DRAFT

Petition No. 1451
C-Tec Solar, LLC
277 Sadds Mill Road, Ellington

Staff Report
July 9, 2021

Introduction

On April 13, 2021, the Connecticut Siting Council (Council) received a petition (Petition) from C-Tec Solar, LLC (C-Tec) for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k for the construction, operation and maintenance of a 3.8-megawatt alternating current (AC) solar photovoltaic electric generating facility and a 2.2-megawatt AC solar photovoltaic electric generating facility located at 277 Sadds Mill Road in Ellington, and an associated electrical interconnection (Project).

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40 on or about December 14, 2020 and April 6 and April 7, 2021, C-Tec notified Town of Ellington (Town) officials, Town of East Windsor officials (within 2,500 feet of the proposed site), state officials and agencies, the site property owner and the abutting property owners of the proposed project.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act (UAPA), an administrative agency is required to take an action on a petition for a declaratory ruling within 60 days of receipt. June 12, 2021 was the deadline for action on this petition under CGS §4-176(e). In response to the Coronavirus pandemic, Governor Lamont issued Executive Order No. 7, as subsequently extended, that provides for a 90-day extension of statutory and regulatory deadlines for administrative agencies thus extending the deadline for action to September 10, 2021.

The Council issued interrogatories to C-Tec on May 14, 2021. On June 4, 2021 C-Tec submitted responses to the Council's interrogatories of which one included photographic documentation of site-specific features intended to serve as a "virtual" field review of the project.

Municipal Consultation

C-Tec discussed the project with Town officials and notified the Town of East Windsor of the Project. As a result of certified mailings, one abutter contacted C-Tec for general Project information and expressed interest in siting a solar project on their property.

On April 15, 2021, the Council sent correspondence to the Town and the Town of East Windsor stating that the Council has received the Petition and invited both municipalities to contact the Council with any questions or comments by May 13, 2021. No comments were received from the municipalities.

State Agency Comments

On April 15, 2021, the Council sent correspondence requesting comments on the proposed project from the following state agencies by May 13, 2021: Department of Energy & Environmental Protection (DEEP); 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).

In response to the Council's solicitation, CEQ and DEEP submitted comments on April 29, 2021 and May 14, 2021, respectively. CEQ's comments relate to potential wildlife impacts, establishment of pollinator habitat, future restoration of prime farmland soils and protection of groundwater quality. DEEP's comments relate to the state's goal to achieve a zero carbon electric sector by 2040 and its Natural Diversity Database (NDDB) policy that no coordination with DEEP is necessary if there are no mapped occurrences of NDDB species within one quarter mile of a site. DEEP also recommended that C-Tec consult with the DEEP Dam Safety Program regarding the proposed stormwater basins at the site.

No other state agencies provided written comments on the proposed 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. [1]

Public Act 17-218

Public Act (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 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." PA 17-218 requires a project developer to obtain a letter from DOAg **OR** DEEP. C-Tec has secured written confirmation from both DOAg and DEEP.

On February 14, 2018, the site property owner and C-Tec hosted a site walk with representatives from the DEEP Forestry Division. Also on February 14, 2018, DOAg personnel visited the site to assess current agricultural operations.

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 requires developers of solar facilities with a generating capacity of more than 2 megawatts (MW) to obtain a written determination from DOAg or DEEP that the project would not materially affect the status of land as prime farmland or core forest prior to submission of a petition for a declaratory ruling to the Council. PA 17-218 does not confer the Council's exclusive jurisdiction over the construction, maintenance and operation of solar photovoltaic electric generating facilities throughout the state upon DOAg or DEEP. PA 17-218 also does not 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

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

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

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.

C-Tec was awarded two contracts (LREC8-6294 & LREC8-6295) 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[2].

The two LREC contracts are each for 2.0 MW AC and have a non-extendable term of 15-years. At the end of the LREC contract period, C-Tec would seek other revenue mechanisms for the energy produced by the facility. C-Tec also intends to apply for two ZREC contracts.

C-Tec has a virtual net metering (VNM) agreement with Eversource that was finalized on February 28, 2020 through its agricultural rate, for 66 percent of the power produced by the facility. C-Tec expects that the remaining power output of the project would also be subject to a VNM agreement, but if an agreement is not executed, then C-Tec would sell the power at market rates.

