

October 10, 2017

VIA ELECTRONIC MAIL AND FIRST CLASS MAIL

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Petition 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 and south of Rukstela Road and Allen Hill Road in Brooklyn, Connecticut.

Dear Ms. Bachman:

On behalf of the petitioner, Quinebaug Solar, LLC (“Quinebaug”), enclosed please find an original and 15 copies of responses to Connecticut Siting Council interrogatories CSC-78 through CSC-119 in connection with the above-referenced proceeding.

Please feel free to contact me if you have any questions regarding this submission.

Sincerely,



David W. Bogan

DWB/dls

cc: Service List

AM 67286554.1

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CSC-78 On August 28, 2017, Quinebaug Solar, LLC (QS) provided the location of the signs that were installed by QS pursuant to Section 16-50j-21 of the Regulations of Connecticut State Agencies. What information was on such signs? On which date(s) were the signs installed?

Petitioner's Response: Pursuant to Section 16-50j-21 of the Regulations of Connecticut State Agencies, signs were installed by Quinebaug Solar, LLC ("Quinebaug") on September 1, 2017. The signs provided information on the Project name, Petitioner name, date of public hearing, and contact information for the Siting Council.

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CSC-79 Is it correct to say that, even though the proposed facility is a generating facility with a capacity of over 10 MW, it is exempt from Connecticut General Statutes Section 22a-20a (Environmental Justice Act) because it is a solar facility?

Petitioner's Response: Connecticut General Statutes §22a-20a(b)(1) requires all affected Applicants seeking any certificate for siting approval from the Connecticut Siting Council “involving an *affecting facility* that is proposed to be located in an environmental justice community or the proposed expansion of an affecting facility located in such a community” to comply with the other provisions of the Connecticut Environmental Justice Act (emphasis added).

Connecticut General Statutes §22a-20a(a)(2) defines “affecting facility” as any “electric generating facility with a capacity of more than ten megawatts.” However the statute exempts “(i) the portion of an electric generating facility that uses non-emitting and nonpolluting renewable resources such as wind, solar and hydro power or that uses fuel cells.”

Accordingly, as the Quinebaug Solar Project (the “Project”) will generate power entirely from solar power, it is exempt from the provisions of the Connecticut Environmental Justice Act.

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CSC-80 At the evidentiary hearing held on September 19, 2017, there was testimony that there are no 100-year flood zones within the proposed project footprint, but some areas on the western side of the project would be located within the 500-year flood zone. Superimpose the 500-year flood zones areas on a map or drawing of the proposed project (e.g. Figure 4 — Proposed Conditions or Sheet C-055), and provide a copy of such drawing or map.

Petitioner's Response: The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM, Community Panel Numbers 0901640003A (effective January 3, 1985), 0901640008A (effective January 3, 1985), 091640009A (effective January 3, 1985) and 091830010A, effective July 2, 1984) for the Project site were reviewed prior to Petition submittal.

The FEMA maps have also been georeferenced and are depicted on the figure in Exhibit CSC-80 – FEMA Figure. The figure confirms that no work is proposed within the limits of either the 100-year or 500-year floodplain.

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CSC-81 In QS' response to Council interrogatory number 51, QS utilized an equivalent natural gas plant in its carbon debt analysis. Is the "equivalent natural gas plant" a simple cycle combustion turbine or a combined cycle facility?

Petitioner's Response: The equivalent natural gas plant is assumed to be a simple cycle combustion turbine.

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CSC-82 Neglecting the equivalent natural gas plant, provide a simple carbon debt payback period by first computing the loss of carbon dioxide sequestration over the life of the facility due to tree clearing and then adding in the carbon dioxide used to manufacture the solar equipment. This would represent the “debt” to be paid back. Then divide by the annual carbon dioxide emission reductions due to the Class I renewable energy displacing the traditional grid generation to arrive at an approximate “payback period.” Is it also correct to note that this is a simplified analysis and a rough approximation because grid emissions may decrease over time due to retirement of fossil fueled-generation and growth of renewables that are expected to occur in the future?

