STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
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CERTIFIED MAIL
RETURN RECEIPT REQUESTED

May 24, 2019

Jesse A. Langer, Esq.
Updike, Kelly & Spellacy, PC
8 Frontage Road
East Haven, CT 06512-2101

RE: **PETITION NO. 1367** – CP Middletown Solar I, LLC and CP Middletown Solar II, LLC, petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 1.0-megawatt AC solar photovoltaic electric generating facility and a 0.986-megawatt solar photovoltaic electric generating facility on approximately 30 acres comprised of six abutting parcels located northeast of the intersection of Higby Road and Meriden Road (Route 66), west of Ballfall Road (Route 217) and south of Sisk Street in Middlefield and Middletown, Connecticut, and associated electrical interconnection.

Dear Attorney Langer:

At a public meeting held on May 23, 2019, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal meets air and water quality standards of Department of Energy and Environmental Protection (DEEP) and would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need, with the following conditions:

1. Approval of any minor project changes be delegated to Council Staff;

2. Prior to the commencement of construction, submission of a copy of a DEEP-approved Stormwater Pollution Control Plan and a DEEP General Permit, if applicable;

3. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;

4. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, the Town of Middlefield, and the City of Middletown.

5. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

6. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;

7. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and

8. If the facility owner/operator is a wholly owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated April 16, 2019 and additional information dated May 14, 2019, May 16, 2019, and May 17, 2019.

Enclosed for your information is a copy of the staff report on this project.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/MP/emr

Enclosure: Staff Report dated May 23, 2019

c: The Honorable Edward Bailey, First Selectman, Town of Middlefield
Jerry Russ, Zoning Enforcement Officer, Town of Middlefield
The Honorable Daniel T. Drew, Mayor, City of Middletown
Joseph Samolis, Director of Planning, Conservation, and Development, City of Middletown

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Petition No. 1367
CP Middletown Solar I, LLC and CP Middletown Solar II, LLC
Meriden Road (Route 66), Middlefield and Middletown
Staff Report
May 23, 2019

Introduction

On April 16, 2019, CP Middletown Solar I, LLC and CP Middletown Solar II, LLC (collectively, the Petitioner or CP Solar) 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 one 1.0-megawatt (MW) alternating current (AC) solar photovoltaic generating facility and one 0.986-MW AC solar photovoltaic generating facility (collectively, the facility) located off of Meriden Road (Route 66) in Middlefield and Middletown, Connecticut. Council member Robert Hannon and Michael Perrone of the Council staff visited the site on May 15, 2019 to review this proposal. Jesse Langer, Esq., Updike, Kelly & Spellacy, P.C. (representing the Petitioner); Matt Gustafson, All-Points Technology Corporation (APT); Brad Parsons, P.E., (APT); Cela Bernie, Citrine Power, LLC (Citrine); Christine Raczka, Planning/Environmental Specialist, City of Middletown; Randy Bernotas, Inland Wetland Enforcement Officer, Town of Middlefield; Paul Augustine, abutting property owner; and Gayle Tewksbury, abutting property owner also attended the field review.

On or about April 16, 2019, the Petitioner notified City of Middletown and Town of Middlefield officials, state officials and agencies, the property owner and abutting property owners of the proposed project.

The Council issued interrogatories to CP Solar on May 3, 2019. On May 15, 2019, the Petitioner submitted the Phase 1B Archaeological Field Reconnaissance Survey (Phase 1B Survey). On May 15, 2019, the Petitioner submitted responses to the Council's interrogatories. On May 16, 2019, the Petitioner submitted a correction to the Vernal Pool Report and additional information on tree clearing.

Municipal Consultation

Representatives of Citrine Power LLC (Citrine[1]) have collaborated with the Town of Middlefield and the City of Middletown on an ongoing basis. Beginning in September 2018, and through March 2019, Citrine met with City of Middletown officials, including the Mayor, Assessor, Town Planner, Economic Development Coordinator, and Energy Coordinator. During the same time, Citrine met with Town of Middlefield officials, including the First Selectman and Town Planner.

By letters dated April 4, 2019, the Towns of Weston and Wilton, who will serve as the municipal host customers of a virtual net metering (VNM) agreement, expressed support for the proposed project as it would promote renewable energy[2]. By letter dated April 10, 2019, the Town of Middlefield expressed support for the proposed project as it would promote renewable energy with minimal impacts and make a productive use of an otherwise unused property.

[1] CP Solar I and CP Solar II are both Connecticut limited liability companies, both formed to develop, construct and operate the two PV facilities. They are wholly-owned subsidiaries of Citrine Power LLC.
[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.

On April 17, 2019, the Council sent correspondence to the Town of Middlefield and the City of Middletown stating that the Council has received Petition No. 1367 and inviting any questions or comments regarding the petition by May 16, 2019. By letter dated May 8, 2019, Randy Bernotas, Inland Wetland Enforcement Officer, Town of Middlefield submitted questions regarding the proposed project. Specifically, Mr. Bernotas inquired about the which portion(s) of the access would be removed during decommissioning; the status of the fencing during decommissioning; and if the Land Use Department could be included in any monitoring schedule, i.e. erosion and sedimentation controls, quarterly site inspections, and restoration activities should they occur. The Petitioner responded to such questions/concerns at the field review held on May 15, 2019. With regard to decommissioning, it is the property owner's decision as to the removal of the access and the status of the fence. With regard to the monitoring schedule, the Council cannot delegate its authority to the town.

