PETITION OF NUTMEG SOLAR, LLC

FOR A DECLARATORY RULING THAT A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED IS NOT REQUIRED FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF A 19.6 MW (AC) SOLAR PHOTOVOLTAIC PROJECT IN ENFIELD, CONNECTICUT

OCTOBER 19, 2018

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October 19, 2018

VIA ELECTRONIC MAIL AND HAND DELIVERY
Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Petition of Nutmeg Solar, LLC for a Declaratory Ruling That a Certificate of Environmental Compatibility and Public Need Is Not Required for the Construction, Operation and Maintenance of a 19.6 MWac Solar Photovoltaic Project in Enfield, Connecticut

Dear Ms. Bachman:

Enclosed please find the original and fifteen (15) copies of a Petition for Declaratory Ruling ("Petition") submitted on behalf of Nutmeg Solar, LLC for the construction, operation and maintenance of a solar photovoltaic project in Enfield, Connecticut, together with a CD containing an electronic copy of the Petition and a filing fee of $625.00. Because of their size, only three (3) copies of the Site Plans (Appendix C) are enclosed as a bulk file.

Please feel free to contact me or Kate Boucher of this office (860-541-7714) if you have any questions or require additional information.

Sincerely,

David W. Bogan
DWB

Enclosures

Copy to: Michael Ludwick, Town of Enfield Mayor and Councilor at Large
C.G. "Bud" Knorr, Jr., Town of Somers First Selectman

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Exhibit R: FAA Correspondence

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List of Acronyms and Abbreviations

AC	Alternating Current
CES	Comprehensive Energy Strategy
CGS	Connecticut General Statutes
CO_2e	Carbon Dioxide Equivalent
CTH	Critical Terrestrial Habitat
dBA	Units of Decibel (A-weighted scale)
DEEP	Connecticut Department of Energy and Environmental Protection
DEEP RFP	DEEP's Small-Scale Clean Energy RFP
DOA	Connecticut Department of Agriculture
DOT	Connecticut Department of Transportation
EDC	Electric Distribution Company
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FPDC	Fleet Performance Diagnostics Center
GHG	Greenhouse Gas
GSU	Generator step-up
ISO-NE	ISO New England
kV	Kilovolt
MW	Megawatt
NDDB	Natural Diversity Data Base
NEER	NextEra Energy Resources, LLC
NextEra	NextEra Energy, Inc.
NLEB	Northern Long-Eared Bat
Nutmeg Solar	Nutmeg Solar, LLC
O&M	Operations and Maintenance
Petitioner	Nutmeg Solar, LLC
PM	Particulate Matter
PPA	Power Purchase Agreement
Project	Nutmeg Solar, a 19.6 megawatt, ground-mounted solar photovoltaic facility located in the Town of Enfield
PV	Photovoltaic
RCSA	Regulations of Connecticut State Agencies

RTE	Rare, Threatened, and Endangered
Siting Council	Connecticut Siting Council
SHPO	Connecticut State Historic Preservation Office
SPCC	Spill Prevention Control and Countermeasure Plan
SWPCP	Stormwater Pollution Control Plan
USDA NRCS	United States Department of Agriculture Natural Resources Conservation Service

Definitions

Project Site: Parcels of land under lease or purchase option agreements that comprise the total area of proposed development described in this petition. The Project Site consists of 162 acres located east of Broad Brook Road.

Development Area: Locations within the Project Site that will be disturbed or altered during the construction and operation of the Project. The Development Area is approximately 131 acres and includes areas of vegetation clearing, site roads and Project infrastructure. The Development Area includes a western array and an eastern array. The western array is located within the western portion of the Development Area, which consists primarily of open agricultural fields. The eastern array is located within the eastern portion of the Development Area, which consists primarily of second-growth forest.

Study Area: 196 acres within which development was considered and natural resource surveys were conducted. This larger Study Area was evaluated to identify the most suitable location to accommodate the required footprint of the Project within properties available for development. Upon completion of the natural resource surveys, the design was initiated utilizing the field survey data collected to avoid and minimize potential impacts. The Study Area includes properties west of Broad Brook Road that were initially evaluated for use in the Project's development.

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SECTION 1

Section 1
Introduction

Pursuant to the Connecticut General Statutes (CGS)[1] and the Regulations of Connecticut State Agencies (RCSA)[2], Nutmeg Solar, LLC (Nutmeg Solar or Petitioner) hereby petitions the Connecticut Siting Council (Siting Council) for a declaratory ruling that a Certificate of Environmental Compatibility and Public Need is not required for the construction, operation, and maintenance of a ground-mounted solar photovoltaic (PV) facility with a nameplate capacity of 19.6 megawatts (MW) alternating current (AC) to be constructed in the Town of Enfield (the Project).[3]

The Project Site is comprised of 9 privately-owned parcels controlled by the Petitioner located south of Bailey Road and east of Route 191 (Broad Brook Road). Combined, the Project Site parcels total approximately 162 acres and, within that, the Development Area will occupy approximately 131 acres. See Figure 1 in Exhibit A that depicts the Project Site and Development Area within the limits of the larger Study Area.

CGS § 16-50k(a) provides, in relevant part:

> *Notwithstanding the provisions of this chapter or title 16A, the council shall, in the exercise of its jurisdiction over the siting of generating facilities, approve by declaratory ruling … the construction or location of any grid-side distributed resources project or facility with a capacity of not more than sixty-five megawatts, as long as such project meets air and water quality standards of the Department of Environmental Protection…*

Throughout Project planning and development, Nutmeg Solar has evaluated alternative layouts, conducted multiple years of field studies, and engaged the local community. As described in this Petition, the construction, operation, and maintenance of the proposed Project satisfies the criteria in CGS § 16-50k(a) and will not have a substantially adverse environmental effect. The result described herein is a design that adapts to the local landscape and uses an efficient footprint with the least amount of disturbance practicable to meet the Project purpose and need. The Project will deliver clean, renewable energy to Connecticut ratepayers and help the region meet mandated renewable energy targets while fitting harmoniously into the existing landscape. The Project has been evaluated and designed by a team of experts to produce substantial environmental benefits with minimal environmental impact, while supporting the goals set forth in the Comprehensive Energy Strategy (CES) developed by the Connecticut Department of Energy and Environmental Protection (DEEP).

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[1] Connecticut General Statutes Section 16-50k(a) and Section 4-176(a).
[2] Regulations of Connecticut State Agencies Section 16-50j-38 *et seq.*
[3] The Project, as defined herein, does not include interconnection facilities associated with the Project that will be designed, constructed, owned, and maintained by The Connecticut Light and Power Company (d/b/a Eversource Energy). See Section 3.8 for further details.

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SECTION 2

Section 2
Petitioner

Nutmeg Solar is an indirect, wholly-owned subsidiary of NextEra Energy Resources, LLC (NEER), which in turn is an indirect, wholly-owned subsidiary of NextEra Energy, Inc. (NextEra), headquartered at 700 Universe Boulevard, Juno Beach, Florida 33408.

Nutmeg Solar is an independent electrical generation entity that will participate in the ISO-New England (ISO-NE) market, and has executed contracts to sell the Project's energy output to Connecticut's electric distribution companies (EDCs). NextEra is a leading clean energy company and one of the largest wholesale electricity generators in the United States, with consolidated revenues of approximately $17.2 billion, approximately 46,790 MW of net generating capacity, and over 14,000 employees in 33 states and Canada as of year-end 2017. As of July 31, 2018, NextEra has a market capitalization of approximately $79 billion. NextEra's principal subsidiaries are:

- NEER, which together with its affiliated entities, is the world's largest generator of renewable energy from the wind and sun, with 14,000 MW of wind and 2,035 MW of solar net generating capacity; and
- Florida Power & Light Company, which serves more than 4.9 million customer accounts in Florida and is one of the largest rate-regulated electric utilities in the United States.

NextEra is a Fortune 200 company included in the Standard & Poor's 100 Index and has often been recognized by third parties for its leadership in sustainability, corporate responsibility, ethics, compliance, and diversity. NextEra has earned a place on Fortune's 2018 list of "World's Most Admired Companies," as well as being featured as the number one company on Fortune's electric and gas utilities industry ranking for the 11th time in the past 12 years.

NEER currently operates approximately 2,035 MW of solar in 16 states, Canada, and Spain. NEER's strategy is based on generating and delivering clean, renewable energy that is reliable and affordable. NEER has an extensive track record of bringing large and complex solar projects through permitting and construction. See Exhibit B for Company Background and Resumes.

Correspondence and/or communications regarding this Petition should be addressed to the following individuals:

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SECTION 3

Section 3
Proposed Project

3.1 Project History

Development of Nutmeg Solar began in 2015, with initial development tasks being performed by Ranger Solar, LLC. Subsequent to the Project's acquisition in early 2017, NEER assumed control and management of all development activities.

On May 3, 2016, the proposed Project was submitted to DEEP's Small-Scale Clean Energy RFP (DEEP RFP) soliciting proposals for Class I renewable energy projects between 2-20 MW. This RFP was issued pursuant to Sections 6 and 7 of Connecticut Public Act 13-303,[4] and Section 1(c) of Public Act 15-107,[5] as well as the DEEP Commissioner's authority under CGS § 16a-14.

