



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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VIA ELECTRONIC MAIL

January 13, 2020

TO: Parties and Intervenors

FROM: Melanie Bachman, Executive Director *MAB*

RE: **PETITION NO. 1310A** - Quinebaug Solar, 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 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 and south of Rukstela Road and Allen Hill Road in Brooklyn, Connecticut. Reopening of this petition based on changed conditions pursuant to Connecticut General Statutes §4-181a(b).

Comments have been received from the Connecticut Department of Energy and Environmental Protection (DEEP), dated January 10, 2020. A copy of the comments is attached for your review. Additionally, in response to DEEP's concern on page 1 of its comments, the Council notes that the entire record of Petition No. 1310, including DEEP's 2017 comments and its September 8, 2017 Stormwater Management Guidance, is included in the Council's administrative notice list for this proceeding.

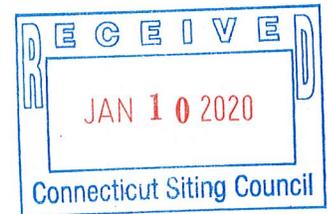
MB/MP/lm

c: Council Members



January 10, 2020

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 Motion to Reopen

Dear Members of the Connecticut Siting Council:

Staff of this department have reviewed the above-referenced Motion to Reopen the 2017 petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need will be required for the construction of a 50-MW 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 January 2, 2020. Based on these efforts, the following comments are offered to the Council for your consideration in this proceeding. The Council is also asked to take administrative notice of DEEP's comments of September 14, 2017 on the original Petition No. 1310 including the Stormwater Management Guidance dated September 8, 2017 which was attached to those comments.

The project site consists of 30 parcels totaling 599 acres consisting of forestland, agricultural fields and gravel extraction pits. The project footprint covers 227 acres. The solar array would employ 179,128 photovoltaic panels.

Compared to the original 2017 proposal, the current project footprint has been reduced from 270 acres to 227 acres, vegetative clearing has been lessened from 118 acres to 71 acres, and buffers around wetlands have been increased.

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 Connecticut's vision for a more affordable, 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 in implementing Governor Lamont's Executive Order No. 3 that DEEP investigate pathways to achieve a 100% zero-carbon electric sector by 2040. Developing grid-scale renewables is also imperative to the state's success in achieving its goal of reducing carbon emissions by 45% below 2001 levels by 2030 and by 80% below 2001 levels by 2050. In reviewing the bids in this RFP, DEEP applied both a quantitative and a qualitative analysis to arrive at a final score for each bid. After evaluating all the projects bid into the three state RFP process, DEEP selected the Quinebaug Solar LLC proposal as one of the projects authorized to enter into long-term power purchase agreements with the utilities. DEEP notes that the Siting Council's previous denial of Quinebaug Solar LLC's petition was not based on a failure to demonstrate a public need. It is DEEP's position that the public need to develop grid-scale renewable energy resources persists unchanged.

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 register for coverage under the Department's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (DEEP-WPED-GP-015). This general permit is currently in the process of being revised and reissued.

Since the original Petition No. 1310 proposal in 2017, Quinebaug Solar and DEEP Stormwater Program personnel have met on several occasions, allowing DEEP to provide additional guidance to the applicant. No registration has yet been filed for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("Construction GP") as such registration filing can occur only after a written affirmative determination has been obtained from the DEEP Wildlife Division that the construction will not threaten the continued existence of any species listed pursuant to section 26-306 of the Connecticut General Statutes as endangered or threatened, or result in the destruction or adverse modification of habitat deemed to be essential for such species, as required by section 3(b)(2) of the Construction GP. This determination letter has not yet been issued as ongoing evaluation of listed species data and suitable mitigation for impacts to listed species is still in process.

As of this past Monday, the DEEP Stormwater Program has issued new guidance for solar farm developers concerning effective management of runoff during the design, construction and operation of solar facilities. This new guidance, which is attached to these comments, neither conflicts with nor supplants the guidance document of September 8, 2017. It is provided with these comments both for the benefit of the petitioner and of Council members and staff.

Quinebaug Solar should also be aware that prior to initiating the construction of any engineered stormwater control measures, any proposed measures must be evaluated to determine if they may qualify as dams as defined by the Regulations of Connecticut State Agencies Sec. 22a-409-1(10), which may require a Dam Safety Construction Permit. A determination on the need for this permit may be requested by contacting the DEEP Dam Safety Program at DEEP.DamSafety@ct.gov.

