



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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VIA ELECTRONIC MAIL

September 15, 2017

TO: Parties and Intervenors

FROM: Melanie Bachman, Executive Director *MAB*

RE: **PETITION NO. 1310** - Quinebaug Solar, LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed construction, maintenance and operation of a 50 megawatt AC solar photovoltaic electric generating facility on approximately 561 acres comprised of 29 separate and abutting privately-owned parcels located generally north of Wauregan Road in Canterbury, Connecticut and south of Rukstela Road and Allen Hill Road in Brooklyn, Connecticut.

Comments have been received from the Department of Energy and Environmental Protection, dated September 14, 2017. A copy of the comments is attached for your review.

MB/MP/lm

c: Council Members



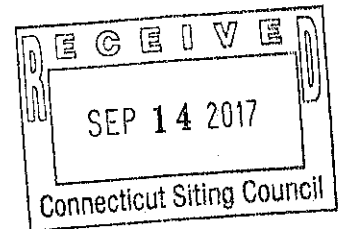
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September 14, 2017

Robert Stein, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051



RE: 50-MW Solar Photo-voltaic Generating Facility
Quinebaug Solar, LLC
Brooklyn and Canterbury, Connecticut
Petition No. 1310

Dear Chairman Stein:

Staff of this department have reviewed the above-referenced petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need will be required for the construction of the proposed photo-voltaic generating facility to be constructed in southeastern Brooklyn and northeastern Canterbury and accessed off Wauregan Road in Canterbury. A field review of the site was conducted on September 6, 2017. Based on these efforts, the following comments are offered to the Council for your use in this proceeding.

Quinebaug Solar LLC proposes to construct a 50-MW solar farm (65 MW DC capacity) employing 191,000 photo-voltaic panels and up to 21 skid-mounted inverters to convert the direct current to alternating current. The inverters will also increase the voltage of the current to 34.5 kV. A network of roads, many of them following existing roads on the site, will provide access to the solar arrays. The site will also be enclosed by a 7' security fence with a 6" gap left below the fence to accommodate wildlife movement.

Quinebaug Solar has acquired a total ownership of 561 acres consisting of 29 separate parcels, with the actual solar project occupying 270 acres. The solar farm will largely use existing site grades so that regrading of the site will be minimal. The remaining undeveloped Quinebaug Solar acreage will afford adequate visual screening to most abutting properties.

New England Clean Energy Multi-State Project Solicitation

Quinebaug Solar submitted this project into the New England Clean Energy Request for Proposals (RFP), a three state solicitation by DEEP, in conjunction with Massachusetts and Rhode Island. Connecticut solicited and selected renewable energy projects issued pursuant to Section 1(c) of Connecticut Public Act 15-107, *An Act Concerning Affordable and Reliable Energy* (P.A. 15-107) and Sections 6 and 7 of Connecticut Public Act 13-303, *An Act Concerning Connecticut's Clean Energy Goals* (P.A. 13-303). The RFP process represents an important step forward in the implementation of Governor Malloy's vision for a cheaper, cleaner, and more reliable energy future for the ratepayers of Connecticut. Bringing more grid-scale renewable energy projects on

line is instrumental in furthering this vision as these resources help diversify the regional fuel mix, assist the state in meeting its commitment to procure 20% of its electricity from Class I renewable sources by 2020, and also, contribute to the state's goal of reducing carbon emissions by 80% below 2001 levels by 2050. In reviewing the bids, DEEP applied both a quantitative and a qualitative analysis to arrive at a final score for each bid. After reviewing all the projects bid into the RFP process, DEEP selected the Quinebaug Solar LLC proposal as one of the projects authorized to enter into a long-term power purchase agreement, in this case with Eversource Energy since the project is within the Eversource service area.

Construction Stormwater Management

Construction projects involving five or more acres of land disturbance require either an individual NPDES discharge permit from DEEP, or they may be eligible to register for coverage under the Department's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (DEEP-WPED-GP-015). The petitioner acknowledges the need for this permit (page 6-11).

The large footprint of solar farm projects and the resultant large areas of land disturbance have occasioned some difficulties in both the review of permit submittals and the failure of stormwater control measures in the field. To address these problems, DEEP has recently developed additional direction to applicants to assist in achieving a successful outcome to both the permit process and the results on the ground. For the benefit of both the petitioner and the Council, attached to these comments please find the recently developed background information and recommended oversight measures for stormwater management at solar farm construction projects.