Petitioner’s Response: Given the lost carbon dioxide sequestration over the life of the facility due to tree clearing and the carbon dioxide emitted from the manufacturer of the solar equipment, the approximate payback period was calculated using regional weather data (<http://pvwatts.nrel.gov>) and was found to be about seven years.

This analysis compares the total MWh generate by solar over a period of 20 years and an equivalent amount generated via natural gas. Retirement of fossil fuel based generators and growth of renewables is expected in the future but is not captured in this analysis. Refer to additional information conducted by EarthShift Global on behalf of Quinebaug, provided as Exhibit CSC-82 – Life-Cycle GHG Assessment, Quinebaug Solar.

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CSC-83 Referencing Sheet G-001 — Solar Racking System Detail, there appears to be 15 feet of horizontal spacing between rows of solar panels. Is this to prevent or minimize the effects of one row of panels casting a shadow on an adjacent row of panels and blocking the sunlight?

Petitioner's Response: Yes, the 15 foot spacing between solar panels reduces row-to-row shading. Spacing is also needed for access and maintenance.

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CSC-84 Does the 2017 National Electric Code require fencing for the solar facility itself or only the substation?

Petitioner's Response: The NEC provides various options for protecting the general public from electrical equipment with one of the options being a fence. Quinebaug selected the option to include a perimeter fence around the array and the substation to satisfy the requirement.

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CSC-85 At the public hearing, QS testified that it is not participating in the ISO-NE Forward Capacity Auction (FCA) at this time, but must qualify for the FCA. Does QS have any plans to participate in future FCAs?

Petitioner's Response: Quinebaug has submitted a request to qualify and participate in the Forward Capacity Market auction in accordance with the requirements of our Power Purchase Agreement. Quinebaug is taking all necessary and appropriate actions to qualify and participate; and commercially reasonable actions to be selected and compensated in the Forward Capacity Auction, and will do so in every auction year for the duration of the Project's Power Purchase Agreement. Quinebaug was notified on September 29, 2017 by the ISO-NE that Quinebaug has partially qualified for the upcoming Forward Capacity Auction (2021-22) for 28.676 MW of Summer Capacity. See Exhibit CSC-85-Quinebaug Solar Forward Capacity Correspondence.

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CSC-86 Is it correct to say that the existing 115-kV corridor consists of one row of double-circuit structures? Would QS (via Eversource) connect to one 115-kV circuit located closer to the substation?

Petitioner's Response: Yes, the 115-kV transmission line is a single row of double circuit structures. Eversource plans to use the western-most circuit (closest to the proposed substation) for the point of interconnection.

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CSC-87 How many square feet is the substation?

Petitioner's Response: The current design for the collector substation is approximately 160 feet x 146 feet (23,360 square feet). The interconnection facility substation is approximately 175 feet x 218 feet (38,150 square feet). Both are preliminary designs and dimensions are subject to change.

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CSC-88 Will just one 34.5-kV circuit (referred to as the “Gen-Tie Line” on page 3-8 of the Petition supply the substation?

Petitioner’s Response: There will be 2 or 3 circuits going to the collector substation.

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CSC-89 Is it correct to say that the 34.5-kV lines from the solar facility to the substation would be overhead? Approximately how tall would the 34.5-kV structures be?

Petitioner's Response: The collection circuits will be underground where possible. If the lines are overhead in some areas, the structures would be 40-50 feet high.

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CSC-90 Would the transformers have containment measures to protect accidental leakage of dielectric fluids, e.g. insulating oil?

Petitioner's Response: The substation will have transformers with secondary oil containment (the transformer tank being primary), comprised of either concrete or an impervious liner. A detailed Spill Prevention Control and Countermeasure Plan (SPCC Plan) will also be developed for the Project and will be prepared by a registered Professional Engineer.

In the development of the SPCC Plan, the Professional Engineer will review each transformer individually to determine if it requires secondary containment. The Plan will meet all federal regulation requirements with respect to transformer secondary containment.

