

DRAFT

**Petition No. 1541
North Haven Solar One, LLC
1.625 MW AC Solar Photovoltaic Electric Generating Facility
122 Mill Street, North Haven
Staff Report
December 16, 2022**

Introduction

On September 30, 2022, the Connecticut Siting Council (Council) received a petition from North Haven Solar One, LLC (Petitioner) for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k for the construction, operation and maintenance of a 1.625 megawatt (MW) alternating current (AC) solar photovoltaic electric generating facility located at 122 Mill Road, in North Haven, Connecticut, and associated electrical interconnection (Petition or Project).

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40 on or about September 19, 2022, Petitioner notified the abutting property owners of the proposed Project. Petitioner responded to one abutting property owner who submitted comments regarding EMF exposure, visibility and reduced property value. On October 13, 2022, Petitioner notified Town of North Haven (Town) officials and state officials and agencies of the proposed Project.

On October 12, 2022, the Council sent correspondence to Petitioner noting a deficiency in the completeness of the Petition. Specifically, proof of service of the Petition to Town officials and state officials and agencies was not provided to the Council, pursuant to RCSA § 16-50j-40. On October 13, 2022, Petitioner submitted proof of service. On October 17, 2022, the Council rendered the Petition complete.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take an action on a petition for a declaratory ruling within 60 days of receipt. On November 10, 2022, pursuant to CGS §4-176(e), the Council voted to set the date by which to render a decision on the Petition as no later than March 29, 2023, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

On November 22, 2022, the Council issued interrogatories to Petitioner. Petitioner submitted responses to the interrogatories on December 13, 2022, one of which included photographic documentation of site-specific features intended to serve as a “virtual” field review of the Project.

Municipal Consultation

On January 20, 2022, Petitioner met with the Town First Selectman to discuss the Project.¹

On October 3, 2022, the Council sent correspondence to the Town stating that the Council has received the Petition and invited the Town to contact the Council with any questions or comments by October 20, 2022. No comments were received.

¹ The Town is also an abutting property owner.

State Agency Comments

On October 3, 2022, pursuant to RCSA §16-50j-40, the Council sent correspondence requesting comments on the proposed Project from the following state agencies by October 30, 2022: Department of Energy and Environmental Protection (DEEP); Department of Agriculture (DOAg); Department of Public Health (DPH); Council on Environmental Quality (CEQ); Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Emergency Services and Public Protection (DESPP); Department of Labor (DOL); Department of Administrative Services (DAS); Department of Transportation (DOT); the Connecticut Airport Authority (CAA); and the State Historic Preservation Office (SHPO).

In response to the Council's solicitation, CEQ submitted comments on October 27, 2022 related to wildlife, wetlands, and prime farmland soils.²

No other state agencies provided written comments on the Project.

While the Council is obligated to consult with and solicit comments from state agencies by statute, the Council is not required to abide by the comments from state agencies.³

Public Act 17-218

Effective July 1, 2017, Public Act (PA) 17-218⁴ requires, "for a solar photovoltaic facility with a capacity of two or more megawatts, to be located on prime farmland or forestland, excluding any such facility that was selected by DEEP in any solicitation issued prior to July 1, 2017, pursuant to section 16a-3f, 16a-3g or 16a-3j, the DOAg represents, in writing, to the Council that such project will not materially affect the status of such land as prime farmland **or** DEEP represents, in writing, to the Council that such project will not materially affect the status of such land as core forest."

The proposed solar facility has a generating capacity of 1.625 MW; therefore, it is exempt from the provisions of Public Act 17-218.

Public Benefit

The Project would be a distributed energy resource facility as defined in CGS § 16-1(a)(49). CGS § 16a-35k establishes the State's energy policy, including the goal to "develop and utilize renewable energy resources, such as solar and wind energy, to the maximum practicable extent." The 2018 Comprehensive Energy Strategy (2018 CES) highlights eight key strategies to guide administrative and legislative action of the next several years. Specifically, Strategy No. 3 is, "Grow and sustain renewable and zero-carbon generation in the state and region." Furthermore, on September 3, 2019, Governor Lamont issued Executive Order No. 3, which calls for the complete de-carbonization of the electric sector by 2040. The proposed facility will contribute to fulfilling the State's Renewable Portfolio Standard and Global Warming Solutions Act as a zero emission Class I renewable energy source.