By letter dated May 16, 2019, Nathan L. Jacobson & Associates, Inc. (which serves as the Town Engineer for the Town of Middlefield) filed comments detailing concerns about the proposed stormwater management analysis and design.

State Agency Comments

On April 17, 2019, the Council sent correspondence requesting comments on the proposed project from the following state agencies: 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). On May 10, 2019, DEEP submitted comments that are attached hereto. The Petitioner's response to DEEP's comments were attached to the interrogatory responses received by the Council on May 15, 2019.

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 collective generating capacity of 1.986 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." On February 8, 2018, DEEP issued the 2018 Comprehensive Energy Strategy (2018 CES). Guided by the long-term vision of transitioning to zero-carbon economy, the 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." The proposed facility is distributed generation. Specifically, the proposed facility will contribute to fulfilling the State's Renewable Portfolio Standard as a zero emission Class I renewable energy source.

The Petitioner has contracts 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 both facilities. 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 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 renewable energy credits (RECs) to the electric utilities. It requires Eversource and the United Illuminating Company (UI) to procure Class I RECs under 15-year contracts with owners or developers of renewable energy projects in the state. The LREC/ZREC Program is designed to run for a six year period during which developers can sell electricity from qualifying projects of Class I RECs to the utilities at a fixed price for the life of the contract. At the end of the LREC/ZREC Program, Eversource and UI are required to purchase $1.02 billion of RECs directly from customers, site owners and/or developers of clean energy projects. Of that amount, $300 million is to be spent on LRECs, and $720 million is to be spent on ZRECs.

Proposed Site

The proposed facility would be located on an area of approximately 8.7 acres of a total of approximately 30 acres, consisting of six lots (collectively, the subject property), which straddle the Middletown/Middlefield municipal line. The subject property is owned by Barbara Penney and Ann Charton, and it also straddles two municipal zones: Middlefield's Route 66 Design District #1 (DD-1) and Middletown's R-15 Residential Zone (R-15). The site is undeveloped land with three large unused open fields, two to the west of an electric transmission line right-of-way and one to the east. The surrounding area is a mix of agricultural, residential and undeveloped, wooded land with limited commercial development along Meriden Road (Route 66).

During its site search, the Petitioner initially considered the size, existing grades, surrounding topography, proximity to the electrical grid, congruence with local planning and zoning, and property owner willingness. The Petitioner also considered potential adverse impacts to environmental and natural resources, as well as scenic and historic values, and met with the property owner, and local land use and municipal officials, culminating in the final selection of the proposed site.

Proposed Project

The proposed project consists of two solar facilities on the same property including a 1 MW AC solar facility that would consist of approximately 3,492 solar modules of 370 Watts direct current (DC) (West Solar Facility) and a 0.986 MW AC solar facility that would consist of approximately 3,492 solar modules of 370 Watts DC (East Solar Facility)[3].

The West Solar Facility, owned by CP Solar I, would be located entirely within the City of Middletown and subject to a VNM Agreement with the Towns of Weston and Wilton. The East Solar Facility, owned by CP Solar II, would be located within both Middletown and Middlefield and subject to a wholesale tariff with Eversource[4].

The modules would be installed on a fixed-tilt racking system and oriented to the south at a 20 degree angle. The modules would be mounted to a ground-mounted, pile-driven racking system. The modules would be

.[3] While the East Solar Array and West Solar Array would each have an equal number of solar panels of the same wattage, the East Solar Array has a lower MW AC because the inverter sizing is different and smaller.

[4] This facility is on the VNM waitlist with the Town of Wilton as the municipal host customer. In the event that CP Solar II is not selected from the waitlist for the VNM, then the electricity generated from this facility would be sold to a new VNM customer or sold to Eversource.

installed to maintain a minimum ground clearance of approximately 24 inches. The maximum height to the tops of the solar panels would be approximately 7.5 feet.

The Petitioner would install approximately thirty-nine 50-kilowatt (kW) string inverters and one 36-kW string inverter. The power output from the inverters would feed into two step-up transformers (each to be located on a 10-foot by 10-foot concrete pad) to raise the voltage to the level of the existing electric distribution.

The efficiency of the proposed solar panel would be approximately 18 percent. The maximum annual power degradation (as the panels age) would be 0.6 percent per year.

Fencing would consist of a seven foot chain-link fence. The fence would have a four to six inch gap at the bottom to accommodate small wildlife and a locked 16-foot wide entrance gate.

The proposed project would utilize an existing approximately 425-foot long sand and gravel access road that originates off of Route 66. This existing access would be improved with approximately two-inches of gravel and would be extended to north by about 580 linear feet by installing additional gravel.

