

Petition No. 1412
LSE Phoenix, LLC
100 Sand Road, North Canaan
DRAFT Staff Report
August 21, 2020

Introduction

On June 11, 2020, LSE Phoenix, LLC (Petitioner) submitted a petition to the Connecticut Siting Council (Council) for a declaratory ruling pursuant to Connecticut General Statutes §4-176 and §16-50k for the construction, operation and maintenance of a 1.99-megawatt (MW) alternating current (AC) solar photovoltaic generating facility located at 100 Sand Road, North Canaan, Connecticut.

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40, on or about June 4, 2020, the Petitioner notified Town of North Canaan (Town) officials, state officials and agencies; and the Petitioner notified the property owner, and abutting property owners of the proposed project on or about June 5, 2020.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition within 60 days of receipt. August 10, 2020 was the deadline for this petition under CGS §4-176(e). In response to the Coronavirus pandemic, on March 25, 2020, Governor Lamont issued Executive Order No. 7M that provides for a 90-day extension of statutory and regulatory deadlines for administrative agencies thus extending the deadline to November 8, 2020.

The Council issued interrogatories to the Petitioner on July 1, 2020. On July 21, 2020, the Petitioner submitted responses to the Council's interrogatories of which one interrogatory included photographic documentation of site-specific features intended to serve as a "virtual" field review of the project. On August 19, 2020 Council staff member, Michael Perrone, visited the site.

Municipal Consultation

On December 2, 2019, the Petitioner held a meeting with a member of the Town Board of Selectmen. On January 31, 2020, the Petitioner gave a presentation via a conference call for the members of the Board of Selectmen and the Town Planning and Zoning Commission. From February through May 2020, the Petitioner held meetings and discussions with several nearby property owners and with Town officials. On June 1, 2020, the Petitioner held a meeting with the Board of Selectman via a video conference. On June 8, 2020, the Petitioner held a meeting with the Town Planning and Zoning Commission.

By letter dated June 9, 2020, First Selectman Charles Perotti of the Town expressed support for the proposed project.

State Agency Comments

On June 12, 2020, the Council sent correspondence requesting comments on the proposed project from the following state agencies by July 11, 2020: 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 Consumer Protection (DCP); 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). No comments were received.

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.¹

Public Act 17-218

Effective July 1, 2017, Public Act 17-218 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 land as core forest.” The proposed facility has a generating capacity of 1.99 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 over 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 decarbonization 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.

The Petitioner was awarded a contract with The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) under the state’s Low and Zero Emissions Renewable Energy Credit Programs (LREC/ZREC Program) to sell the renewable energy credits 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.” The LREC/ZREC Program is not among the competitive energy procurement programs that are exempt from Public Act 17-218.

The proposed project will be subject to virtual net metering (VNM) agreement(s) with at least one municipality. The Petitioner is working towards finalizing VNM agreements with the Towns of South Windsor and Windsor.²

The Petitioner would participate in the ISO-New England, Inc. Forward Capacity Auction #15 in 2021 for the 2024 to 2025 Capacity Commitment Period.

Proposed Site

The proposed facility would be located on an approximately 8.7-acre area of an approximately 23-acre parcel located west of Sand Road in North Canaan. The subject property is located within the Residential-Agricultural Zone. The property is undeveloped with a clearing/meadow in the central portion and wooded areas in the eastern and western portions. Property uses in the immediate vicinity consist of residential properties and a cemetery.

¹ *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007)

² Pursuant to CGS §16-244u, the state’s VNM program incentivizes the use of renewable energy by allowing municipalities and other end use customers to assign surplus energy production to other metered accounts.

Considerations in Petitioner's site selection process include, but are not limited to, the following:

- a) parcel size, topography, wildlife, and site hydrology;
- b) availability of land for lease or purchase;
- c) proximity to the electrical infrastructure; and
- d) access to site.

Proposed Project

The proposed solar facility consists of one array totaling 1.99 MW AC³.

The solar facility would include a total of 7,560 solar photovoltaic modules at 390 Watts direct current (DC) each. The modules would be installed on a fixed-tilt ground-mounted racking system and oriented to the south at a 25 degree angle. The modules would be installed with a ground clearance of approximately 3 feet. The maximum height to the tops of the solar panels would be approximately 11 feet.

The racking system would be supported by posts driven into the ground to an embedment depth of about 5 to 7 feet.