² http://portal.ct.gov/-/media/CSC/3_Petitions-medialibrary/Petitions_MediaLibrary/MediaPetitionNos1501-1600/PE1541/ProceduralCorrespondence/PE1541_STATEMEMO-CommentsRecdCEQ_s.pdf

³ *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007)

⁴ Codified at Conn. Gen. Stat. §16-50k(a) and §16a-3k (2021)

Petitioner was awarded a 15-year contract with The United Illuminating Company (UI) under the state's Low and Zero Emissions Renewable Energy Credit Programs (LREC/ZREC Program) ⁵ to sell the renewable energy credits (RECs) from the facility. The LREC/ZREC Program was developed as part of Public Act 11-80, "An Act Concerning the Establishment of the [DEEP] and Planning for Connecticut's Energy Future." Specifically, Petitioner has one LREC contract for 1.625 MW AC.

The LREC/ZREC Program creates a market-driven bidding process for renewable energy projects ranging from rooftop solar panels to fuel cells to compete to obtain a 15-year revenue stream from the sale of RECs to the electric utilities. It requires The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) and UI to procure Class I RECs under 15-year contracts with owners or developers of renewable energy projects in the state. After Petitioner's LREC contract expires, Petitioner would continue to operate the solar facility as long as it is economically feasible to do so and would sell its electricity and RECs on the spot market.

The LREC/ZREC Program is not among the competitive energy procurement programs that are exempt from Public Act 17-218.

Petitioner would participate in the ISO New England, Inc. (ISO-NE) Forward Capacity Auction (FCA).

Proposed Site

Pursuant to a lease agreement with the property owner, Petitioner proposes to construct the solar facility on an approximate 9-acre site⁶ within a 123.86-acre parcel located at 122 Mill Road in North Haven. The host parcel, zoned Residential A-1, hosts All Saints Cemetery and associated structures. The parcel is traversed by the Muddy River and contains forested areas, wetlands, and farm fields.

The Project site would be located in the northern portion of the host parcel, to the north and west of Muddy River, east of Mill Road, and south of Drazen Drive. The site is partially cleared and currently used for hay farming. The site slopes downgradient from the northeast to the south at an elevation of approximately 75 feet above mean sea level (amsl) to 50 feet amsl.

Land use surrounding the site consists primarily of single-family residences and the cemetery. The nearest off-site residence is located approximately 175 feet to the north of the Project fence and is located at 19 Drazen Drive South. An existing 4.98 MW solar photovoltaic electric generating facility is located on adjacent parcels approximately 0.43-mile to the east; This solar facility was approved by the Council on June 7, 2018 under Petition 1342⁷.

Petitioner selected the site due to limited environmental impact, suitability, and proximity to an electrical interconnection.

At the end of the lease, Petitioner must decommission the Project and restore the site to its pre-existing condition.

⁵ Zero emission renewable energy credit (ZREC) contracts are limited to 1 MW, and LREC contracts are limited to 2 MW. (CGS §16-244r)

⁶ 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.

⁷ https://portal.ct.gov/CSC/3_Petitions/Petition-Nos-1341-1350/Petition-No-1342-CF-North-Haven-LLC

Proposed Project

The proposed Project consists of 3,900 solar panels rated at 540 Watts. The panels would be installed on a fixed racking system facing south at a 25-degree angle. The panels would be approximately 10 feet above grade at the highest point and 2 feet above grade at the lowest point. The aisles between the panel rows would be approximately 14 feet wide.

Panel row wiring would generally extend along the racking system to reduce potential damage from weather events, maintenance activities or animals. In areas where wiring is not run along the racking, it would be protected via a conduit. From the proposed equipment and transformer pad area, the electrical interconnection route would run underground to the west to Mill Road. The line would run overhead from a new pole with a recloser to another new pole with a disconnect switch. Per UI requirements, the line would continue underground to a pad-mounted metering cabinet to a new UI pole with a recloser and continue overhead to the point of interconnection⁸ at existing UI Pole #1366. In total, three new poles (two by Petitioner and one by UI) would be installed with heights in the range of approximately 40 to 45 feet each.

The capacity factor for the Project is approximately 19.3 percent. The power output would decline over time with an anticipated annual power loss of approximately 0.5 percent.

A seven-foot tall chain link fence with a 6-inch wildlife gap would enclose the facility. Access to the solar facility would be over an approximately 500-foot long gravel access drive (with two turnarounds) off of Mill Road.

Approximately 333 cubic yards of native soil would be removed to construct the access drive. This net cut material would be deposited on site or may be utilized in other locations by active farmers. The solar racking would generally be installed on existing grades. Some areas might need to be graded after stump removal.

Construction would occur over an approximately 6 month period. Typical construction hours and workdays of the week are Monday – Friday, 7:00 AM to 6:00 PM and Saturday from 8:00 AM to 5:00 PM.