The electrical conduit would be trenched underground roughly where the windrow of trees (to be removed) is located. The proposed electrical interconnection would consist of two separate feeders – one for each facility. The electrical interconnection would continue overhead along the access road, and via an overhead crossing of Route 66 would be anticipated to connect to the existing distribution. Approximately seven utility poles of about 35 to 40 feet in height would be installed along the access road. The Petitioner has received interconnection agreements from Eversource, and the exact locations of the poles would be finalized when Eversource completes its field engineering design. Eversource currently has existing three-phase overhead electrical distribution on the opposite side (or south side) Route 66.

Daily monitoring would be conducted via an internet-based data acquisition system, which would have the capability to send alarms identifying communication and power generation issues should they occur.

The useful life of each facility is approximately 25 years. The petitioner intends to operate each facility until the equipment has exhausted its useful life.

The nearest residence to the proposed facility is located at 100 Nutmeg Court, Middletown and is approximately 225 feet to the northeast of the proposed project perimeter fence.

Construction is expected to typically occur Monday through Saturday from 7:00 a.m. through 6:00 p.m. and Sundays from 9:00 a.m. to 6:00 p.m. (with federal holidays observed). If approved, the Petitioner would commence construction approximately beginning in August 2019 for completion by approximately the end of November 2019.

The proposed project would comply with the National Electric Code, National Electric Safety Code and National Fire Protection Association Codes and Standards, as applicable. The proposed project would include an internal protection system to shut down a portion of or the whole of each facility, as appropriate, should an unlikely fault occur. The design of the proposed project would also include the capability to isolate the respective facilities automatically during abnormal grid disturbances or during power outage events. The proposed projects would be equipped with a recloser (as determined by Eversource) to provide added protection.

The Petitioner would ensure that first responders are trained in the procedures necessary to address the unlikely event of a fire or emergency. In addition, the Petitioner would ensure that keys are available for responders in a Knox box or equivalent Rapid Entry System, as required by the local fire authorities.

The nearest airport to the proposed facilities is the Meriden Markham Municipal Airport, which is approximately 6.8 miles to the west/southwest of the proposed site. By letter dated May 3, 2019, the Federal Aviation Administration (FAA) issued a Determination of No Hazard to Air Navigation. The Petitioner contends that a glare analysis is not required as a result of the FAA determination. Furthermore, the panels are manufactured to minimize glare and are covered with an anti-reflective coating.

Environment, Cultural and Scenic Values

The proposed racking structures and access drive would be installed maintaining existing topography. No grading would be required for the proposed project. Approximately 165 cubic yards of cut would be required for the proposed access road. The excess material generation from the access drive construction would be used on-site to fill in areas where the tree stumps would be removed. No cut or fill would be expected for the solar array installations.

Approximately 0.55 acres of trees located in a windrow in the center of the project footprint in a north-south direction would be removed for the installation of the solar facilities. One additional tree in the eastern portion of the subject property would also be removed. The Petitioner voluntarily proposes[5] to conduct its tree clearing outside of the June through July pup season of the northern long-eared bat, a federally-listed Threatened Species and state-listed Endangered Species.

By letter dated February 8, 2019, DEEP indicated that the eastern box turtle (EBT), a state-listed Species of Special Concern, may occur at the proposed site and recommended a series of construction-related protection strategies to be implemented, including, but not limited to, hiring a qualified herpetologist to be on site during construction to provide awareness/identification training to contractors/workers; establish exclusion zones to prevent unintentional mortality to migrating EBTs; and monitoring compliance with the protection measures.

The EBT hibernate in forested areas, typically near wetlands. The narrow windrow of trees located between the two fields would not support turtle habitat, along with the fields. Thus, the Petitioner notes that the recommended seasonal restriction would not be applicable to the narrow windrow of trees separating the fields. The Petitioner has included its Turtle Protection Program with measures that would be protective of the EBT during both its active (April through October) and inactive (November through March) periods.

The racking system would be supported by posts that would be driven into the ground using a specialized post drilling machine. A geotechnical study would be completed prior to final design engineering and construction. The Petitioner believes that that soils would be suitable for a driven post foundation at a typical 7-foot to 10-foot embedment depth. In the event that ledge is encountered, the Petitioner would evaluate the appropriate remedial measure on a case by case basis. Such options would include the use of different footing options such as a concrete pier, boring into bedrock and setting the post in concrete, or fixing a base plate to the post and fastening it to bedrock utilizing rock anchors.

The proposed project is not within an aquifer protection area; nor within a Federal Emergency Management Agency-designated 100-year or 500-year flood zone.

The topography of the site mainly slopes from northwest to southeast. Wetland 1 consists of a large forested wetland located in the east-central portion of the proposed site. Wetland 2 consists of a large forested wetland system complex located along the proposed project's western boundary extending from the far north and draining southward. All clearing and grading limits for the solar infrastructure would maintain a minimum setback of approximately 90 feet to the west of Wetland 1. There would be minor improvements

[5] This measure is voluntary and not required for the proposed project by U.S. Fish & Wildlife Service or DEEP. It would be performed to the extent allowed by the construction schedule.

to the existing access within 38 feet of Wetland 2. However, outside of the access road work, a minimum setback of 73 feet would be maintained to Wetland 2. To protect wetland resources during construction, the Petitioner has a Wetland Protection Plan, which includes, but is not limited to, the use of erosion and sedimentation controls consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control.*

During the initial inspection of the subject property to confirm the presence and extent of wetlands and watercourses, a small depression in Wetland 1 and two small depressions in Wetland 2 that demonstrated potential to support vernal pool breeding habit. Subsequent site visits were performed in April and May 2019 to confirm if any obligate vernal pool species were utilizing these depressional areas for breeding. Of the three potential vernal pools, only the depressional area located in the central portion of Wetland 2 (VP #1) was confirmed as vernal pool habitat due to the presence of wood frog and spotted salamander egg masses.