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CSC-91 How much time in total was spent assessing each potential vernal pool? Please provide a table with the amount of time spent per pool and dates sampled from the Connecticut Association of Wetland Scientists (CAWS) data sheets in the record.

Petitioner's Response: The time spent by Quinebaug's consultant, Verdanterra, assessing each vernal pool on April 19–20, 2016 (site visit #1) and April 29–30, 2017 (site visit #2) ranged from 19–40 minutes total time spent in each pool, with an average of 27 total minutes spent assessing each vernal pool within the Project site for both site visits (see Table 1 below). Time spent at each vernal pool varied due to vernal pool size, and the abundance and diversity of fauna observed. Copies of the CAWS data sheets for the vernal pool data provided in Table 1 are included in Exhibit L of the Petition (see Appendix C Vernal Pool Survey Data of Exhibit L).

Table 1. Time Spent Assessing Vernal Pools (Minutes) and Type of Observation

Vernal Pool ID	Vernal Pool Size (square feet)	Type of Observation	Total Time (Minutes) Spent Assessing Pool
RS_QN_VP03_2	841.19	Visual and Dipnetting	22
RS_QN_VP04_1	5750.92	Visual	25
RS_QN_VP04_2	5363.67	Visual and Dipnetting	30
RS_QN_VP05_1	9428.65	Visual and Dipnetting	40
RS_QN_VP06_2	144.10	Visual and Dipnetting	19

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CSC-92 Please elaborate on the role of CAWS in this study beyond the use of their data sheets.

Petitioner's Response: Breeding season surveys were conducted following the *Connecticut Association of Wetland Scientists Vernal Pool Monitoring Program Protocol* (undated), including recording data using the *Connecticut Association of Wetland Scientists Vernal Pool Data Sheet*. Additional guidance concerning pool assessment methods, decontamination procedures, and assessor qualifications was taken from the *Maine Association of Wetland Scientists Vernal Pool Technical Committee Vernal Pool Survey Protocol* (April 2014).

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CSC-93 Were any pools re-sampled to ensure that a complete assessment of all species occurred?

Petitioner's Response: Two site visits were completed in April 2016 (19-20 April and 29-30 April 2016) as required by the protocols identified in the Response to CSC-92. The entire Project area was initially screened and all pools and potential pools identified in the first site visit were re-surveyed during the second visit.

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CSC-94 Was the presence of cryptic vernal pools (i.e., pools embedded within larger wetland complexes) assessed?

Petitioner's Response: A systematic survey for vernal pools was conducted over the entire Project site. Biologists conducted meandering surveys throughout the Project site to search for potential vernal pools, including those that could be present within large wetland complexes. Global Positioning System (GPS) tracking was recorded during each survey to allow biologists to visually evaluate the areas surveyed while in the field. During the surveys, each potential vernal pool was thoroughly surveyed by slowly wading through the pool basin searching for amphibian breeding activity, including the presence of egg masses and noting other vernal pool-dependent species use.

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CSC-95 Were pools assessed using minnow traps?

Petitioner's Response: No. Dip Nets were used during surveys, and, given site specific conditions, field biologists employed in the effort determined that to be an adequate measure to evaluate resources. Per the *CT Association of Wetlands Scientists (CAWS) Vernal Pool Monitoring Program Protocol*, the use of dip nets is optional.

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CSC-96 Were pools assessed by cover searching within the vernal pool envelope (0-100 feet from the high water mark of the pool)?

Petitioner's Response: Yes, incidental observations within the vernal pool envelope were made by the field biologists as they approached the pool to be assessed.

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CSC-97 Were dry pools examined in autumn to detect brooding adult marbled salamanders?

Petitioner's Response: No. Targeted surveys were not conducted; however, during visits to the entire site over the course of summer and fall, biologists provided incidental observations of all species observed within habitats present. Note that the CAWS *Vernal Pool Monitoring Program Protocol* does not require autumn surveys.