The Project is not proposed to be undertaken by state departments, institutions or agencies, and is not to be funded in whole or in part by the state through any contract or grant. The estimated cost of the Project is in excess of \$3 million.

Public Safety

The Project would comply with the National Electrical Code (NEC), National Electrical Safety Code and National Fire Protection Association codes and standards, as applicable. Petitioner designed the system in accordance with the CT State Fire Prevention Code, Section 11.12.3 – Ground Mounted Photovoltaic System Installations.

Petitioner utilized the Federal Aviation Administration (FAA) Notice Criteria Tool to determine that no notice to the FAA is required for the Project.

Petitioner would provide training to local emergency responders.

⁸ Only one POI is necessary for the Project because there is a single LREC contract.

The seven-foot high chain link perimeter fence complies with the NEC fencing requirements⁹.

The proposed facility would be in compliance with DEEP Noise Control Standards. Noise modeling indicates noise from the Project would be approximately 22 dBA at the nearest residential property line. Construction noise is exempt from DEEP Noise Control Standards.

The site is not located within a Federal Emergency Management Agency designated 100-year or 500-year flood zone.

Environmental Effects and Mitigation Measures

Historic and Recreational Resources

Rising Sun Tavern, a property listed on the National Register of Historic Places, is located approximately 0.7-mile from the Project area. Due to the distance, Rising Sun Tavern is not expected to be directly impacted by the Project. Also, approximately 8.14 acres of the study area had moderate/high potential for archaeological sensitivity, requiring further study.

After review of a Phase IB cultural resources survey, SHPO submitted correspondence to Petitioner on November 25, 2022, indicating that no additional archaeological investigations are warranted, and no historic properties would be affected by the Project.

The nearest publicly accessible recreational facility is Hansen Park, located over ½-mile northeast of the Project area. The Project is not expected to be visible from Hansen Park due to existing topography and vegetation.

Visibility

The Project is designed and located to minimize potential views from public viewsheds or private properties. The proposed facility was expected to be visible from the nearest residence at 25 Drazen Drive S due to a “gap” in existing tree cover in the northern portion of the site. However, Petitioner will implement a Landscaping Plan that includes 23 western red cedar trees 6 to 8 feet tall to be planted along the northern limits of the Project to provide screening for this area.

The proposed facility is not expected to be visible from the residence at 147 Mill Road due to topography and existing trees. The proposed facility is also not expected to be visible from the intersection of Roarke Road and Mill Road due to existing trees. Notwithstanding, the Landscaping Plan also includes 12 western red cedar trees and 2 American holy trees 6 to 8 feet tall to be planted along Mill Street north of the intersection.

Agriculture

The host parcel contains prime farmland soils according to mapping maintained by the United States Department of Agriculture (USDA) Natural Resource Conservation Service. Under PA 17-218, “prime farmland” means land that meets the criteria for prime farmland as described in 7 Code of Federal Regulations (C.F.R.) 657, as amended from time to time. 7 C.F.R. 657 defines prime farmland in relevant

⁹ Section 691.4(2) of the National Electrical Code (NEC), 2020 Edition notes that, “Access to PV electric supply stations shall be restricted by fencing or other adequate means in accordance with 110.31...” Section 110.31 notes that for over 1,000 Volts, “...a wall, screen, or fence shall be used...A fence shall not be less than 7 feet in height or a combination of 6 feet or more of fence fabric and a 1 foot or more...utilizing barbed wire or equivalent.”

part as “land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses.”

Approximately 9 acres of the Project site would be located in areas currently planted with hay. A total of approximately 0.5-acre of Prime Farmland Soils would be impacted by the Project. No soils would be exported from the site due to construction of the facility.

Wetlands and Watercourses

Petitioner performed a wetland and watercourse survey in December 2021 and a vernal pool survey in spring 2022. Wetlands 1, 2 and 3 are freshwater palustrine forested slope wetlands. Wetland 1 runs in north-south direction and is located west of the solar array area. Wetland 2 is located south of the solar array area. Wetland 3 runs in a north-south direction and is located east of the solar array area. No solar arrays would be located within a 100-foot buffer for any of the wetlands.

A cryptic vernal pool (VP1) is located within Wetland 1. No work is proposed within the 100-foot vernal pool envelope. While the proposed construction would temporarily impact the 100-foot to 750-foot Critical Terrestrial Habitat (CTH) area, this area is already disturbed; thus, no long-term adverse impacts to VP1 is expected. The Project would comply with the 2015 U.S. Army Corps of Engineers Vernal Pool Best Management Practices.

