



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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June 26, 2018

TO: Parties and Intervenors

FROM: Melanie Bachman, Executive Director *MB*

RE: **PETITION NO. 1345** – Pawcatuck Solar Center 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 15 MW AC solar photovoltaic electric generating facility on approximately 353 acres comprised of four abutting parcels located east of Pendleton Hill Road, north of the Pawcatuck River and south of Interstate-95 with proposed access from Ella Wheeler Road, and associated electrical interconnection to Eversource Energy's Shunock Substation west of Pendleton Hill Road in North Stonington, Connecticut.

Comments have been received from the Connecticut Department of Energy and Environmental Protection, dated June 25, 2018. A copy of the comments is attached for your review.

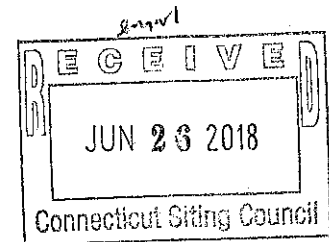
MB/RDM/lm

c: Council Members



June 25, 2018

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



RE: 15-MW Photo-voltaic generating facility
Pawcatuck Solar Center, LLC
North Stonington, Connecticut
Petition No. 1345

Dear Chairman Stein:

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 of the proposed photo-voltaic generating facility in the southeastern corner of North Stonington off Ella Wheeler Road. A field review of the site was conducted on June 19, 2018. Based on these efforts, the following comments are offered to the Council for your use in this proceeding.

DEEP Small Scale Clean Energy Request for Proposals

Pawtucket Solar Center, LLC submitted this 15 MW project into the Small Scale Clean Energy Request for Proposals (RFP) issued by DEEP. Connecticut solicited and selected renewable energy projects issued pursuant to Section 1(b) 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). Bringing grid-scale renewable energy projects on line is an important step forward towards a cheaper, cleaner, and more reliable energy future for the ratepayers of Connecticut. In the most recent legislative session, Connecticut committed to procuring 40% of its electricity from Class I renewable sources by 2030. Connecticut also committed to a mid-point reduction of carbon emissions of 45% below 2001 levels by 2035 on the way to attaining the state's longer term goal of an emissions reduction of 80% below 2001 levels by 2050. Grid scale renewable energy projects are essential to maintaining compliance with these statutory commitments. In reviewing the projects submitted pursuant to this RFP, DEEP applied both a quantitative and a

qualitative analysis to arrive at a final score for each project. After reviewing all the projects submitted through the RFP process, DEEP selected the Pawtucket Solar Center project as one of the projects authorized to negotiate a long-term power purchase agreement with the utilities, Eversource Energy and The United Illuminating Company.

Project Site

Pawcatuck Solar Center, LLC assembled four parcels totaling 353 acres for this project, of which 144 acres will be within the limits of disturbance for project staging and construction, and, of these, 118 acres will host the actual facility. The 15-MW solar generating facility, employing 61,000 photo-voltaic panels, is proposed to be sited on a mixture of agricultural and forest land south of Interstate 95, northwest of the Pawcatuck River and east of Route 49 in the southeastern corner of North Stonington.

Though portions of the site approximate level, much or most of it is gently to moderately sloped, with portions of the southern fields in particular falling into the latter category. The northeastern portion of the proposed solar farm footprint exhibits moderate to steep slopes. Several linear forested wetland areas aligned in a north-south direction divide the agricultural portion of the site into smaller parcels.

Several portions of the site possess notable 'aromatic' qualities from the disposal of manure, principally along the fringes of the agricultural fields. This is most evident at the eastern end of the circular turnaround at the end of Ella Wheeler Road, along the western cornfield edge north of the terminus of Ella Wheeler Road, and along the eastern edge of the northeastern cornfield immediately north of the spadefoot toad breeding pool. The manure has not been applied and spread as a soil conditioner but has simply been deposited in these areas.

On the date of the DEEP field review, the vernal pool had a large population of tadpoles of 1" or less in length. The vernal pool has an informal graveled spillway constructed though the farm road to convey overflow from it to the intermittent watercourse to the south.

A couple additional observations from the field are that a hen turkey and four poults were observed at the turnaround at the end of Ella Wheeler Road and a group of five grown turkeys were seen in the southernmost cornfield on June 19. Also, for the crossing of Wetland 1 that is necessary to accommodate the access road to the northwestern portions of the solar array, it is not clear from the field exactly at what point the road will cross this wetland but it appears the crossing might be contemplated in an area at which a dense, continuous cover of grape vines overlays and completely hides the underlying herbaceous and shrub cover. Though this area might not be aesthetically attractive, it does provide excellent cover for birds and small mammals. If the road crossing would fall in this short area, it is requested that the crossing be moved slightly to either to the north or south where, in either location, it would impact red maples in a more open setting.