The Project was selected in the DEEP RFP and subsequently entered into long-term power purchase agreements (PPAs) with Connecticut's EDCs, namely The Connecticut Light and Power Company (d/b/a Eversource Energy) and The United Illuminating Company. DEEP issued a Final Determination letter on June 27, 2017 providing notice of its selections. Because the Project was selected by DEEP in a solicitation before July 1, 2017, the Project is expressly exempted from the requirements set forth in Public Act 17-218. On September 7, 2017, the Connecticut Public Utilities Regulatory Authority issued regulatory approval of the Project's PPAs in Docket No. 17-01-11, *PURA Review of Public Act 15-107(b) Small-Scale Energy Resource Agreements*.

The Project is a Class I generating resource pursuant to CGS § 16-1(a)(20). The electricity from the Project will be sold to Connecticut's EDCs: 80.4% to Eversource and 19.6% to UI. The Project will provide competitively priced renewable energy to Connecticut ratepayers, and generate tax revenue for the State of Connecticut and the Town of Enfield.

Following selection of the Project, more detailed environmental and cultural resource assessments were completed to assure the feasibility of constructing and operating the Project. Studies and assessments conducted for the Project include, but are not limited to:

- Wetland and watercourse delineation (Exhibit D)
- Vernal pool surveys (two consecutive years) (Exhibit D)
- Bat acoustic surveys (Exhibit D)
- Farmland soil assessment (Exhibit D)
- General herpetofauna survey (Exhibit D)
- Eastern spadefoot toad (*Scaphiopus holbrookii*) survey (Exhibit D)

[4] *An Act Concerning Connecticut's Clean Energy Goals* (as amended by Sections 32 and 33 of Public Act 14-94, *An Act Concerning Connecticut's Recycling and Materials Management Strategy, The Underground Damage Prevention Program and Revisions to Energy and Environmental Statutes*).
[5] *An Act Concerning Affordable and Reliable Energy*.

- Topographic and boundary survey (Exhibit G)
- Visual impact assessment (Exhibit I)
- Greenhouse gas assessment (Exhibit M)
- Acoustic study (Exhibit Q)
- Phase 1A (complete) and Phase 1B (in progress) cultural surveys (Exhibit S)

A Herpetofauna Avoidance and Mitigation Plan (Exhibit D) has been developed for the Project to be implemented during the construction period. The plan outlines the steps and procedures to be implemented during construction to avoid potential impacts to amphibians and reptiles that may occur within the Project Site. Natural Diversity Database (NDDB) concurrence with this plan was provided on August 3, 2018 (Exhibit D).

The Petitioner has consulted regularly with the Town of Enfield throughout the development process. Enfield has been welcoming of the proposed Project, and has worked with the Petitioner on community outreach efforts. The Petitioner continues to coordinate closely with the town, abutters, and other stakeholders on the proposed Project.

To assist with the development, design, and permitting of the Project, the Petitioner has retained:

- Tighe and Bond, Inc. (Tighe & Bond), an engineering and environmental consulting firm to develop the Petition and provide civil engineering;
- Tetra Tech, Inc., an engineering and environmental consulting firm to provide ecological services including field work for wetlands and biological surveys, conduct a Phase 1 Environmental Site Assessment, and support Petition development;
- FB Environmental to conduct vernal pool, eastern spadefoot toad and targeted herpetological surveys;
- Cornerstone Energy Services to produce boundary and topographic surveys;
- Heritage Consultants, LLC to conduct cultural resource surveys and assessments;
- Tech Environmental to conduct a noise analysis;
- MSE Engineering, LLC to design the AC electrical components;
- EarthShift Global, LLC to conduct a Project-specific life cycle greenhouse gas (GHG) assessment;
- Gaffney Bennett Public Relations and Statehouse Associates, LLC to assist with community outreach efforts; and
- Locke Lord LLP to provide counsel and legal assistance during the Petition filing and hearing process.

3.2 Site Selection

The Petitioner's development team screened potential candidate sites in Connecticut that could support solar installations with a nameplate capacity of approximately 20 MW AC. The final Project Site was selected based on an evaluation of the following site suitability criteria: accessible and quality of solar energy resource, existing land use, environmental

constraints (and ability to avoid or mitigate any impacts to them), topography, land availability (i.e., ability to lease or purchase land), and interconnection feasibility. As will be detailed in later sections, the Project Site meets each of the criterion provided above: adequate solar resource, relatively flat topography, compatible existing land uses, few environmental constraints, available land, and close proximity to existing electrical infrastructure (i.e., Eversource's 115 kilovolt [kV] to 23 kV Scitico Substation).

Early iterations of the Nutmeg Solar site plan included a proposed solar array on property west of Broad Brook Road. Exhibit A, Figure 4 shows a version of the proposed Development Area that includes an array west of Broad Brook Road. The array was removed from Project consideration based on consultations with the Connecticut Department of Transportation (DOT), input from the local community regarding concerns of visual impacts, initial consultation with the NDDB showing potential presence of rare, threatened and endangered (RTE) species habitat, and a field review with the Connecticut Department of Agriculture (DOA) and the State's Soil Scientist to determine the extent and condition of mapped Prime Farmland Soils. Eliminating this array served to: 1) reduce the number of direct abutters to the Project from 52 to 27; 2) avoid complications related to a railroad crossing; 3) avoid potential RTE habitat impacts; and 4) preserve field-confirmed Prime Farmland Soils.

During the Project Site characterization work conducted by the Petitioner's development team, natural and cultural resources within the Project Study Area were identified and delineated in accordance with state, local, federal, and standard industry practices. Based on the results of these surveys, and with the intent to minimize environmental, agricultural, and aesthetic impacts, Nutmeg Solar is proposing to develop 131 acres (Development Area) of the 162 acres of property (Project Site) that would result in the lowest level of impact and alteration necessary while still meeting the Project purpose and need.

3.3 Property and Site Description

Property Description

The Project Site consists of 9 parcels located in the southeast portion of the Town of Enfield, in Hartford County, Connecticut. The Project Site is generally bounded by Bailey Road to the north, Broad Brook Road to the west, forested areas to the south, and an existing Eversource transmission line to the east. The Project Site is in a mixed rural and agricultural area, with residential homes occurring generally north and west of the Project Site. A locally-owned orchard is located to the northeast, and an active concrete batch plant is located immediately southeast of the Project Site. The topography throughout the Project Site ranges in elevation from approximately 166 to 320 feet above mean sea level according to the National Geodetic Vertical Datum. An overview, topographical map of the Project Site is provided in Exhibit A, Figure 2.

The Petitioner has worked with the landowners on the Project since 2015 and has secured the 9 parcels of land through a combination of lease and option to purchase agreements. The Project Site parcels under agreement with Nutmeg Solar are listed in Table 3-1 below and depicted in Exhibit A, Figure 13. Memorandums of these agreements are also provided in Exhibit C.

Table 3-1. Project Site Parcels

Parcel ID	Current Owner	Project Lease or Purchase	Current Tax Classification
108-6	Jarmoc Farms, LLC and Jarmoc Real Estate, LLC	Lease	490 Tillable B
102-48	Jarmoc Farms, LLC and Jarmoc Real Estate, LLC	Lease	490 Tillable B
102-50	Jarmoc Farms, LLC and Jarmoc Real Estate, LLC	Lease	490 Tillable B
109-3	David and Donna Waleryszak	Lease	Residential
109-4	Laura Jarmoc	Purchase	490 Tillable B
109-18	Laura Jarmoc	Purchase	490 Tillable B
109-40	Laura Jarmoc	Purchase	490 Tillable B
109-12	James Lefebvre	Purchase	490 Tillable B
109-13	James Lefebvre	Purchase	Residential

Current Land Use

The western portion of the Project Site consists of predominantly flat areas currently used as agricultural fields with accompanying outbuildings, most recently for the cultivation of tobacco and gourd (i.e., pumpkin and squash) crops. The eastern portion of the Project Site consists of mixed second-growth forest. There is an existing network of recreational vehicle trails and tree stands indicating that the current use of this land is primarily for hunting and recreational activities. There is evidence of past timber harvesting and gravel extraction activities on the property.

The surrounding land uses include residential development, agricultural production and industrial use, including an inactive railroad line and the Enfield Transit Mix batch plant, both located on the west side of Broad Brook Road. The Scantic River is located north of the Project Site across Bailey Road.

Some of the Project Site parcels are classified under the Public Act 490 Program, according to the Town of Enfield Tax Assessor's Office (see Table 3-1 above). Connecticut Public Act 63-490, codified in CGS §§ 12-107a–f, allows certain farm, forest or open space land to be assessed at its use value as opposed to its fair market value. Pursuant to CGS § 12-107c(a), "an owner of land may apply for its classification as farm land." As such, the Public 490 Program parcels within the Project Site will be reclassified appropriately upon Siting Council approval of the Project.

In June 2017, the DOA filed a Notice in the Town of Enfield Land Records indicating that other parcels owned by Jarmoc Farms are part of the Connecticut Farmland Preservation Program. These parcels are not part of the Project Site. The Jarmoc Farms parcels that have conveyed the related Development Rights are described in Exhibit C. A figure depicting these parcels is also provided in Exhibit C.

