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December 13, 2022

**VIA ELECTRONIC MAIL AND
HAND DELIVERY**

Melanie Bachman
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Petition No. 1541 – North Haven Solar One, LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 1.625-megawatt AC solar photovoltaic electric generating facility located at 122 Mill Road, North Haven, Connecticut, and associated electrical interconnection.

Dear Ms. Bachman:

I am writing on behalf of my client, North Haven Solar One, LLC, in connection with the above-referenced Petition. With this letter, I am enclosing an original and 15 copies of North Haven Solar One's responses to the Siting Council's First Set of Interrogatories, issued on November 22, 2022. Please accept the original and 15 copies of these responses, and please date-stamp the remaining copy of the responses and return it to my Paralegal Kurt Sheathelm, who is hand delivering the responses.

If you have any questions concerning this submittal, please contact me at your convenience. Thank you in advance for your consideration of this Petition.

Sincerely,

Lee D. Hoffman

**STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL**

North Haven Solar One, LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 1.625-megawatt AC solar photovoltaic electric generating facility located at 122 Mill Road, North Haven, Connecticut, and associated electrical interconnection.	Petition No. 1541
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Petitioner North Haven Solar One, LLC hereby submits the following responses to the Interrogatories that were directed to North Haven Solar One, LLC by the Connecticut Siting Council on November 22, 2022.

Project Development

1. What is the estimated cost of the project?

The cost of the project is estimated to be over three million dollars.

2. Is the project, or any portion of the project, proposed to be undertaken by state departments, institutions or agencies, or to be funded in whole or in part by the state through any contract or grant?

No.

3. Referencing page 14 and 18 of the Petition, has the Town of North Haven and/or any abutters provided comments to North Haven Solar One, LLC (NHSO) since the Petition filing? If so, please summarize the comments and how these comments were addressed, including, but not limited to, any updates to visual mitigation.

Yes, the Petitioner received comments from one neighboring property owner after submission of the petition. These comments included the following:

- i. Possible danger of exposure to electricity produced by the project
- ii. Concern that the facility would be an eyesore in the neighborhood
- iii. Concern that the project would be installed in a residential area
- iv. Concern that the project could result in a decrease to property values

The Petitioner responded to these comments made by the neighboring property owner by sharing additional information to address each point of concern as is described in greater detail below.

- i. Electricity produced by the project is ultimately delivered to the existing distribution network at its current operating voltage. This infrastructure currently services the surrounding buildings. Electricity produced by the proposed project and subsequently delivered to the existing distribution network would not result in any increase to electric or magnetic fields currently created by that existing electric distribution network.
- ii. Potential offsite views of the proposed project would be addressed by the addition of a landscaped buffer to be completed by the Petitioner. The Petitioner's engineer of record has completed a landscaping plan that would be utilized to provide a visual buffer to any potential offsite views originating from Mill Road or Drazen Drive. A copy of that landscape plan is attached hereto as Exhibit A.
- iii. Solar photovoltaic projects utilize the sun as a fuel source, and as such, do not require a fossil-based fuel to produce electricity. Solar PV projects do not create any air emissions while in operation, the project would not use any potable water nor produce any wastewater, and any potential noise emissions should be contained to the parcel bounds.
- iv. Studies conducted by research firms across the United States have indicated that there is not a measurable and consistent difference in property values for properties adjacent to solar farms when compared to similar properties locationally removed from their influence.

4. **Referencing page 4 of the Petition, the ZREC contract is for a period of 15 years.**

- a. **Is more than one ZREC contract used for the 1.625 MW AC output, e.g. one 1 MW contract and one 0.625 MW contract? Explain.**

The project holds one (1) LREC contract for the full nameplate capacity of 1.625 MWac

- b. **Can these contract(s) be extended/renewed?**

Currently, these contracts cannot be renewed or extended. At the conclusion of the LREC contract term, it is anticipated that the project would sell its Class I RECs on the spot market.

- c. **If there is no provision for extension or renewal, would the Petitioner decommission the facility at that time or seek other revenue mechanisms for the power produced by the facility?**

At the conclusion of the LREC contract, it is anticipated that the project would sell its electricity and Class I RECs on the spot market. The project will continue to

operate until it is no longer economically feasible to do so, which is estimated to be in 25-35 years.

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

In addition to this petition from the Connecticut Siting Council, the following permits are anticipated to be required for construction and operation of the North Haven Solar One facility:

- a. Connecticut Department of Energy and Environmental Protection (“CTDEEP”), General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activity.
- b. Town of North Haven, Building Permit.
- c. Town of North Haven, Electrical Permit.

The Petitioner will obtain and hold the above-referenced permits.

