

**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

**Petition of Greenskies Clean Energy LLC  
for Declaratory Ruling, Pursuant to Conn.  
Gen. Stat. §§4-176 and 16-50k, for the  
Proposed Construction, Maintenance and  
Operation of a 5.0 MW AC Ground-  
mounted Solar Photovoltaic Electric  
Generating Systems to Be Located on Boom  
Bridge Road in North Stonington,  
Connecticut**

**Petition No. 1415**

**August 17, 2020**

**GREENSKIES CLEAN ENERGY LLC'S RESPONSES TO THE CONNECTICUT  
SITING COUNCIL'S FIRST SET OF INTERROGATORIES**

The petitioner, Greenskies Clean Energy LLC (“GCE” or “the Petitioner”), respectfully submits this response to the Connecticut Siting Council’s August 3, 2020 First Set of Interrogatories in the above-referenced Petition. In response to the Siting Council’s Interrogatories, GCE states as follows:

**Project Development**

1. If Greenskies Clean Energy LLC’s (GCE or Petitioner) project is approved, identify all permits necessary for construction and operation, and indicate which entity will hold the permit(s).

Permits required for the proposed Project are the Connecticut Department of Energy and Environmental Protection (the “CTDEEP”) General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (the “General Permit”), as well as building and electrical permits from the Town of North Stonington Building Department. It is anticipated that GCE will hold the General Permit, and the Project’s contractor<sup>1</sup> will hold the building and electrical permits.

2. Is the sale of the facility output to Connecticut State Colleges and Universities (CSCU) through a bilateral contract or a tariff mechanism offered through the electrical distribution company? Or does the Petitioner have virtual net metering (VNM) agreement(s) with CSCU? If so, would all 5 megawatts (MW) alternating current (AC) be dedicated to VNM? Explain.

GCE objects to this interrogatory in that it is requesting information that is beyond the scope of the jurisdiction of the Siting Council for a petition for declaratory ruling pursuant to

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<sup>1</sup> Once final civil and electrical designs are complete, a contractor will be selected.

Conn. Gen. Stat. §16-50k. Subject to the foregoing objection, GCE states that all five facilities have VNM agreements with CSCU and will be dedicated to VNM.

3. Would the Petitioner participate in the ISO-NE Forward Capacity Auction? If yes, which auction(s) and capacity commitment period(s)?

No, the Petitioner does not intend to participate in the ISO-NE Forward Capacity Auction.

4. Pursuant to Connecticut General Statutes §16-50k(a), has the Petitioner obtained a letter from the Connecticut Department of Energy and Environmental Protection (DEEP) that the proposed facility will not materially affect the status of core forest? Please submit any correspondence submitted to and/or received from DEEP relative to the proposed facility.

On August 13, 2020, representatives for the Petitioner were informed by DEEP's forestry division that a letter stating that the project as proposed will not materially affect the status of core forest is forthcoming. It is anticipated that this letter will be provided before the end of August, and the Petitioner respectfully requests that the date for complying with this interrogatory be extended until August 31, 2020.

### **Proposed Site**

5. Referencing page 5 of the Petition, the Petitioner states, "Until 2016, the site consisted of forestland. It was cleared at that time by the landowner for potential farming purposes but has not been used as such." Referencing Appendix H of the Petition, Phase 1A Cultural Resources Assessment Survey, page 23, the Petitioner notes that, "At the time of survey, an area located at the northwest portion of the project area contained an agricultural field planted with corn (Figure 14)." Please clarify if any portion of the proposed project area is currently used for agricultural purposes and if it is used by the property owner or if it is leased to a third party.

No portion of the proposed project area is currently used for agricultural purposes. The temporary staging area, as identified on page 3 on the site plans, is located on land that is currently being farmed. This area will continue to be farmed after the Project is built.

6. Would all components of the solar photovoltaic panels be recyclable? Could components of panels be reused to make photovoltaic cells or whole panels be used to make new solar panels at the end of the life of this project? Could the solar panels and/or associated components be repurposed for a different use or product?