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CSC-98 Were pools investigated for marbled salamander larvae in the spring time? If so by what methodologies (i.e., larvae traps or dip netting). If these methodologies were used, please quantify the number of traps or dip net sweeps per pool.

Petitioner's Response: Yes (see also the response to CSC-93). The first site visit consisted of a visual assessment of each vernal pool. The second site visit to each pool included a visual assessment and 4 sweeps with a dipnet (with the exception of VP04_1, which was only assessed visually), which was deemed to be adequate by the experienced biologists conducting the vernal pool survey work.

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CSC-99 At the evidentiary hearing held on September 19, 2017, there was testimony that “man-made” wetlands were excluded from the vernal pool study. Please elaborate on the scientific justification for not considering “man-made” wetlands as having vernal pool function.

Petitioner’s Response: Testimony provided at the evidentiary hearing held on September 19, 2017 did not include statements that “man-made” wetlands were excluded from the vernal pool survey. All wetlands and wetland complexes were assessed for the presence of vernal pools (see also Response to CSC-94). Two unnatural/man-made vernal pools were identified in the Project area during the vernal pool survey, and these were included in the vernal pool assessment completed for the Project.

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CSC-100 At the evidentiary hearing held on September 19, 2017, a statement was made about vernal pool definitions. What is Connecticut's definition of a vernal pool?

Petitioner's Response: Connecticut's Inland Wetlands and Watercourses Act and Connecticut General Statutes do not provide a definition of a vernal pool. A Connecticut DEP Task Force developed the following draft definition of a vernal pool: "*Vernal pool means a seasonal watercourse in a defined depression or basin, that lacks a fish population and supports or is capable of supporting breeding and development of amphibian or invertebrate species recognized as obligate to such watercourses. These species include spotted salamander, Jefferson salamander complex, marbled salamander, wood frog, and fairy shrimp.*" (CAWS Vernal Pool Monitoring Program Protocol, No date)¹

For the purposes of the Project survey, the *Maine Association of Wetland Scientists Vernal Pool Technical Committee Vernal Pool Survey Protocol* (April 2014) definition was used. The field surveys were carried out based on the MAWS field survey protocol which covers the CT Association of Wetlands Scientists Vernal Pool Monitoring Program Protocol items 1-15, and, in addition collects broader biological and site characterization that support vernal pool assessments. This definition also more closely aligns with the definition of a vernal pool per Calhoun and Klemens (2002), see response to CSC-101.

Maine's definition of a vernal pool is (as defined by Maine DEP's Chapter 335): "*A vernal pool, also referred to as a seasonal forest pool, is a natural, temporary to semi-permanent body of*

¹ CAWS Vernal Pool Monitoring Program. No data. Available online at: http://www.ctwetlands.org/forms/CAWS_VernalPoolMonitoring_FactSheet.pdf. Accessed October 9, 2017.

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*water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet or outlet and no viable populations of predatory fish. A vernal pool may provide the primary breeding habitat for wood frogs (*Rana sylvaticus*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus* sp. 3), as well as valuable habitat for other plants and wildlife including several rare, threatened, and endangered species. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition.” A man-made feature in wetlands or uplands (not created for the purpose of compensatory mitigation), even if they provide breeding habitat for vernal pool indicator species, are not included in Maine’s Natural Resources Protection Act definition of a vernal pool.*

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CSC-101 What is the biological definition of a vernal pool as per Calhoun and Klemens (2002)?