Natural Diversity Data Base

As indicated in Appendix D of the Petition, there have been numerous contacts between representatives of Quinebaug Solar and the biologists of the Natural Diversity Data Base over the last two years. The principal endangered species at the site is the eastern spadefoot, often referred to as the eastern spadefoot toad, (*Scaphiopus holbrookii*), an amphibian which requires vernal pools and/or other temporary freshwater habitat as well as dry upland areas. DEEP and the applicant are engaged in on-going discussion concerning the provision of adequate upland habitat for this species, and to a lesser extent for eastern hognose snake (*Heterodon platirhinos*), a species of special concern. Eastern spadefoot upland habitat appears to occur on the project site.

The proposed seasonal restriction of conducting all tree clearing from October to March is appropriate for the protection of any tree-roosting bat species at the site.

The hiring of an on-site environmental monitor, an aspect of the Herpetofauna Avoidance and Mitigation Plan contained in Appendix D, is a valuable aspect of the protection of listed species which may be resident on the project site and specifically within the construction area. The Council should require that this environmental monitor be a qualified herpetologist with education and experience with amphibians and reptiles in general and with specific experience with the eastern spadefoot. The monitor should also have or obtain a valid scientific collection permit from the DEEP Wildlife Division to work with eastern spadefoot and thereby be authorized and qualified to relocate any individuals encountered at the project site who need to be moved out of harm's way.

Miscellaneous Commentary

Given the 71 acres of land clearing proposed for this project and the intensity of the panel coverage within the limits of the construction area, the preservation of 91% of the stone walls with the development area, as cited on page 6-6 of the Petition, is a notable and commendable accomplishment.

There is a possible discrepancy between the figure on page 3-8 of 0.88 miles of existing roads on the project site being reused for the project and the statement on page 4 of the Vernal Pool Survey and General Herpetological Inventory for the Quinebaug Solar Site which cites the presence of 1.5 miles of existing dirt and gravel roads on the site. Does this difference reflect a difference between the areas covered by the terms 'development area' and 'the site', or are some of the existing roads not designated for reuse by the project?

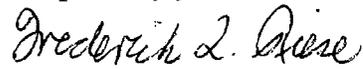
Petition No. 1310 Motion to Reopen
Quinebaug Solar LLC

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January 10, 2020

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 Katie Dykes



**GUIDANCE REGARDING SOLAR ARRAYS
AND THE GENERAL PERMIT FOR THE
DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS FROM CONSTRUCTION
ACTIVITIES**

January 6, 2020

Solar development has expanded over the last several years as Connecticut and other states have invested in this important resource to further greenhouse gas emission reductions. The large amount of impervious surface inherent in the construction of a large-scale solar arrays is unlike most other construction activities regulated under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (“general permit”) and entails challenges not encountered in traditional development projects. If not properly managed through appropriate design and mitigation measures, stormwater discharged during and after the construction of solar arrays can be a significant source of pollution resulting from increased runoff, erosion, and sedimentation, which can adversely impact wetlands or other natural resources. Solar installations must be properly designed to assure soil stabilization, minimize soil disturbance and soil compaction. This includes ensuring that effective controls are put in place to manage the total runoff volume and velocity that can lead to the loss of topsoil, erosion and sediment discharges from disturbed areas and stormwater outlets, and erosion along downstream channels and streambanks. The ability to address such significant environmental problems during construction and post-construction becomes more difficult as site imperviousness increases.

The environmental objectives of the general permit that solar facilities must meet have not changed. What has changed are the design assumptions and application of stormwater management techniques and engineering principles and practices to meet those requirements, as well as the Department’s knowledge and experience with respect to the ability of different techniques and engineering practices to meet the underlying environmental requirements. The Department is obligated to apply its best understanding of management techniques and engineering practices and principles. At the same time, the Department strives to provide more predictability and transparency around its approaches to permitting solar facilities in order to promote environmental compliance and competitive solar development in the state.

To that end, DEEP is publishing this Guidance, available at www.ct.gov/deep/stormwater to assist the professionals engaged in designing and constructing solar array projects, both large and small, and to provide a more transparent understanding of how the Department is considering emerging issues and the manner of addressing them. The Guidance describes the Department’s expectations around how such professionals may ensure that any such project is designed and constructed in a manner that takes into account site conditions such as: the amount, frequency, intensity and duration of precipitation; soil types, topography, surficial geology, hydrology and natural resources; and any changes to such conditions resulting from site activities during and after construction to minimize erosion and sedimentation and to control stormwater discharges, including peak flowrates and total stormwater runoff volume and velocity. This guidance should also help facilitate the preparation and efficient review of a Stormwater Pollution Control Plan (Plan) submitted in support of an application for coverage under the general permit.