The proposed project would be consistent with U.S. Army Corps Vernal Pool Best Management Practices (ACOE BMPs). The 100-foot vernal pool envelope (VPE) would not be impacted by the proposed development because the proposed access would follow an existing access road that is already partially located within the VPE. The pre-construction percent developed area of the 100-foot to 750-foot Critical Terrestrial Habitat (CTH) is approximately 23.7 percent. Post-construction, the percent developed area of the CTH would be approximately 41.4 percent. However, as the forested habitat proposed to be removed (~0.7-acre) is considered suboptimal habitat, this habitat loss within the CTH would not be expected to have a significant adverse impact to those populations utilizing VP #1. Notwithstanding, the Petitioner has provided its own recommended vernal pool best management practices to protect vernal pool herpetofauna and would also provide wetland protection.

There would be some limited views of small portions of the proposed project from Route 66 and Nutmeg Court, but otherwise, the proposed project is set back sufficiently from abutting properties and proximate roads, along with existing vegetation, so that that the proposed project would not be visible from most locations off site. The Petitioner has proposed some visual screening along the boundary of the proposed site and 100 Nutmeg Court. Specifically, the Petitioner proposes to plant seven green giant arborvitae near the northeastern limits of the proposed project.

The nearest recreational area is the Tynan Memorial Park (TMP), located approximately 0.5-mile to the northwest of the proposed solar facility. While the elevation of TMP is approximately 70 feet higher than the highest point on the proposed site, that elevation would not be sufficient to provide direct lines of site to the proposed project area due to the intervening obstructions. Further, in its comments dated May 10, 2019, DEEP notes that there would not be anticipated impacts to TMP.

The Petitioner's consultant, Heritage Consultants, performed a Phase 1A Cultural Resources Assessment Survey dated January 2019 (Phase 1A Survey). According to the Phase IA Survey, the nearest historic structure listed on the National Register of Historic Places is the Seth Wetmore House, located approximately 0.5-mile east of the proposed project. However, this historic resource would not be directly or indirectly impacted by the construction of the proposed solar project. The Phase IA Survey also indicated that, while a small segment of the northern portion of the subject property was determined to retain no/low archaeological sensitivity (due to steep slopes), the remainder of the subject property appears to retain a moderate/high archaeological sensitivity. By letter dated April 8, 2019, the SHPO recommended that a Phase 1B cultural resources assessment and reconnaissance survey be performed.

On May 15, 2019, the Petitioner submitted its Phase 1B Survey. Based on the results, no archaeological or historic structures are located within the Area of Potential Effect (APE). Therefore, the proposed project would not affect any potentially significant cultural resources. No additional cultural resource investigations would be warranted for the proposed project.

The proposed site contains approximately 16.4 acres of Prime Farmland Ssoils while a smaller portion along the northern property line contains approximately 2.9 acres of Statewide Important Farmland soils. Of those acreages, the proposed facility would be located on approximately 6.9 acres of Prime Farmland Soils and approximately 2.1 acres of Statewide Important Farmland soils.

The proposed site was used historically for farming, although it is currently inactive and periodically mowed throughout the growing seasons. No active cultivation has occurred at the site for the past 30 years. The site has not been the subject of any known development plans. There is no record of any agricultural or development rights purchased by the state.

The portions of the subject property located within Middletown are part of the Public Act 490 Program (PA 490 Program) and classified as Tillable B. The portions of the subject property that would be used for the proposed project would no longer be eligible for PA 490 classification. The remaining portions of the subject property not used for the facility in Middletown would retain their PA 490 status.

The portions of the subject property located in Middlefield are part of the PA 490 Program classified as Open Space. The portions that would be used for the proposed project would no longer be eligible for PA 490 classification. The remaining portions of the subject property in Middlefield would retain their PA 490 status.

Pursuant to CGS Section 22a-430b, DEEP retains final jurisdiction over stormwater management. The Petitioner contends that the ground disturbance is limited to 0.95-acre, which is less than the one-acre threshold requiring a DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities (DEEP General Permit); therefore, the proposed project would not be required to obtain a DEEP General Permit. However, in the DEEP comments dated May 10, 2019, DEEP indicates that it considers the entire approximately 8.7-acre footprint to be the disturbed area.

The project would comply with noise and air regulations. Operation of both facilities for 20 years would result in the offset of approximately 46,960 metric tons of carbon dioxide. The carbon payback period would equal 1.44 days to recover the loss of carbon sequestration by the 0.55-acre of tree clearing. The solar project would not produce air emissions of regulated air pollutants or greenhouse gases during operation.

A Decommissioning Plan was included in the Petition and has provisions for project removal after a useful life of at least 25 years. Following the removal of project related equipment, the site would be restored and if any soils are compacted at levels that would affect successful re-vegetation, they would be de-compacted. The method used to de-compact (e.g. aeration, tilling, etc.) would depend on how compacted the soil has become over the life of the project.