Natural Diversity Data Base

As contained in Exhibit M of the Quinebaug Solar petition, a preliminary assessment letter from the DEEP Natural Diversity Data Base (NDDDB) to the petitioner was provided on October 7, 2016 indicating the State-listed species which could potentially be present within the Quinebaug Solar property. The Petition indicates that some follow-up surveys were undertaken, in particular an acoustic survey for bats which was completed in 2016 and which detected the presence of two State-endangered bat species, the little brown bat and the tri-colored bat. A seasonal tree clearing limitation to work only between October 1 and March 31 is proposed.

While the applicant has undertaken this survey, it has not provided any of the survey results to the Natural Diversity Data Base for review as requested in the letter of October 7, 2016. As detailed in that letter, DEEP will need to review the dates, methodologies and findings of the surveys for all the listed species as well as the credentials of the biologist(s) who performed them. Alternatively, the applicant may forego the surveys and simply assume that the listed species may be encountered at the project site and prepare protection strategies for each species. These strategies must then be submitted to, and approved by, the NDDDB biologists. To date, neither any documentation of field surveys nor the development of protection strategies for the listed species have been submitted to the Department. Dawn McKay of the DEEP Wildlife Division should be the contact in this regard and can be reached at (860) 424-3592. I should note that representatives of the petitioner are meeting with Jenny Dickson of the DEEP Wildlife Division today, as these comments are being submitted.

Project Site

The project site was visited on September 6. Though the main access road from Wauregan Road at the south end to the Town of Brooklyn transfer station at the north end of the property and several connecting gravel roads were taken, the site review conducted was not a thorough one due to both the size of the site and the fact that the main access gate off Wauregan Road, which was open at the beginning of the DEEP visit, became locked during the course of the visit. After several calls were made to get the northern gate opened and allow my vehicle and I to leave the site, the property was not again accessible for reentry.

Based on the portions of the project site visited on September 6, the site is not level but the grades on the site are gentle. As noted in the Petition, the site is a mixture of forest, agricultural land, two gravel pits, and some open grassland. Mugwort (*Artemisia vulgaris*) is very common in disturbed areas such as along the sides of the access roads and the margins of the some of the cornfields.

Blackwell Park, which is a large, flat, grassed area divided into several soccer fields, is located in the southwestern portion of the project site. Benches, two portable toilets and a small parking area are the amenities available at the park, which is shown on Map C-032 of Exhibit C of the Petition. A comparison with Map C-086 of the same exhibit shows that the soccer fields will be covered over with the photo-voltaic arrays. In addition to the extra generation capacity obtained by using this area, Quinebaug Solar may also feel it is necessary for security reasons to terminate the soccer field use within the solar farm. The farmer who cultivates the corn within the project site indicated it was his understanding that those soccer fields, which were privately constructed, will be reconstructed elsewhere in the immediate project area.

Though ample visual screening is available around most of the perimeter of the proposed solar farm, the two homes on Leipsis Road will have little visual screening. The Petition notes this location as an area where more vegetative screening will be added to reduce the visibility of the solar panels. The other areas noted in the text and shown in the simulations in Exhibit J as proposed for screening were not assessed during the DEEP site review.

Though the overall property appeared generally free of trash or debris, a collection of perhaps a hundred tires was noted off the north side of the main access road just a short distance southwest of the larger (eastern) gravel pit. Other than that, the site is well maintained in that regard.

Miscellaneous Commentary

Figure 2 of Exhibit B, Existing Conditions, maps the central portion of the eastern gravel pit as Prime Farmland Soils. I don't know how long that sand and gravel excavation has been there but the indicated area does not currently host any soils, prime farmland or otherwise.

The construction and operation of the Quinebaug Solar Farm is not expected to have any impact on the Quinebaug River Wildlife Management Area unit southeast of Wauregan Road in the vicinity of the main entrance to the project site, nor on the operation of the Quinebaug Fish Hatchery which is also southeast of the project site. The section of the Quinebaug River Wildlife

Management Area southeast of Wauregan Road contains two agricultural fields cultivated by a local farmer under agreement with DEEP and it also supports hunting activity, chiefly turkey, small game, waterfowl and deer. The broader Wildlife Management Area also supports these hunting activities as well as trapping, fishing, wildlife observation, hiking and horseback riding.

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 contact me at (860) 424-4110 or at frederick.riese@ct.gov.

Respectfully yours,



Frederick L. Riese

Senior Environmental Analyst

Attachment: (1)

cc: Commissioner Robert Klee

Dept. Commissioner Robert Kaliszewski

Dept. Commissioner Susan Whalen

Dept. Commissioner Mary Sotos



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.