Stormwater Management

As with most other solar farm projects, stormwater management is a dominant issue, and it is certainly a concern with this project, particularly for the northeastern portion of the project with the need to clear and grub the existing forest on this steeply sloped area and to stabilize the area before the photo-voltaic array is installed. DEEP would advise against siting the solar array on such steeply sloped areas. Until DEEP sees the design for the stormwater management controls which reflect how the applicant can logistically construct the project, especially the stormwater system, within the proposed timeframe, we cannot provide comments on that aspect of the project. To date, no stormwater permit application has been received by DEEP from Pawcatuck Solar Center, LLC.

The critical consideration in successful stormwater management is the phasing of the site disturbance and then achieving and maintaining site stabilization before and during construction. Adherence to the submitted and approved stormwater plans has been an issue in many cases. Clearing and grading all of the project site at once, though easier and less expensive for a project developer, is often in conflict with the schedules in the stormwater management plans, which call for work in phases.

The construction schedule in the Petition calls for mobilization and land clearing to begin in the first quarter of 2019, with construction and array installation to be done by fall of 2019, and testing and project commissioning to occur in late 2019. A compressed project construction timeframe frequently does not allow for the site to be stabilized before construction work begins. This has been the case mostly notably at solar farm projects in Sprague and Pomfret, where Cease and Desist Orders have been issued on construction activities. The record of solar developers achieving what they have represented to the Siting Council, and to DEEP, particularly for the larger facilities, has not been encouraging.

The challenges being faced in achieving successful stormwater management at solar farm sites, as well as guidance to hopefully achieve better outcomes, are discussed in the attached guidance document on solar farm stormwater management. DEEP would strongly advise planning for a longer construction schedule to allow for appropriately phased implementation of stormwater controls and site stabilization.

Natural Diversity Data Base

The Pawcatuck Solar Petition does not contain any correspondence with the DEEP Natural Diversity Data Base (NDDDB) program. A preliminary assessment was issued for this project in April 2017 identifying the four listed species referenced on page 23 of the Petition. The preliminary assessment letter is valid for a period of one year. The preliminary assessment letter requested site surveys for the listed species and protection strategies for the species identified as present or potentially present.

Since the preliminary assessment letter was issued in April 2017, there has been no contact of any kind from representatives of the Pawcatuck Solar Center with the NDDDB program. The Petition presents evidence that, for the eastern spadefoot toad in particular,

protection and habitat enhancement strategies have been formulated. However, the applicant needs to contact the NDDDB program to provide the results of its survey work and its protection strategies and to request an update of the now-expired preliminary assessment. Of special relevance to the applicant is the fact that no Stormwater General Permit can be issued until the NDDDB sign-off is obtained. Dawn McKay of the DEEP NDDDB program should be contacted at (860)424-3592 or at Dawn.McKay@ct.gov in this regard. Please also note that a response to the Connecticut Siting Council with the survey and protection information does not constitute a reply to the NDDDB program which specifically requested the information.

Interconnection to Shunock Substation

The interconnection from the Pawcatuck Solar Center to Shunock Substation is short and direct. There is nothing particularly noteworthy about the transmission line corridor between these two termini. Other than a mention on page 12 of the Petition that approximately five 40' poles will be needed to effect the interconnection, the Petition contains no description of it, but it seems logical to assume the new line would run on the northern side of the right-of-way and may likely involve a small amount of additional tree clearing there as the cleared portion of the right-of-way is not overly wide.

Miscellaneous Application Commentary

The last paragraph of page 28 of Exhibit G includes 'proposed landscaping' as one measure that will shield the solar farm from views from surrounding properties. No details or discussion of such additional landscaping is found elsewhere in the Petition. The proposed landscaping is listed as being in addition to the retention of some portion of the existing perimeter vegetation. What measures are envisioned and where would such landscaping occur?

The Engineer's Notes in Exhibit C, opposite Site Plan C-101, contain numerous references to meeting with county staff, approval by the county engineer, approval of easements by New London County, requesting county acceptance of improvements, etc. Such instructions are not applicable to this project. Site Plan C-101 contains a note that parcel boundaries were provided from the New England Assessor's tax maps. This is also likely erroneous.

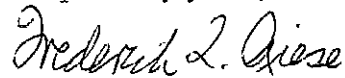
The introduction to the REMA evaluation of the vernal pool (Appendix B of Exhibit G) describes the vernal pool as 'encompassing approximately 277 acres'. This figure is off by approximately four orders of magnitude.

Potentially relevant to Section 3.19, *Recreation Areas*, of Exhibit G, the Wood-Pawcatuck River Watershed has received Congressional approval for a Wild and Scenic Rivers Study. This is the first step in a potential designation of the Wood-Pawcatuck River system as a Wild and Scenic River. The watershed also received EPA Sole Source Aquifer Designation in 1988. Lastly, and more relevant to the Stormwater Management General Permit for the project which will look to achieve no net increase in post-project

instantaneous discharge rates from the site, many locations along the Pawcatuck River have experienced chronic flooding problems as were detailed in an August 2017 *Wood-Pawcatuck Watershed Flood Resiliency Management Plan* prepared by Fuss & O'Neill.

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

Senior Environmental Analyst

cc: Commissioner Rob Klee

Attachment: (1)



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.