Glass, plastic, aluminum and silicon primarily comprise photovoltaic panels and are all recyclable materials that can be repurposed to create new panels or other products. Each panel contains a small amount of non-recyclable material—however, this may change by the time the Project is decommissioned.

### **Energy Output**

7. Have electrical loss assumptions been factored into the output of the facility? What is the output (MW AC) at the point of interconnection?

Yes, standard loss factors have been factored into the Facility's system production analysis. At the point of interconnection, the output is anticipated to be 4.9 MW AC.

8. What is the projected capacity factor (expressed as a percentage) for the proposed project? For clarity, is this capacity factor based on a ratio of AC MWh to AC MWh, or a ratio of AC MWh to DC MWh?

The projected capacity factor for the proposed Project is 14.89 (%) percent. This is based on AC MWh to DC MWh, and is expressed as:

$$\text{Capacity factor (\%)} = (\text{production in kWh}) / (\text{system size kWdc} * 8760) * (100)$$

9. What is the efficiency of the photovoltaic module technology of the proposed project?

The efficiency of the photovoltaic module technology of the proposed Project is 17.68 (%) percent.

10. Would the power output of the solar panels decline as the panels age? If so, estimate the percent per year.

Yes, 0.5% per year.

11. Is the project being designed to accommodate a potential future battery storage system? If so, please indicate the anticipated size of the system, where it may be located on the site, and the impact it may have on the zero emission renewable energy credit (ZREC) and/or VNM agreements, as applicable.

No, the Project has not been designed to accommodate a potential future battery storage system.

12. Would the impact of soft or hard shading reduce the energy production of the proposed project? If so, was this included in the proposed projects capacity factor?

Yes, any shading will reduce the Facility's energy production. However, expected inter-row shading has been factored into the Project's production analysis. An assumed loss for shading caused by debris such as dirt, leaves, or snow on the module surface has also been factored into said analysis.

13. Could the project be designed to serve as a microgrid?

No, the Project cannot be designed to serve as a microgrid. This is credited to the fact that the respective utility company's interconnection application does not include batteries or any of the infrastructure that is necessary for the Project to provide microgrid function. Additionally, the subject revenue contracts do not include microgrid effects.

14. If one section of the solar array experiences electrical problems causing the section to shut down, could other sections of the system still operate and transmit power to the grid?

Yes; throughout the Facility's array, sections of modules are connected to multiple inverters—thereby ensuring that an inoperable inverter will not impede the functionality of the other inverters.

15. Do solar facilities present a challenge for the independent system operator for balancing loads and generation (to maintain the system frequency) due to the changing (but not controlled) megawatt output of a solar facility? What technology or operational protocols could be employed to mitigate any challenges?

Generally speaking, large solar facilities can present grid management issues for the independent system operator (“ISO”) or transmission operator; however, those issues are reviewed on a site-by-site basis. Eversource concluded in the Impact Study that the Project will not cause any adverse impacts to customer voltages or power quality and will not cause excess capacitor bank operations.

### **Site Components and Solar Equipment**

16. Provide the following information regarding the Project solar panels:

- a) Will the panels be mounted in a portrait or landscape fashion?

A detail of the panel and racking system has been added to the Site Plans, Sheet C-6.1, attached hereto as Exhibit A.

- b) What is the proposed height from grade to the bottom edge of the solar panels? Referencing Drawing E300, Racking Detail, would the top edge of the solar panels be about 6’7” higher than the bottom edge?

The minimum proposed clearance height from finished grade to the bottom edge of a panel is approximately two (2) feet. As currently designed, the top edge of the solar panels is proposed to be approximately 6’7” higher than the bottom edge. Both of these items are subject to change, however, pending final equipment selection and electrical design. A detail of the panel and racking system has been added to the Site Plans Sheet C-6.1, attached hereto as Exhibit A.

