



September 11, 2017

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

RE: 26.4 MW Solar Photovoltaic Facility
DWW Solar II, LLC
Simsbury, Connecticut
Petition No. 1313

Dear Chairman Stein:

Staff of the Department of Energy and Environmental Protection (DEEP) reviewed the above referenced petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need will be required for the proposed construction, maintenance and operation of a 26.4 MW AC solar photovoltaic electric generation facility (Tobacco Valley Solar Project). A field review of the site was conducted on August 15, 2017. The following comments are offered to the Connecticut Siting Council.

Renewable Energy

DWW Solar II LLC bid 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 ranking for each bid. While DEEP selected many projects through the RFP process, including some sited in Connecticut, the Tobacco Valley Solar project had a lower benefit to cost ratio and was not selected by DEEP. However, Massachusetts and Rhode Island elected to choose more projects than Connecticut resulting in the selection of the Tobacco Valley Solar project, among others.

Site Location

The project is located on approximately 289 acres zoned as residential and industrial, comprised of five privately owned parcels located west of Hopmeadow Street, north and south of Hoskins Road, and north and east of County Road, and to an interconnection to Eversource Energy's North Simsbury Substation. Of the 289 total acres of the site, 133 acres of forest, wetlands and open space will be preserved, 126 acres of agricultural land will be utilized

for solar arrays, and 30 acres will be used for a 20 foot wide gravel perimeter roadway, access roads, and a 100 foot cleared zone outside of the security fence.

Activities

As stated in the petition in the Project Description Section 3.5, solar panels will be mounted on fixed metal framework called racking. The racks are arranged in rows facing south and supported on pile foundations spaced 13 feet apart. The solar panels are designed to have low irradiance (reflectance) and are 97% efficient at absorbing energy directly from the sun and are not the reflector-concentrator type systems. The solar panels will be at a fixed tilt of approximately 25% and 3 feet above grade at the low end and 10 feet above grade at the highest point. Construction involves site altering activities including tree clearing, partial grading on steep slopes, and soil excavation for the installation of pilings and conduit trenches. On three parcels, a total of 30 acres of trees of the 151 forested acres will be cut for solar arrays and maintenance (18.1 acres, 7.2 acres and 4.7 acres). To prevent soil erosion during construction, the petition describes utilizing erosion control blankets, silt fence, straw wattles, sediment traps and hydraulic mulching to hold back sediment. DEEP will analyze these techniques as part of the stormwater permit review. Where trees are removed from the 100 ft. zone outside of the security fence, tree stumps will be left in place to reduce the potential for soil erosion. Grading will be done to establish a maximum 15% slope where needed. A total of 14.2 acres throughout the site will be graded to achieve this slope. Disturbed areas will be graded, topsoil applied, and planted with cool-season grass seed mix.

Site Visit

A site visit was conducted on August 15, 2017. Observations were made at locations within the subdivisions at Litchfield Drive, Knollwood Circle, Saxton Brook Drive, Munnisunk Drive, Berkshire Way and along the main roads where the fields are visible; County Road and Hoskins Road. Access to the site is via a dirt road off of County Road, that is adjacent to wetlands associated with Munnisunk Brook. The road progresses 300 or more feet away from the Munnisunk Brook until it crosses at a narrow path in wetlands. A culvert is proposed at this wetland crossing.

There is a 100-foot setback proposed off of Hoskins Road and County Road; the petitioner has proposed 10-foot architectural fencing with landscaping for visual aesthetics where there is an open view. The first few houses on Hoskins Road near Saxton Brook Drive may see a view of the solar field fencing from their homes. Saxton Brook is surrounded by vegetation and there is no work proposed within 100 feet from the brook. Munnisunk Brook meanders through the site and off site, and back on the site at the north end of the project. The riparian corridor is heavily vegetated both at the entrance to the site and at the north corner of the site. No work is proposed near the Munnisunk Brook with the exception of the proposed culvert, and approximately 100 to 200 feet of vegetated buffer will be retained. The north section of the development is where approximately 18 acres of trees will be cut inside the fencing. The potential cable route will cross Saxton Brook, details of the trenching would need to be provided for further review. Fencing and solar arrays will be installed 100 to 200 feet from Bissell Brook.

Construction Stormwater Management

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, DEEP. Construction projects involving five (5) or more acres of land disturbance require an individual NPDES discharge permit from the DEEP, or may be eligible to register for coverage under DEEP's NPDES General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (general permit).

In the Notes section on plan sheet C-1, the petitioner recognizes the need to register for DEEP's general permit to address the stormwater discharges associated with the proposed project. DEEP acknowledges that the petition includes a Stormwater Pollution Control Plan which, depending upon the phasing of the project, addresses a variety of methods for erosion controls such as temporary sediment basins and diversion channels to be used where needed. DEEP also recognizes that a site inspection section is included on page 16 of the SWPCP, stating that the permittee will provide qualified personnel to inspect disturbed areas of the construction site and will respond to storm events during construction. Nevertheless, based upon the problems that have been encountered in regards to large areas of land disturbance at solar farm construction projects and the need to assure that the construction project complies with the terms and conditions of the general permit and the SWPCP, DEEP believes additional measures for oversight during the construction phase of the project are warranted. For the benefit of both the petitioner and the Siting Council, please see the recently developed attachment that includes background information and recommended oversight measures for stormwater management at solar farm construction projects (see attachment).