The Muddy River is located approximately 300 feet south of the Project.

Petitioner would establish erosion and sedimentation controls consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*. With the proposed temporary and permanent stormwater management measures and wetland buffers, the Project is not expected to impact wetlands.

Wildlife

The site is located within a NDDB buffered area. By letter dated March 1, 2022, DEEP NDDB indicated that two state-listed Species of Special Concern, the eastern box turtle and the wood turtle, may occur at the site, and DEEP identified recommended protective measures for both species. Petitioner would implement the DEEP-recommended protective measures for both state-listed turtle species including, but not limited to, exclusionary fencing and daily turtle sweeps prior to commencing work during the active turtle season of April through October.

The northern long-eared bat (NLEB), a federally-listed Threatened Species and a state-listed Endangered Species, occurs in Connecticut. The Project is not located within 0.25-mile of known NLEB hibernaculum or within 150 feet of a known NLEB maternity roost tree. Thus, the Project is not expected to impact the NLEB.

Petitioner would utilize a pollinator-friendly seed mix such as Ernst Solar Farm Seed Mix for planting within the Project limits of disturbance.

Forest

A total of approximately 3 acres of trees would be removed in the northwestern portion of the site and the south-central portion of the site. No core forest would be impacted by the development of the solar facility.

Air Quality

The Project would not produce air emissions as a result of operation. The Project would not produce emissions of regulated air pollutants or greenhouse gases during operation.

Water Quality

The site is not located within a DEEP-designated Aquifer Protection Area (APA). The nearest APA is located approximately 3.6 miles northwest of the Project site. There are no wells on or proximate to the site.

A Spill Prevention and Materials Storage Plan has been developed for the Project to protect water resources.

The facility would not use or discharge water during site operations.

Stormwater

Pursuant to CGS Section 22a-430b, DEEP retains final jurisdiction over stormwater management and administers permit programs to regulate stormwater discharges. DEEP regulations and guidelines set forth standards for erosion and sedimentation control, stormwater pollution control and best engineering practices. The DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit) requires implementation of a Stormwater Pollution Control Plan (SWPCP) to prevent the movement of sediments off construction sites into nearby water bodies and to address the impacts of stormwater discharges from a project after construction is complete.

A DEEP-issued General Permit is required prior to commencement of construction activities, as defined in the General Permit. The General Permit and associated SWPCP incorporates project designs consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and the *2004 Connecticut Stormwater Quality Manual*.

A construction sequence is noted on the Project Site Plans that includes the establishment of erosion control measures, site clearing and construction and installation of the stormwater management system. Once the disturbed areas are stabilized, installation of site infrastructure would commence.

Petitioner met with the DEEP on August 29, 2022. DEEP did not have any specific comments related to stormwater. On October 14, 2022, Petitioner submitted an application to DEEP for a Stormwater Permit, and it is currently under review.

Operations and Maintenance

A post-construction Operations and Maintenance (O&M) Plan has been developed that includes provisions for periodic inspections of physical site features and structural and electrical components.

An evaluation of the facility and performance of preventative maintenance measures would be conducted in accordance with manufacturer's specifications. The evaluation would include the electrical system/components, physical infrastructure, and site vegetation. Replacement modules would not be stored on-site.

Module cleaning is not expected to be necessary. However, should module cleaning be necessary, Petitioner would utilize water and soft bristle brooms for cleaning. No chemicals would be utilized.

Decommissioning

The Project has a minimal operational life of 30 years. At the end of the Project's useful life, it would be decommissioned and the site restored to its original condition.

It is anticipated that the steel racking system, electrical component and wiring and solar modules would be recycled as applicable. All recyclable materials would be transported to appropriate recycling facilities.

Any non-recyclable materials will be properly disposed of in accordance with applicable permits and regulations. The transformer and interconnection equipment pads would be removed. Access roads that would not support future use of the site would be removed and restored to pre-construction conditions. Disturbed areas would be backfilled with soil and seeded.

The selected solar panels for the Project meet current Toxicity Characteristic Leaching Procedure (TCLP) criteria for characterization as nonhazardous waste in the event the solar panels are not recycled at the end of the Project's life.