Petitioner's Response: Calhoun and Klemens (2002) defines a vernal pool as: "*Vernal pools are seasonal bodies of water that attain maximum depths in spring or fall, and lack permanent surface water connections with other wetlands or water bodies. Pools fill with snowmelt or runoff in the spring, although some may be fed primarily by groundwater sources. The duration of surface flooding, known as hydroperiod, varies depending upon the pool and the year; vernal pool hydroperiods range along a continuum from less than 30 days to more than one year (Semlitsch 2000 in Calhoun and Klemens 2002). Pools are generally small in size (< 2 acres), with the extent of vegetation varying widely. They lack established fish populations, usually as a result of periodic drying, and support communities dominated by animals adapted to living in temporary, fishless pools. In the New England region, they provide essential breeding habitat for one or more wildlife species including Ambystomatid salamanders (*Ambystoma* spp., called "mole salamanders" because they live in burrows), wood frogs (*Lithobates sylvatica*), and fairy shrimp (*Eubranchipus* spp.).*"

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CSC-102 If one uses a biological definition does it matter whether the pool has an inlet or outlet, has been altered by human activities, or is embedded within a larger wetland complex?

Petitioner's Response: Natural resources that fall under regulatory legislation require defined characteristics. The CAWS data form used to collect the Project vernal pool data includes an area to identify whether an inlet or outlet were observed, as well as an area to identify whether fish were observed in the pool. The importance of whether a vernal pool has an inlet and/or outlet is directly related to the potential for fish to be present to prey upon egg masses, and larval and adult forms of vernal pool fauna. If predatory fish have the potential to access a vernal pool, the abundance and diversity of vernal pool fauna may be affected. Additionally, inlets and outlets will affect the amount of standing water remaining in the pool, thereby affecting the ability of vernal pool fauna to complete their life cycle requirements. Per the Maine definition of a vernal pool, vernal pools are characterized as having “*...no permanent inlet or outlet and no viable populations of predatory fish.*” Calhoun and Klemens (2002) also identify vernal pools as a “*...confined depression that lacks a permanent outlet stream, no fish, and dries out in most years.*” See also the responses to CSC-94, CSC-99, and CSC-100.

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CSC-103 Reference is made to Calhoun and Klemens (2002) Best Development Practices for Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States (BDP), but has the Petitioner complied with the BDP standard of this manual that states that no development occur in the vernal pool envelope (0-100 feet from the high water mark) and 25% development on the critical upland habitat zone (100-750 feet) around the pool? Provide a table with the pre-development areas and post-development areas as percentages of the respective Critical Terrestrial Habitats (CTIIs) areas.

Petitioner's Response: Refer to the figures and tables in Exhibit CSC-103 – Vernal Pool BDP Analysis. Of the five vernal pools identified within the Study Area, the two ranked as having the highest ecological value (VP04_2 and VP06_2) will include natural resources buffers that meet the BDP recommendations. The remaining three vernal pools have been classified as Tier III vernal pools (lowest ecological value), and will have construction activities located within 50 feet (VP04_1 and VP05_1) or within 68 feet (VP03_2).

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CSC-104 Please discuss specifically how searches were conducted for this species? What methodologies were employed (e.g. minnow trapping) cover searching within the vernal pool envelope or wetland buffer (i.e. 0-100 feet from the wetland edge). If these searches were conducted, please quantify over what period of time? How much effort was expended per wetland, e.g., number of trap nights, number of cover objects examined?

Petitioner's Response: See the responses to CSC-91 through CSC-98.

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CSC-105 What types of wetlands were searched for these species? Vernal pools, cryptic vernal pools, wooded swamps, and riparian swamps and marshes?

Petitioner's Response: All wetlands within the subject property were searched (see the response to CSC-94).

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CSC-106 Is any portion of the subject property a historical glacial lake basin? If so, which wetlands on the subject property lie within or partially within a historical glacial lake basin?

Petitioner's Response: None of the subject property is located within a glacial lake basin. See the attached figure in Exhibit CSC-106 – CT Geology Figure.

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CSC-107 At the evidentiary hearing held on September 19, 2017, there was testimony that no spadefoot toads were observed during the wetland delineations and vernal pool assessments. Based on the ecology and cryptic habits of this fossorial desert species, is such an assessment adequate to determine with any confidence that this species does not occur on this site?

