

PETITION NO. 1422 – Greenskies Clean Energy, 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 4.99-megawatt AC solar photovoltaic electric } generating facility to be located at Mulnite Farms, Inc. off Barber } Hill Road west of the intersection with Rockville Road, East } Windsor, Connecticut and associated electrical interconnection.	Connecticut Siting Council April 22, 2021
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Opinion

Introduction

On July 20, 2020, Greenskies Clean Energy, LLC (GCE or Petitioner) submitted a petition to the Connecticut Siting Council (Council), pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k, for a declaratory ruling for the construction, maintenance and operation of a 4.99-megawatt AC solar photovoltaic electric generating facility to be located at Mulnite Farms, Inc. off Barber Hill Road west of the intersection with Rockville Road, East Windsor, Connecticut, and associated electrical interconnection.

Jurisdiction

As it applies to the petition, CGS §16-50k states in relevant part, “...the Council shall, in the exercise of its jurisdiction over the siting of generating facilities, approve by declaratory ruling... (B) the construction or location... of any grid-side distributed resources project... with a capacity of not more than sixty-five megawatts, as long as such project meets the air and water quality standards of the Department of Energy and Environmental Protection and the Council does not find a substantial adverse environmental effect...” The project is a “grid-side distributed resources” facility, as defined in CGS §16-1(a)(37) and has a capacity of approximately 4.99 MW.

Effective July 1, 2017, PA 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 the Department of Energy and Environmental Protection (DEEP) in any solicitation issued prior to July 1, 2017, pursuant to section 16a-3f, 16a-3g or 16a-3j, the Department of Agriculture (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. PA 17-218 also requires that the Council not find a substantial adverse environmental effect in its exercise of jurisdiction over the facilities eligible to be approved by declaratory ruling under CGS §16-50k. There are no exemptions from this provision of PA 17-218.

By letter dated August 20, 2020, DEEP’s Bureau of Natural Resources determined the proposed solar facility would not have a material impact on the status of core forest. By letter dated August 27, 2020, DOAg determined the proposed solar facility would not have a material impact on the status of prime farmland.

Pursuant to CGS §16-50x, the Council has exclusive jurisdiction over the construction, maintenance and operation of solar photovoltaic electric generating facilities throughout the state. PA 17-218 does not confer the Council’s exclusive jurisdiction upon DOAg or DEEP nor does it permit DOAg or DEEP to impose any enforceable conditions on the construction, maintenance and operation of solar photovoltaic electric generating facilities under the exclusive jurisdiction of the Council.

Public Benefit

Pursuant to CGS §16-50p, a public benefit exists when a facility is necessary for the reliability of the electric power supply of the state or for the development of a competitive market for electricity. PA 05-1, An Act Concerning Energy Independence, portions of which were codified in CGS §16-50k, established a rebuttable presumption that there is a public benefit for electric generating facilities selected in RFPs. The Project was awarded three low emission renewable energy credit (LREC) contracts through a competitive RFP.

GCE intends to sell the energy produced by the project via Virtual Net Metering (VNM), but the name of the entity that GCE would pursue a VNM agreement with is not known.

GCE does not intend to participate in the ISO-NE Forward Capacity Auction.

Proposed Project

Pursuant to a lease agreement with the property owner, GCE proposes to construct the solar facility on a site located within the approximate 39-acre Mulnite Farms, Inc. property west of Barber Hill Road and west of Rockville Road in East Windsor. The site parcel is zoned Agricultural/Residential A-1 and is a portion of approximately 104 acres of contiguous farmland currently being used by Mulnite Farms, Inc. to grow shade tobacco and corn.

Approximately 19,968 fixed tilt bifacial solar panels, rated at approximately 395 Watts¹ direct current (DC) each, would be installed at the site. The solar panels would be installed on a steel post-racking system with the posts driven into the ground to an approximate depth of 6 to 12 feet. If ledge is encountered, ground screw anchors and/or pre-drilling would be utilized to support the racking system. The solar array rows (panel edge to panel edge) would be spaced approximately 14.6 feet apart. Once installed, the horizontal width of the panel row would measure approximately 11.3 feet.

The project would be enclosed by a 7-foot high chain link fence, designed so that the fence would have a six-inch gap at the bottom for small wildlife passage.

The project would be accessed by a new approximately 2,800-foot long, 14.6-foot wide permanent gravel access road that extends westward from Barber Hill Road into the site and would turn to the north in two locations to serve the solar array areas. The Council will require that the existing farm road access remain unimpeded as a result of development of the project and its stormwater basins.