The Petitioner would install sixteen 125-kilowatt (kW) inverters. The AC power output from the inverters would feed into a step-up transformer to raise the voltage to the level of the existing electric distribution. The transformer would be located on a concrete pad⁴ in the northwest portion of the facility.

The efficiency of the proposed solar panels would be approximately 19.4 percent. The annual power degradation (as the panels age) would be approximately 0.54 percent per year.

Fencing would consist of a seven-foot tall chain-link fence with a six-inch wildlife gap at the bottom.

A new gravel access drive would extend from Ryan Avenue southeast to the site. This access drive would be about 110 feet in total length and would be used for emergency responder access and temporary construction access purposes, subject to the Petitioner securing an easement for such access.

The existing approximately ¼-mile long stone driveway from Sand Road would be utilized for permanent and maintenance access for the proposed facility.

Interconnection and impact studies have been completed and have resulted in the execution of an interconnection agreement with Eversource. The electrical interconnection would run overhead from Eversource's existing 13.2-kilovolt distribution on Ryan Avenue in a southeasterly direction to within about 60 feet of the switchgear on the proposed concrete equipment pad. The electrical interconnection route would then convert to underground to make the final connection to the equipment on the pad.

Total clearing area would be approximately 7.78 acres consisting of 2.17 acres of clearing only and 5.61 acres of clearing and grubbing. The proposed solar array would be installed with minimal changes to the existing grades. Construction of the facility would require approximately 3,732 cubic yards of cut and 3,065 cubic yards of fill, resulting in a net cut of approximately 667 cubic yards.

If approved, construction of the project would commence in approximately the fall of 2020. From mobilization and site preparation to final commission would take approximately 18 weeks. Work hours

³ Taking into account the transformer and medium voltage line losses, the Petitioner estimates a maximum output at the point of interconnection of approximately 1.931 MW AC.

⁴ The pad would be poured on-site. A construction wash-out area would be located between the proposed access drive turnaround off of Ryan Avenue and the proposed fence.

would typically be 7:00 a.m. to 5:00 p.m., Monday through Saturday, but can be modified if required to comply with Town requirements.

Public Safety

The proposed project would comply with the National Electric Code, National Electric Safety Code and National Fire Protection Association Codes and Standards, as applicable. If one section of the solar array experiences an abnormal operation, that section (connected to a given inverter) can shut down while the remaining sections (on separate inverters) can remain active. The facility would be remotely monitored, and the operations and maintenance team would be notified if a fault is detected by an inverter and would perform the repairs as necessary. In the event of abnormal conditions or a complete outage of the utility grid, all inverters would disconnect from the grid immediately.

After completion of construction and prior to energization, local emergency responders would be provided with on-site training. The fire department would have 24/7 access to the site by installing their own lock on the access gate to the site.

The nearest federally-obligated airport to the proposed facility is Bradley International Airport in Windsor Locks, which is approximately 34 miles to the east of the proposed site. By letter dated October 24, 2019, the Federal Aviation Administration (FAA) issued a Determination of No Hazard to Air Navigation and did not require a glare analysis. The solar modules would be constructed of dark, light absorbing material with an anti-reflective coating designed to maximum absorption and minimize reflection.

Any noise associated with the construction of this project would be temporary in nature and exempt per DEEP Noise Control Regulations. The proposed project is expected to meet the DEEP noise standards at the property boundaries.

Environmental Effects and Mitigation Measures

Historic and Recreational Resources

Heritage Consultants (Heritage) prepared a Phase 1A Cultural Resources Assessment Survey dated April 2020 (Phase 1A Report). According to the Phase 1A Report, 14 previously recorded archaeological sites are located within 1 mile of the project area; however, none will be impacted by the proposed project. Moreover, there are no properties or historic standing structures listed in the National Register of Historic Places (NRHP) or State Register of Historic Places within a 1-mile radius of the proposed project area. Heritage noted that approximately 3.55 acres in the southwestern portion of the project area retain moderate/high sensitivity for intact archaeological deposits and recommended the Petitioner conduct a Phase 1B Survey.

Heritage prepared a Phase 1B Cultural Resources Reconnaissance Survey Report dated May 2020 (Phase 1B Report). Heritage noted that a total of 66 shovel tests were excavated within the project area. One positive shovel test resulted in the recovery of a single chert chunk⁵. However, it was not deemed as significant per NRHP criteria, and no additional archaeological examination at the proposed site was recommended.