The 3.8 MW and 2.2 MW facilities are sized to match respective ZREC and/or VNM awards and applications. C-Tec intends to build both facilities at the same time; however, if additional VNM contracts or ZRECs are not awarded, C-Tec may construct the Project in phases to match current contracts.

The proposed facility interconnection is currently under review by ISO-NE.

C-Tec is evaluating its participation in the ISO-NE Forward Capacity Auctions.

Proposed Site

Pursuant to a lease agreement with the property owner, C-Tec proposes to construct the solar facility on a 32.13 acre site[3] located on two irregularly-shaped parcels that total approximately 157.3 acres. The term of the lease would be 20 years with two five-year optional extensions.

The host parcel is east of Sadds Mill Road (Route 140) and south of Reeves Road in Ellington. The host parcel consists of woodland generally in the northern portion, agricultural fields in the southwestern portion and an earth materials operation and some woodland in the southeastern portion. The parcel is accessed from Sadds Mill Road via an existing gravel driveway extending to the earth materials area.

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

[3] 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.

The site is located in a wooded area in the south-central portion of the host parcel, east of the earth materials operation.

The host property is zoned Industrial (I) except for approximately 16 acres located along the northern property line that is zoned Rural Agricultural Residential (RAR).

Surrounding land use consists of a mix of undeveloped wooded and agricultural land to the north and east, and agricultural land, sand and gravel operations and the Ellington Transfer Station to the south. Some residential use is located to the west, beyond a wooded area.

C-Tec pursued the site because it was located within the Town's Industrial zone. Pursuant to CGS §16-50p(g), the Council has no authority to compel a parcel owner to sell or lease property, or portions thereof, for the purpose of siting a facility.[4]

Proposed Project

The solar facility would occupy approximately 32.1 acres, consisting of an approximate 24 acre solar field and an additional 8.1 acres for shade mitigation, stormwater management system, and the access road.

The Project consists of the installation of 18,432 480 Watt photovoltaic modules. The panels would be arranged in linear rows, oriented to the south at a fixed 25° angle. The rows of panels would be approximately 13.3 feet wide, separated by a 15-foot wide aisle. The modules would be installed approximately 10 feet above final grade with a ground clearance of approximately 3 feet. The modules would be supported on a racking system attached to posts driven into the ground.

Other equipment includes 68 inverters, 2 pad mounted switchgears, 2 transformers, and 4 service interconnection points. The majority of the wiring would be installed on the racking system. Where wiring is not installed on the racking system, it would be installed in underground conduit.

Although not currently proposed, the site has been designed with enough space to support a future battery storage system.

The facility would have an anticipated service life of 20 to 35 years. The Project capacity factor is approximately 21.8 percent.

The site would be accessed from an existing gravel road that extends from Sadds Mill Road to the earth materials operation on the host parcel. The existing road would not require any upgrades to access the site except for an approximate 150-foot section west of the proposed site fence line where new gravel would be installed. Gravel hammerhead turnarounds would be installed adjacent to the proposed access gate, and a short gravel road would extend to the proposed electrical equipment pads inside the gate.

The proposed Project would interconnect to the existing Eversource distribution system located on Sadds Mill Road. From the facility electric service pads within the perimeter solar field fence, underground lines would connect to a utility pole located outside of the fenced area. From there the interconnection lines would be supported on 13 new utility poles that will extend along the existing gravel road on the host property to the inverter connection point on Sadds Mill Road.

[4] *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007); CGS §16-50p(g) (2019).

The existing distribution system is three-phase; therefore, no upgrades are required to accommodate the Project. The interconnection would be designed in accordance with Eversource's technical standards. An ISO-NE interconnection study is currently underway.

Existing topography generally slopes from northeast to the southwest and southeast. Ground elevation ranges from approximately 305 feet above mean sea level (amsl) in the northwest portion of the site to 225 feet in the south and west extent of the site. Slopes within the site generally range from gentle to 15 percent with several areas that reach up to 45 percent. Soils are composed of sand, gravel and glacial till.

Approximately 27 acres of the site would require tree clearing and grubbing to create the solar field area and stormwater management system. An additional 5 acres of trees would be cleared primarily to the south and east of the solar field for shade mitigation. Tree stumps would remain in these areas to protect soils. Trees would be chipped on-site to be used for erosion control measures.

Earthwork would include excavation and grading to develop stormwater control basins/swales as well as to reduce steep grades to 15 percent or less, and would result in approximately 16,770 cubic yards of cut and 15,000 cubic yards of fill. Excess fill would be disposed of within the fenced area or at the earth materials operation on the host property. Approximately 4 acres of the site would require recontouring to reduce slopes to 15 percent or less.

