Petition No. 1385
Responses to Interrogatories
Set One

November 20, 2019

Project Development

1. If the project is approved, identify all permits necessary for construction and operation and which entity will hold the permit(s).

   Cobb Road LLC is the project level company that all project documents are held in. With the exception of the construction permits, which will be managed by the EPC contractor, use permits and interconnection permits will be in the name of Cobb Road LLC. The Petitioner anticipates that one of the key construction permits for the project will be the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, which is issued by the Connecticut Department of Energy and Environmental Protection ("DEEP"). The Petitioner anticipates that the permitting for the Project will be as follows:

Permit	Authority	Entity to Hold Permit
State		
Declaratory Ruling that a Certificate of Environmental Compatibility and Public Need is not Required	Connecticut Siting Council (CSC)	Cobb Road LLC
Approval of Development and Management Plan	Connecticut Siting Council (CSC)	Cobb Road LLC
General Permit for Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities	Connecticut Department of Energy and Environmental Protection (CTDEEP)	Cobb Road LLC
Qualification as a RPS Class I Renewable Generation Unit[1]	Connecticut Public Utilities Regulatory Authority (PURA)	Cobb Road LLC
Local		
Town of Old Lyme	Building and Electrical Permit	Construction contractor and/or Cobb Road LLC

[1] Obtaining this approval is not necessary for construction or operation of the Project, however, Petitioner anticipates applying for and receiving this approval nonetheless.

2. Would the Petitioner sell all of the electricity and renewable energy certificates (RECs) it expects to generate with the proposed project to Eversource?

   The Petitioner objects to this Interrogatory as the Interrogatory exceeds the scope of a petition for declaratory ruling pursuant to Conn. Gen. Stat. §§4-176 and 16-50K. Subject to the foregoing objection, the Petitioner states that, pursuant to the LREC Agreement, dated January 22, 2019, between Cobb Road, as Seller, and Eversource, as Purchaser, Cobb Road is required to sell all of the renewable energy certificates (RECs) it expects to generate with the proposed Project to Eversource. Initially, it is anticipated that the energy from the Project will be sold back to Eversource via their self-generation tariff, also known as Rate 980.

3. What authority approves the power purchase agreement (PPA) for the facility? Has a PPA with Eversource been executed? If so, at what alternating current megawatt output? If not, when would the PPA be finalized?

   The Petitioner objects to this Interrogatory as the Interrogatory exceeds the scope of a petition for declaratory ruling pursuant to Conn. Gen. Stat. §§4-176 and 16-50K. Subject to the foregoing objection, Cobb Road states that there is no Power Purchase Agreement ("PPA") for the proposed Facility, as the energy will be sold via the Eversource Rate 980 tariff (approved by PURA). Accordingly, there is only the LREC Agreement, dated January 22, 2019. As such, the remainder of Interrogatory #3 is inapplicable to the Petitioner and the proposed Project.

4. What is the length of the PPA? Are there provisions for any extension of time in the PPA? Is there an option to renew?

   The Petitioner objects to this Interrogatory as the Interrogatory exceeds the scope of a petition for declaratory ruling pursuant to Conn. Gen. Stat. §§4-176 and 16-50K. Subject to the foregoing objection, Cobb Road states that, there is no PPA for the proposed Facility. Therefore, Interrogatory #4 does not apply. The term of the LREC Agreement, however, is fifteen (15) years.

5. Is the alternating current megawatt capacity of the facility fixed at a certain amount per the PPA? Is there an option within the PPA to allow for changes in the total output of the facility based on unforeseen circumstances?

   The Petitioner objects to this Interrogatory as the Interrogatory exceeds the scope of a petition for declaratory ruling pursuant to Conn. Gen. Stat. §§4-176 and 16-50K. Subject to the foregoing objection, the Petitioner states that, there is no PPA for the proposed Facility. As such, Interrogatory #5 does not apply. However, the LREC Agreement stipulates that the nameplate capacity of the Facility cannot be greater than 2 MW-AC.

6. If the PPA expires and is not renewed and the solar facility has not reached the end of its lifespan, will the Petitioner decommission the facility or seek other revenue mechanisms for the power produced by the facility?

   The Petitioner objects to this Interrogatory as the Interrogatory exceeds the scope of a petition for declaratory ruling pursuant to Conn. Gen. Stat. §§4-176 and 16-50K. Subject to the foregoing objection, the Petitioner states that there is no PPA for the proposed Facility. Therefore, Interrogatory #6 does not apply.

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

   The Petitioner objects to this Interrogatory as the Interrogatory exceeds the scope of a petition for declaratory ruling pursuant to Conn. Gen. Stat. §§4-176 and 16-50K. Subject to the foregoing objection, the Petitioner states that, there is potential, but no obligation, for the Petitioner to participate in the ISO-NE Forward Capacity Auction. That having been said, the Petitioner currently has no plans to participate in the ISO-NE Forward Capacity Auction.