17. How many panels will each rack hold?

Racking structures typically hold ten (10) to twelve (12) panels per rack. The exact number will depend on which vendor GCE chooses to purchase racking from during procurement.

18. Is the wiring from the panels to the inverters installed on the racking? If wiring is external, how would it be protected from potential damage from weather exposure, vegetation maintenance, or animals?

Wiring will be installed both on the underside of panels and underground, protecting it from UV light and weather exposure. The wire will be rated for the environment and installed in line with national electrical code.

19. Referencing page 9 of the Petition, would the existing access be improved with gravel as necessary? What, if any, improvements would be performed where the existing access crosses Wetland 4?

It is generally proposed to improve the existing farm access road with gravel in the locations necessary to handle construction traffic although the exact locations have not been determined yet. Regarding the existing farm access road in the location of Wetland 4, the road has been revised to go around the wetland and provide a landscaped buffer between the road and the wetland. This change was made at the advice of the project team's spadefoot toad consultant based upon ongoing investigations. The revised access road can be seen on Site Plan Sheet C-3.2, attached hereto as Exhibit A.

20. Referencing Appendix A of the Petition, Drawing C-3.1, the proposed aisle width between solar panel rows is 15 feet. What is the minimum aisle width at which the solar panel rows could be installed?

While the aisle width for the Project could be reduced from 15 feet, two problems begin to occur at smaller widths. The first is that the panels begin shading one another, thus reducing the Project's overall efficiency. The second problem is that the land between the panels allows for infiltration of stormwater. As the aisles narrow between rows of panels, there is a greater amount of imperviousness with respect to stormwater management at the site. As such, fifteen (15) feet is the minimum width for aisle spacing in order to avoid these two concerns.

21. Referencing Appendix G of the Petition, Stormwater Report, page 9, the Petitioner states, "The entire portion of the Site is within Zone X (0.2% annual chance flood) according to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map..." Referencing the FEMA Flood Insurance Rate Map under Appendix A of the Stormwater Report, is it correct to say that the site is located within the unshaded Zone X, an area outside of the 100-year and 500-year flood zones?

The description of the Site in the Stormwater Report as being within an area of 0.2% annual chance flood was written in error and has been revised to correctly state that the Site is located outside of any Special Flood Hazard Areas or Other Areas of Flood Hazard (including 100-year and 500-year flood zones). A revised stormwater management report is submitted herewith as Exhibit B.

### **Interconnection**

22. What is the line voltage of the proposed electrical interconnection?

The primary distribution voltage is 13.8 kV.

23. Is the project interconnection required to be reviewed by ISO-NE?

No, the project interconnection is not required to be reviewed by ISO-NE. A single inverter has been de-rated to 124 kW AC by the manufacturer, bringing the aggregate system size to 4.9 MW AC, below the 5 MW AC threshold for ISO-NE review.

24. Referencing page 10 of the Petition, it states, “The scope and Facility Study Agreement were received in May 2020 and are pending review.” What is the status of the Facility Study Agreement? Has Eversource confirmed that the interconnection to Shunock Substation could accommodate the 5 MW output from the proposed solar facility?

The Facility Study is currently underway and is expected to be complete in late October – early November 2020. The Impact Study from Eversource stated that “At daytime minimum loading steady state conditions, with generation at a unity power factor and the customer generation connected, the system can sustain voltage within PURA limitations on all circuits associated with the Shunock 32P-2X transformer under an alternate feed configuration. The system does not cause high voltage at the PCC; or elsewhere along the circuits associated with the Shunock 32P-2X transformer.”

25. Referencing page 10 of the Petition, it states, “Eversource will provide GCE with interconnection agreements upon completion of the Facility Study.” What is the status of the interconnection agreements?

Interconnection agreements have not been drafted yet. GCE expects to receive interconnection agreements upon completion of the Facility Study.

26. Referencing page 10 of the Petition, it states, “The proposed project...will not require a dedicated feeder.” Is the existing distribution that connects to Shunock Substation three-phase, or would it have to be upgraded from single-phase to three-phase?