Existing Environmental Conditions

Subsequent to initiating consultation with NDDB, comprehensive environmental field investigations were completed within the Study Area and no wetlands or watercourses were identified within the Project Site. One vernal pool was identified within a borrow pit along an existing haul road adjacent to the tree line near the center of the Project Site. Field investigations conducted in 2017 and 2018 indicated that the vernal pool likely functions as a sink for vernal pool breeding amphibians in most years due to a short hydroperiod. Based on field observations, the pool does not contain water long enough for species present to metamorphose. Section 6 below and the Environmental Site Conditions Report (Exhibit D) provide more detailed descriptions and analyses of the natural resources observed within the Study Area. The Project Site does not contain any mapped NDDB Areas (Exhibit A, Figure 9).

Areas mapped by the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) as Prime Farmland and Farmland of Statewide Importance are located within the Project Site (Exhibit A, Figure 10). The Petitioner has developed a Farmland Soil Mitigation Plan (Exhibit E) in consultation with the DOA to minimize and mitigate impacts to agricultural soils. Under this plan, eligible farmland soils will be baseline tested prior to excavation; then, the soils will be redistributed in a broadcast manner to suitable locations on site and stabilized within the limit of work.

3.4 Project Description

The Project is a fixed-tilt solar PV energy system that will consist of solar modules, inverters, a collector substation, site roads, fencing, and stormwater management features, along with related infrastructure. Although final equipment selection is subject to change, the size of the Project Development Area will not increase. As currently designed, the Project will result in an average annual energy generation of approximately 37,000 megawatt-hours (MWh) over the course of the Project's 30-year life. For perspective, this is enough generation to supply the electricity needs of approximately 4,300 Connecticut homes.[6]

The Project consists of a western array and an eastern array as shown in Exhibit A, Figure 7. The western array is located within the western portion of the Development Area, which consists primarily of open agricultural fields. The eastern array is located within the eastern portion of the Development Area, which consists primarily of second-growth forest.

The Project Site is zoned One-Family Residential (R-88). Pursuant to CGS § 16-50k, the Project will be regulated under the Siting Council Petition for a Declaratory Ruling process. While the Siting Council has exclusive jurisdiction over the facilities it regulates, it must consider municipal regulations and other state laws when making declaratory rulings. Although the Project is not subject to Town of Enfield zoning, Nutmeg Solar has designed the Project to adhere to the applicable property line setbacks for the R-88 District as follows:

[6] 2016 U.S. Energy Information Administration (EIA) state-level data Table 5: 2016 Average Monthly Bill – Residential. *See*, U.S. State Profiles and Energy estimates, available at https://www.eia.gov/state/seds/

- Front yard: 50 feet
- Side yard: 35 feet
- Rear yard: 60 feet

The total impervious area associated with the Project is 3.7 acres. This includes the collector substation, equipment pads, and site roads. Gravel site roads have been included in the total impervious area calculation as a conservative assumption for the stormwater analysis.

Modules and Racking

The Project will include solar PV modules installed in linear arrays oriented generally east-west across the Development Area. Arrays will face south and be tilted at approximately 25 degrees. Each array will consist of modules mounted on fixed vertical posts that will be installed using a pile driver, drill, or vibratory hammer. In some areas, ground screws may be used in lieu of, or in addition to, the posts. The total length of the posts will average 10-16 feet with an embedment of approximately 6-12 feet. Horizontal inter-row spacing (i.e., from panel edge to panel edge) will be approximately 15 feet. This inter-row spacing minimizes row-to-row shading and allows for necessary maintenance access. The solar modules will be dark blue or black with an anti-reflective coating.

The modules and racking system are designed to meet local design and building code wind speed standards and to accommodate the maximum snow load expected for this location. Module cleaning and clearing snow from modules is not anticipated to be necessary during the operation of the Project. Specification sheets for the proposed PV modules and racking are provided in Exhibit F.

Inverters and Transformers

The Project will include up to 14 centralized inverters paired with medium-voltage transformers sited at various locations within the Development Area. The centralized inverters will convert direct current (DC) electricity produced by the modules to alternating current (AC) electricity suitable for grid injection. Each inverter will take in DC power at 1,500 volts and be paired with a medium-voltage transformer, which will normalize voltage to 34.5 kV AC and aggregate output into a feeder cable used for collection.

The inverters and transformers are pre-manufactured and skid-mounted. The inverters will measure approximately 7-8 feet high by 16-17 feet wide by 3-4 feet deep. The transformers will measure approximately 6-7 feet high by 6-7 feet wide by 8-9 feet deep. Specification sheets for the proposed inverters and transformers are provided in Exhibit F. In addition to manufacturer provided casing as primary oil containment, the transformers will have secondary oil containment comprised of either a concrete basin or an impervious liner shell filled with gravel. A detailed Spill Prevention Control and Countermeasure Plan (SPCC Plan) will be subsequently prepared by a registered Professional Engineer. The SPCC Plan will meet all federal regulatory requirements.

Collector Substation

The collector substation will include a generator step up transformer (GSU) which will receive the Project's output from 34.5 kV collection cables and step up the voltage to the interconnection voltage of 115 kV. The collector substation will also include a high-voltage circuit breaker for interruption of fault current and a disconnect switch for manual

isolation. Instrument transformers will be installed for the protection and control of the facilities and communication equipment.

The GSU will have a detailed SPCC Plan, which will be subsequently prepared by a registered Professional Engineer. The Plan will meet all federal regulatory requirements.

An approximately 500-foot underground transmission line will deliver the Project's energy from the high voltage side of the GSU (115 kV) to the point of interconnection (POI) at Eversource's 115 kV Scitico Substation. The Project's interconnection is further described in Section 3.8.

Site Roads and Laydown Areas

The primary access to the Project Site during construction and operations will be from Broad Brook Road. This location was selected based on impact avoidance through the use of existing roads and infrastructure, site topography, and to minimize impacts to residents along Bailey Road. It is anticipated that construction vehicles will utilize Interstate 91 and Route 141, depending on their point of origin. From there, vehicles are expected to access the gated entry point located on Broad Brook Road. No new curb cuts are proposed on Broad Brook Road and the Petitioner will coordinate construction access with DOT and the Town of Enfield Department of Public Works.

For emergency purposes only, a secondary access point will be located along an existing driveway from Bailey Road, north of the Project Site (see Exhibit A, Figure 7). Nutmeg Solar will develop a construction-period traffic management plan directing all vehicles to the primary access point at the Broad Brook Road entrance.

A series of gravel site roads will be constructed within the Development Area to provide access to the solar arrays, substation, and centralized inverter/transformer stations. Site roads for the Project will utilize existing roads currently present throughout the Project Site to the greatest extent practicable.

The majority of the 1.4 miles of proposed site roads will be approximately 16 feet wide. At the proposed substation location, the road is approximately 20 feet wide for a short section to provide a turning radius necessary for component delivery. Site roads will be comprised of a 12-inch thick crushed stone base and a 4-inch thick traffic bound gravel surface. Minor grading will be required along the proposed site roads in select locations to address minor variations in site topography.

Approximately 6.5 acres have been designated for use as a temporary laydown area within the northern portion of the Development Area and adjacent to the proposed collector substation. The laydown area will be used during construction for component delivery, off-loading, and storage. The area will employ appropriate erosion controls, which will be kept in place until the Project Site is determined to be suitably stable.

Vegetation Management

Approximately 91 acres of the Project Site will be cleared and grubbed to allow for the construction and operation of the Project and to minimize shading impacts. Selective vegetation management is proposed to be employed on approximately 5 acres. This will occur in the area surrounding the identified vernal pool habitat. Section 6.17 further describes the details and approach to selective vegetation management (see Exhibit A, Figure 11). The ground within the Development Area will be planted with native seed mix

to establish a meadow habitat that will be maintained for the life of the Project. Operations and maintenance (O&M) activities are further described in Exhibit H.

Fencing

Three types of fencing are proposed for the Project: 1) perimeter fence; 2) substation fence; and 3) agricultural fence. The Project's proposed fencing will be approximately 17,056 linear feet in total length. All Project fencing will comply with the National Electric Safety Code, National Electric Code, and Siting Council requirements.

1) Perimeter fence – Most of the Development Area will be enclosed by a 7-foot tall perimeter chain link fence, with a 6-inch gap at the bottom to allow for passage of wildlife.
2) Substation fence – The substation will be enclosed by an 8-foot chain link fence with barbed wire along the top and a mesh size of no greater than approximately 2 inches.
3) Agricultural fence – Approximately 3,798 linear feet along the Project's western boundary will utilize a 7-foot tall wide-gauge agricultural fence. This fence type will meet all necessary standards while enhancing the visual appearance of the Project from Broad Brook Road. Specifications for the agricultural fence are provided in Exhibit F.