Proposed Site

8. Would the Petitioner lease or purchase the subject property to develop the project? If the property is to be leased for the purposes of the project, in the lease agreement, are there any provisions related to site restoration at the end of the project's useful life? If so, please provide any such provisions.

   The Petitioner will lease the subject property to develop the Project. Pursuant to the terms of the Lease, dated March 23, 2018, by and between Howard S. Tooker (as "Landlord") and Independence Solar, LLC (as "Tenant"), the Petitioner is required to decommission the Solar Facility within the Decommissioning Period, which is 150 days after the cessation of electricity production, pursuant to the terms of the Lease. Furthermore, the Lease provides that, in the event that the Petitioner fails to decommission the Solar Facility within such period, "Landlord shall have the immediate right to re-entry (to the extent permitted by law) and may cause the Solar Facility and all other property belonging to Tenant removed from the Leased Property." Therefore, notwithstanding that it is the general practice of the Petitioner to ensure adequate Site restoration upon decommissioning a project, the Petitioner is contractually obligated to ensure that the Site is adequately restored at the end of the Project's useful life. If the Petitioner fails to do so, the Landlord will have the ability to decommission the Project and pursue the Petitioner for penalties under the terms of the Lease.

9. Page 6 of the Petition, Section 3.2.2 states, "Currently, the immediate surrounding parcel is in the process of being developed for residential subdivisions by a private developer." Please identify this parcel by property owner and lot number.

   The Petitioner acknowledges that while Section 3.2.2. of the Petition may be read to refer to a particular parcel, Petitioner's intent was to state that the surrounding area, particularly those specific parcels located to the south and east of the Project, are in the process of being developed for residential subdivisions by a private developer.

   As was noted previously, Howard S. Tooker owns the Project Site, including the area surrounding the Project Site (the "Land"). Originally, the Land (including the Project Site) was slated for residential development. Several years ago, however, Mr. Tooker sold only a portion of the Land (i.e., those areas nearby the Project Site) to a private developer, resulting in what is now known as "The Oaks" subdivision. As indicated in the Map, attached hereto as Attachment A, there are several parcels predominantly to the southeast of the Project Site where there are residential

subdivisions and new construction occurring. Pertinent information regarding these parcels is included in Attachment A.

10. The Viewshed Analysis Map notes that, "Proposed solar panels to be mounted on approximately 10' AGL support structures." Does this mean that the distance from grade to the bottom edges of the solar panels would be not more than 10 feet? Or is 10 feet AGL a conservative maximum height that would not be exceeded by the proposed solar panel installation? Please explain.

    The ten (10) feet AGL is a conservative maximum height that would not be exceeded by the proposed solar panel installation(s). Currently, the Petitioner intends to install the panels on a 25-degree tilt, with the lower end set to be approximately three (3) feet AGL. Because each row is to be installed along the slope, the expected maximum height of the panels should not exceed 10 feet AGL.

11. Referencing the Phase 1B Cultural Resources Reconnaissance Survey, page 25, it notes, "As mentioned above, none of the archaeological deposits identified within the Locus 1 do not retain research potential…" Was "…none of the archaeological deposits identified within Locus 1 retain research potential…" intended (emphasis added)?

    Yes, that is what the Petitioner intended. As such, that sentence should read: "As mentioned above, none of the archeological deposits identified in Locus 1 retain research potential…"

12. What is the operational life of the facility?

    The Petitioner anticipates that the operational life of the Facility will be at least twenty-five (25) years.

13. Page 11 of the Petition, Section 3.7 notes that, "Key assumptions in estimating the Project's decommissioning costs include the fact that fencing, electrical cabinetry, solar racks, solar panels, wiring and all other equipment are one hundred percent (100%) recyclable…" However, Under Appendix B of the Petition – Decommissioning Plan, Step 2, states that, "The panels will either be recycled, reused at another project or transported to an appropriate disposal if they can neither be reused nor recycled." Please explain why page 11 of the Petition notes that the panels are assumed to be 100 percent recyclable while Appendix B has a disposal option.

    Presently, the panels are 100 percent recyclable. However, the Petitioner is unsure whether this fact will remain true in 25 – 30 years. As such, out of an abundance of caution, the Petitioner also developed the disposal option for the panels, as was included in Appendix B of the Petition.

14. Page 11 of the Petition, Section 3.7 notes that, "When the operation of the Project has been discontinued, or the Facility has been decommissioned, abandoned or has reached the end of its useful life, Cobb Road plans to remove the Facility within 90 days of discontinued operations." Explain what is meant by "abandoned" in this context.