Conclusion

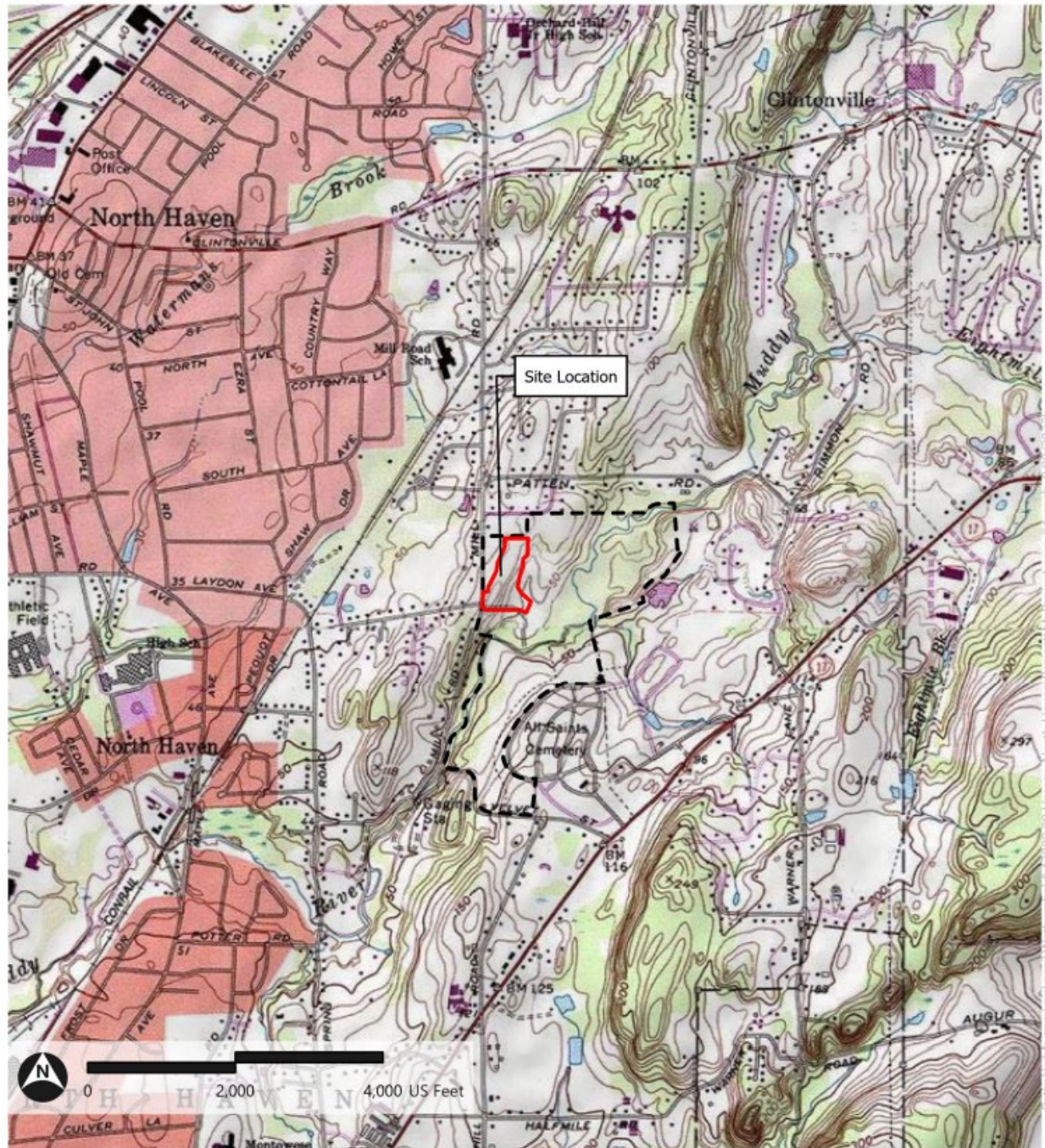
The Project is a customer-side distributed energy resource with a capacity of not more than sixty-five megawatts, meets DEEP air and water quality standards, and would not have a substantial adverse environmental effect. The proposed project will not produce air emissions, will not utilize water to produce electricity, was designed to minimize environmental impacts, and furthers the State's energy policy by developing and utilizing renewable energy resources and distributed energy resources. Furthermore, the Project was selected under the State's LREC/ZREC Program.

Recommendations

Staff recommends inclusion of the following conditions:

1. Approval of any project changes be delegated to Council staff;
2. Submit a copy of the DEEP Stormwater Permit prior to the commencement of construction;
3. Submit the final structural design for the racking system stamped by a Professional Engineer duly licensed in the State of Connecticut prior to commencement of construction;
4. Provide training to emergency responders; and
5. Utilize a pollinator seed mix, where feasible.

Site Location



Development Site

Project Area

Proposed Conditions