Some portions of the interconnection route will be upgraded from single-phase to three-phase.

### **Public Safety**

27. Would the project comply with the National Electrical Code, the National Electrical Safety Code and any applicable National Fire Protection Association codes and standards?

Yes; the Project would comply with the National Electrical Code, the National Electrical Safety Code and all applicable National Fire Protection Association codes and standards.

28. Would the proposed project meet the applicable Department of Energy and Environmental Protection noise standards at the property boundaries?

The proposed project will meet the applicable CTDEEP noise standards at the property boundaries. The currently-proposed inverter has an audible noise of less than 55 dBA at one meter of distance from the inverter. This alone meets the residential-to-commercial/industrial standard which the project has to its northern and eastern boundaries. The audible noise from the closest proposed inverter to the southern parcel line (residential property) is almost imperceptible given the approximate 450-foot distance, which will meet both daytime and nighttime noise standards for residential-to-residential zones. A copy of a specification sheet for the currently-selected inverter equipment, as well as a spreadsheet displaying the CTDEEP noise standards and a distance adjustment computation are enclosed herewith as Exhibit C for reference.

29. Where is the nearest federally-obligated airport? Is a glare analysis required to comply with Federal Aviation Administration (FAA) policy?

The nearest federally-obligated airport appears to be the Westerly State Airport, which is located approximately 5.7 miles away from the proposed Project Site. The Petitioner utilized the FAA's Notice Criteria Tool, which revealed that FAA review is not required for the Project. *See* Results of Notice Criteria Tool, attached hereto as Exhibit D. As such, a glare hazard analysis has not been conducted and is not required by the FAA for this Project.

In accordance with CFR Title 14 Part 77.9, a project would need to file with the FAA prior to project construction if:

- The structure will exceed 200 feet above ground level
- The structure will be in proximity to an airport and will exceed the slope ratio
- The structure involves construction of a traverse-way (i.e. highway, railroad, waterway, etc.) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- The structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- The structure will be in an instrument approach area and might exceed part 77 Subpart C
- The proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- The structure will be on an airport or heliport
- Filing has been requested by the FAA

Given that none of the foregoing applies to the instant Project, the Project is not expected to have an adverse impact on air navigation. In addition to the Project's distance from the Westerly State Airport, the selected panels for the Project are designed to absorb light, rather than reflect, and will therefore not transmit a great deal of glare. Accordingly, given the distance of the Project from the nearest airport, and the lack of glare from the proposed panels, the Project is not anticipated to have an adverse impact on air navigation.

30. Would the proposed project require a review/determination from the FAA regarding any potential hazard to air navigation?

No. Please see the Petitioner's answer to Interrogatory 29 above.

31. With regard to emergency response:

- a. Is outreach and/or training necessary for local emergency responders in the event of a fire or other emergency at the site?

Typically, when a solar project is nearing completion and final inspection, the respective local Fire Marshal will perform a site walk to inspect signage, site access (in case of emergency), emergency shutoff, disconnect locations, and anything relevant to their response of an event. Accordingly, for the instant Project, Greenskies will offer to host such a site walk, training, and Project design review with the appropriate North Stonington officials, and expects that such a walk-through and training will happen.

- b. How would site access be ensured for emergency responders?

Emergency responders will be provided keys or the code to all access gates on site.

- c. In the event of a brush or electrical fire, how would the Petitioner mitigate potential electric hazards that could be encountered by emergency response personnel?

Greenskies will work with emergency response personnel to provide training on how to handle a fire on site. Hazard mitigation includes designing and building the Project to code and managing brush on-site.

- d. Could the entire facility be shut down and de-energized in the event of a fire? If so, how?

Yes, the entire facility can be shut down via the main switch. This information will be included during the training with emergency responders.