    An abandonment would occur if the Project was de-energized and removed from producing electricity to the grid. At that time, the Project would begin decommissioning.

15. Page 6 of the Petition notes, "The nearest residence is located approximately 750 feet south of the Project Area." Please provide the address of this residence.

    The address of this residence is 18-1 Short Hills Road, Old Lyme, Connecticut (Parcel ID 24-17).

Energy Production

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

    Yes, a variety of energy loss assumptions have been factored into calculating the Facility's expected output. Such assumptions include: losses due to wiring, soiling/snow, module mismatch, and LID. The nameplate rating of the Facility is 1.95 MW-AC, with an expected year 1 production of 3,942 MWh-AC.

17. Explain why a solar panel orientation to the south with an angle at 25 degrees above the horizontal was selected for this facility. Is the project designed to maximize annual energy production or peak load shaving?

    The twenty-five (25) degree tilt is an optimized design to maximize annual energy production.

18. What is the projected capacity factor (expressed as a percentage) for the proposed project?

    The anticipated capacity factor for the Project based on the MW-AC rating is 22.6 (%) percent.

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

    The efficiency of the proposed Project's photovoltaic module technology (based on W-DC) is expected to be 19.7 (%) percent.

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

    Yes. The Petitioner has assumed a linear loss of 0.5% in power output every year.

21. 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 PPA.

    No battery or other storage is proposed for the Project at this time; nor have any studies been done to date assessing the impact of including battery storage in project design.

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

    All forms of shading and soiling, including snow and other weather-related events, have been included in the Petitioner's energy estimates. Such estimates have been incorporated into the above capacity factor of 22.6 (%) percent.

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

In theory, all solar projects can serve as a microgrid from a technology perspective. This specific project, however, is approved for interconnection with Eversource's power grid and thus will not be serving as a microgrid.

24. 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?

    The Project has twelve (12) inverters that operate independently. Therefore, if an operational issue were to occur, such that it reduced or curtailed the output of one of the inverters or one of its subcomponents, it would not have any impact on the production capabilities of the other eleven (11) inverters or their output to the grid.

Site Components and Solar Equipment

25. Provide the specifications sheet for the proposed solar photovoltaic panels.

    The specifications sheet for the proposed solar photovoltaic panels is attached hereto as Attachment B.

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

    a) What is the anticipated size of the panels? How many panels would each rack hold?

       The Solar System's design, as proposed, uses TSM-DE14A panels. These panels are approximately 2000 mm long by 992 mm wide, and 40 mm thick. Each rack is designed to hold 24 panels.

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

       The panels will be mounted in landscape fashion, with a height of four (4) panels.

    c) What is the minimum and maximum overall height of the panels above grade?

       The minimum height of the panels above grade will be three (3) feet. Accounting for slope, the expected maximum height of the panels should not exceed ten (10) feet above grade.

27. Were string inverters considered for this project? If so, what factors led the current design of several large inverters rather than the use of string inverters? Would the use of string inverters rather than large inverters allow the Petitioner to reduce the footprint of the project?

    The Solectria XGI 1500 series inverters selected for the Project are string inverters. A specification sheet for this type of inverter is attached hereto as Attachment C. While the Petitioner acknowledges that string inverters have increased in size over the last few years, they are still materially different than the previous generation of central inverters. That said, the subject string inverters can be mounted on a rack built behind one of the Project's panel rows, without the need for an additional equipment pad. As such, the selected string inverters reduce the overall area needed for the equipment. The Petitioner does not believe that using a different model and/or size of string inverter would impact the footprint of the Project.

28. Referencing page 2 and Appendix H of the Petition, there would be 12 inverters at 150 kW AC each for a total of 1.8 MW AC. Would 13 inverters be required to achieve 1.95 MW AC? Explain.

    The Solectria XGI 1500 line of string inverters has three (3) options for the nameplate rating: 125 kW-AC, 150 kW-AC, and 166 kW-AC. The string inverters selected for this Project are a combination of nine (9) of the 166 kW-AC model (XGI 1500-166/166) and three (3) of the 150 kW-AC model (XGI 1500-150/166). Therefore, the twelve (12) inverters selected for this Project have a combined output rating of 1.944 MW-AC (rounded to 1.95 MW-AC).

29. What is the length of the screw anchors (that support the racking systems) and to what depth would the anchors be spun into the ground to provide the required structural stability? How would the screw anchors be spun into the ground? In the event that ledge is encountered, what methods would be utilized for installation? Are any impacts to groundwater quality anticipated? If so, how would the Petitioner manage and/or mitigate these impacts?