Proposed Site

6. **Please submit a map clearly depicting the boundaries of the solar project site and the boundaries of the host parcel. Under RCSA §16-50j-2a(29), “Site” means a contiguous parcel of property with specified boundaries, including, but not limited to, the leased area, right-of-way, access and easements on which a facility and associated equipment is located, shall be located or is proposed to be located.**

A map depicting entire property boundary and with the requested information is attached hereto as Exhibit B.

7. **In the lease agreement with the property owner, are there any provisions related to decommissioning or site restoration at the end of the project’s useful life? If so, please describe and/or provide any such provisions.**

Yes, section 12.1 of the lease agreement, quoted below, provides the requirements for decommissioning:

Section 12.1 -Condition of Premises. Upon expiration or other termination of this Lease the Solar Array and any improvements constructed on, over, or under the Leased Premises by Tenant shall be removed by Tenant and the Leased Premises shall be restored to substantially the same condition as prior to the commencement of this Lease, excluding normal wear and tear. All trade fixtures and signs, whether by law deemed to be a part of the realty or not, installed by the Tenant at any time or anyone claiming under the Tenant, shall remain the property of the Tenant or persons claiming under the Tenant and may be removed by the Tenant or anyone claiming under the Tenant at any time or times during the Lease Term. In the event this Lease terminates due to the expiration of the then applicable Lease Term, Tenant shall be afforded the term of thirty (30) days after such

termination, as such time may be extended if Tenant is diligently pursuing the removal of the Solar Array, but not to exceed ninety (90) days, to remove all of its personal property, trade fixtures and signs for the Leased Premises including the Solar Array (which is deemed to be personal property) and Tenant shall pay the then existing Base Rent, calculated on a per diem basis, for any time period Tenant is removing personal property, trade fixtures, the Solar Array and/or signs.

8. **Is the site parcel, or any portion thereof, part of the Public Act 490 Program? If so, how does the municipal land use code classify the parcel? How would the project affect the use classification?**

No, neither the site parcel, nor any portion thereof, is part of the Public Act 490 Program. Presently, the property is zoned R40 (“Residential”) by the Town of North Haven, and the current land use is “Vacant Land”. The parcel would be reclassified by the Town upon completion of the project.

9. **Has the State of Connecticut Department of Agriculture purchased any development rights for the project site or any portion of the project site as part of the State Program for the Preservation of Agricultural Land?**

No, the State of Connecticut Department of Agriculture has not purchased any development rights for the any portion of the project site.

10. **Referencing page 6 of the Petition, agricultural activities are taking place in the northern portion of the subject property. Would the proposed project impact any of the existing agricultural activities?**

Approximately 9 acres of the proposed project would occupy areas currently planted with hay.

11. **Provide the distance, direction and address of the nearest property line and nearest off-site residence from the solar field perimeter fence.**

The nearest property line is 25 Drazen Drive South, located approximately 50’ to the north of the perimeter fence. The nearest off-site residence is 19 Drazen Drive South and the residence is located approximately 175’ to the north of the perimeter fence. A figure showing these two locations is attached hereto as Exhibit C.

Energy Output

12. **What is the anticipated capacity factor of the project? Would the capacity of the system decline over time? If so, estimate annual losses.**

The anticipated AC capacity factor is 19.33%. Project electricity production is expected to decline one half of one percent (0.5%) per year.

13. **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 ZREC contract(s).**

Currently, Petitioner has no plans to incorporate a battery energy storage system (“BESS”). However, it is anticipated that in the event a BESS is incorporated at the site at a later date, it will be situated on the customer side of the existing DC/AC inverters, will not disrupt the existing interconnection approval with United Illuminating, and it will not impact the LREC contract.

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, only the DC panels or DC to AC inverters for the affected area would not operate, while the remainder of the system would continue to operate and produce power.

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

Yes, the petitioner would look to participate in the ISO-NE Forward Capacity Auction. Tentatively, the petitioner would participate in FCA #17 in 2023 for CCP 2026/2027.

Site Components and Solar Equipment

16. **What is the maximum overall height of the panels above grade?**

The maximum overall height of the panels above grade is approximately 10 feet.

17. **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?**

A majority of the wiring from the panels to the inverters will be run on the racking itself. Where wiring is not run on the racking, it would run in conduit. All PV wire is weatherproof and rated up to 194 degrees Fahrenheit.

18. **Referencing Figure 6 – Drawing C-2.0, the proposed row spacing or aisle width is 14 feet. What is the minimum aisle width at which the solar panel rows could be installed?**

Due to site topography the minimum row spacing at the proposed tilt to prevent inter-row shading is 14 feet as proposed.

19. **Referencing Appendix A of the Petition, Drawing C-2.0, provide the approximate overall dimensions of each of the two proposed equipment pads.**

The proposed equipment pad sizes are 14’ x 17’ and 16’ x 54’.