Conclusion

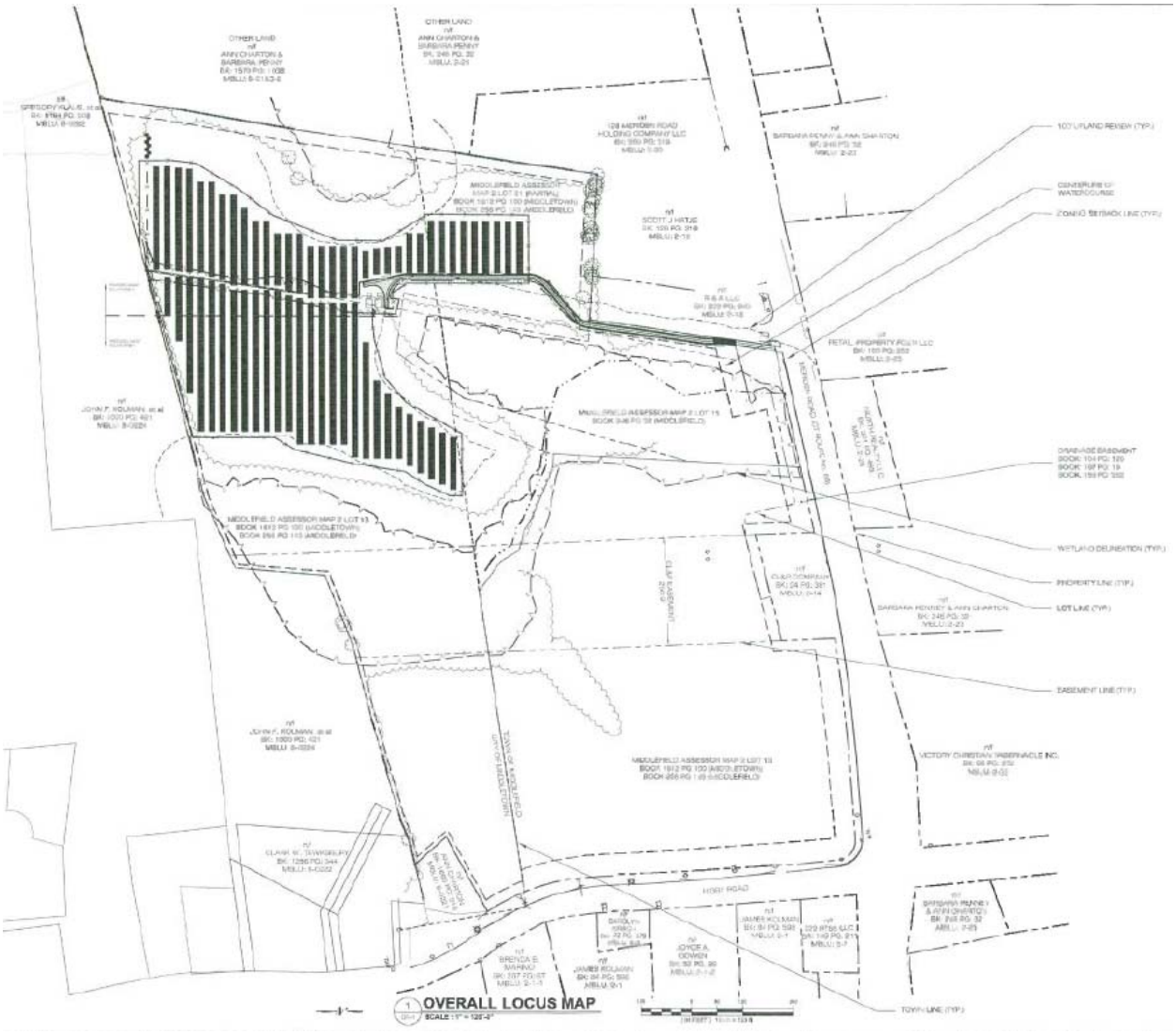
The project is a grid-side distributed resource with a capacity of not more than sixty-five megawatts, meets air and water quality standards of the DEEP, and would not have a substantial adverse environmental effect. The proposed project will not produce air emissions, will not utilize water to produce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

Staff recommends inclusion of the following conditions:

1. Approval of any minor project changes be delegated to Council Staff; and
2. Prior to the commencement of construction, submission of a copy of a DEEP-approved Stormwater Pollution Control Plan and a DEEP General Permit, if applicable.

Proposed site layout



Aerial Site Plan

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employe

May 10, 2019

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

RE: 1.0-MW and 0.986-MW Photo-voltaic generating facilities
Citrine Power, LLC
Middletown and Middlefield, Connecticut
Petition No. 1367

Dear Members of the Connecticut Siting Council:

Staff of this department have reviewed the above-referenced petition for declaratory ruling that no Certificate of Environmental Compatibility and Public Need will be required for the construction 1.0-MW and 0.986-MW photo-voltaic generating facilities north of Route 66 in Middlefield and Middletown. A field review of the site was conducted on April 30, 2019. Based on these efforts, the following comments are offered to the Council for your use in this proceeding.