    The length and depth of the screw anchors (that support the racking systems) to provide the required structural stability will be determined by TerraSmart, the racking manufacturer, as part of its structural design drawings. The screw anchors will be spun into the ground utilizing TerraSmart's advanced ground screw install machines. In the event that ledge is encountered the holes will be pre-drilled and then the anchors would be spun into that hole, which limits the necessary ground disturbance. More information on TerraSmart's ground screw anchors can be found here: https://www.terrasmart.com/products/ground-screws/.

    The Petitioner does not anticipate that there will be any impacts to groundwater quality; as such, the remainder of Interrogatory 29, as it relates to managing and/or mitigating these impacts, is inapplicable.

30. 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?

    The wiring between the panels will be neatly secured to the racking structure, using steel clips and rubber coated steel ties. This will ensure that said wiring is protected by the racking structure and will not be subject to damage. The wiring from the panel strings back to the inverters will be run underground in conduit from the racking structures to the location of the inverters, and therefore, will not be exposed.

31. The proposed aisle width between the solar panel rows from panel edge to panel edge is about 13.4 feet per Sheet SP-2. What is the minimum aisle width at which the solar panel rows could be installed?

    The proposed aisle width between the solar panel rows (inter-row spacing) of 13.4 feet, with a tilt of twenty-five (25) degree, is the aisle width required for the Project to optimize the design and is as suggested by CTDEEP's *Appendix I, Stormwater Management at Solar Array Construction Projects* Section 1(a). The vegetated area receiving runoff between rows of solar panels (see Figures 1 and 2) is equal to or greater than the average width of the row of solar panels draining to the vegetated area.

Interconnection

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

    The Project is required to apply for interconnection approval with Eversource. As part of Eversource's obligations, Eversource may be required to submit the Project to ISO-NE for its review. However, such review process is solely Eversource's responsibility, and not the Petitioner's.

33. Is a System Impact Study from Eversource required for the interconnection process? If yes, has Eversource confirmed that the existing distribution can accommodate the 1.95 MW AC of the facility, or would the existing distribution need to be upgraded?

    Yes, a System Impact Study ("SIS") was required for the interconnection process; and Eversource issued a final report for the Project on August 22, 2018. The SIS found that the existing distribution infrastructure can accommodate the proposed Project without the need for significant upgrades, aside from adding some standard relay protection equipment to the circuit and installing the wiring to connect the Project to the existing utility lines running adjacent to the Site.

34. What is the status of the interconnection agreement with Eversource?

    The Petitioner has a fully executed interconnection agreement with Eversource, dated June 28, 2019.

35. Would the proposed electrical interconnection be underground from the solar facility to Proposed Utility Pole #5 and then continue overhead to reach Eversource's existing distribution? Approximately how tall would the five proposed utility poles be?

    Yes, the electrical interconnection will run underground between Proposed Utility Pole #5 and the Solar Facility. It is expected that the five (5) utility poles will stand approximately 40 feet tall.

36. Page 11 of the Petition, Section 3.7 notes that, "The proposed facility would interconnect to the electrical grid via an existing distribution pole located within the Eversource ROW to the south." Is the existing Eversource distribution three-phase or would it have to be upgraded from single-phase to three-phase? What is the line voltage of the existing Eversource distribution, e.g. 13.8-kV?

    The existing Eversource distribution lines located within the adjacent ROW (where the Project will interconnect) is a 3-phase, 23 kV circuit.

Public Safety

37. 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 will be designed to comply with applicable codes and standards, including the National Electrical Code ("NEC") the National Electrical Safety Code ("NESC"), and those codes and standards promulgated by the National Fire Protection Association ("NFPA").

38. Page 8 of the Petition, Section 3.3.4 notes that, "[T]he main point of ingress/egress to the Facility is located in the southwest corner of the Project Area." Was "southeast corner of the Project Area" intended?

    Yes, that was an unintended scrivener's error. The proposed gate—intended for the ingress/egress to the Facility—is located in the southeast corner of the Project Area, not the southwest corner of the Project Area.

39. Two access gates would be located on the western portion of the fenced solar facility. What would these access gates be used for?

    The two access gates located on the western portion of the fenced solar facility would be used to provide access for the maintenance of the proposed stormwater basins.

40. Where is the nearest federally-obligated airport? Is a glare analysis required to comply with FAA policy?

    The nearest federally-obligated airport is Groton-New London Airport, which is located approximately eleven (11) miles to the east of the Project Site. A smaller, private airstrip, Mile Creek,[2] is located approximately two (2) miles to the southwest of the Project Site.

    It is the Petitioner's present understanding that the applicable FAA policy requiring glare analyses is limited to development on airport facilities and within nearby approach zones. The Petitioner also ran an *FAA 7460-1 Aeronautical Study*, which resulted in a "No Hazard to Air Navigation" Determination, thereby confirming that the Project would not obstruct/interfere with air navigation. Such determination also suggests that the Project is not within an approach zone. Due to this response from the FAA, the Petitioner did not believe that a glare study was necessary.