By letter dated June 3, 2020, SHPO concurs that no additional archaeological investigations are warranted and determined that the no historic properties would be affected by the proposed project.

⁵ Chert is a hard, fine-grained sedimentary rock composed of crystals of quartz that was historically used to make tools.

Robbins Swamp Wildlife Management Area and the Northwest Connecticut Rod and Gun Club are located to the southeast of the proposed site at distances of 0.18-mile and 0.12-mile, respectively. These parcels are used for recreational purposes, including, but not limited to, hiking, hunting, and fishing. Existing intervening vegetation would remain along the eastern portion of the subject parcel (i.e. west of Sand Road), and there is existing vegetation and development directly east of Sand Hill Road.

Visibility

The project would be located approximately 690 feet west of Sand Road. The existing vegetation along the frontage on Sand Road would remain. The nearest potential visual receptor is a residence located at 19 Ryan Avenue approximately 100 feet to the north of the facility. Given the dense vegetation surrounding the proposed site and the topography of the site and surrounding areas, no visual impact on the surrounding area would be expected. Additionally, the Petitioner met with the owner of the nearest residence, and such owner did not express concerns about the project.

Agriculture

The proposed site contains approximately 5.7 acres of Prime Farmland Soils. Post-construction, the project would occupy approximately 3.8 acres of Prime Farmland Soils.

The site contains a meadow/hayfield. There is no evidence of recent haying activity or other agricultural uses. The subject property was previously logged by the property owner and has been held in forestry.

Wetlands

The topography of the site mainly slopes from west to east. Wetland 1 consists of a small hillside seep wetland located in the central-east portion of the subject property in the northeast corner of the open field. Wetland 1 drains to the northeast with surface flows from the wetland discharging into a small seasonal intermittent watercourse. The proposed solar facility would maintain a 100-foot wetland/watercourse buffer, with the exception of the southeastern corner of the stormwater basin. See Aerial Site Plan. Additionally, the proposed project would utilize erosion and sedimentation controls consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*.

No vernal pools were identified at the site during the wetland delineation.

Wildlife

The closed buffered area of the DEEP Natural Diversity Database (NDDB) is located approximately 70 feet northeast of the proposed project development area. By letter dated February 26, 2020, DEEP indicated that the following state-listed species may occur within or close to the boundaries of the subject property:

Common Name	Category	State-listed Status
Blue-spotted salamander	Vertebrate animal	Endangered/Special Concern
Timber rattlesnake	Vertebrate animal	Endangered
Alder flycatcher	Vertebrate animal	Special Concern
Smooth green snake	Vertebrate animal	Special Concern
Northern leopard frog	Vertebrate animal	Special Concern
Yellow-banded bumble bee	Invertebrate animal	Threatened
Slender clearwing	Invertebrate animal	Threatened
Toothed apharetra moth	Invertebrate animal	Threatened
Short-awned meadow foxtail	Vascular plant	Threatened
Mountain spleenwort	Vascular plant	Special Concern
Wallrue spleenwort	Vascular plant	Threatened

Purple cress	Vascular plant	Special Concern
Foxtail sedge	Vascular plant	Threatened
Water sedge	Vascular plant	Special Concern
Back's sedge	Vascular plant	Endangered
Chestnut-colored sedge	Vascular plant	Endangered
Clustered sedge	Vascular plant	Threatened
Eastern few-fruit sedge	Vascular plant	Special Concern
Long-bracted green orchid	Vascular plant	Endangered
Large-bracted tick-trefoil	Vascular plant	Endangered
Goldie's fern	Vascular plant	Special Concern
Three-leaved false Solomon's-seal	Vascular Plant	Threatened
Sweet coltsfoot	Vascular Plant	Threatened
Red pine	Vascular Plant	Endangered
Purple oat	Vascular Plant	Special Concern
Three-toothed cinquefoil	Vascular Plant	Threatened
Northern white cedar	Vascular Plant	Threatened
Narrow false oats	Vascular Plant	Endangered
Large-flowered bellwort	Vascular Plant	Endangered

In DEEP's NDDB Letter of February 26, 2020 (NDDB Letter), the following plant communities were also listed as potentially occurring at the site: Circumneutral maple/ash basin swamp; Circumneutral northern white cedar basin swamp; and rich fen. The Petitioner performed a preliminary botanical survey on May 12, 2020. Neither these plant communities nor floodplain forest were identified at the site. However, suitable habitat was found at the site for several state-listed plant species such as mountain spleenwort, wallrue spleenwort and Goldie's fern. Surveys for state-listed plant species identified in the NDDB Letter have been completed, and no such species were identified at the site.