Aquifer Protection

This project is partially located on the Aquarion Water Company's Hoskins Well Field Aquifer Protection Area. The proposed solar farm is not a regulated activity under the Aquifer Protection Area Regulations, Connecticut General Statutes Sections 22a-354bb. However, the petitioner should be aware that this project is in an Aquifer Protection Area and should take precautions to protect this sensitive drinking water location. If this project is approved, DEEP recommends the Siting Council include the conditions with Best Management Practices taken from the Connecticut Aquifer Protection Area Program Municipal Manual, entitled "Road and Highway Construction/ Reconstruction in Aquifer Protection Areas."

1. A plan for road construction should have a siting and design assessment to avoid or mitigate potential impacts. A stormwater management plan considering both the quality and quantity of runoff should be developed.
2. Aquifer Protection requires stormwater management plans for all permits to ensure runoff is managed to prevent groundwater pollution.
3. Allow sheet flow to above ground treatment structures such as detention/ retention basins.

Natural Diversity Database

A preliminary review dated January 10, 2016 by DEEP Wildlife Division staff stated there are known extant populations of state listed species that occur within or close to the boundaries of this project. DEEP Wildlife staff stated that field surveys would need to be completed by a qualified biologist and submitted for the Department's review. A list of beetles, moths, plants and vertebrate animals were provided for each property. VHB Consultants provided a review in a letter dated April 25, 2017 for strategies of conservation and protection of the 23 total species. Strategies for protection include following DEEP wildlife guidance documents during construction to avoid harm to wildlife and provide contractor awareness; complying with time of year restrictions, and GPS point locations will be taken if sensitive plant or animal species are discovered to avoid those areas during construction. The approval of these strategies by DEEP's Wildlife Division is pending.

Habitat Loss and Mitigation

The petitioner states the project will result in a loss of woodland habitat and forest edge habitat. Forest edge habitat will be shifted by approximately 100 feet. Permanent grassland containing the solar arrays will replace the 126 acres of agricultural land. DEEP recommends that the Siting Council require conditions to mitigate the loss of habitat.

A list of mitigation actions are proposed in Section 7 of the petition, Environmental Consequences, page 48. In particular, the petitioner proposes to utilize one acre to address pollinating species such as bees, birds, butterflies, and bats. Habitat loss and altered land use patterns as well as pesticides and climate issues have stressed these populations. The proposed one acre will be planted with native pollinator seed mix developed by Xerces Society for northeastern United States. In addition to the petitioner following guidance documents on pollinator habitat, the Siting Council could consider a condition for annual updates on the site for a select period of time to measure the survival of the plantings. Maintenance in this area could include removal of unwanted invasive plants, rotating mowing less than 30% of the site in any one year, and re-seeding when necessary. Also, the petitioner proposes to promote recreational activities through the development of several miles of rustic walking paths outside of the security fence.

Wetlands and Vernal Pools

A consultant for the petitioner conducted wetland and vernal pool assessments and identified nine wetland systems, three perennial watercourses and four farm ponds. A culvert is proposed in a narrow portion of wetlands on the access road off of County Road. A permit from the Army Corps of Engineers may be needed as part of Section 404 Clean Water Act, Water Quality Certification. Depending on if the project qualifies for self-verification or a general permit, a 401 Water Quality permit may be required by DEEP Land and Water Resources Division. Details for the culvert should be included in the Development and Management Plan.

The petitioner does not propose any work within 100 feet of a wetland or watercourse, and in some areas a larger buffer is provided. This will likely maintain water quality and wetland functions. Clearing limits on the plans provided are shown at the 100 and 200 foot buffer areas.

VHB Biologists conducted vernal pools surveys on the project site. The consultants assessed wetlands to identify any seasonal waterbody that has a defined depression, lacks fish, and supports or is capable of supporting obligate species. The only potential vernal pools identified were the four farm ponds. The ponds were investigated on three dates in April and May and contained fish populations, and for that reason did not meet the criteria for a vernal pool. Wood frogs were encountered in puddles which had formed during snow melt but had dried entirely by April 19, 2017.

Agriculture

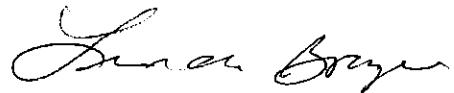
DEEP anticipates that the Department of Agriculture will submit comments to the Siting Council on these matters.

Decommissioning Plan

DEEP recommends that the Siting Council require the petitioner to post a performance bond or other security to ensure funds are available for site restoration as outlined in Exhibit S, Section 3. As represented in the petition, restoration will include the removal of above-ground structures, grading if needed, restoration of topsoil and seeding. Temporary erosion and sedimentation control and best management practices will be used during this phase. Exhibit S contains further details regarding how the land will be restored for agricultural use. Prior to decommissioning, the petitioner should consult with DEEP on any permits that may be required during land disturbance operations.

Thank you for the opportunity to review this petition and to submit these comments to the Siting Council. Should you, other Council members or Council staff have any questions, please contact me at Linda.Brunza@ct.gov or by telephone at 860-424-3739.

Sincerely,



Linda Brunza
Environmental Analyst II

CC:

Robert Klee, Commissioner
Robert Kaliszewski, Deputy Commissioner
Susan Whalen, Deputy Commissioner
Mary Sotos, Deputy Commissioner

Attachment



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.