Visual Screening

The Petitioner proposes to install approximately 1,570 linear feet of vegetative screening to mitigate potential visual impacts along Broad Brook Road near Charnley Road and along the northwestern boundary of the Development Area. Variable planting arrangements will be utilized to replicate natural vegetation spacing patterns and to blend with the natural character of the landscape. Screening will be installed as indicated on the Project Site Plans in Exhibit G. Refer to Exhibit A, Figure 7 for an overview of screening locations, and refer to Section 6.5 below and Exhibit I for additional information regarding visual screening and photo-simulated renderings.

Two of the five tobacco barns within the Development Area will be relocated and available for continued use for tobacco cultivation. These relocated barns will also function as additional visual screening along the Project's northwestern boundary. Three of the five tobacco barns will be removed (see Exhibit A, Figure 7).

3.5 Construction Schedule and Phasing

Construction of the Project is expected to begin in the fourth quarter of 2019 with mobilization of equipment and land clearing efforts. Further site work and land preparation is expected to be complete by the end of the third quarter of 2020. Final site stabilization, testing, and commissioning is expected to be complete in the fourth quarter of 2020. Construction hours are expected to occur on weekdays during daylight hours. Some weekend work may be needed due to unforeseen circumstances. Final construction hours will be included in the Development and Management Plan. See Exhibit J for the proposed Construction Schedule.

The Project is proposed to be constructed in phases to minimize disturbance: four major phases with 34 sub-phases. Within each major phase, sub-phases will be designed to be

less than 10 acres and each will have a temporary sediment basin or trap as required. The major phases include the following:

- Phase 1: Site Roads and Staging
- Phase 2: Eastern Array Grubbing and Stormwater Controls
- Phase 3: Western Array Stormwater Controls and Solar Equipment Installation
- Phase 4: Eastern Array Stormwater Controls and Solar Equipment Installation

Note that Phase 2 and Phase 4 occur in the same location, with differing construction activities. Phase 4 is the installation of solar infrastructure in the area that was grubbed and temporarily stabilized in Phase 2.

The construction sequence described below has been developed in close consultation with DEEP staff in support of the application for Registration in accordance with the DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (Construction General Permit). Phasing plans for construction are provided in Exhibit K. Detailed drawings depicting stormwater controls for each sub-phase will be provided to DEEP as part of the Construction General Permit registration.

During construction, Nutmeg Solar will employ a full-time environmental monitor present on site to document conditions and ensure compliance with the terms of the DEEP Construction General Permit. As required by DEEP, a third-party certified inspector will also provide oversight and compliance monitoring for the construction process.

Pre-Construction

1. Demarcation of clearing limits, selective cutting zones, and buffer areas.
2. Cut trees above ground (retain stumps) in frozen conditions.
3. Barn relocation and removal (no ground disturbance).
4. Environmental restriction and safety training for all site personnel.
5. Preconstruction meeting.

Phase 1 – Site Roads and Staging

1. Flag the limits of construction necessary to facilitate the preconstruction meeting.
2. Environmental restriction and safety training for all site personnel.
3. Preconstruction meeting.
4. Install construction entrance.
5. Install perimeter controls to establish phase work area in accordance with site plan and stormwater pollution control plan (SWPCP).
6. Prior to installing stormwater controls, such as temporary diversions and stone check dams, inspect existing conditions to ensure discharge locations are stable. If not stable, review discharge conditions with the design engineer and implement additional stabilized measures prior to installing surface water controls.

7. Construct temporary sediment traps and/or basins, diversion swales and berms with check dams.
8. Once temporary stormwater controls are established, clear and grub existing stumps.
9. Strip, re-distribute, and stabilize all topsoil that is within the footprint of the site road, site road appurtenances and the collector substation (see 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, Chapter 4, Part ii and the Farmland Soils Mitigation Plan in Exhibit E).
10. Construct site roads, roadside swales and buried utility conduits.
11. Stabilize site by hydroseeding with bonded fiber matrix or installing erosion control blanket in all disturbed areas. Monitor hydroseeded area and augment with additional seeding as needed.
12. Upon stabilization, temporary controls may be removed or relocated as necessary to construct subsequent sub-phases.

Phase 2 – Eastern Array Grubbing and Stormwater Controls

1. Flag the limits of construction.
2. Install perimeter controls to establish phase work area in accordance with site plan and SWPCP plans.
3. Prior to installing surface water controls, such as temporary diversions and stone check dams, inspect existing conditions to ensure discharge locations are stable. If not stable, review discharge conditions with the design engineer and implement additional stabilized measures prior to installing surface water controls.
4. Construct temporary sediment traps and/or basins, diversion swales and berms with check dams.
5. Once temporary stormwater controls are established, grub existing stumps from previously cleared trees.
6. Stabilize site by hydroseeding with bonded fiber matrix or installing erosion control blanket in all ground-disturbed areas. Monitor hydroseeded area and augment with additional seeding as needed.
7. Check and repair temporary controls as needed. Temporary controls to remain in place through Phase 4 construction.

Phase 3 – Western Array Stormwater Controls and Solar Equipment Installation

1. Flag the limits of construction.
2. Install perimeter controls to establish phase work area in accordance with site plan and SWPCP plans.
3. Prior to installing surface water controls, such as temporary diversions and stone check dams, inspect existing conditions to ensure discharge locations are stable. If not stable, review discharge conditions with the design engineer and implement additional stabilized measures prior to installing surface water controls.
4. Construct temporary sediment traps and/or basins, diversion swales and berms with check dams.

5. Clear and grub existing stumps as needed.
6. Install solar infrastructure, including racking, solar modules, utility connections, and equipment pads. Solar array construction will begin with posts or ground screws being driven into the ground; racking will then be affixed to the posts; and modules will be mounted and installed on the racks.
7. Stabilize site by hydroseeding with bonded fiber matrix or installing erosion control blanket in all disturbed areas. Monitor hydroseeded area daily and augment with additional seeding as needed.
8. After site is fully stabilized, remove temporary stormwater controls.

Phase 4 – Eastern Array Stormwater Controls and Solar Equipment Installation

1. Inspect and install perimeter controls established in Phase 2 to ensure phase work area is in accordance with site plan and SWPCP plans.
2. Inspect and construct temporary sediment traps and/or basins, diversion swales and berms with check dams installed in Phase 2.
3. Install solar infrastructure, including racking, solar modules, utility connections, and equipment pads. Solar array construction will begin with posts or ground screws being driven into the ground; racking will then be affixed to the posts; and modules will be mounted and installed on the racks.
4. Construct collector substation.
5. Stabilize site by hydroseeding with bonded fiber matrix or installing erosion control blanket in all disturbed areas. Monitor hydroseeded area daily and augment with additional seeding as needed.
6. After site is fully stabilized, remove temporary stormwater controls.

3.6 Operation & Maintenance

Nutmeg Solar will ensure site safety and optimal performance throughout the life of the project through an O&M plan that utilizes NextEra's 24/7 remote monitoring capability and on-site technicians for maintenance and repairs. A detailed O&M Plan is provided in Exhibit H.

Remote Monitoring

24/7 remote monitoring and diagnostic analysis of the Project will be conducted from the Fleet Performance Diagnostics Center (FPDC) located at NextEra headquarters in Juno Beach, FL. The FPDC is responsible for remote monitoring of the entire fleet of NextEra solar facilities, totaling 2,965 MW as of September 2018. The FPDC provides performance and reliability optimization through remote operation and fault reset capability, the use of advanced real-time equipment performance statistical modeling for advanced diagnostics, benchmarking among similar components, and replication of best practices across the fleet. This approach is based on prevention as opposed to a reactive event response approach. FPDC personnel provide root cause analysis, fleet risk analysis, and mitigation planning to assure countermeasures are done on a scheduled basis to minimize downtime and ensure safe operations.

The Renewable Operations and Control Center (ROCC), co-located with the FPDC, not only monitors but remotely operates all of NextEra's renewable energy facilities. The ROCC is

a secured North American Electric Reliability Corporation Critical Infrastructure Protection (NERC-CIP) facility responsible for starting up, curtailing, and shutting down the generating facilities it manages.

On-Site Maintenance

Nutmeg Solar will perform on-site maintenance to ensure safety and prevent shading impacts over the life of the Project. Grass between panel rows will be mowed as needed, which is estimated to be twice per year. Pesticides and herbicides may be used as a secondary means of control where necessary. All applications will be targeted at specific species in discrete locations; broadcast aerial application of herbicides is not proposed. All chemical use will comply with the regulations and requirements of DEEP's Pesticide Management Program.

3.7 Decommissioning

The expected useful life of the Project is 30 years. At the end of the Project life, all equipment will be removed in accordance with the Decommissioning Plan in Exhibit L. The Petitioner will also post financial security (e.g., a surety bond) commensurate to the full expected cost of decommissioning activities. If a third party acquires the Project, or any portion of the Project, any decommissioning obligations and associated costs will be transferred to that entity.

3.8 Electrical Interconnection

The Project holds ISO-NE Generation Interconnection Queue Position 552. The Project's ISO-NE System Impact Study report (issued June 21, 2016) concluded that the Project will not cause any adverse impacts to the transmission system and no system upgrades will be required to interconnect at the designated POI. Section I.3.9 approval was received from ISO-NE on November 8, 2016. Nutmeg Solar entered into a small generator interconnection agreement (SGIA) with ISO-NE and Connecticut Light and Power on July 5, 2017.