### **Environmental**

32. Page 5 of the Petition notes that, “[T]he site has grown to be covered with low lying brush and smaller-sized saplings.” Page 26 of the Petition notes that, “No tree clearing is proposed...” Is it correct to say that no trees greater than six inches diameter would be removed to construct the facility? If no, explain.

In the event that the project construction begins in 2021, as anticipated, no mature trees or trees greater than six (6) inches in diameter would need to be removed to construct the facility—with the exception of a single, dead snag tree along the stonewall property boundary.

33. The Greenhouse Gas (GHG) Assessment in Appendix M of Council Petition No. 1352 compared the life cycle GHG emissions from a solar project to a scenario where the solar project is avoided and an equivalent amount of natural gas-fired electric generation operated for the estimated life of the solar facility. Referencing Appendix E of this Petition, how would the net GHG emissions (or reduction) over the life of the solar facility and carbon debt payback be affected under this natural gas-fired generation versus proposed solar generation scenario?



Assuming a one percent (1%) degradation of solar output per year and a starting yearly output of 8,502 MWh for this Project, it is anticipated that approximately 236,252 MWh will be generated over an assumed 30-year lifespan. Utilizing the conversion ratio described in Appendix M of Council Petition No. 1352 relating 744,038 MWh to 1,273,861 MT of CO<sub>2</sub>eq, it can be anticipated that approximately 404,485 MT of CO<sub>2</sub>eq would be generated by a natural gas-fired facility to equal this Project's MWh output. This translates to approximately 13,483 MT of CO<sub>2</sub>eq per year. Relating this Petition's estimated carbon debt of 10,061 MT CO<sub>2</sub>eq to this number, it would take the Project 0.75 years (or nearly 9 months) to have a net improvement with respect to GHG emissions.

34. Referencing page 26 and Appendix J of the Petition, the Petitioner notes that a survey for the eastern spadefoot and three state-listed plant species will be performed between May 2020 and June 2020, and a report will be submitted to DEEP Wildlife Division for review and final determination. Provide an update on the status of such report. Include a copy of such report and any DEEP response(s) to the report if available.

Night-time surveys for the eastern spadefoot at the site are ongoing still due to the requirement to perform these surveys following rainfall events and a very dry summer. All other wildlife investigations for RTE species found on the NDDDB Preliminary Assessment for the site have been completed. A report is currently being prepared and is anticipated to be provided to CTDEEP's Wildlife Division for their review shortly following the completion of the eastern spadefoot surveys.

35. Please respond to the Council on Environmental Quality comments dated July 22, 2020.

The Petitioner's responses to the Council on Environmental Quality's July 22, 2020 comments are as follows:

#### **Proposed Project Site**

A Spill Prevention, Control, and Countermeasure Plan (SPCC) has been prepared for construction at the Site. A copy is enclosed herewith as Exhibit E.

#### **Wetlands**

The Petitioner has relocated the contractor parking to be out of any delineated inland wetland 100-foot buffer.

#### **Wildlife**

The 100-foot Vernal Pool Envelope ("VPE") will not be impacted by the Project, nor is there a proposed change to the VPE; existing VPE disturbance is approximately sixteen percent (16%) and will remain at the same percentage post-construction.

The 750-foot Critical Terrestrial Habitat ("CTH") that occurs within the Project Site is not suitable forested habitat for the amphibian species and is not considered suitable habitat under the Vernal Pool Best Management Practices guidance document (January 2015) from

the US Army Corps of Engineers-New England District, attached hereto as Exhibit F. The figures depicted throughout the above-referenced Vernal Pool BMP document exclude all areas as suitable habitat except for forest communities. In addition, the attached Vernal Pool Disturbance Map (Exhibit G) indicates that the percentage of existing CTH disturbance is the same as proposed, approximately 71 (%) percent.