Interconnection

20. **Provide the line voltage of the proposed electrical interconnection.**

The line voltage is 13.8 kV at the point of connection to the grid.

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

Yes, the project was required to be reviewed by ISO-NE as part of the interconnection application and study process with United Illuminating.

22. **Is the existing electrical distribution on Mill Road three-phase, or would it have to be upgraded from single-phase to three-phase? Would any other modifications to the electrical distribution system be required for the project interconnection?**

The existing service on Mill Road is three-phase. The Distribution Impact Study results provided by United Illuminating indicate that no modifications to the distribution system will be required.

23. **Referencing Appendix A of the Petition, Drawing C-2.0, describe the proposed electrical interconnection route. For example, would it be underground from the equipment pads to one new pole east of the wooded area adjacent to Mill Road and then overhead from that pole to an existing pole on Mill Road? Explain. Indicate the pole height(s), location(s) and quantity of poles. Would interconnection equipment near the poles be pole-mounted or pad mounted?**

From the project equipment & transformer pad, the electrical lines will run underground west towards Mill Road. The lines will then run overhead from a pole with a Petitioner-installed recloser to another Petitioner-installed pole with an air break disconnect switch. The line then runs underground to a pad-mounted metering cabinet, required by United Illuminating. From there the service will proceed underground to a United Illuminating pole with a recloser, then overhead to its final point of connection to the existing distribution system at Pole #1366. There will be a total of three new poles (one by the utility and two by the Petitioner) installed. All poles installed would be 40-45 feet tall.

24. **Are separate electrical interconnections to the existing overhead distribution necessary for each ZREC contract? Explain.**

There is only a single LREC contract and only one connection to the overhead distribution system is needed for this project.

Public Safety

25. **Referencing pages 16 and 17 of the Petition, would the proposed project meet the applicable Department of Energy and Environmental Protection (DEEP) noise standards at the property boundaries?**

Yes, the project is anticipated to meet the applicable DEEP noise standards at the property boundaries.

26. **Would the project comply with the National Electrical Code, the National Electrical Safety Code and any applicable National Fire Protection Association codes and standards including, but not limited to, NFPA Code Section 11.12.3?**

Yes, the project will comply with all of the above-mentioned codes and standards.

27. **With regard to emergency response:**

- a. **Would training be provided for local emergency responders in the event of a fire or other emergency at the site?**

The Petitioner is prepared to provide assistance and/or training to local emergency responders if needed or requested.

- b. **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?**

In the event of a fire or emergency, the Facility will be able to be shut down by emergency responders via a physical disconnect switch that will be appropriately labeled pursuant to the requirements of the National Electric Code.

Environmental

28. **Please provide the following:**

- a. **Acreage of tree clearing only; and**

Approximately 0.2 acres of tree clearing is proposed.

- b. **Acreage of tree clearing and grubbing.**

Approximately 3.2 acres of tree clearing and grubbing is proposed.

29. **Referencing page 19 of the Petition, how many acres of Prime Farmland Soils would be impacted by the proposed project?**

Approximately 0.5 acres of Prime Farmland Soils will be impacted by the proposed project.

30. **How would NHSO protect wells, groundwater and/or water quality from construction impacts?**

The project is located with an area that has a public water supply serviced by the Regional Water Authority, thus there are no wells expected in the vicinity of the project. North Haven Solar One does not anticipate that ground water impacts will result from the construction activity planned for the Project. Any vibrations that may result from installing

the racking system for the Facility are not expected to cause sediment releases, and no disruption(s) to well water flow and/or quality is anticipated. As a result, no special precautions relative to the wells are warranted.

31. **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?**

The solar panels will not have any effect on the site drainage patterns, as the stormwater will fall to the ground and travel as it does in its existing conditions. 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 the panels at multiple locations as the panels follow the contours of the existing land, which are not consistently east-west in any location.

32. **Where is the nearest publicly accessible recreational area from the proposed site? Describe the visibility of the proposed project from this recreational area.**

The nearest publicly accessible recreational facility is Hansen Park, located over half a mile northeast from the Project. Based on existing topography and vegetation, the Project Site will not be visible from this recreation area.

33. **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.**

Per a review of the Connecticut Scenic Roads App on the Connecticut Department of Transportation website, there are no scenic roads located in the Town of North Haven. The nearest scenic road is Durham Road (Route 77) in Guilford, located approximately 6 miles east of the project site. Based on existing topography and vegetation, the Project Site will not be visible from this scenic road.