Nutmeg Solar's POI to the ISO-NE grid is the 115 kV bus at Eversource's Scitico Substation. The Project will deliver output to the POI via an approximately 500-foot underground transmission line originating from the Project's collector substation, which is situated adjacent to the Scitico's southern border. The Project will require modifications to the Scitico Substation from a single bus to a three breaker ring configuration with a new terminal structure.

Pursuant to the SGIA, Eversource will design, construct, own, and maintain the underground transmission line and all modifications within the Scitico Substation. Nutmeg Solar will design, construct, own, and maintain the collector substation up to the point of change of ownership located on the collector substation's terminal structure.

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SECTION 4

Section 4
Project Benefits

Pursuant to CGS § 16-50p(c)(1), a public benefit exists if a project "is necessary for the reliability of the electric power supply of the state or for a competitive market for electricity." The Project will provide much of its generation during peak load hours, particularly during the summer, thereby providing a valuable resource to the New England grid to enhance reliability. As discussed in Section 3.1, Nutmeg Solar was selected in DEEP's 2016 RFP for small-scale clean energy facilities. Special Session Public Act 05-1, *An Act Concerning Energy Independence*, portions of which were codified in CGS § 16-50k, established a rebuttable presumption that there is a public benefit for electric generating facilities selected in RFPs.

Moreover, the Project will help foster the state's goal of developing "renewable energy resources, such as solar and wind energy, to the maximum practicable extent" pursuant to CGS § 16a-35k. The Project will provide substantial additional benefits to the State of Connecticut and the Town of Enfield, including:

- Clean, reliable energy generation requiring no water or fuel consumption, and resulting in no air pollutant emissions;
- A Class I renewable energy source helping Connecticut electric providers meet their Renewable Portfolio Standard (RPS) requirements;
- Diversification of Connecticut and New England's electricity generation mix and potential displacement of aging, inefficient fossil fuel-based generators;
- Preservation of existing farmland soils through use of long-term, grass cover crops that sequester atmospheric carbon in the soil and improve soil health; and
- Economic benefits to the Town of Enfield and the State of Connecticut during the construction and operational life of the Project, including incremental economic activity and significant tax revenue to the Town of Enfield.[7]

Environmental and Energy Benefits

Nutmeg Solar will be a Class I renewable energy source aiding Connecticut in pursuit of its ambitious greenhouse gas reduction goals and RPS requirements. Connecticut's 2018 CES states that "over the next thirty years, Connecticut will need to procure more carbon-free power to meet the Global Warming Solutions Act goals of reducing emissions by 80 percent from 2001 levels by 2050."[8] In addition, this year the Connecticut General Assembly increased the state's RPS to require electric providers to obtain 40% of their electricity supply from Class I renewable energy sources by 2030.[9]

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[7] While economic issues are not relevant to the Siting Council's jurisdiction and decision-making criteria, economic benefits associated with the Project are included for informational purposes.
[8] 2018 CES, available at https://www.ct.gov/deep/lib/deep/energy/ces/2018_comprehensive_energy_strategy.pdf , Page 28.
[9] *See*, Public Act 18-50, *An Act Concerning Connecticut's Energy Future*, Section 1, which

The 19.6 MW Nutmeg Solar project will generate 37,000 MWh of renewable energy annually and over 740,000 MWh total over the first 20 years of operation. As compared to emissions associated with generating this amount of energy from a conventional, fossil fuel power plant, Nutmeg Solar's output results in a reduction of 177,859 metric tons of carbon dioxide equivalent (CO_2e). For more on this analysis and a detailed GHG life cycle assessment of the Project, see Exhibit M. For reference, these emission savings are equivalent to the amount of carbon sequestered by a 209,000-acre forest in one year, or, stated differently, to taking 38,000 passenger vehicles off the road for one year.[10]

Economic Benefits

The Project will benefit the local economy in Enfield and broader economy in Connecticut through job creation, goods and services purchased, and recurring, dependable tax revenue. The Project is estimated to create approximately 100 jobs during construction that will be locally-sourced to the greatest extent possible. Nutmeg Solar will also provide millions of dollars in property tax revenue to the Town of Enfield over the course of the Project life. These tax dollars will support local schools, roads, the Hazardville Fire District, and other essential services in Enfield.

amended CGS § 16-245a.

[10] Calculations made with the Environmental Protection Agency (EPA) Greenhouse Gas Equivalencies Calculator, available at https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

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SECTION 5

Section 5
Regulatory and Community Outreach

Throughout the development process, the Petitioner has worked with state regulators, town officials, abutting property owners, and other stakeholders to keep them apprised of the Project's progress, maintain an ongoing dialogue, and receive constructive feedback that can then be incorporated into the Project design. This section of the Petition provides an overview of public outreach to date.

The Petitioner has held several meetings with Project abutters and town officials, and hosted multiple public presentations, beginning in January 2017. The Petitioner will continue to work with town officials, state agencies, and the local community throughout the construction and operation phases of the Project via an inclusive and responsive public outreach effort. A complete summary of outreach activities and meeting minutes from consultation with state agencies is provided in Exhibit N.

Community and Municipal Outreach

The Petitioner has endeavored to meet with all Project abutters to identify any concerns related to the Project. An open house was held for abutters on site at 65 Broad Brook Road on August 1, 2017 to provide information and answer questions or concerns about the Project. Letters and invitations were sent to all abutters to notify them about the development of the Project and the upcoming open house event.

A formal presentation was conducted at Enfield Town Hall on August 9, 2017. In attendance were Town of Enfield municipal officials and commission members, as well as abutting property owners, members of the public, and state legislators. A community open house for Town of Enfield residents, abutting property owners, and town officials was held on September 26, 2017 at 65 Broad Brook Road. The Petitioner formally presented to the Town of Enfield Economic Development Commission on November 29, 2017, and to the Enfield Town Council on June 4, 2018. Notices of these meetings were published in the Journal Inquirer, Enfield Patch, and on the Town of Enfield's website. Nutmeg Solar also discussed the Project with representatives from the adjoining Town of Somers. As an adjoining municipality within 2,500 feet of the Project Site, Town of Somers' municipal officials received Notice of the Petition filing.

In addition, the Petitioner met with the North Central Connecticut Chamber of Commerce in April 2017 and later joined the organization in October 2017. Nutmeg Solar will continue to work closely with the community and Chamber of Commerce to utilize local resources as the Project is developed.

State Legislator and State Agency Outreach

The Petitioner has met with and discussed the Project with various state legislators and consulted with a number of state agencies. In January 2017, the Petitioner met with State Representative Greg Stokes and State Senator John Kissel. Furthermore, meetings were held with State Representative Carol Hall on three occasions: September 2017, January 2018, and February 2018. The February meeting with State Representative Carol Hall included a community forum held at the Enfield Town Hall (February 22, 2018). Notice of this meeting was published in the Journal Inquirer, on the Town of Enfield's website, and on State Representative Hall's website and Facebook page.

Regarding consultation with state agencies, in November 2017, and February and August 2018, the Petitioner met with DEEP stormwater and NDDB officials. In October 2017, the Petitioner and its representatives met with the DOA and hosted the Department for a site visit. In August 2018, Nutmeg Solar met again with the DOA to provide a Project update.

A preliminary screening request was submitted to NDDB and used to inform field studies. Subsequently, two pre-application meetings were held at DEEP's offices with NDDB staff on November 13, 2017 and February 23, 2018. A Final DEEP NDDB Determination was received on August 3, 2018. NDDB found that the Project, as proposed, will not result in any undue adverse risk to species. Correspondence from NDDB is provided in Exhibit O.

The Petitioner consulted with the Connecticut State Historic Preservation Office (SHPO) for the Project. A Phase 1A Cultural Resources Assessment Survey has been completed and SHPO has concurred with the findings. The scope for a Phase 1B Cultural Resources Reconnaissance Survey has been reviewed and approved by the agency; Phase 1B fieldwork is complete and the report is currently being finalized for submission to SHPO. The Petitioner will subsequently file the Phase 1B report for the Siting Council's consideration. Refer to Section 6.7 below for further discussion regarding the cultural resources surveys and consultations.

Petition Filing Notice

As required by RCSA § 16-50j-40(a), the Petitioner provided notice of its intent to file this petition to: (a) those adjacent property owners listed in Exhibit P and (b) the municipal officials and government agencies listed in Exhibit P. In addition, the Petitioner provided a copy of the Petition to the Towns of Enfield and Somers and to all of the Project Site property owners identified in Section 3.3.

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SECTION 6

Section 6
Environmental Considerations

The Petitioner and its consultants have conducted comprehensive environmental assessments during the development and in advance of the design of the Project. As part of this process, relevant agencies were consulted, potential environmental impacts were evaluated, and avoidance and mitigation measures have been developed. The Project as designed will achieve the desired energy output while avoiding, minimizing, and mitigating potential environmental impacts to the greatest extent practicable.

6.1 Natural Environment - Proposed Land Uses

The proposed Project would require land use activities within the Development Area to be converted from current uses to the operation of a solar energy generation facility. Clearing and grading activities would be required to prepare the Development Area to support the proposed Project. Approximately 91 acres of tree clearing is estimated to be necessary to construct the Project.