Petitioner's Response: We cannot say with 100% certainty that the spadefoot toad does not occur at the Project site. However, due to the current active land use activities associated with agricultural production and forest management, the Project site is not considered optimal habitat to support this species due to frequency of land disturbances. Project operations are not anticipated to adversely impact spadefoot toad due to the passive nature of operational activities.

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CSC-108 At the evidentiary hearing held on September 19, 2017, there was testimony that approximately 15-20% of the site lies atop Hinckley soils. Please provide a map of those soils on the site, and quantify the percentage of the site that is underlain by Hinckley soils.

Petitioner's Response: See the figure in Exhibit CSC-108 – Hinckley Soils. The figure depicts the limits of mapped Hinckley soils within the limit of work. Approximately 18% of the limit of work is underlain by mapped Hinckley soils.

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CSC-109 Are you aware of the spadefoot toad predictive models based on soils types that were prepared by Kate Moran of DEEP as well as the earlier model for the Lillibridge-metapopulation (Plainfield/Canterbury/Griswold) based on soils prepared for DEEP by Klemens as part of the Lowes distribution center permitting process?

Petitioner's Response: A general online search identified a thesis authored by Katherine Moran titled “*A GIS Model for Identifying Eastern Spadefoot Toad Habitat in Eastern Connecticut*”; however, public access to this document or the GIS information is not available.

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CSC-110 Are you aware of the strong correlation of this species to occur within this portion of the Quinebaug Valley in habitats, including gravel pits and agricultural fields, in and near Hinckley soils?

Petitioner's Response: Connecticut DEEP identifies habitat for eastern spadefoot toad as: “*Found in arid to semi-arid areas, such as fields, farmland, dunes and woodlands with sandy or loose soils. Breed in temporary bodies of water (e.g., vernal pools), flooded fields and forested wetland.*” (Connecticut DEEP 2017).² No information regarding correlation of this species with Quinebaug Valley habitats, including gravel pits and agricultural fields in and near Hinckley soils was identified in our background search for this information.

² Connecticut DEEP. 2017. Eastern Spadefoot Toad *Scaphiopus holbrookii*. Available online at: <http://www.ct.gov/deep/cwp/view.asp?A=2723&Q=326002>. Accessed October 9, 2017.

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CSC-111 Was the property studied during nighttime summer rains, especially heavy thunderstorms on warm nights, to determine the presence of this species which is often active under such conditions on the ground surface?

Petitioner's Response: No, the Petitioner did not undertake such a night time study. The actions associated with the Project are not expected to present an adverse risk to this species in contrast to existing land use. Further, nighttime studies are not required per the CAWS Vernal Pool Monitoring Protocol.

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CSC-112 Were pit fall traps employed in transects across sandy areas of the site, and near wetland edges, to determine use of the habitat by spadefoot toads?

Petitioner's Response: No. This type of survey was not undertaken, nor was it a recommendation or requirement presented during agency consultation.

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CSC-113 Was any effort made to visit the site after heavy summer rains to determine breeding of spadefoot toads, not only in wetlands and vernal pools, but in non-wetland habitats that have ponded water such as agricultural fields?

Petitioner's Response: No. Agricultural fields within the area were not observed to have ponded water for a duration that would support the breeding of spadefoot toads. Egg masses associated with spadefoot toad are distinct and likely would have been observed during delineations. This species does possess a rapid development and can complete metamorphosis within just over two weeks. This would require a persistent hydro-period to last at least that long. No site specific observations or characterizations would suggest that such non-wetland habitats are present on-site.

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CSC-114 The DEEP has required that applicants for large development projects in contiguous areas of the Quinebaug Valley (Lowes) and gravel extraction projects (0 and G) conduct detailed assessment of a site for this species prior to permitting of activities. In QS' opinion, should a lesser evidentiary standard be employed on this proposed use and if so why?