As discussed in the VHB Vernal Pool Technical Memorandum, dated May 8, 2020, suitable terrestrial habitat on-site is very limited based on the vegetation cover types that include both the plowed agricultural fields and scrub-shrub communities. Please refer to the Vegetative Cover Map figure that was included in the VHB Vernal Pool Technical Memorandum. The upper reaches of Wetland 1, its edge, as well as the forested strip between the northern property boundary at Wetland 1 and I-95, will remain undisturbed as species may use this route to migrate to Wetland 5. There will also continue to be migratory passage available to terrestrial habitat through the Project Site to offsite areas post construction.

The Prairie Warbler (*Dendroica discolor*) is listed on the Information for Planning and Consultation (“IPaC”) report as a Bird of Conservation Concern (“BCC”); however, it is not listed as federally endangered or threatened. This species was observed on the Project Site during the ecological and wildlife fieldwork investigations predominantly within the scrub-shrub habitat. Given that this warbler is a BCC, the Petitioner proposes to provide a seasonal restriction measure that would provide nesting and breeding protection. This will include no clearing of the scrub-shrub habitat on the Project Site from May 1st through July 31<sup>st</sup>. A note has been added to the Construction Sequence on Site Plan Sheet C-5.0 (Exhibit A) to this effect.

36. Are there any wells on the site or in the vicinity of the site? If so, how would the petitioner protect the wells and/or water quality from construction impacts?

There are no wells on, or within the vicinity of, the Site.

37. Provide a Spill Prevention, Control and Countermeasure Plan.

A Spill Prevention, Control and Countermeasure Plan has been prepared for construction at the Site; a copy of same is included herewith as Exhibit E.

38. What effect would runoff from the drip edge of each row of solar panels have on the site drainage patterns? Would channelization below the drip edge be expected? If not, why not?

Due to the fact that the development area is not graded consistently to the east or to the west in any location, it is not anticipated that runoff from the panel drip edges will channelize or have an effect on Site drainage patterns.

39. Would the proposed project be consistent with the 2015 U.S. Army Corps of Engineers Vernal Pool Best Management Practices?

As designed, the proposed Project will be consistent with the 2015 U.S. Army Corps of Engineers (“ACOE”) Vernal Pool Best Management Practices (“BMP”). The 100-foot Vernal Pool Envelope (“VPE”) will not be impacted by the Project nor is there a proposed

change to the VPE; existing VPE disturbance is approximately sixteen (16) percent (%) and will remain at the same percentage post construction.

The 750-foot Critical Terrestrial Habitat (CTH) that occurs within the Project Site is not suitable forested habitat for the amphibian species and is not considered suitable habitat under the Vernal Pool Best Management Practices guidance document (January 2015) from the US Army Corps of Engineers-New England District (attached hereto as Exhibit F). The figures depicted throughout the referenced Vernal Pool BMP document exclude all areas as suitable habitat except for forest communities. In addition, the attached Vernal Pool Disturbance Map (Exhibit G) indicates that the percentage of existing CTH disturbance is the same as proposed, approximately 71 (%) percent.

40. Provide an updated vernal pool assessment map showing the solar panels and other developed site features with a table quantifying pre- and post-construction development area percentages for the vernal pool envelope and critical terrestrial habitat.

A Vernal Pool Disturbance map has been prepared and is provided herewith as Exhibit G.

41. What is the host municipality's setback regulation from wetlands?

The latest available version of the Inland Wetlands and Watercourses Regulations of the Town of North Stonington (revised through March 14, 2012) describes the Upland Review Area from wetlands and/or watercourses to be 100 feet.

42. What is the length of the posts and to what depth would the posts be driven into the ground to provide structural stability? Are any impacts to groundwater quality anticipated? If so, how would the petitioner manage and/or mitigate these impacts?

It is currently anticipated that 12 to 16-foot length steel piles will be used as structural foundation materials. Based upon the use of this system, no impacts to groundwater quality are anticipated.

43. Where is the nearest recreational area from the proposed site? Describe the visibility of the proposed project from this recreational area.