Construction is expected to start in the Fall of 2021 and would occur over a nine month period. Typical construction hours and work days of the week are as follows: Monday – Friday 7:00 AM to 5:00 PM.

A site construction phasing plan has been developed that includes two main construction phases. Phase 1 (6.76 acres) includes all work necessary to establish temporary sediment basins and other erosion control measures at the site as well as tree cutting for the southern shade mitigation area. Phase 2 (25.31 acres) includes any remaining earthwork and grubbing, followed by site infrastructure installation and site stabilization and establishment of other shade mitigation zones.

Public Safety

The proposed project would comply with the National Electrical Code, National Electrical Safety Code and National Fire Protection Association codes and standards, as applicable. A 15-foot minimum aisle would be maintained between the perimeter fence and the solar panels, in accordance with the CT State Fire Prevention Code, Section 11.12.3 - Ground Mounted Photovoltaic System Installations.

The nearest federally-obligated airport to the site is Skylark Airpark in East Windsor, approximately 2.1 miles east of the proposed facility. Under Federal Aviation Administration (FAA) criteria, the Project would not be a Hazard to Air Navigation or require a FAA glare analysis.

The Facility would be remotely monitored and would have the ability to remotely de-energize in the event of a fault or other power outage event and/or emergency. C-Tec would contact, and, offer training to local emergency responders.

The solar field would be enclosed by a 7-foot high chain link fence[5]. The main entrance to the Facility would be gated, limiting access solely to authorized personnel. Access to the facility for emergency responders would be via a Knox padlock.

The proposed facility would be in compliance with DEEP Noise Control Standards. Project-related operational noise would be from the facility transformers which emit a maximum sound level of approximately 61 dBA at a distance of one-foot. The nearest residence is approximately 1,800 feet west of the transformer, thus, noise would not exceed DEEP Noise Control Standard of the 61 dBA for a commercial emitter to a residential receptor during the day[6]. The transformers are inactive at night. 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.

C-Tec has not yet consulted with the DEEP Dam Safety program regarding permitting requirements, if any, for the proposed stormwater basins. A safety permit is not anticipated as the basins would detain volumes of water below dam safety permit criteria.

Environmental Effects and Mitigation Measures

Historic and Recreational Resources

According to SHPO files, one property listed on the National or State Register of Historic Places is located is within one mile of the proposed facility but the facility would not be visible from the listed property. Based on a review of historic maps, aerial photographs, and soil profiles, approximately 14 acres of the proposed site possessed a potential for moderate to high archaeological sensitivity. Subsequent field evaluations of these areas found no evidence of archaeological significance that warranted listing on the National or State Register of Historic Places. By letter dated February 9, 2021, SHPO concurred with the findings of the historic/archeological study and recommended no further action.

No public parks or other publicly accessible recreation resources are located adjacent to the site. An undeveloped open space parcel is located approximately 550 feet northeast of the site.

Visibility

The proposed facility is located near the east property line of the host parcel, abutting undeveloped and agricultural lands. No year-round visibility of the proposed facility would occur from any developed residential properties due to its location and the presence of existing intervening vegetation. Limited year-round and seasonal views of the facility may occur from the Sadds Mill Road and Reeves Road intersection area, approximately 2,100 feet west of the proposed facility.

No landscaping is proposed.

No exterior lighting is proposed.

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[5] 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."

[6] The inverse square law states that the intensity of sound decreases by approximately 6 dB for each doubling of distance from the sound source.

Agriculture

The subject property contains prime farmland soils according to mapping maintained by the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). 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 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."

The proposed site consists of a forested area, a portion of which (16.9 acres) was previously logged. Approximately 10.8 acres of this forested area is mapped as prime farmland soil.

The Project site parcels are currently enrolled in the PA 490 Program for agricultural land tax abatement. The land is classified as "Woodland" and "Forestland". Once constructed, the project area would no longer be eligible for this program.

By letter dated April 5, 2021, pursuant to PA 17-218, DOAg indicated that the proposed project would not materially impact the status of prime farmland.

The landowners currently have active farm fields, operate apiaries, and harvest timber on the host parcel. The property owner intends to increase the number of apiaries to use the honey to establish a farm distillery. C-Tec would plant seeds[7] primarily composed of wildflowers, forbs, and legumes, within the solar array area to increase forage for honey bees, thus facilitating the expansion of the apiaries.