On April 28, 2020, the Petitioner performed a habitat assessment for the state-listed blue-spotted salamander complex, northern leopard frog, smooth green snake and the timber rattlesnake. Of these four species, suitable habitat was found for only the smooth green snake. Accordingly, the Petitioner has developed protection measures for the smooth green snake that includes a seasonal restriction to perform construction during the May through November active season, use of exclusion fencing, snake monitoring and removal protocols, and development and maintenance of a planting plan to provide suitable habitat for smooth green snakes.

On May 14, 2020, a habitat assessment was performed for the alder flycatcher. No alder flycatchers were observed at the site at that time, but the wetland at the site includes a small area of early-successional wet meadow and scrub-shrub cover. This hydrology does not fit the characteristics of a wetland suitable for this species. However, despite the habitat being sub-optimal, the presence of this species could not be completely ruled out at that time. Thus, three follow-up breeding bird surveys were conducted in June 2020, and no alder flycatchers were identified during these surveys.

Habitat evaluations are ongoing for the host plants associated with the three invertebrate species identified in the NDDB Letter but are not yet complete. The Petitioner will submit the final habitat report related to invertebrates when it is completed.

The northern long-eared bat (NLEB), a state-listed Endangered Species and federally-listed Threatened Species, is known to occur in Connecticut. The nearest NLEB hibernacula area is located over one mile to the west in Salisbury. There are no known maternity roost trees within or proximate to the site.

Forest

Under PA 17-218, “core forest” means unfragmented forest land that is three hundred feet or greater from the boundary between forest land and nonforest land, as determined by the Commissioner of DEEP. UCONN’s Center for Land Use Education and Research (CLEAR) defines “core forest” as forested areas that are essentially surrounded by more forested areas and fall into three classes – small core forest, medium core forest and large core forest. Small core forest is comprised of core forest patches that are less than 250 acres. Medium core forest is comprised of core forest patches that are between 250-500 acres. Large core forest is comprised of core forest patches that are greater than 500 acres.

UConn CLEAR utilizes the concept of “edge width” to capture the influence of a non-forest feature as it extends into the forest. Research found that the “edge influence” of a clearing will typically extend about 300 feet into the forest.

The proposed project area does not contain “core forest.” Development of the project would result in the direct removal of 7.7 acres of edge forest, and that would indirectly result in approximately 1.7 additional acres no longer being considered edge forest. Proposed project development would also indirectly result in the loss of 0.1-acre of core forest.

Air Quality

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

Water Quality

The site is not located within a Federal Emergency Management Agency designated 100-year or 500-year flood zone. The site parcel is also not located within a DEEP-designated Aquifer Protection Area.

No on-site wells were identified during the field survey of the site. While there may be off-site wells in the vicinity of the site, no impacts to groundwater are expected to result from the construction of the facility. The installation of racking and electrical trenching is not expected to result in vibrations that would impact existing wells or water quality.

Stormwater

Pursuant to CGS Section 22a-430b, DEEP retains final jurisdiction over stormwater management and administers permit programs to regulate stormwater pollution. DEEP regulations and guidelines set forth standards for erosion and sedimentation control, stormwater pollution control and best engineering practices. The DEEP Individual and General Permits for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (Stormwater Permit) requires implementation of a Stormwater Pollution Control Plan 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 Stormwater Permit is required prior to commencement of construction.

The Petitioner would comply with DEEP’s draft Appendix I – Stormwater Management at Solar Array Construction Projects. The Petitioner would file for its DEEP Stormwater Permit prior to construction.

Decommissioning Plan

A Decommissioning Plan was included in the Petition and has provisions for project removal after a useful life of approximately 20 years. Following the removal of project related equipment, the site would be restored, and a seed mix would be applied as necessary to encourage vegetative coverage.