Electrical Interconnection

The project's electrical interconnection would run underground from the concrete equipment pads in the solar array area to the east to the switchgear location. The interconnection route would continue underground until it reaches a minimum of three new riser poles (approximately 34 feet high above grade) in the southeastern limits of the site. Three different interconnections each with their own meter (or one per LREC contract) is required per the terms of the LREC contracts. One meter would be installed on each riser pole. The demarcation point(s) (or location(s) of change of control) from GCE to Eversource would be the meters on the riser poles. An additional pole might be necessary for Eversource's protection equipment. From the riser poles, the interconnection would continue overhead to connect to the electrical distribution on Barber Hill Road.

¹ This is based on front side of the solar panel only and excludes the gains from the reverse side of the panel due to bifacial effects.

GCE anticipates that Eversource would construct a three-phase distribution line extension of approximately 0.21-mile north along Barber Hill Road and perform minor upgrades to a circuit breaker at Barbour Hill Substation. The permitting of the line extension/upgrade along Barber Hill Road and upgrades at Barbour Hill Substation would be the responsibility of Eversource.

Project Alternatives

GCE selected the project site based on the following factors:

- a) Minimize impacts to core forest;
- b) Minimize impacts to prime farmland soils;
- c) Minimize impacts to wildlife;
- d) Minimize impacts on nearby residents;
- e) Proximity to electrical infrastructure; and
- f) Cost considerations.

Public Safety

The project would comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC) and the National Fire Protection Association code. GCE would coordinate with Town emergency responders regarding access to the facility, and GCE would provide keys or the access code for the facility gates to emergency responders.

The entire facility can be shut down via a main switch. GCE would also coordinate with the Town regarding the emergency shut-off.

The facility and any alarms would be remotely monitored by GCE's Operational and Maintenance team on a 24/7 basis.

GCE would host a site walk, training, and review of the project with appropriate Town officials. GCE would also conduct annual emergency response training with municipal emergency service providers.

GCE would consult with the Town regarding construction traffic prior to the commencement of construction activities.

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

Noise generated during facility operations would comply with the DEEP Noise Control Standards. Noise resulting from construction is exempt from DEEP Noise Control Standards.

The project has an anticipated life of 20 years, but it could operate for approximately 30 years or more. Decommissioning of the project would include facility infrastructure removal and site restoration provisions. Concrete pads would be broken and removed to a depth of two feet below grade. The remaining excavation would be filled with sub-grade material compatible with the surrounding area.

Following decommissioning activities, the sub-grade material and topsoil would be de-compacted and restored to a density and depth consistent with surrounding areas. If the subsequent use for the site would involve agriculture, a deep till of the site would be undertaken. Affected areas would be inspected, thoroughly cleaned, and all constructed-related debris would be removed. Disturbed areas would be re-seeded to promote re-vegetation, unless the area is to be immediately redeveloped.

GCE has not made a final selection regarding the solar panels to be used for the project, so it does not know whether the panels would pass the Toxicity Characteristic Leaching Procedure (TCLP) test or not. Notwithstanding, GCE notes that, regardless of what modules it selects, GCE will commit to using modules that do not contain lead, arsenic, selenium, cadmium, per- and polyfluoroalkyl substances (PFAS), or other hazardous materials or heavy metals except for lead used in solder. The Council will require that the selected solar panels are characterized as non-hazardous through TCLP testing and do not contain PFAS.

Environmental

Historic and Archaeological Resources

There are no known properties listed on the State or National Register of Historic Places located within one mile of the project site.

A Phase IA Cultural Resources Assessment Survey Report (Phase IA Report) concluded that 7.1 acres of the project area retain no to low archaeological potential, and approximately 79 acres of the project area possess a moderate sensitivity for producing archaeological resources. No additional archaeological examination of the no/low potential areas was recommended.

A Phase IB Cultural Resources Reconnaissance Survey (Phase IB Report) was conducted for the areas of moderate sensitivity. The shovel tests resulted in the identification of a single 19th century historic cultural resource locus known as Locus 1. Per the Phase IB Report, Locus 1 does not retain the qualities of significance per the National Register of Historic Places (NRHP) criteria; no additional archaeological testing of Locus 1 is recommended; and no impacts to significant cultural resources are expected to result from the construction of the facility.

The Phase IA Report and Phase IB Report were submitted to the State Historic Preservation Office (SHPO) for review. By letter dated March 18, 2020, SHPO concurs that Locus 1 is not eligible for listing on NRHP, and no additional archaeological investigations of the project area are warranted. SHPO recommends that all three tobacco sheds in the vicinity of the project area be “retained and incorporated into the layout of the solar facility.”