This guidance should not be confused with, and is not intended to contain, enforceable requirements. A professional may propose to design and construct a solar array in another manner. A design professional may decide, based on the particular conditions for a project or a site that the best technique or engineering practice is to deviate from this guidance. The Department is open to considering alternative approaches. To be approved, however, any proposal must address the issues noted in this Guidance as well as demonstrate compliance with the requirements of the general

permit. This guidance is provided for informational purposes only and is not meant to modify or replace any provision of the general permit or any applicable laws or regulation. In the event of a conflict between this guidance and the general permit or any applicable law or regulation, the permit or applicable law or regulation shall govern.

The Department notes that it has separately initiated a public comment process on the proposed Construction General Permit, which includes similar provisions described in this guidance. The final adoption of a new Construction General Permit will negate the need for this Guidance. Any questions about the applicability of this Guidance may be directed to Karen Allen at Karen.Allen@ct.gov.

Design and construction guidance

- (1) Roadways, gravel surfaces and transformer pads within the solar array are considered effective impervious cover for the purposes of calculating Water Quality Volume (WQV). In addition to these impervious surfaces, all solar panels in the array should also be considered effective impervious cover for the purposes of calculating the WQV if the proposed post-construction slopes at a site are equal to or greater than 15% or if the post-construction slopes at a site are less than 15% and the conditions in (a) – (e), inclusive, below have not been met:
 - (a) The vegetated area receiving runoff between rows of solar panels (see Figures 1 and 2, below) is equal to or greater than the average width of the row of solar panels draining to the vegetated area;
 - (b) Overall site conditions and solar panel configuration within the array are designed and constructed such that the runoff remains as sheet flow across the entire site;
 - (c) The following conditions are satisfied regarding the design of the post-construction slope of the site:
 - For slopes less than or equal to 5%, appropriate vegetation shall be established as indicated in Figure 1, below; and
 - for slopes greater than 5%, but less than 10%, practices including, but not limited to, the use of level spreaders, terraces or berms as described in Figure 2, below, shall be used to ensure long term sheet flow conditions; and
 - for sites with slopes greater than or equal to 8%, erosion control blankets or stump grindings or erosion control mix mulch or hydroseed with tackifier should be applied within 72 hours of final grading, or when a rainfall of 0.5 inches or greater is predicted within 24 hours, whichever time period is less; and
 - for slopes equal to or greater than 10% and less than 15%, the Plan includes specific engineered stormwater control measures with detailed specifications that are designed to provide permanent stabilization and non-erosive conveyance of runoff to the property line of the site or downgradient from the site.
 - (d) The solar panels should be designed and constructed in such a manner as to allow the growth of vegetation beneath and between the panels.
 - (e) A one-hundred (100) foot buffer should be maintained between any part of the solar array and any of the following: “wetland” as that term is defined in in Conn. Gen. Stat. § 22a-29, “wetlands” as defined in Conn. Gen. Stat. § 22a-38, or “waters” as defined in Conn. Gen. Stat. § 22a-423, which shall include vernal or intermittent waters. The buffer shall consist of undisturbed existing vegetation or native shrub plantings.
- (2) The lowest vertical clearance of the solar panels above the ground should not be greater than ten (10) feet. The panels should, however, be at an adequate height to support vegetative growth and maintenance beneath and between the panels. If the lowest vertical clearance of the solar panels above the ground is greater than ten (10) feet, non-vegetative control measures will be necessary to prevent/control erosion and scour along the drip line or otherwise provide energy dissipation from water running off the panels.

- (3) The Commissioner may require that a letter of credit be secured prior to undertaking construction activity, in circumstances where site conditions, scale of project or previous compliance issues present elevated risks associated with potential non-compliance. For previously permitted projects, the amount of the letter of credit has been established at \$15,000.00 per acre of disturbance. The wording of such letter of credit shall be as prescribed by the Commissioner. The Permittee should maintain such letter of credit in effect until the Commissioner notifies the permittee that the Notice of Termination, filed in compliance with Section 6 of the general permit has been accepted by the Commissioner.

Design requirements for post-construction stormwater management measures.

- (1) Post-construction stormwater control measures should be designed and constructed to provide permanent stabilization and non-erosive conveyance of runoff to the property line of the site or downgradient from the site.
- (2) Orientation of panels should be considered with respect to drainage pattern, flow concentration, drainage area and velocity (i.e. rows perpendicular to the contours may result in higher runoff and flow concentration).
- (3) The permittee should conduct a hydrologic analysis that:
 - (a) Evaluates 2, 25, 50 and 100-year storm post-construction stormwater flows; and
 - (b) Is based on site specific soil mapping to confirm soil types; and
 - (c) Is able to determine and confirm the infiltrative capacity of any stormwater management measures and, in addition, reflects a reduction of the Hydrologic Soil Group present on-site by one (1) step (e.g. soils of HSG B shall be considered HSG C) to account for the compaction of soils that results from extensive machinery traffic over the course of the construction of the array; and
 - (d) Is based on slope gradient, surveyed soil type (adjusted per subparagraph (c), above), infiltration rate, length of slope, occurrence of bedrock, and change in drainage patterns (see also page 23 at https://www.ct.gov/deep/lib/deep/Permits_and_Licenses/Land_Use_Permits/Inland_Water_Permits/IWRD_inst.pdf); and
 - (e) For an engineered stormwater management system, demonstrates no net increase in peak flows, erosive velocities or volumes, or adverse impacts to downstream properties.