The closest private recreational area from the Site is the Mystic KOA Holiday on Pendleton Hill Rd, and is approximately 1.7 miles west therefrom. The closest public recreational area is the Avalonia Land Conservancy/Yannatos Preserve on Clarks Falls, Rd and is approximately 1.63 miles north of the Site. The Site will not be visible from either area.

44. Where is the nearest national, state and/or locally-designated scenic road from the proposed site? Describe the visibility of the proposed project from the nearby scenic road.

The closest state-designated scenic road is Route 49, which runs north-south approximately 2.1 miles to the west of the Project Site at its closest point. The proposed Project will not be visible from this road.

45. Please submit photographic site documentation with notations linked to the site plans or a detailed aerial image that identify locations of site-specific and representative site features. The submission should include photographs of the site from public road(s) or publicly accessible area(s) as well as Site-specific locations depicting site features including, but not necessarily limited to, the following locations as applicable:

For each photo, please indicate the photo viewpoint direction and stake or flag the locations of site-specific and representative site features. Site-specific and representative site features include, but are not limited to, as applicable:

1. wetlands, watercourses and vernal pools;
2. forest/forest edge areas;
3. agricultural soil areas;
4. sloping terrain;
5. proposed stormwater control features;
6. nearest residences;
7. Site access and interior access road(s);
8. utility pads/electrical interconnection(s);
9. clearing limits/property lines;
10. mitigation areas; and
11. any other noteworthy features relative to the Project.

A photolog graphic must accompany the submission, using a site plan or a detailed aerial image, depicting each numbered photograph for reference. For each photo, indicate the photo location number and viewpoint direction, and clearly identify the locations of site-specific and representative site features show (e.g., physical staking/flagging or other means of marking the subject area).

The submission shall be delivered electronically in a legible portable document format (PDF) with a maximum file size of <20MB. If necessary, multiple files may be submitted and clearly marked in terms of sequence.

A photo log exhibit has been prepared and is enclosed herewith as Exhibit H.

### **Facility Construction**

46. Referencing page 17 of the Petition, has GCE submitted its application to DEEP for a Stormwater Permit? What is the status?

As of the date of this response, the Petitioner has secured SHPO concurrence on the project, has ongoing consultation with the Dam Safety Division of CTDEEP, and has ongoing correspondence with the Wildlife Division of CTDEEP. Once these three departments have reviewed the project in full and concur, the Petitioner intends to immediately file for a CTDEEP Stormwater General Permit. Notification will be made to the Council when this takes place.

47. With regard to earthwork required to be developed the site, provide the following:

- a) Will the site be graded? If so, in what areas?

Yes, the proposal is to grade the site in the location of the proposed stormwater basins, in the location of the proposed swales, and in locations of planned development which currently exceed fifteen percent (15%) slope.

- b) What is the desired slope within the solar array areas?

It is generally accepted that a fifteen percent (15%) slope or less is tolerable for fixed-tilt solar panel racking. It is not proposed to regrade areas to be covered by panels which is already under 15% slope.

- c) Could the solar field areas be installed with minimal alteration to existing slopes?

The solar panel array itself is proposed on approximately 17.7 acres. It is only proposed to regrade 0.6 acres to reduce steep slopes, which represents only 3.3% of the solar panel array acreage.

- d) If minimal alteration of slopes are proposed, can existing vegetation be maintained to provide ground cover during construction?

It is the Petitioner's opinion that minimal alteration of slopes is proposed. Existing vegetation will be maintained to the maximum extent feasible; however, the existing vegetation of brambles and saplings is not conducive to solar development and it is recommended that a mowable grass seed mix be employed.

- e) Estimate the amounts of cut and fill in cubic yards for the access road(s).

It is proposed to install approximately 1,850 linear feet of access road within the limits of work. The construction of the road will be 15-foot wide and 12-inch deep. No regrading for slope adjustment is proposed in association with construction of access roads. Accordingly, it is anticipated that approximately 1,030 cubic yards of soil cut will be replaced with road material.

- f) Estimate the amounts of cut and fill in cubic yards for solar field grading.