The Development Area will utilize existing grades to minimize earth work. Some soil disturbance and limited grading will be required for installation of site roads and equipment pads. Racking will follow existing grade in nearly all cases, with little to no grading required before installation, and only minor surface-finish grading as needed post-installation. In portions of the Project Site where excavation is proposed within the limits of Prime Farmland Soils, soils will be removed and re-distributed in discrete areas in accordance with the Farmland Soil Mitigation Plan in Exhibit E.

At the end of the Project life, the Project Site will be able to return to previous use and conditions for agricultural production or forest regrowth. As described in Section 6.16 below, Prime Farmland Soils and Farmland Soils of Statewide Importance are present on site. These Farmland Soils will not be permanently impacted, and will be available to support agricultural production after Project decommissioning.

To the extent feasible, the Project has been designed to meet the intent of local land use regulations and plans, including the Town of Enfield's Plan of Conservation & Development. This Project will support the goals of the Enfield Clean Energy Committee and Connecticut's energy policy that identify the use of renewables, including solar, as an important strategy for lowering the state's carbon footprint.

6.2 Public Health and Safety

Overall, the Project will meet or exceed applicable industry, state, and local codes and standards, including the National Fire Protection Association, and will not pose a safety concern or create undue hazard to the general public. The Project's generation of electricity will produce zero emissions and will not otherwise produce harmful byproducts. Project operations will be monitored remotely at all times and will be maintained by on-site technicians as detailed in Section 3.6.

Each employee working on the Project Site will:

- Receive required general and Project Site specific health and safety training;

- Comply with all health and safety controls as directed by local and state requirements;
- Understand and employ the Project Site health and safety plan while on the Project Site;
- Know the location of local emergency care facilities, travel times, ingress and egress routes; and
- Report all unsafe conditions to the construction or O&M manager.

The Project is expected to have a short-term impact on traffic flow during construction. Construction vehicles will utilize the primary access road entrance on Broad Brook Road as indicated on the Project Site Plans (Exhibit G). Prior to Project construction, a traffic control plan will be developed in consultation with DOT and the Town of Enfield Department of Public Works. Once constructed, the Project will generally not require vehicle activity other than for minimal system maintenance purposes.

Prior to operation, the Petitioner will meet with the Town's first responders to provide an orientation to the Project and information regarding response to emergencies at the Project Site. All disconnect switches will be clearly marked for use in an emergency. The Project will be remotely monitored and will feature remote shutdown capabilities. Adequate access for fire and emergency service equipment will be provided to the Project via the proposed access roads. A secondary access point off Bailey Road will be available for emergency access (Exhibit A, Figure 7).

An updated Phase I Environmental Site Assessment of the Project Site was completed in October 2018 and no Recognized Environmental Conditions were identified.

6.3 Noise

The Project will not produce significant noise during operation. An acoustic study, performed by Tech Environmental, has been completed for the Project and is provided in Exhibit Q.

After the Project is constructed and in service, maximum sound levels at nearby residences will range from 13.5 to 37.0 units of decibel (A-weighted scale) (dBA). This is well below the most conservative criteria of 45 dBA for nighttime and 55 dBA for daytime, as established by Connecticut Noise Control regulations (RCSA 22a-69-1) and the Town of Enfield Code of Ordinances (Chapter 38, Article IV).

For comparison, and as presented in the acoustic study (Exhibit Q), a quiet suburban area at night without any traffic typically has an average sound level of 40 to 45 dBA from the threshold of hearing. A freight train heard in the distance from the threshold of hearing may be 50 dBA. Crickets and tree frogs in the summer sing at a sound level of 55 dBA.

Per § 38-104 of the Town of Enfield Code, noise generated by construction equipment operated during "daytime hours" is exempt from noise level requirements. "Daytime hours" is defined in the Town of Enfield Code as between 7:00 AM and 9:00 PM Monday through Saturday, and between 9:00 AM and 9:00 PM on Sunday. Construction activities related to the Project will not occur outside of these hours.

6.4 Air Quality

During operation, the Project will not produce air emissions of regulated air pollutants (e.g., particulate matter [PM] PM_{10}, $PM_{2.5}$, volatile organic compounds, or ozone) or greenhouse gases (i.e., carbon dioxide, methane, nitrous oxide, or fluorinated gases). A life cycle greenhouse gas analysis of the Project, performed by EarthShift Global, is provided in Exhibit M. The analysis concluded that the Project will reduce GHG emissions by approximately 177,859 metric tons of CO_2e over the first 20 years of its operations as compared to conventional, fossil-fuel generation. This reduction is equivalent to the amount of carbon dioxide emitted from the consumption of 411,871 barrels of oil.[11]

Per DEEP recommendations, Nutmeg Solar will make reasonable efforts to use off-road construction equipment that meets United States Environmental Protection Agency or California Air Resources Board standards for diesel emissions. Additionally, the Project will comply with regulations that mandate the use of ultra-low sulfur fuel to reduce exhaust emissions.

Nutmeg Solar will be in compliance with the Connecticut standards outlined in RCSA § 22a-174-18(b)(3)(C). This regulation applies to most vehicles, such as trucks and other diesel engine-powered vehicles commonly used on construction sites. Adhering to the regulation will reduce unnecessary idling at truck staging zones, delivery or truck dumping areas, and further reduce on-road and construction equipment emissions.

The Project will have minor emissions of regulated air pollutants and GHGs associated with the construction phase of the Project and no air permit will be required. During construction of the Project, any air emission effects will be temporary and controlled by enacting appropriate mitigation measures (e.g., water for dust abatement and avoiding mass early morning vehicle startups). Following construction, the Project will have no emissions associated with electricity generation operations.

6.5 Scenic Values

The Petitioner conducted a viewshed analysis during Project Site visits and by using aerial and topographic mapping collected in September 2017. This analysis identified a substantial amount of existing natural screening present in the area. There is existing forest cover between the Project Site and potential observation points to the south and east. Furthermore, no public parks, hiking paths, or other potential public non-vehicular trails are present in the area that would serve as potential observation points. Section 6.8 further explains recreational resources in the vicinity of the Project.

To verify the potential visibility of the Project, visual renderings were produced using existing Project Site photos with AutoDesk 3D Studio and Adobe Photoshop, from various locations in the vicinity of the Project. These visual renderings are provided in Exhibit I. In preparing the renderings, existing site photographs were imported into the model and matched to AutoDesk 3D Studio's camera by loading a digital picture and calibrating the AutoDesk camera to the position and focal length of the camera used to take the actual photograph. Solar arrays and landscape buffering depicted in the Project Site Plans (Exhibit G) were modeled to represent actual dimensions and scales. Once modeling was

[11] Calculations made with the EPA Greenhouse Gas Equivalencies Calculator, available at https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

complete, images were created and enhanced with Adobe Photoshop to create the final renderings.

As the visual renderings demonstrate, the proposed Project will not have a substantial adverse effect on scenic value. The immediate foreground threshold views into the Project Site are limited due to existing or proposed vegetative screening and proposed relocated tobacco barns. In addition, the agricultural fencing proposed along the Project's western boundary facing Broad Brook Road further preserves scenic value.

Solar modules are designed to absorb incoming sunlight and minimize reflectivity to maximize electricity generation. A minimal percentage of incidental light will be reflected off the modules. This incidental light is significantly less reflective than common building materials, such as steel, glass, or the surface of smooth water. In addition, a majority of the Project will be shielded from view by existing vegetation, proposed screening vegetation and topographical conditions.

6.6 Federal Aviation Administration Determination

Bradley International Airport is located approximately 8 miles west of the Project Site, in the Town of Windsor Locks. Tighe & Bond, on behalf of Nutmeg Solar, filed a "Notice of Proposed Construction or Alteration" with the Federal Aviation Administration (FAA) in May 2018. The FAA issued Determination of No Hazard to Air Navigation letters (one for each of the four corners of the Project Site) on May 21, 2018, provided in Exhibit R.

No direct or sky-reflected glare is anticipated as part of this Project. Per previous correspondence with an FAA Obstruction Evaluation Specialist, it was confirmed that if not explicitly stated, as is the case here, a glint/glare analysis is not required.

6.7 Historic and Archeological Resources

A Phase 1A Cultural Resources Assessment Survey was conducted within the Study Area[12] in compliance with the SHPO Environmental Review Primer for Connecticut's Archaeological Resources. This survey addresses archeological concerns, historic districts, and historic structures that could be potentially impacted by development of the Project.

Based on the Phase 1A Cultural Resources Assessment Survey reconnaissance report (Exhibit S), structures of various ages, built circa 1850 to 2012, were identified in and around the Project Site. The report determined that no historic standing structures within the limits of the Project Site are eligible for inclusion in the National Register of Historic Places. Additionally, the modern buildings lack the historical significance necessary to make them eligible for listing on the National Register of Historic Places, either individually or as a district.

Tobacco barns are visible in historic aerial photographs and maps of the Project Site. None of the Project Site tobacco barns were included in the Connecticut Trust's *Historic*

[12] The Phase 1A Cultural Resource Assessment Survey was conducted for the entire Study Area (including the parcels west of Broad Brook Road) in the summer of 2017. This assessment included Parcel ID 108-11, which has subsequently been excluded from the Project.