Citrine Power proposes to construct two functionally-separate solar facilities totaling 6,984 panels on two historically agricultural fields north of Route 66 and east of an Eversource transmission line. The site is bisected in an east-west direction by the Middletown-Middlefield town line, and north-south by a row of trees separating the two fields. An existing, very modest unpaved access road extending northward from a seasonal farm stand on Route 66 provides access to the site but rapidly peters out after entering the site.

The output from one of the two solar facilities will be subject to a virtual net metering agreement. The virtual net metering program helps municipalities reduce their electricity costs by allowing credits created through Class I renewable generation to be applied to municipal electric bills for meters that aren't co-located with the generation. This program is one of a suite of policy tools to develop clean generation to help the state meet its economy-wide greenhouse gas emissions reduction targets established in Section 22a-200a to the General Statutes.

Site Description

With the exception of clearing that may be necessary to improve the access road and to remove the one windrow of trees between the two fields, the project footprint portion of the site is fully cleared. The vegetative cover on the site, consisting of pasture grasses

and an ample representation of multifloral rose which is kept to a low height by periodic mowing/haying, is very well established. Of the two fields which would host the solar panels, the western one has a gentle southerly slope in its northern half and approximates level in its southern half. The eastern field slopes moderately from its high point in its northwest corner, descending south and east. Like the western field, its southern half is generally flat. The single mature tree mentioned in the petition as needing to be removed from the eastern field was not readily apparent.

Even in view of the ample recent rains preceding the site review, the fields were very mushy and poorly drained, with numerous small pockets of standing water. This was especially true of the hill in the northwest corner of the eastern field. Perhaps the impervious soil layers which led to the site's wetlands being described in the petition as perched wetlands may extend, at least is some areas, to the cleared portions of the site. This might explain the amount of surface water present on the hill in the eastern field.

During the approximately 2 ½ hour DEEP site visit, a Canada goose, a tom turkey, a pair of mallards and a red-wing blackbird were observed on the site. The presence of three deer stands along the western edge of the western field and one along the eastern edge of the eastern field attest to the ample deer visitation on the site. According to the landowner of the property immediately north of the project site, coyotes and bobcats are also common on the project property. That landowner also said that the host property formerly participated in USDA's Wildlife Habitat Incentives Program (WHIP).

The project site is visually well buffered from its surrounding properties with two exceptions: the commercial development along the north side of Route 66 and the three homes at the end of Nutmeg Court which are visible from the northern end of the eastern field. These homes are at 90, 100, and 101 Nutmeg Court. The home at 100 Nutmeg Court is visually prominent from the northern portion of the eastern field and possesses a large deck which looks directly southward toward the solar farm site. Some coniferous screening may be in order along this boundary of the project site. To add to the wildlife count during the field visit, a hen turkey strutted across the front lawn of the home at 101 Nutmeg Court during the site visit.

Stormwater Management Permit

According to page 16 of the petition, the amount of ground disturbance from the project will be limited to 0.95 acres and, therefore, the project will not require a DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities. The petition assumedly bases this determination on a summation of the cross-sectional area of each of the individual racking posts driven into the ground with perhaps some component due to improvements to the access road. DEEP considers the entire 8.7-acre footprint of the project to be disturbed area, both from the actual placement of the racks, cables, inverters, concrete pads and access road and also from the construction activities which will be necessary to put these project components in place. This is consistent with past practice on all previous solar farms as well as on all construction

projects. Therefore, the petitioner should contact Neal Williams of the DEEP Stormwater Program at (860) 424-3356 or at neal.williams@ct.gov in regard to the project's registration submittal under the Stormwater General Permit.

As with previous DEEP comments to the Council for solar farms, attached to these comments is the guidance document *Stormwater Management at Solar Farm Construction Projects,* dated September 8, 2017.

Natural Diversity Data Base

Appendix B of Attachment 10 of the petition contains a letter of February 8, 2019 from DEEP's Natural Diversity Data Base to the petitioner specifying the recommended protection strategies for eastern box turtle *(Terrapene carolina carolina).* Thus it appears that all necessary coordination with the NDDB Program has taken place.

Tynan Memorial Park

Page 10 of the Environmental Assessment lists Tynan Memorial Park as the closest recreational property to the proposed solar farm, being 0.5 miles northwest of the proposed facility. Tynan Memorial Park serves as the trailhead for a 0.8 mile long connecting trail to the Mattabessett Trail. Other than the parking lot for the trailhead and an informational sign, there are no facilities at the park. No impact upon the park or its uses would be anticipated from the development of the solar farm.

Miscellaneous Petition Commentary

The wetland delineation field form in Appendix A of the Environmental Assessment classifies two of the three potential vernal pools as classic style vernal pools and only one as a cryptic vernal pool despite all three potential vernal pools being embedded within forested wetlands. Perhaps the petitioner could explain why the eastern and central potential vernal pools were not designated as cryptic.

As is typically the case, a 7' chain link perimeter fence is proposed around the solar farm. As the host site is popular with wildlife and will retain its existing vegetative cover, it would be desirable if a 6" gap of clearance could be provided between the bottom of the fence and the ground to allow for movement by smaller wildlife onto and off of the solar farm site.