Based upon an earthwork analysis of the proposed grading with the solar panel array, the cut/fill is generally balanced and includes moving approximately 600 cubic yards of soil.

- g) If there is excess cut, will this material be removed from the site property or deposited on the site property?

Primarily due to the creation of stormwater basins, it is anticipated that an excess cut of soil of approximately 7,800 cubic yards is required for the project. The Petitioner presently anticipates stockpiling excess material for reuse in other non-project areas of the property.

## **Handling of Soil**

48. Would topsoil be stripped from the site prior to grading? If so, would the topsoil be spread over the disturbed areas once grading is complete? If not, how would growth of new vegetation/grasses be promoted within the graded areas if nutrient rich soils are not present?

The Petitioner anticipates that topsoil will be stripped from the site prior to grading and stockpiled for reuse as necessary.

49. How would the posts (that support the racking system) be driven into the ground? In the event that ledge is encountered, what methods would be utilized for installation?

The posts will be driven into the ground by a track-mounted pile driver. Ground screws or concrete ballasts will be used in the event that ledge is encountered.

50. What is the minimum road width required for post-construction use?

Greenskies' preferred minimum road width for post-construction operations and maintenance is fifteen feet (15').

51. Referencing page 11 of the Petition, based on any geotechnical investigation performed, would the existing site conditions support the overall project design?

Based upon the geotechnical testing for stormwater management, the Project has been designed to accommodate existing Site conditions. It is anticipated that structural pull testing will be required if/once the Project is approved to assist in the final design of the racking foundation systems.

52. Referencing Figure 8 of the Petition, Construction Schedule, would the schedule be affected by any potential seasonal restrictions as determined by the results of the wildlife/plant survey of protected species?

A restriction of scrub-shrub clearing at the Site between May 1st and July 31 has been added to Site Plan Sheet C-5.0 (Exhibit A) to protect for the possible presence of prairie warblers. Consultation with NDDDB is ongoing, however further discussions will likely be necessary to determine potential seasonal restrictions related to the possible presence of box turtles at the Site.

## **Maintenance Questions**

53. Would the Petitioner remove snow that accumulates on the panels? Would snow accumulation on the solar panels affect the output of the facility? Under what circumstances would snow be removed? Describe snow removal methods.

There are no anticipated circumstances in which Greenskies would remove snow from panels. Accumulation of snow will affect energy output, however, this has been factored into the production analysis.

54. Describe the type and frequency of anticipated vegetation management for the site. Include areas inside and outside of the perimeter fence, as well as detention basins and swales.

Vegetation maintenance on-site involves mowing two (2) to three (3) times per year.

Appendix C of the Stormwater Report, enclosed herewith as Exhibit B, has been revised to include more information regarding long-term type and frequency of anticipated vegetation management for the Site. Generally, areas inside the perimeter fence shall be mowed twice a year and inspected bi-annually for bare spots. Any bare spots shall be seeded and re-planted as necessary. It is not proposed to maintain vegetation outside of the limits of the proposed perimeter fence as part of this project.

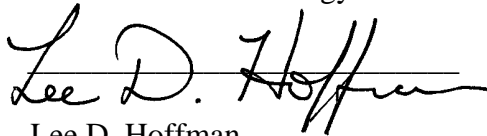
55. Would the installed solar panels require regular cleaning or other, similar, maintenance? If so, how often and please describe cleaning procedures including substances used. Would this maintenance activity have any impacts to water quality?

Due to regular precipitation and weather patterns in the Northeast, modules typically do not require periodic cleaning. If, however, an unforeseen incident or event were to occur that would make cleaning necessary, GCE would only use water for such cleaning purposes.

56. Would the Petitioner store any replacement modules on-site in the event solar panels are damaged or are not functioning properly? If so, where? How would damaged panels be detected?

No, the Petitioner would store all replacement modules at the Greenskies warehouse in North Haven, CT.

Respectfully Submitted,  
Greenskies Clean Energy LLC



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