Wetlands and Watercourses

No wetlands or watercourses are in close proximity to the site. Two wetland areas are located adjacent to the existing driveway on the host parcel near the intersection with Sadds Mill Road. No project-related expansion of the existing driveway in this area is proposed. The installation of the interconnection utility poles would not affect the wetlands.

An existing wet stormwater basin is located on the southwest side to the existing earth materials operation. The proposed facility would not affect this basin.

Wildlife

According to DEEP mapping, the site is not located within a DEEP NDDB buffered area indicating the potential presence of a State-listed species, and therefore, no NDDB site review is required. DEEP confirmed this in its written comments dated May 13, 2021.

The northern long-eared bat (NLEB), a state-listed Endangered Species and federally-listed Threatened Species, is known to occur in Connecticut. However, the nearest known NLEB habitat resource is located 11 miles to the west and Project-related impacts to NLEB are not expected.

The perimeter fence would be installed so that a 4 to 6 inch gap would be maintained between the fence fabric and ground for small wildlife movement.

[7] The *Bee and Butterfly Habitat Fund* has provided C-Tec with a specific seed blend and the necessary operation and maintenance program needed to establish the proposed pollinator-friendly species.

Core 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 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. Forestland that that does not meet the definition of core forest is considered "edge forest". Edge forest is a forested area extending up to 300 feet from a non-forest feature such as a road.

The Project would result in the removal of approximately 31.7 acres of forest. An existing small core forest block (60.9 acres) extends from the host parcel to abutting parcels to the east. 17.33 acres of tree clearing would occur within the small core forest block. Development of the project would split the existing core forest block into two approximately 15 acre core forest blocks. Due to the small size of the existing core forest block, tree clearing associated with the project would not result in a significant impact to core forest habitat.

By letter dated December 23, 2020, pursuant to PA 17-218, DEEP indicated that the proposed project will not materially affect the status 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 parcel is not within a DEEP-designated Aquifer Protection Area or a mapped Public Drinking Supply Watershed.

No residential private wells are in the area of the proposed development No impacts to private wells or groundwater in the area are anticipated. Bedrock would not be encountered during site construction.

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

<u>Stormwater</u>

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.

A construction sequence is included on the site plans that include the establishment of erosion control measures that comply with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, construction and installation of a sediment basins followed by installation of site infrastructure.

Once the facility is completed and the site stabilized, the stormwater management system would consist of 3 grass-lined stormwater management infiltration basins along the southern and western portions of the site.

C-Tec met with the DEEP Stormwater Division on February 18, 2021 to review the Project. There were no major project modifications suggested at the meeting. A Stormwater permit application has not been filed with DEEP.

A Spill Prevention/Control Plan has been provided.

Operation and Maintenance

A post-construction Operations and Maintenance Program has been established that includes provisions for periodic inspections of physical site features and structural and electrical components. A field visit to check mechanical and vegetative site conditions would be performed monthly. The solar field area would be mowed at least twice per year. The height of the grass would be maintained to reduce the risk of grass fires. No herbicides, pesticides or fertilizers would be used on site.

An evaluation of facility components and preventative maintenance activities would be conducted in accordance with manufacturer recommendations.

Module cleaning would be conducted on an as needed basis with water that is trucked into the site. No chemicals would be used during cleaning operations.

Decommissioning

Project decommissioning will involve removal and disposal or recycling of all above-surface project components. All recyclable materials will be transported to the appropriate nearby recycling facilities. Any non-recyclable materials will be properly disposed of at a nearby landfill. It is anticipated that at least 95 percent of the project's components will be recyclable. The transformer and interconnection equipment pads would be removed. Underground conduits would remain in place. Disturbed areas would be backfilled with native soil and stabilized.

The manufacturer of the selected solar panels has conducted Toxicity Characteristic Leaching Procedure (TCLP) testing on the panels. The TCLP test indicates the panels would not be characterized as hazardous waste at the time of disposal, under current testing criteria.