The three tobacco sheds located adjacent to the project are currently used as active drying sheds and as storage for farm equipment. The project would not affect any of the sheds. The landowner would retain ownership and use of the sheds.

Visibility

GCE proposes landscaping along the eastern side of the project site to conceal the project using a mix of native trees and shrubs. Specifically, GCE proposes to plant the following: Canadian serviceberry; crusader Hawthorn; swamp white oak; eastern red cedar; Colorado spruce; red chokeberry; mountain laurel; northern bayberry; and fragrant sumac. The landscaping is intended to reduce the visibility of the solar panels from Rockville Road and Barber Hill Road for adjacent residents while maintaining their “big picture” view of the area.

The two eastern-most tobacco sheds would provide additional screening for the northeastern and southeastern portions of the project. The proposed landscaping would fill in the “gap” between the two sheds along Rockville Road and Barber Hill Road.

GCE would also install privacy slats on the proposed chain link fence along the eastern side of the facility for a distance of about 980 linear feet to provide additional screening along Rockville Road and Barber Hill Road. The privacy slats alone (neglecting the landscaping) would block direct views of the majority of the 8-foot 7-inch tall solar panels given the fence height of 7 feet.

GCE is willing to discuss with Eversource the possibility of locating the three proposed riser/meter poles directly north of the barn (located near the proposed access drive) for visual screening purposes. GCE is also willing to discuss with Eversource the possibility of locating the three poles to the west of the barn for visual screening purposes, but GCE is concerned about the limited space on the subject property west of the barn. The Council recommends GCE consult with Eversource to reduce the visual impact of the riser/meter poles.

There are no national or state scenic roads in the Town. The nearest local scenic road, Wapping Road, is located approximately 0.34-mile northwest of the site, but the project would not be visible from this road.

The nearest publicly accessible recreational area to the proposed facility is Pierce Memorial Park (PMP). PMP is a Town-owned park located approximately 0.6-mile from the proposed facility. The project would not be visible from PMP.

Agriculture

The project has a 32-acre limits of work (LOW) area which is all located on prime farmland soils. Of the 32 acres, disturbance of prime farmland soils within the perimeter fence and associated with the installation of solar panels and stormwater basins plus the access roads would total approximately 24 acres, and the remaining 8 acres of prime farmland soils located within the LOW but outside the identified disturbance areas would be vegetated.

To maintain the agricultural character of the area, GCE has committed to incorporate an agricultural co-use within the project site. Specifically, GCE's would host the rotational grazing of sheep on the site and would also include a small apiary consisting of four to five beehives on the site.

The sheep would not have access to the entire facility footprint at any given time. They would be moved to different locations. GCE would also be willing to relocate the sheep to a different portion of the site farther away from neighbors should noise become an issue. The Council will require that the final plans for hosting sheep grazing at the site include provisions for possible on-site sheep relocation, if necessary, due to noise concerns be included in the D&M Plan.

GCE would utilize a seed mix that would address the nutritional needs of sheep, provide a low-growing, easily maintained and sustainable vegetation solution for solar installations, and be pollinator friendly. The Council will require that the final seed mix be included in the D&M Plan.

The final beehive locations have not yet been determined. GCE would work with a local beekeeping group and hire a beekeeper as a contractor to manage the hives. The Council will require that the final beehive plans be included in the D&M Plan.

Forest and Parks

There is no mapped core forest at the site. No state forests or parks are located in the vicinity of the site.

Wildlife

On August 2, 2019, GCE submitted a preliminary Natural Diversity Database (NDDB) assessment that identified 14 state-listed plant and animal species that are known to occur within or proximate to the site property: big sand tiger beetle; Horace's duskywing; eastern pearlshell; scribbled sallow moth; sharp-skinned hawk; short-eared owl; American kestrel; wood turtle; red-headed woodpecker; Savannah sparrow; short-awned meadow foxtail; dwarf huckleberry; climbing fern; and narrow-leaved horse gentian.

GCE performed an assessment of the identified state-listed species based on a combination of habitat assessments and field surveys. The results of the state-listed species investigations dated August 26, 2020 were submitted to DEEP.

By letter dated October 22, 2020, DEEP determined that the project would not be expected to result in negative impacts to state-listed species because only one state-listed species, the brown thrasher, a state-listed species of special concern, was found on the subject property, and suitable habitat for this species is not located within the project footprint.