On page 2 of the Decommissioning Plan, the removal of two concrete equipment pads is cited as generating 300 cubic yards of waste concrete. As each pad measures 15' x 20' x 1', each pad contains 300 cubic feet of concrete, equating to 600 cubic feet for the two pads. This in turn equates to 22 cubic yards of concrete waste rather than 300 cubic yards.

Also relative to the Decommissioning Plan, would the cited figure of 95% or greater of the facility's components being recyclable be dependent on whether solar

technology 25 or 30 years from now still uses the same types of panels as are currently used or would that 95% figure be independent of changes in photo-voltaic technology?

On page 2 of the Operations and Maintenance Plan, the annual inspection of the facility is described as including, among other components, trackers. Would trackers only come into play for a solar farm using variable tilt panels rather than fixed tilt ones as proposed at this site, or does this term have some other use? Also on page 2 of the O & M Plan, what is the 'DAS system' that will be inspected for proper functioning?

Lastly, the landowner for the property directly north of the site mentioned that he had planted pumpkins, corn and rye on the proposed host fields and estimated his last use of these fields was as recent as 6-8 years ago. This would contrast with statement in the petition that the site was last cultivated thirty years ago.

Thank you for the opportunity to review this petition and to submit these comments to the Council. Should you, other Council members or Council staff have any questions, please feel free to call me at (860) 424-4110.

Respectfully yours,

Frederick L. Riese

Frederick L. Riese
Senior Environmental Analyst

cc: Commissioner Katie Dykes
Attachments: (1)

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

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Stormwater Management at Solar Farm Construction Projects September 8, 2017

Solar farms are on-the-ground installations of arrays of photovoltaic cell panels, supporting structures and related equipment for the production of electricity. As with other types of construction projects, the construction of solar farms can involve land clearing, grading, excavation, trenching, dewatering and similar activities that create land disturbances which potentially result in soil erosion and sediment discharges polluting wetlands, streams and other surface waters. Construction-related land disturbances of 0.5 acres or larger are regulated in Connecticut pursuant to the Connecticut Soil Erosion and Sediment Control Act under Sections 22a-325 to 22a-329, inclusive, of the Connecticut General Statutes ("CGS"). Construction-related land disturbances of one (1) acre or larger are also regulated under CGS Section 22a-430 and under Section 402(p) of the federal Clean Water Act and the National Pollutant Discharge Elimination System ("NPDES") program. Prior to the start of such regulated activities, authorization is required from local authorities and, for larger projects, the Connecticut Department of Energy and Environmental Protection ("Department"). Construction projects involving five (5) or more acres of land disturbance require an individual NPDES discharge permit from the Department, or may be eligible to register for coverage under the Department's NPDES General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (general permit).

The Department has encountered repeated problems associated with solar farm construction projects covered under the general permit, from the registration process through construction activities. Although in no way an exhaustive list, the following are common problems associated with solar farm general permit registration applications and ways to address such problems:

- Applicants have been submitting registration applications that lack the requisite information or the requirements necessary for authorization under the general permit. The Department requires a complete and sufficient application when a registration application is filed, and may reject any registration application it deems to be incomplete or insufficient.
- Applicants are not adhering to the sixty (60) day/ninety (90) day time frame for Department review as required by Section 3(c) of the general permit. While the Department has on occasion shortened the review timeframe, Applicants are expected to allocate no less than the requisite time frame for the registration application review process and must plan accordingly.
- Registration applications for solar farm projects often fail to identify the project's contractor and sub-contractors. Section 5(b)(1)(viii) of the general permit mandates that this information be included in the registration application.
- Applicants have been repackaging the Siting Council submittal, which is not acceptable. Section 3(c)(2)(D) of the general permit mandates that the application submittal include only materials required to support the Stormwater Pollution Control

Plan ("SWPCP"). This information must be up-to-date and accurate. Any superfluous information delays the registration application review process.

- SWPCPs for solar farm projects are often lacking sufficient detail and information. An approvable SWPCP shall include, but not be limited to, the location of all erosion, sediment and stormwater control measures including detailed design cut sheets with supporting calculations, construction means and methods, project phasing (i.e., site planning, pre-construction, construction, and post-construction stabilization, etc.), construction sequencing and a construction schedule.
- The Applicant's design professional must be well-versed in the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control ("E&S Guidelines"), specifically the techniques found in Chapter 4, Large Construction Sites, the 2004 Connecticut Stormwater Quality Manual, as well as *current* best management practices (BMPs) recognized by the International Erosion Control Association (IECA), provided such BMPs are equal to or better than the E&S Guidelines.
- From the Department's perspective, an approvable SWPCP will include methods for avoiding compaction of soils, disconnection and reduction of runoff associated with solar panel arrays, avoidance of concentration of stormwater, and other measures necessary to maintain or improve pre-construction hydrologic conditions.
- Applicants need to follow the SWPCP review checklist when preparing the SWPCP, giving specific attention to post-construction stormwater controls and the development of a detailed long-term maintenance plan to ensure that the SWPCP meets the terms and conditions of the general permit.