Figure 1
Solar Panel Installation with Slopes $\leq 5\%$

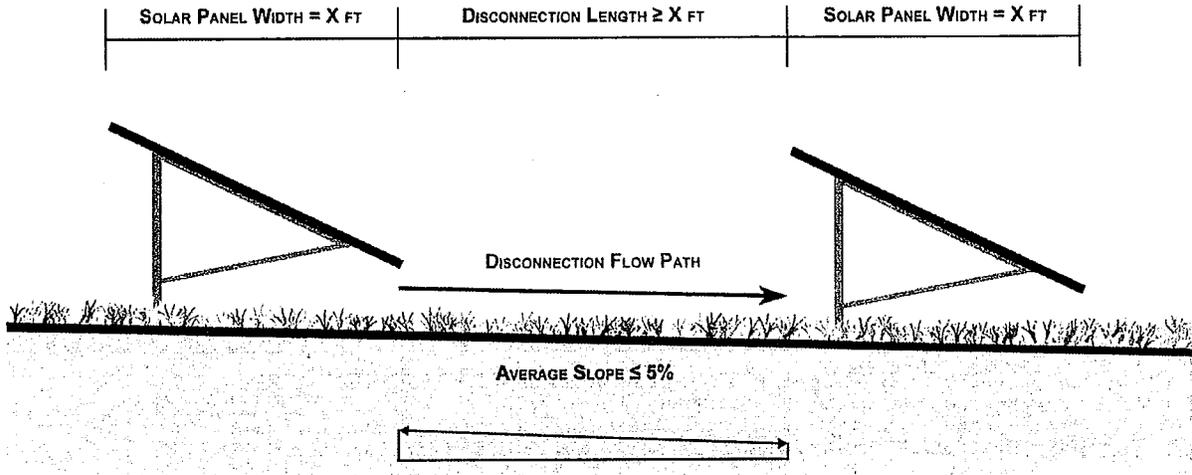
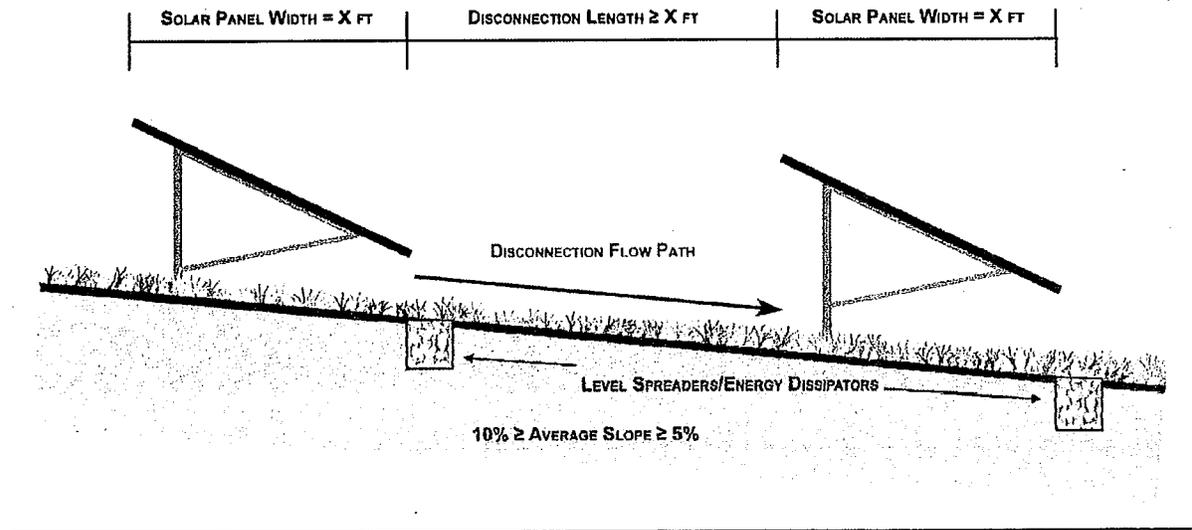


Figure 2
Solar Panel Installation with Slopes $> 5\%$ and $\leq 10\%$



Source: Maryland Department of the Environment: Stormwater Design Guidance – Solar Panel Installations