont.

11

12 **18. Conclusion**

13 Q28. Does this conclude your testimony?

14 A28. Yes.

15