Subsequent to authorization for coverage under the general permit, the Registrant is responsible for ensuring compliance with all terms and conditions of the general permit and the approved SWPCP once construction has been initiated. However, for solar farm projects, Registrants often fail to comply with the terms and conditions of the general permit, including the approved SWPCP. In particular, Department staff have observed the following issues that a routine inspection protocol and proper oversight, as required under the general permit, would have prevented, including but not limited to:

- pre-construction site planning and management deficiencies (e.g., existing vegetation, scheduling, training, phasing/sequencing, tree protection, etc.)
- ineffective placement, maintenance, and/or repair of administrative/procedural, vegetative, and structural BMPs (e.g., erosion, sediment and stormwater runoff controls, good housekeeping, materials management, and training)
- lack of thorough inspections
- ineffective or untimely corrective action
- ineffective stabilization practices
- ineffective permanent post-construction controls (i.e., store, treat and direct stormwater quality and quantity to pre-construction levels)

Such issues at solar farm construction projects raise concerns, since such projects often create areas of land disruption larger than the generally accepted BMPs of five (5) acres anticipated under the general permit. As a result, any applicant seeking coverage under the general permit for a solar farm construction project should take care to address the issues noted above. While

by no means exclusive, some recommendations that should be incorporated into a SWPCP to address these issues include:

- Ensuring that only a Professional Engineer and/or Landscape Architect, as defined in Section 2 of the general permit, who meets the qualifications described in Section 5(b)(4)(A)(ii) and who has been approved in writing by the Commissioner, serve as the Commissioner's agent to inspect the site and also serve as the qualified inspector for the purposes of Section 5(b)(4) of the general permit ("authorized professional"). Such authorized professional must remain in good standing with the Connecticut Department of Consumer Protection and be technically and ethically qualified to inspect the site and be retained for the duration of the construction project until the Notice of Termination acceptable to the Commissioner has been filed as described below.
- Ensuring that the authorized professional prepare a proposed inspection checklist to assure the construction project is being conducted in compliance with the terms and conditions of the general permit, and the approved SWPCP is implemented in accordance with the general permit. The inspection checklist shall comply with Section 5(b)(4)(B)(iii) of the general permit, and include a space for the authorized professional's signature and professional stamp.
- Ensuring that the credentials for the authorized professional proposed by the Applicant and the proposed inspection checklist prepared by such authorized professional be submitted for the review and approval of the Commissioner and be included with the registration application for the general permit. No other professional may serve as the authorized professional without the prior submittal of relevant credentials and inspection checklist for the Commissioner's review and written approval.
- Ensuring that the authorized professional personally perform all pre-construction, construction, and post-construction site inspections; perform inspections at the end of any storm event whether or not such storm generates a discharge; and prepare and submit all inspection reports including the supporting inspection checklists in compliance with Sections 5(b)(4)(A) and 5(b)(4)(B) of the general permit.
- Ensuring that the authorized professional report any violations of the terms and conditions of the general permit or the SWPCP to the Commissioner's designee within two (2) hours of becoming aware of such violation, or at the start of the next business day of becoming aware of such violation outside normal business hours and shall, within five (5) days, prepare and submit a signed and stamped written report, which documents the cause of the violation, duration including dates and times, and corrective action taken or planned to prevent future occurrences.
- Ensuring that if circumstances necessitate a revision to the SWPCP, the authorized professional works with the Permittee's design professional to ensure compliance with the terms and conditions of the general permit, and any such change to the SWPCP shall be submitted for the review and written approval of the Commissioner.
- Ensure that the authorized professional reviews all stormwater monitoring reports to evaluate the effectiveness of the SWPCP and to document any adverse impacts that any stormwater controls on the construction site or discharges from the construction site may have on wetlands, streams, any other receiving waterbodies. Such evaluation shall be documented in the inspection reports and inspection checklists performed pursuant to Section 5(b)(4) of the general permit.
- Ensuring that, in the event the authorized professional identifies a violation of the terms and conditions of the general permit, the SWPCP, or otherwise identifies adverse

impacts on wetlands, streams or any other receiving waterbodies, that construction activity shall immediately cease and the site stabilized until such violation or adverse impacts have been corrected.

- Ensuring that reporting and record-keeping of all inspection checklists and inspection reports comply with the requirements of Section 5(d) of the general permit, except that a copy shall also be submitted electronically to the Department within ten (10) days from the date such inspection was performed.
- Ensuring that all inspection checklists and inspection reports comply with the requirements for Certification of Documents in Section 5(i) of the general permit, including the requirement that such checklists and reports shall also be prepared, stamped and signed by the authorized professional.
- After completion of a construction project, ensuring that a Notice of Termination is filed in compliance with Section 6 of the general permit, including the requirement that such Notice of Termination be stamped and signed by the authorized professional certifying that such authorized professional has personally inspected and verified that the site has been stabilized following the first full growing season (i.e., April through October) in the year following completion of the construction project.
- Ensuring that any transfer of the registration comply with the requirements of Section 5(m) of the general permit.

These recommendations are by no means intended to be exclusive. To help address the issues noted above, the Commissioner will also be considering the posting of a performance bond or other security, in accordance with Section 22a-6(a)(7) of the Connecticut General Statutes, to assure the solar farm construction project maintains compliance with the terms and conditions of the general permit and the SWPCP.