Conclusion

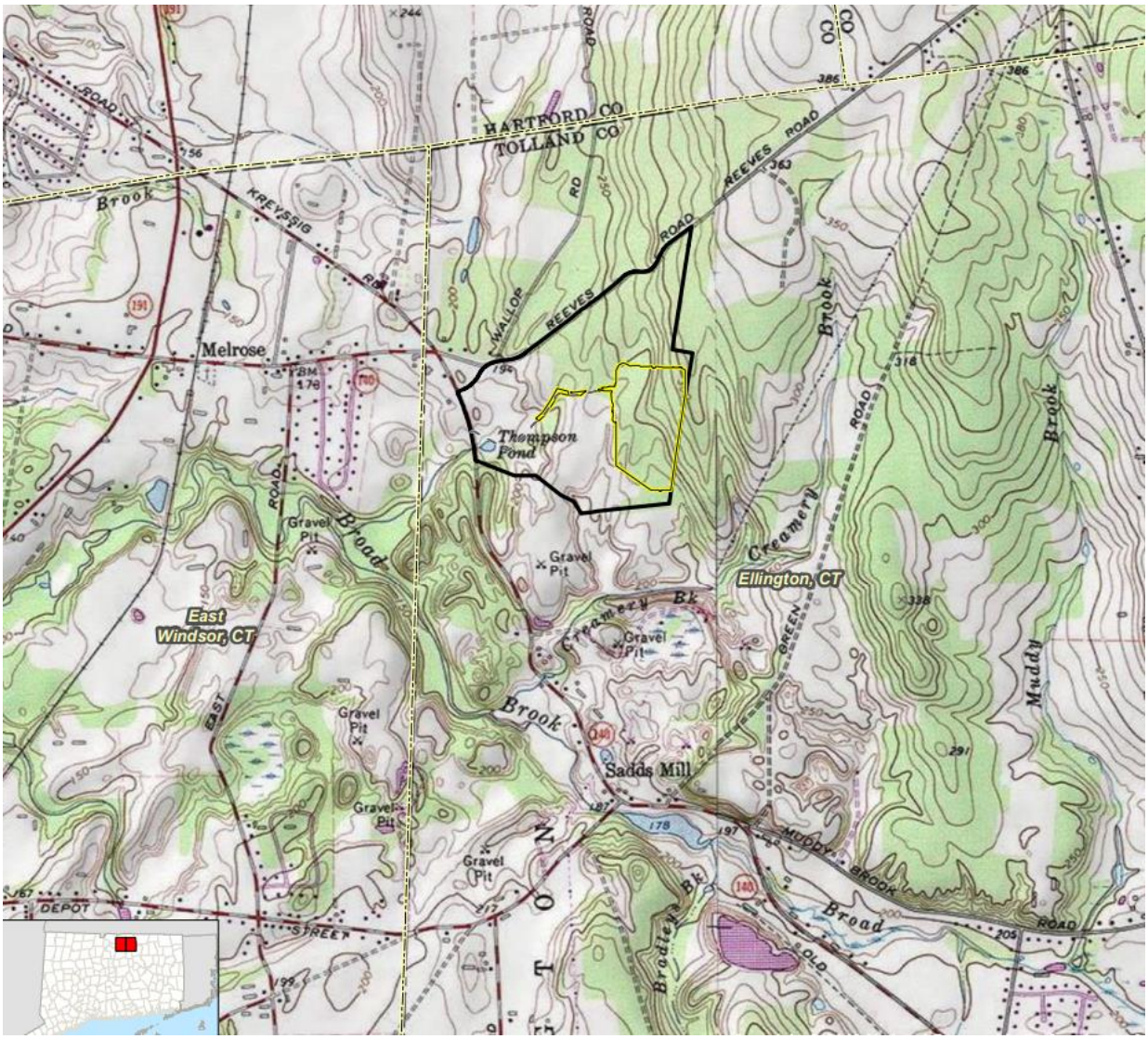
The project is a grid-side distributed resource with a capacity of not more than sixty-five megawatts, meets air and water quality standards of the DEEP, and would not have a substantial adverse environmental effect. The proposed project will not produce air emissions, will not utilize water to produce 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 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;
3. The facility owner/operator shall file an annual report on a forecast of loads and resources pursuant to Conn. Gen. Stat. §16-50r;
4. Consult with the DEEP Dam Safety Program regarding permitting requirements, if any, for the proposed stormwater basins prior to site construction; and
5. Submit a copy of the DEEP Stormwater Permit prior to the commencement of construction.