34. **Referencing Appendix F of the Petition, were the Phase 1A Assessment and/or Phase 1B Survey submitted to the State Historic Preservation Office (SHPO)? If so, has NHSO received any responses from SHPO to date? If yes, provide a copy of such response.**

The Phase 1A & 1B survey were submitted to the SHPO. The Petitioner received a response from SHPO stating that no additional archeological investigations were warranted and that no historic properties will be affected. SHPO’s response letter is attached hereto as Exhibit D.

35. **Could any landscaping be installed along Mill Road in the area where clearing would extend to the road?**

Yes, the Petitioner proposes to install additional landscaping in the area where the project connects to Mill Road and in the location where there is a gap in the existing vegetation in the northeast corner of the Project. A landscape plan is attached hereto as Exhibit A.

36. **The Visual Impact Study shows predicted visibility from two locations. What would the view of the facility be from Mill Road, farther south than #147 Mill Road?**

A cross-section has been provided showing the view of the Facility from Roarke Road. The revised Visual Impact Study is attached hereto as Exhibit E.

37. **Submit photographs of the proposed solar facility site construction area with descriptive captions and/or a map identifying the locations of the photographs.**

Please refer to the Photo Log Map, attached hereto as Exhibit F.

Facility Construction

38. **Referencing page 10 of Petition, has NHSO submitted an application for a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities from DEEP?**

Yes, the Petitioner submitted an application to DEEP on October 14, 2022, and it is currently under review.

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

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

The only proposed site grading is associated with work related to the proposed stormwater basins.

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

The desired maximum slope for fixed-tilt racking installation(s) is less than thirty percent (30%) slope.

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

Yes. The Project's solar field areas have been designed, to the extent(s) feasible, with only minimal alteration to the existing slopes. A small amount of ground shaping may be required in the area where trees and stumps are proposed to be removed.

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

Yes. To the extent practicable, existing vegetation will be maintained onsite where grading or tree clearing is not proposed.

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

Approximately 13,500 square feet of gravel access roads are proposed as part of the project. An 8-inch depth of imported gravel that will be flush with surrounding grades results in approximately 9,000 cubic feet or 333 cubic yards of native soil that will be removed. This excess soil will be used to fill gaps in the areas of tree clearing and stump removal to shape it.

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

No regrading is proposed within the solar field. It is anticipated that the area may need to be shaped following stump removal.

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

The plan is not to import borrow or export native soil from the site, but rather to have a balanced site. It is anticipated that native soil will be deposited on the site property or perhaps used in other locations of the overall site by the active farmers.

40. **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 Applicant anticipates that topsoil will be stripped from the Site prior to grading and will be stockpiled for reuse, as necessary. Vegetative growth across the Site will be monitored throughout Project construction in support of the Project's future DEEP Stormwater General Permit approval; any areas struggling to support vegetative growth will be examined and remedied on a case-by-case basis. Composting of onsite material may be employed in some areas to support achieving permanent vegetation.

41. **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?**

Yes, The Petitioner has completed a geotechnical study for the Project Site. The subsurface conditions consist mainly of shallow weathered rock. As such, the Petitioner will utilize predrilling of pilot holes to drive piles or ground screws for the racking foundations.

42. **If a geotechnical study will be performed, when would it be performed? What types of equipment would be required? Indicate if and where any tree clearing would be performed to accommodate such equipment and testing.**

A geotechnical study has already been conducted.

43. **Referencing page 7 of the Petition, how would NHSO determine whether to use driven posts or ground screws? What would be the typical depths below grade for each? Which methods would be used to install the driven posts and the ground screws?**

The final foundation type will be determined by the selected racking manufacturer. The depth will depend on the structural requirements of the racking, but the foundations are expected to be at a depth of 7 to 10 feet. The foundations will be installed as required by the manufacturer for the design that is proposed.

44. **Referencing Appendix H of the Petition, DEEP Natural Diversity Database letter dated March 1, 2022, Site Design Recommendations, could the Petitioner utilize pollinator-friendly species plantings under and/or around the proposed solar panels? Explain.**

The Petitioner will utilize a pollinator friendly seed mix such as the Ernst Solar Farm Seed Mix that includes a clover species in the mix.

45. **Would the proposed project be located within 0.25-mile of a known northern long-eared bat (NLEB) hibernaculum or within 150 feet of a known NLEB maternity roost tree? Would the project be expected to impact the NLEB?**

The Project is not located within 0.25-miles of a known NLEB hibernaculum or with 150 feet of a known NLEB maternity roost tree, and as such there is no expected impact to the NLEB. The Petitioner submitted a IPac to the U.S. Fish and Wildlife Service on November 14, 2022.

Maintenance/Decommissioning

46. **Would NHSO 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?**

The Petitioner would not store replacement modules on site. They will be stored in a warehouse off-site. Damaged panels would be detected through routine maintenance and inspection.