41. 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?

       The process of such outreach and training has begun. On November 6, 2019, Petitioner representative, James Schwartz, met with several members from the Old Lyme Fire Department ("OLFD"), including Chief Steve Super, Deputy Chief Mike McCarthy, Assistant Chief James Oldfield, and Captain Larry Merrill (collectively, the "OLFD personnel"). During the meeting, the Petitioner provided OLFD personnel with an overview of the proposed Project and equipment, including a 24" by 36" drawing set of site plans and copies of the Material Data Safety Sheet ("MSDS") for the proposed solar panels. In addition, the Petitioner discussed the means of disconnecting power from the System in the event of an emergency; the roads that would be used by the OLFD to access the Site; and the various System components (including panels, inverters, racking,

[2] *See* https://www.airnav.com/airport/5CT7

switchgear(s), and transformer(s)) and associated hazards with same. The Petitioner also committed to provide the OLFD with the following related to the Project:

- A Knox Box with gate access keys at the main entrance;
- Signage on the Project Site, which identifies System components and hazards;
- Pertinent contact information for the Petitioner's representative to contact 24/7 in the event of an emergency (which information will also be included in the Site's signage);
- As-built project plans, in electronic format, to include in auto-dispatch system and loading on field iPads;
- Project pictures, including aerial images with a Project map, to include in auto-dispatch system and loading on field iPads;
- Training sessions for OLFD personnel during the Project's construction and after the Project's completion to ensure that OLFD personnel are familiar with Site layout, System components, and common hazards.

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

At the main gate entrance to the Project, there will be a Knox Box with a key for emergency responder access. The Petitioner will also provide emergency responders with a set of Project plans, to ensure that they are well familiarized with the 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?

To mitigate potential electric hazards that could be encountered by emergency response personnel, the Project will have comprehensive signage—with clear warnings relating to the equipment location(s) and hazards associated therewith—throughout the Site, including at the main entrance gate, on the exterior fencing, and on the solar equipment. In addition, a main shutoff switch for the electrical feed for the entire Solar Facility will be located next to the main gate entrance to the Facility with identifying signage, that should be opened if any emergency responders need to enter the Facility.

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

Yes, the Solar Facility's design includes a main shut off switch for the 23-kV connection to the utility grid, which will be located at the main entrance to the Facility. When said main switch is opened, power to the entire Solar Facility (including, the transformer, switchgear, inverters) will shut off, and all of the inverters will cease operations within two (2) seconds of the switch opening. It should be noted that the solar panels do remain energized if sunlight is present; but this only represents a hazard if there is damage to the panel-level wiring. This was discussed during the November 6th OLFD meeting, and will be part of the emergency response training upon the Project's completion.

Environmental

42. Referencing Appendix F – Wetland & Vernal Pool Protection Plan, Reporting Section, it states, "Following completion of the project, a summary report will be prepared by the Environmental Monitor documenting compliance with the Wetland and Vernal Pool Protection Plan and

submitted to the Permittee." If approved, could the Environmental Monitor's final summary report also be provided to the Council?

Yes, the Environmental Monitor's final summary report will be provided to the Council.

43. Could the project be redesigned to reduce impacts to core forest and the critical terrestrial habitat of the vernal pool? Explain.

    The Petitioner's ability to limit impact to forest habitat is largely constrained due to the forest habitat that surrounds the proposed Site. Accordingly, if the Petitioner were to shift the Facility either to the east or west of its proposed location, the Facility would similarly encroach into forest habitat and therefore would not result in a reduction to forest impact. The property boundary to the north, and the Eversource ROW to the south, limits alternative layouts in these directions. It may be possible to shift the Facility to the west to expand upon the existing ±370 buffer from Vernal Pool 1 and further minimize impact to the pool's critical terrestrial habitat ("CTH"); however, Wetland 4 limits the ability to provide any significant movement to the west.

    That said, the decision to site the Facility in its current location was the result of balancing the need to minimize impact(s) to the CTH, against the need to avoid encroaching, to the extent feasible, into the upland buffer to Wetland 4. The proposed Facility complies with the guidelines from the U.S. Army Corps of Engineers New England District's *Vernal Pool Best Management Practices* ("BMPs") (January 2015) and the *Best Development Practices: Conserving Pool-Breeding Amphibians in Residential and Commercial Development in the Northeastern U.S.* (Calhoun & Klemens; 2002) for development within the CTH. Notably, the proposed Facility does not exceed the recommended 25% maximum development threshold, as only 14% of the CTH will be developed by the proposed facility. Therefore, the proposed habitat loss within the CTH is not anticipated to result in a significant negative impact on the vernal pool-dependent species populations utilizing Vernal Pool 1. Conceivably, the location of the Facility could be shifted 50 feet further west, which would reduce the buffer to Wetland 4 to ±50 feet. However, such a shift would only result in a three (3%) percent reduction of CTH development. Considering that the Facility, as currently proposed, will not result in a degradation to vernal pool- dependent species and complies with applicable regulatory guidance, a redesign of the Facility would not result in a significant benefit to Vernal Pool 1 or significantly reduce impact to the CTH. As such, the Petitioner has no present plans to relocate the Facility.