Barns of Connecticut survey, despite the inclusion of several other tobacco barns along Broad Brook Road. Within the Development Area, two barns date from the 1950s (Buildings 12 and 13 in the Phase 1A report provided in Exhibit S), while the remaining three were constructed in the 1980s or later (Buildings 10, 11 and 14). Buildings less than 50 years in age must be considered "exceptionally significant" to be listed in the National Register of Historic Places. Further, the historic tobacco barns are either in poor condition, under repair, or have had several alterations to their structure and hardware, rendering them not eligible for inclusion in the National Register of Historic Places applying the criteria for evaluation (36 CFR 60.4 [a-d]).

The Phase 1A survey also identified approximately 55 acres within the Study Area that possess a moderate/high archaeological sensitivity. The Phase 1A survey recommended that areas that possess a moderate/high archaeological sensitivity (either for prehistoric or historic archaeological resources) that are located within the Development Area be examined using subsurface testing techniques as part of a comprehensive Phase 1B Cultural Resources Reconnaissance Survey. The fieldwork for the Phase 1B survey has been completed and no archaeological deposits were identified. The Petitioner anticipates that the Phase 1B report will be submitted to SHPO in November 2018, and will subsequently file the Phase 1B report for the Siting Council's consideration. The Phase 1A and Phase 1B survey findings indicate the Project will not have an adverse impact on historical or archeological resources, as no deposits were identified on the Project Site.

Copies of the Phase 1A reports, Phase 1B scope of work, SHPO concurrence letters, and other SHPO correspondence are provided in Exhibit S.

6.8 Recreation

Recreational resources surrounding the Project Site (in the Town of Enfield and the neighboring communities of Somers, Ellington, and East Windsor) include some public and privately-owned open space and recreational areas. The nearest recreational area is the Scantic River State Park across Bailey Road to the north of the Project Site and along the Scantic River. Additional parks, recreational areas, and open space within two miles of the Project are listed in Table 6-1, and shown on Exhibit A, Figure 6.

The Scantic River State Park is a public recreation area consisting of several separated parcels totaling 784 acres along the Scantic River in the Towns of Enfield, East Windsor, and Somers, Connecticut. The Powder Hollow Section of the park is located approximately 0.5 miles to the northwest of the Project Site, while the Harrington Lot is located to the southwest outside of the 2-mile Project Site radius. Smaller, non-contiguous portions of the park are located along the Scantic River approximately 0.25 miles north of the Project Site. Privately-owned parcels, site topography, and existing vegetation located outside and within the Project situated between the Project Site and the park will prevent viewshed impacts to this recreational resource.

6.9 Lighting

Site lighting and overhead lighting are not proposed for the Project. Temporary lighting will be used at the staging area during construction. Lighting at the collector substation will be based on National Electric Code requirements. It is expected that a small exterior light at the control house will be motion-activated to enable safe access in the event work is required at the collector substation.

6.10 Coastal Zone Management Areas

The Town of Enfield is not located within the Coastal Area or Coastal Boundary, as defined by the Coastal Management Act, CGS Section 22a-94(a). No Coastal Zone Management Areas would be affected by the Project.

6.11 Other Surrounding Features

The locations of non-residential development and other resources within 2 miles of the Project Site are listed in Table 6-1 below. Figure 6 in Exhibit A (Surrounding Features Map) depicts these locations relative to the Project Site. No adverse effects are anticipated to the facilities or places identified in Figure 6, primarily because of their sufficient distance from the Project. Potential impacts to the closest non-residential developments (i.e., public and private recreational areas) are described in Section 6.8 above.

TABLE 6-1
Non-Residential Features within 2 Miles of the Project Site

Resource / Structure Type	Name	Address	Town	Approximate Distance to Project Site
Park / Open Space	Hazardville Park / Playground	379 Hazard Avenue	Enfield	1.2 miles
	Land granted to Northern Conn. Land Trust, Inc. by Joan H. Swann	0 Reeves Road	Ellington	1.8 miles
	Land granted to State of CT DEP by Emil Downey and Richard Wolverton	Billings Road	Somers	1.25 miles
	Land granted to State of CT DEP by Somersville Corporation	48 Main Street	Somers	0.6 miles
	Land granted to State of CT DEP by Somersville Corporation	72 Scitico Road	Somers	0.6 miles
	Land granted to State of CT DEP by Somersville Corporation	88 Scitico Road	Somers	0.6 miles
	Land granted to State of CT DEP by Somersville Corporation	96 Scitico Road	Somers	0.5 miles
	Land granted to State of CT DEP by Somersville Corporation	112 Scitico Road	Somers	0.45 miles
	Land granted to Town of Enfield by Azura, LLC	0 Abbe Road	Enfield	0.3 miles
	Land granted to Town of Enfield by Charles and Renelle Fortin	0 Charnley Road	Enfield	0.2 miles
	Land granted to Town of Enfield by Edward S. Welch	0 South Road	Enfield	1.9 miles
	Land granted to Town of Enfield by Faffia Farms, Inc.	0 Powder Hill Road	Enfield	1.9 miles
	Land granted to Town of Enfield by Charles and Renelle Fortin	0 Charnley Road	Enfield	0.2 miles
	Land granted to Town of Enfield by Francesco Vono	0 Somers Road	Enfield	1.8 miles
	Land granted to Town of Enfield by Francesco Vono	0 Dust House Road	Enfield	1.5 miles
	Land granted to Town of Enfield by Francesco Vono	0 Somers Road	Enfield	1.8 miles
	Land granted to Town of Enfield by Francis B. and Margaret C. Glazier	0 Taylor Road	Enfield	0.5 miles
	Land granted to Town of Enfield by Green Manor Construction, Inc.	198 Taylor Road	Enfield	0.65 miles
	Land granted to Town of Enfield by Hazardville Homes, Inc.	0 Ridgefield Road	Enfield	0.5 miles
	Land granted to Town of Enfield by John E. & Elaine Swindle	0 Bailey Road	Enfield	0.25 miles
	Land granted to Town of Enfield by John W. and Marilyn H. Allen	0 Powder Hill Road	Enfield	1.7 miles
	Land granted to Town of Enfield by Julia A. French	0 Powder Hill Road	Enfield	1.7 miles
	Land granted to Town of Enfield by Julia A. French	0 Powder Hill Road	Enfield	1.8 miles
	Land granted to Town of Enfield by Lillian L. and Arthur G. Allen	0 Powder Hill Road	Enfield	1.7 miles
	Land granted to Town of Enfield by Madeline R. Kertenis	0 Powder Hill Road	Enfield	1.9 miles
	Land granted to Town of Enfield by Robert D. Gingras	0 Maple Street	Enfield	1.7 miles
	Land granted to Town of Enfield by Rye Hill of Enfield, Inc.	0 Rye Field Drive	Enfield	1.6 miles
	Land granted to Town of Enfield by Rye Hill of Enfield, Inc.	18A High Meadow Lane	Enfield	1.5 miles
	Land granted to Town of Enfield by S. Leger Starr	0 Monroe Road	Enfield	0.6 miles
	Land granted to Town of Enfield by Somerset Development Corp.	0 Taft Lane	Enfield	0.4 miles
	Land granted to Town of Enfield by Somerset Development Corp.	0 Taft Lane	Enfield	0.3 miles
	Land granted to Town of Enfield by Somerset Development Corp.	0 Taft Lane	Enfield	0.4 miles
	Land granted to Town of Enfield by Somersville Corporation	0 Northfield Road	Enfield	0.6 miles
	Land granted to Town of Enfield by Stella L. et la Mangini	0 Powder Hill Road	Enfield	1.7 miles
	Land granted to Town of Enfield by Suffield Bank	0 Michael Drive	Enfield	2.0 miles
	Land granted to Town of Enfield by Susan S. Starr	0 Indian Run	Enfield	2.0 miles
	Land granted to Town of Enfield by TAR Associates, LLC	0 Maple Street	Enfield	1.7 miles
	Land granted to Town of Enfield by William Holland	0 Bailey Road	Enfield	0.25 miles
	Land granted to Town of Enfield Robert I. and Patricia G. Edwards	0 Grant Road	Enfield	2.0 miles
	Land granted to Town of Somers by Somersville Corporation	66 Quality Avenue	Somers	0.85 miles
	Land granted to Town of Somers by Somersville Manufacturing Company	56 Scitico Road	Somers	0.7 miles