Petitioner's Response: Yes. Due to the historic and ongoing agricultural and forest management activities that involve active manipulation of soils for planting, harvesting, soil management, and timber harvesting, the Project site does not represent high quality habitat suitable for eastern spadefoot toad. Were the species to be present on the Project site, the passive nature of the solar Project, once operational, is expected to result in little to no impact to this species, in comparison to the ongoing practices at the site. For these reasons, we agree that a lesser evidentiary standard be employed for the Project. Consultation with Connecticut DEEP completed for the Project to date has not identified a high level of concern or requests for additional due diligence associated with spadefoot toad at the site.

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CSC-115 At the evidentiary hearing held on September 19, 2017, a statement was made to the effect that wildlife flourishes in solar fields near wetlands. Can you provide any scientific study that supports the statement that these solar arrays, many within 100 feet or less of a wetland would not adversely impact wetland dependent species that have upland habitat use?

Petitioner's Response: The Petitioner did not state that wildlife would flourish in solar fields near wetlands. Testimony was provided to suggest fewer impacts to wildlife would result from the passive nature of the Project, once operational; and that additional risk to wildlife in comparison to the current ongoing agricultural and forest management practices would be less. Once operational, very little noise would be associated with the Project, and no soil or habitat manipulation would occur as currently occurs on a frequent basis. The passive nature of the Project would enable wildlife to travel more freely, and encounter significantly less disturbance in comparison to current conditions.

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CSC-116 Describe the terrestrial use of this wetland species?

Petitioner's Response: The Eastern ribbon snake is semi-aquatic and often found in areas with permanent water and adjacent terrestrial habitat. During the active season (April-October), these aquatic habitats include open water habitats such as ponds or lakes, wetlands (e.g., marshes, fens, swamps, or bogs), or the flowing water of streams or rivers. Adjacent terrestrial habitat generally includes open, sunny areas, especially where there are clumps of grasses or sedges and low shrubs. Adjacent habitat can also include rocky hillsides and deciduous forests. Source: *Government of Canada. 2015. Management Plan for the Eastern Ribbonsnake (Thamnophis sauritus), Great Lakes population, in Canada.* Available online at: <https://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=AB8A6A47-1>. Accessed October 2, 2017.

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CSC-117 Is the terrestrial use of this species limited to 50 feet from the wetland edge?

Petitioner's Response: The *Government of Canada. 2015. Management Plan for the Eastern Ribbonsnake (Thamnophis sauritus), Great Lakes population, in Canada* cited in the Response to CSC-116 indicates that “*In Nova Scotia, eastern ribbon snake, Atlantic population, individuals were found up to 400 meters from wetlands during early spring and fall, and home ranges of adults varied from 1,790-7,784 hectares*”. Based on this information, eastern ribbon snake would be expected to occur in terrestrial habitats that are greater than 50 feet from their primary habitats (wetlands).

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CSC-118 What would the impacts be to this species' terrestrial activity by the construction of this project?

Petitioner's Response: Eastern ribbon snake could potentially be impacted by construction activities that occur in terrestrial habitats, due to the presence of construction vehicles, materials, and personnel. Construction personnel will stop work activities if a snake (of any species) or other wildlife is observed in an area where active construction is occurring. The most robust avoidance measure will be clearing restrictions that will be followed to avoid risk of mortality to this species, as well as to bat species, employed during the growing season.

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CSC-119 What measures would you employ to reduce the incidental take of this species during the construction and operation of the facility?

Petitioner's Response: Exclusion fencing can be used during construction to exclude small vertebrate species, including eastern ribbon snake, from entering the construction site. Project construction activities will include stopping work if snakes or other wildlife are observed in areas of active construction where they could be harmed (i.e. on roadways, path of construction equipment). NextEra has internal environmental monitors and monitoring programs that will be employed to identify species of concern within and around the construction site, and notify personnel when sensitive areas need to be avoided.

CERTIFICATION

I hereby certify that on October 10, 2017, the foregoing was delivered by electronic mail and regular mail, postage prepaid, in accordance with § 16-50j-12 of the Regulations of Connecticut State Agencies, to all parties and intervenors of record, as follows:

Troy and Megan Sposato
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David W. Bogan
Commissioner of the Superior Court