44. Please provide the following:

    a. Acreage of tree clearing only;

       There will be 0.39 acres of tree clearing only.

    b. Acreage of tree clearing and grubbing;

       There will be 12.33 acres of tree clearing and grubbing.

45. How would invasive species be managed? If the project is approved, could a 5-year invasive species management plan be submitted?

The Petitioner proposes to address invasive species primarily through preventative means. The Project Site is generally void of invasive plant species, as the understory and herbaceous layers primarily consist of native upland species. However, the Petitioner recognizes that during Project-related construction activities on the Site, the resulting soil disturbance may create the opportunity for invasive plant species to invade and become established, thereby out competing desirable native plant species. Accordingly, the Petitioner believes that taking certain preventative measures to avoid/minimize the introduction of invasive plant species represents an effective management technique for this Project.

One such preventive measure would be to immediately reclaim disturbed areas with the planting of native species. The proposed pollinator-friendly seed mix will be certified "weed-free" and will include a wide variety of native grasses and forbs that will encourage a weed-resistant habitat. To further discourage the establishment of invasive species, disturbed soils will be immediately seeded and mulched. If soils need to be changed to promote healthy root and foliage growth, the Petitioner will use compost or an organic slow release fertilizer. The Petitioner will avoid the use of commercial fertilizer(s), as weed growth is often encouraged, and commercial fertilizer(s) reduce the ability to establish native plantings due to excessive nitrogen release. As another means of control, contractors will be required to clean their respective equipment prior to entering the Site to avoid introducing undesirable non-native plant seeds. As part of its Operation and Maintenance plan for the Facility, the Petitioner proposes monitoring invasive plants for a five (5)-year period post construction. If more than 20% aerial coverage of invasive plants is identified during this time, the Petitioner would develop an appropriate treatment plan.[3]

46. With regard to herbicide and pesticide use, would such uses be avoided per the voluntary measures on page 36 of the Environmental Assessment, or would herbicides and pesticides be used "only when necessary" with spot treatments per page 27 of the Petition? Would they be required to control invasive species?

    As a preliminary matter, it is the Petitioner's goal to avoid the use of herbicides and pesticides altogether. The Petitioner is currently contemplating a number of techniques/practices that can be implemented in the preliminary stages of Project development to mitigate the need for the use of herbicides and pesticides later on. However, the Petitioner is mindful that the use of same may be necessary to comply with the Council's directives relating to invasive species. In such event, herbicides and pesticides would be used in accordance with the Council's directives.

47. Did the Petitioner conduct a Shade Study Analysis? Would shading present any challenges for the proposed project? If so, provide acreage of trees that would be removed to mitigate for shading? How were the limits of tree shading determined? Will stumps be left in place in these areas?

    Shading will not present additional challenges for this Project, as the effects thereof were accounted for in the Project's design and were similarly included as part of the overall limits of disturbance so additional clearing will not be required beyond what is being proposed. That said, the Project's design was completed using aggressive shade ratios of 1:1 in the east/west and 2:1 in

[3] The 20% performance standard is based other invasive species management plans that have been reviewed by local, state and federal agencies and generally follows guidance from the Army Corps of Engineers. Additional information may be found at: https://www.nae.usace.army.mil/Missions/Regulatory/Mitigation.aspx. Please click on Monitoring Reports for additional information.

the north direction from the edge of panels. This aggressive approach was used as the Petitioner is willing to accept some shading (and the attendant reduction in electricity output and associated revenues) in order to allow for the development of a more compact site. Therefore, these ratios were used in order to minimize the amount of clearing required for the Project.

In terms of how these limits of tree shading were determined, the proposed shading limits assumed an approximate tree canopy height of 70 feet, which requires a minimum clearing of 70 feet on the east and west sides of the array, and 140 feet from the trees on the south side of the electrical distribution right-of-way.

The clearing beyond the Facility limit is ±1.56 acres, which is required for shading and the installation of stormwater basins. The number of stumps that will be left in place will be minimal, as the majority of the cleared area outside the Facility will be occupied by the stormwater basins and proposed pollinator habitat.