Site Location and Area Features



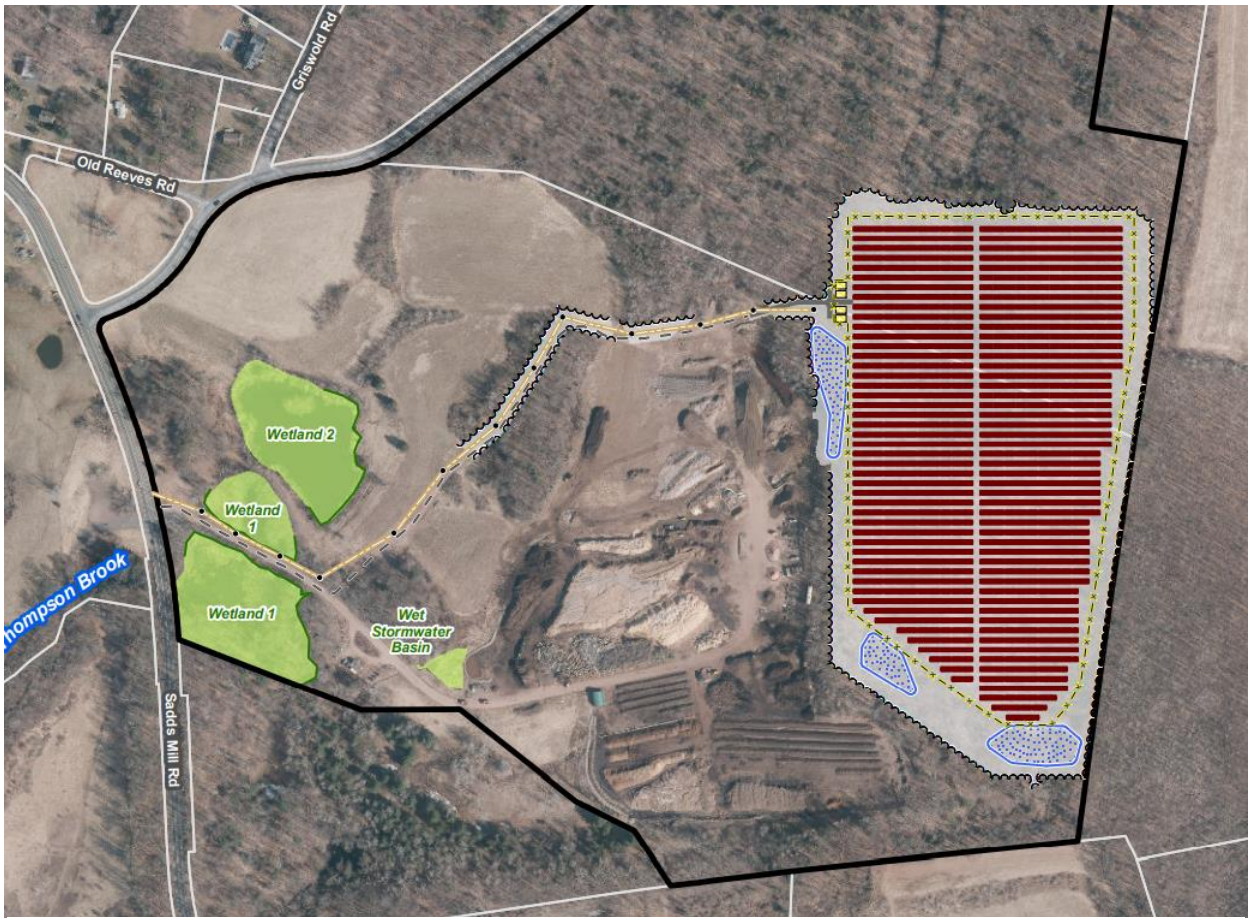
Existing Conditions Map

Figure 2
Existing Conditions Map

Proposed Solar Energy Facility
277 Sadds Mill Road
Ellington, Connecticut

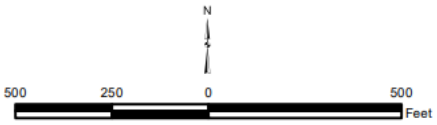
CTEC

Proposed Site Layout



Legend

- Site
- Approx. Parcel Boundary
- Delineated Wetland Boundary
- Wetlands
- Access Road (No Improvements)
- Limit of Disturbance
- Solar Modules
- Conc. Equipment Pad
- Gravel Area
- Stormwater Basin
- Perimeter Fence
- Treeline (Clearing Limit)
- Interconnection Path (Overhead)
- Utility Pole



Site Plan with areas of grading