With respect to federally-listed species, the northern long-eared bat (NLEB), a federally-listed Threatened Species and state-listed Endangered Species, has a range that encompasses the State of Connecticut. There are no known NLEB hibernacula within East Windsor; the nearest known hibernaculum is located in East Granby. There are no known maternity roost trees in Connecticut. Additionally, no tree clearing is proposed for this project.

Air Quality

The project would meet DEEP air quality standards with no emissions associated with site operation. Thus, no air permit would be required. The project would meet DEEP air quality standards.

A natural gas-fueled electric generating facility of equivalent size would produce about 420,080 metric tons of carbon dioxide equivalent (MT CO₂eq) over a 30-year service life or about 14,002 MT CO₂eq per year. The solar project would have an estimated carbon debt of 9,659 MT CO₂eq. Thus, the solar facility would result in a net improvement in greenhouse gas emissions after approximately 8.3 months of operation.

Water Quality

The project site is located outside of a DEEP-designated Aquifer Protection Area. Groundwater underlying the site does not meet DEEP's groundwater classifications for drinking water.

There are no wells located within the project footprint area, and the project would not be expected to impact off-site wells.

Wetlands and Watercourses

The Inland Wetland and Watercourses Act (IWWA) strikes a balance between economic activities and wetlands preservation. The impact of a proposed activity on the wetlands and watercourses that may come from outside the physical boundaries of the wetlands or watercourses is a major consideration. Defined upland review areas, such as 100 feet, provide a trigger for reviewing whether a regulated activity is likely to affect wetlands and watercourses. Under CGS §22a-41(d), regulatory agencies shall not deny or condition an application for a regulated activity in an area outside wetlands or watercourses on the basis of

an impact or effect on aquatic, plant, or animal life *unless such activity will likely impact or affect the physical characteristics of such wetlands or watercourses.*

One wetland (Wetland 1) was identified in the southern limits of the subject property near Lindsay Lane. Wetland 1 is located approximately ¼-mile southwest of the project limits of work.

Windsor Pond is located approximately 500 feet to the northeast of the project area and on the opposite side of Rockville Road. The proposed stormwater management system would mitigate peak flow increases and treat water quality of runoff to protect this resource.

Per the *2004 Connecticut Stormwater Quality Manual* (2004 Stormwater Manual), generally, a 100-foot undisturbed upland buffer along a wetland boundary or on either side of a watercourse should be maintained to promote water quality. The Council notes that the upland buffers for Wetland 1 and Windsor Pond are approximately 13.2 and 5 times this 100-foot threshold, respectively.

Vernal Pools

No vernal pool habitat was observed on or proximate to the site during the wetland delineation.

Stormwater

Pursuant to CGS §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) require 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 Stormwater Permit is required prior to commencement of construction.

DEEP has the authority to enforce project compliance with its Individual or General Permit and the SWPCP, including, but not limited to, the installation of site-specific water quality protection measures in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* (2002 E&S Guidelines).

The project has been designed to comply with the 2004 Stormwater Manual and the 2002 E&S Guidelines.

GCE would install three stormwater detention basins in the proposed project area. The proposed stormwater management system was designed to meet DEEP Guidance Regarding Solar Arrays.

Stormwater calculations were performed for 2, 10, 25, and 100-year storms. The hydrological calculations indicate that the design of the proposed stormwater basins would reduce peak rates of runoff below pre-construction levels.

A pre-application meeting was held with DEEP Stormwater Division on June 3, 2020, and a site visit was held on July 28, 2020. The proposed site plans were discussed during the site walk. DEEP Stormwater staff did not indicate any suggested modifications at that time.

As of February 23, 2021, GCE had recently filed its Stormwater Permit application with DEEP. GCE will discuss with DEEP the effects of grazing sheep at the site as part of the Stormwater Permit. The Council

will require GCE to consult with DEEP Stormwater Division regarding the potential impacts of sheep grazing on the site and include any recommendations from DEEP in the D&M Plan.

Conclusion

Based on the record of this proceeding, the Council finds that there would not be a substantial adverse environmental effect associated with the construction, maintenance and operation of an approximately 4.99 MW solar photovoltaic electric generating facility and an associated electrical interconnection located off Barber Hill Road west of the intersection with Rockville Road, East Windsor, Connecticut.

The proposed project is a grid-side distributed resources project with a capacity of less than 65 MW under CGS §16-50k, it was selected under the state's LREC Program, it is consistent with the state's energy policy under CGS §16a-35k, and the proposed project would meet all applicable U.S. Environmental Protection Agency and DEEP Air and Water Quality Standards. Therefore, the Council will issue a declaratory ruling for the proposed project.