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

The rows of solar panels are not considered "closed systems," because there are "gaps" between each module (both north/south and east/west). As such, the drip edge of each solar panel will not have an impact on the Site's drainage patterns, as stormwater will flow off of the panels in various locations as the panels follow the contours of the existing land. In the case of this Project since the solar panels will be in four up landscape orientation increasing the lower drip edge from two in portrait to four in landscape, reducing in half the amount of runoff encountered at each drip edge. Furthermore, once the Site is fully stabilized post-construction, channelization along the drip edge is not expected. The Petitioner expects that the only time that channelization along the drip edge may be of concern is during construction in those areas that are not fully stabilized; however, such would be rectified upon final stabilization of the Site.

Facility Construction

49. Would noise from inverters and transformer comply with DEEP Noise Control Regulations?

The DEEP Noise Control Regulations (the "Regulations") applicable to the proposed Project require the Facility to meet the following sound levels: 61 dBA at the nearest residential property during the day (when the Project would be generating electricity); 51 dBA at the nearest residential property at night (when some accessory equipment might still be in operation); 66 dBA at the nearest commercial property; and 70 dBA at the nearest industrial property. The Regulations also account for impulse and other types of noise. Construction noise is exempt from the Regulations.

The two sources of noise associated with the Project include the inverters and transformer. Sound from the Project will significantly degrade over distance. Based on information provided by specified equipment manufacturers, the selected inverters and transformer for the proposed Facility will typically generate maximum noise levels of approximately 56 dBA and 61 dBA at 3 feet from the equipment, respectively. The equipment will be below the Regulations' daytime criteria of 61 dBA at the nearest property line for each of the sources. Maximum noise levels from the inverters are calculated at ±22 dBA at the nearest residential property line (±150 feet to the southeast). The inverters are inactive at night and will not generate any noise while

inoperative. The closest residential property line relative to the transformer is approximately 138 feet to the southeast, where noise levels have been calculated at approximately 28 dBA. Further, transformer noise at the nearest residence (located ±750 feet to the south) has been calculated at approximately 13 dBA.

All other selected system equipment will typically generate lower levels of noise than that of the inverters or transformers. As such, the Project will meet the applicable regulations pertaining to noise and will not substantively change current conditions at the Site.

50. Has the Petitioner submitted an application for a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities from the Department of Energy and Environmental Protection?

    At this time, the Petitioner has not submitted an application for a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities from the Connecticut Department of Energy and Environmental Protection ("CTDEEP"). The Petitioner recognizes that it must obtain this permit before the commencement of construction of the Project.

51. Please provide a copy of CTDEEP's *Appendix I, Stormwater Management at Solar Array Construction Projects* referred to on page 37 of the Environmental Assessment.

    A copy of CTDEEP's *Appendix I, Stormwater Management at Solar Array Construction Projects* is attached as Attachment D.

52. Has the Petitioner considered the feasibility of installing a level spreader at the end of the proposed detention basin spillways to promote more of a sheet flow stormwater release?

    To date, the Petitioner has shown additional riprap leaving the detention basins, with the intent to promote sheet flow; however, the Petitioner would be amenable to revising this detail to show a level spreader.

53. With regard to earthwork required to develop the site, provide the following:

    a) What is the desired slope within the solar array areas?

       The racking manufacture TerraSmart is able to install the racking on slopes up to twenty-five (25%) percent. The Project is designed to maintain the existing slopes within the Project Area which are mainly below ten (10%) percent. The average slope from east to west across the array is between four and five (4-5%) percent.

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

       The existing slopes within the Project Area will require minimal alteration; any necessary alteration to same will be to maintain positive drainage from the clearing and grubbing activities.

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

As a result of the relatively dense overstory, the existing understory vegetation is dominated by scattered native shrub growth and minimal grass and forbs. Because there is a need to stump and grub the existing trees to develop the Site, the majority of the existing vegetation on the Site will be disturbed. However, the Petitioner will, to the greatest extent possible, maintain the existing understory vegetation by mowing the woody vegetation. This, in turn, will retain the fine root mats to assist in soil stabilization, as the permanent meadow vegetation is being established on site.

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

The access road will require the removal of approximately 1,000 cubic yards for the installation of the gravel.

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

There is no cut or fill required for the solar field grading, there will only be shaping. *See* Interrogatory 53(f) response below.

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

If there is excess cut resulting from the installation of the stormwater basins and access roads, that material would be spread throughout the Site so to minimize the removal of material from the Site. Any existing Topsoil will be maintained on site and reused as required. The Petitioner anticipates that some material, such as unsuitable, stones/boulders, excess cut material may have to be removed from the Site. If required to achieve optimal grass growth some additional topsoil may need to be brought to site.

54. 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?