Conclusion

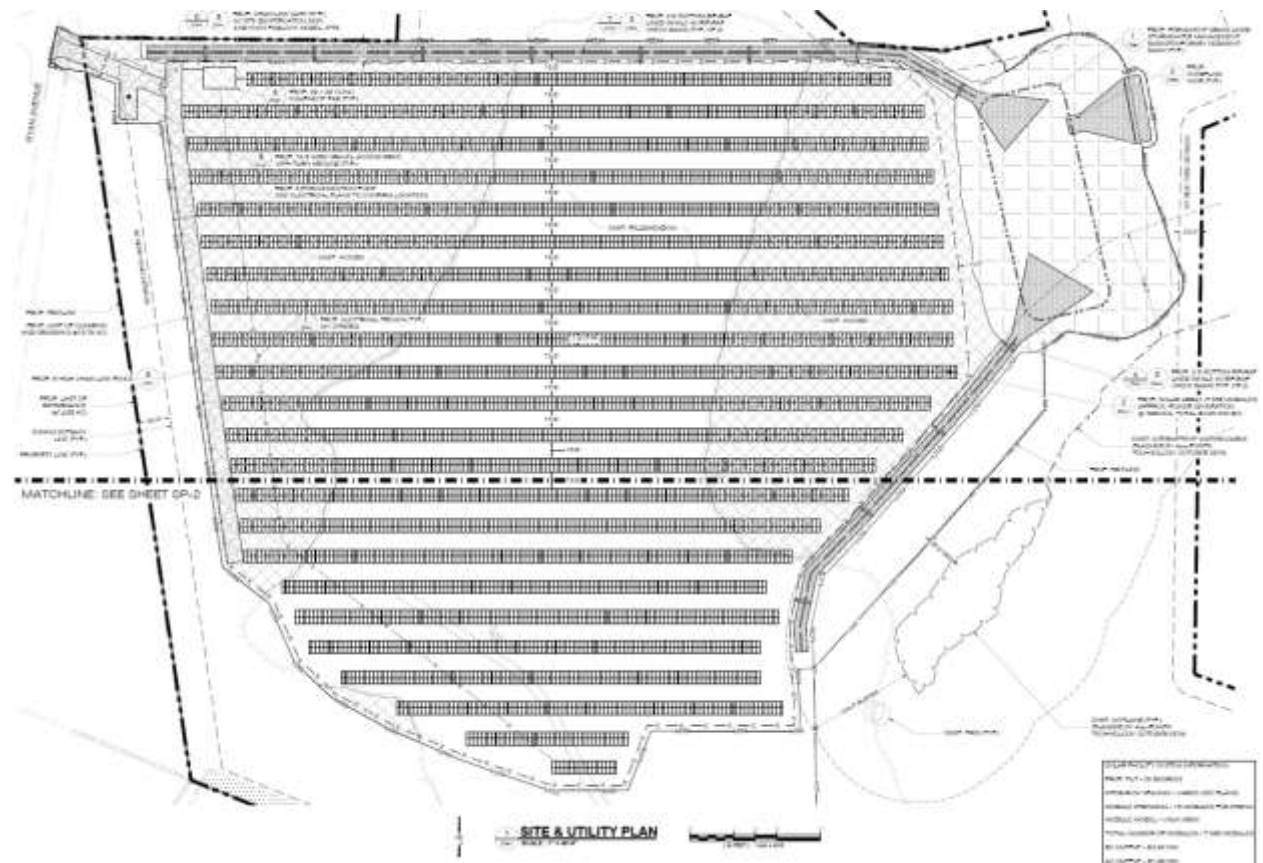
The project is a grid-side distributed resource with a capacity of not more than sixty-five megawatts, meets air and water quality standards of the DEEP, and would not have a substantial adverse environmental effect. The proposed project will not produce air emissions, will not utilize water to produce 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 and would further the state's VNM program.

Recommendations

If approved, staff recommends the following conditions:

1. Approval of any project changes be delegated to Council staff;
2. Submit a copy of a DEEP Stormwater Permit prior to commencement of construction;
3. Submit a copy of the final habitat report for state-listed invertebrates and any applicable DEEP-recommended protective/mitigation measures for the state-listed invertebrate species prior to commencement of construction;
4. Submit a copy of the final planting plan for smooth green snake habitat prior to commencement of construction; and
5. Submit the final electrical design plans and interconnection route on the subject property prior to commencement of construction.

Proposed site layout



Aerial Site Plan