In accordance with general construction practices, the existing topsoil will be stripped from the Site only in areas within the stormwater basins. In those areas, the topsoil will be stored in a stockpile to be spread over disturbed areas and stabilized with permanent vegetation once grading is complete. If, during the placement of stockpiles topsoil, it is determined there is an insufficient amount of topsoil for final grading of the stormwater BMPs, compost will be considered as an amendment. Importing topsoil will be avoided due to concerns over the introduction of invasive plants. For the remaining majority of the proposed development footprint, topsoil will remain in place. Topsoil will be tested for major and critical micronutrients and pH to determine if soil modifications are necessary to promote seed germination and establishment of a healthy meadow habitat. If soil tests indicate that the soils are particularly infertile, modifications, such as, lime, compost, and/or organic slow release fertilizers will be used at rates recommended by the soil testing laboratory in consultation with a soil scientist. Refer to Interrogatory 45 response and the concern over the use of commercial fertilizers that could potentially promote the establishment of invasive plants.

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

    The minimum access road width required for post-construction use is twenty (20) feet.

56. Has a comprehensive geotechnical study been completed for the site to determine if site conditions support the overall Project design? If so, summarize the results. If not, has the Petitioner anticipated and designed the Project with assumed subsurface conditions? What are these assumed conditions?

    The racking manufacture TerraSmart does not require a comprehensive geotechnical study to be completed to support their structural design as their pre-drilled foundation screw holes can accommodate any subsurface conditions. The Project has completed test pit and soil analysis for the stormwater basins to support the stormwater management design. Those results can be found in the Stormwater Management Report.

Maintenance Questions

57. 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, as applicable.

    Areas within the perimeter fence will be planted with a seed mix consisting of cool season fescue species (e.g., red fescue [*Festuca rubra*]) noted for their hardiness and wide ecological adaptation and deeper rooted, short-stature, warm season grasses such as little bluestem (*Schizachyrium scoparium*) and purple love grass (*Eragrostis spectabilis*) and low growing nitrogen fixing forbs such as partridge pea (*Chamaecrista fasciculata*), red clover (*Trifolium pratense*) and trailing clover (*Lespedeza procumbens*) to sustain soil fertility. The grass lined infiltration basins and swales will be seeded with a New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites (New England Wetland Plants, Inc., or approved equivalent) on the bottom of the basin and New England Erosion/Restoration Mix for Dry Sites (New England Wetland Plants, Inc., or approved equivalent) on the side slopes of the basins and swales. Both of these seed mixes contain a selection of native grasses and wildflowers designed to colonize recently disturbed sites where quick growth of vegetation is desired to stabilize the soil surface. These seed mixes are appropriate for ecologically sensitive restorations that require stabilization as well as long-term establishment of native vegetation. The area outside of the perimeter fence, between the fence and the newly-created forest edge, will be planted with a pollinator-friendly seed mix consisting of New England Showy Wildflower Mix (New England Wetland Plants, Inc., or approved equivalent). This seed mix includes a selection of native wildflowers and grasses that will create a wildflower meadow and support a wide variety of pollinator species.

    Mowing frequency within the perimeter fence will be performed approximately two (2) to three (3) times annually. The wildflower meadow habitat created around the outside of the fenced Facility will be mowed once annually in the late winter/early spring to provide cover and foraging habitat for wildlife during both flowering and seed production periods, so to support both pollinator and bird species. In both vegetation management areas, mowing would not occur within 24 hours after a significant rainfall event when soil would be susceptible to compaction.

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

    No cleaning is anticipated throughout the Project's lifetime.

59. How does the developer intend to promote and maintain grasses or other ground cover beneath the panels and within the solar array rows? Would bare ground areas or patchy growth increase site runoff?

    All areas exposed during construction will be reseeded with an array seed mix containing a mixture of sun-tolerant and shade tolerant grasses, in order to promote growth both underneath the panels and between the rows of modules. A stormwater pollution prevention plan will be implemented as part of the CTDEEP Stormwater General Permit to address runoff. Periodic mowing will occur each season as part of normal operations and maintenance.

60. If applicable, what type of methods would be employed to clean the panels and how often?

    No cleaning is anticipated throughout the Project's lifetime, since in New England, there is rarely the need for module washing due to frequent rain fall. In the unlikely event there is an abnormal buildup on the modules causing a significant production loss, then the modules will be washed with water only. Such water would be brought into the Site via tanker truck.

61. 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 spare panels will be stored on Site; rather, spares will be stored in an off-site facility. The Solar Facility will feature a remote monitoring system that will immediately alert the Petitioner of any/all malfunctioning of the major System components (i.e., the transformer, inverters, strings of panels) which will allow the Petitioner to take quick, corrective action. Additionally, the Facility will be inspected regularly by a service technician. There are several tools used by service technicians to identify any panel issues, including, *inter alia*, an I-V curve tracer, insulation megger tester(s), and thermal camera scans.