TABLE 6-1
Non-Residential Features within 2 Miles of the Project Site

Resource / Structure Type	Name	Address	Town	Approximate Distance to Project Site
Park / Open Space	Mill Pond Recreation Area	49 School Street	Somers	1.1 miles
	Neelans Park	0 Town Farm Road	Enfield	1.85 miles
	Powder Hollow Park	Scantic River	Enfield	1.6 miles
	Scantic River State Park	Cooper Street	Enfield	0 miles
	Somers Fairgrounds	56 Egypt Road	Somers	2.0 miles
	Somersville Pond	School Street	Somers	1.1 miles
Church	Enfield Church of Christ	Hazard Avenue	Enfield	1.0 miles
	Faith Baptist Church	182 Broad Brook Road	Enfield	0.7 miles
	Hazardville United Methodist Church	330 Hazard Avenue	Hazardville	1.25 miles
	Mount Zion Church	Abbe Road	Enfield	0.5 miles
	Our Redeemer Lutheran Church	65 Maple Street	Enfield	1.7 miles
	Saint Bernard Roman Catholic Church	426 Hazard Avenue	Hazardville	1.0 miles
	Saint Mary's Episcopal Church	383 Hazard Avenue	Hazardville	1.2 miles
Cemetery	Saint Bernard's Cemetery	North Street	Enfield	1.1 miles
Youth Camp	None within 2 miles of the site.			
Hospital	None within 2 miles of the site.			
Fire Department	Hazardville Fire Department	385 Hazard Avenue	Hazardville	1.1 miles
Airport	Laurie Field-Ct19	147 Abbe Road	Enfield	1.2 miles
Child Day Care	None within 2 miles of the site.			
Community Center	None within 2 miles of the site.			
Senior Center	None within 2 miles of the site.			
Public School	Enrico Fermi High School	124 Maple Street	Enfield	1.8 miles
	Hazardville Memorial Elementary School	68 Maple Street	Hazardville	1.6 miles
	Nathan Hale Elementary School	5 Taylor Road	Enfield	0.6 miles
	Somersville Elementary School	1 School Street	Somersville	1.1 miles
Private School	Saint Bernard's School	426 Hazard Avenue	Hazardville	1.0 miles
	Enfield Christian Academy	182 Broad Brook Road	Enfield	0.7 miles
Historic	Hazardville Historic District	Hazard Ave	Hazardville	0.9 miles
	Melrose Historic District	Broad Brook Road	East Windsor	1.85 miles
	Somersville Historic District	Main Street	Somers	0.65 miles
	Manchester Historic District (Boundary Increase)	Sadds Mill Road	East Windsor	1.6 miles
	Enfield Shakers	Shaker Road	Enfield	1.8 miles

6.12 Wildlife and Habitat

Open agricultural fields (western array) and mixed second growth forests (eastern array) characterize the habitat within the Project Site. Field surveys conducted in the Study Area during the 2017 growing season included bat acoustic surveys, a rare, threatened, and endangered (RTE) species habitat survey, and amphibian breeding surveys. An additional vernal pool survey, general herpetological inventory, and eastern spadefoot toad survey were completed in 2018.

Presence of eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and big brown bat (*Eptesicus fuscus*) were confirmed to occur at the Project Site. The data analysis of the acoustic surveys indicates northern long-eared bat (*Myotis septentrionalis*) (NLEB) is unlikely to occur at the Project Site. Further details on survey methods and results are provided in Exhibit D. As discussed in Section 6.13, the Petitioner has tailored tree clearing for the Project to avoid bat roosting periods.

Amphibian breeding activity was observed in one area during the two consecutive years of vernal pool surveys that were completed for the Project. This pool is within an excavated depression occurring at the bottom of a slope within a forested area, located directly adjacent to a recreational vehicle trail. Due to the presence of two or more indicator species, the fact that at least 75 percent of the vernal pool envelope remains intact, and that greater than 50 percent of the Critical Terrestrial Habitat (CTH) surrounding the pool is forested, the pool meets the criteria to be considered a Tier 1 vernal pool according to the standards set forth in Calhoun and Klemens (2002). Despite having these characteristics, the pool is not of high biological value nor would it be considered exemplary habitat. Relatively low egg mass numbers in both years, man-made origin, and the pool's short hydroperiod likely make it a sink for vernal pool amphibians.

According to the University of Connecticut Forest Stewardship Program cited in the 2002 Calhoun and Klemens document, vernal pools are defined by having a hydroperiod of approximately 2 months during the growing season.[13] The pool located within the Project Study area was observed to be completely dry on June 18, 2018. Species observed to be present in the pool include the wood frog (*Lithobates sylvaticus*) and spotted salamander (*Ambystoma maculatum*). In Connecticut, spotted salamanders typically take approximately 15-20 weeks to metamorphose, typically emerging from vernal pools between July and October.[14] A long-term study in Michigan found that wood frogs typically take approximately 10-13 weeks to metamorphose.[15] In Connecticut, wood frogs have

[13] Calhoun, A.J.K. and M.W. Klemens. 2002. Best development practices: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

[14] 1993. Klemens, Michael W. Amphibians and Reptiles of Connecticut and Adjacent Regions. State Geological and Natural History Survey of Connecticut. Bulletin No. 112. ISBN No. 0-942081-04-8. New York, NY.

[15] 2009. Berven, Keith A. Density Dependence in the Terrestrial State of Wood Frogs: Evidence from a 21-year Population Study. American Society of Ichthyologists and Herpetologists. Copeia 2009, No. 2, pp 328-338.

been found to complete metamorphosis as early as mid-June, and as late as early July.[16] A description of the vernal pool survey methodology and analysis of the habitat is provided in Exhibit D.

In consideration of the results of the environmental surveys, the Project has been designed to avoid and minimize impacts to wildlife habitat, including the identified vernal pool. The vernal pool and its 100-foot envelope will not be impacted or altered by the proposed Project. A directional corridor connecting the pool with a wetland area occurring off site to the south of the Project Site will also remain undisturbed. A selective vegetation management plan will be implemented in forested areas within the CTH of the pool. Under this plan, tree species outside of the 100-foot pool envelope will be selectively removed based on a canopy height limit of 20-40 feet, leaving the understory vegetation present and allowing it to regenerate within the CTH around the vernal pool depression. Figure 11 (Exhibit A) depicts the selective vegetation management area, and the no-disturbance area around the pool and within the directional corridor. Further details on the vegetation maintenance plan for this area are provided in Section 6.17.

A Herpetofauna Avoidance and Mitigation Plan (Exhibit D) has been developed for the Project to be implemented during the construction period. The plan outlines the steps and procedures to be implemented during construction to avoid potential impacts to amphibians and reptiles that may occur within the Project Site. NDDB concurrence with this plan was provided on August 3, 2018 (Exhibit D).

6.13 Rare, Threatened, and Endangered Plants and Wildlife

Field surveys for rare, threatened, and endangered plants and wildlife were conducted at the Project Site in 2017 and 2018. These surveys included NLEB presence/absence surveys, an RTE species habitat survey, a general herpetological inventory, and an eastern spadefoot toad survey. Results of these surveys were submitted to NDDB and a determination received from the agency on August 3, 2018 concurred with the findings.

As mentioned in Section 6.12, NLEBs were not detected within the Project Site during the acoustic survey. Presence was not confirmed for any state-listed bat species; however, presence of eastern red bat, hoary bat, and silver-haired bat was confirmed, all of which are identified in Connecticut as species of special concern. Tree clearing will occur during the winter months (November-March) to avoid risk to tree roosting bat species.

Additionally, no RTE amphibians and reptiles were observed within the Project Site. Marginal habitat for box turtle (*Terrapene carolina carolina*) was found to be present within the Study Area, but box turtles were not observed within the Project Site during the herpetological inventory or during other site surveys conducted in 2017 and 2018. No eastern spadefoot toads were encountered at the Project Site during five separate nights of surveys. Further details regarding the results of RTE species field studies are included in Exhibit D.

[16] 1993. Klemens, Michael W. Amphibians and Reptiles of Connecticut and Adjacent Regions. State Geological and Natural History Survey of Connecticut. Bulletin No. 112. ISBN No. 0-942081-04-8. New York, NY.

6.14 Water Supply

The Project will not require a dedicated water supply during operation. Drinking water and water to be used for dust abatement or module cleaning, if necessary, will be brought in to the site.

As shown on the Existing Conditions figure (Figure 3) and Water Quality Classification and Public Water Supply Well figure (Figure 5) provided in Exhibit A, the Project will not be located within a DEEP-designated Aquifer Protection Area, as there are no Aquifer Protection Areas mapped in the vicinity of the Project Site and the Project Site is not located in proximity to the Area of Contribution to a Public Water Supply Well. The closest Aquifer Protection Area is located to the north of the Project Site, north of the Scantic River approximately 0.25 miles away.

Portions of the Town of Enfield are served by Connecticut Water and Hazardville Water Company, including residences located north of the Project Site along Bailey Road. Other residences in proximity to the Project have private wells. No impacts to private wells in the area are anticipated.

There are locations across the Project where the driven posts to support the racking system will be embedded into the ground. These posts are made of galvanized steel and are driven vertically into the ground. The galvanized posts are corrosion resistant and, by design, are intended for direct burial or driving into the ground. These posts are not anticipated to have an adverse impact on groundwater; galvanized steel is also used in potable water supply systems.

The Project will be designed and permitted in accordance with DEEP stormwater discharge requirements, and a SWPCP will be prepared prior to construction and implemented during construction. The SWPCP and Project design uses of best management practices will ensure that construction is managed and stabilized in phases that minimize the potential for surface erosion and sedimentation off the Project Site. Based on this approach, impacts to off-site surficial groundwater are not anticipated.

6.15 Water Quality

Wetlands and Watercourses

A wetland and watercourse delineation was completed for the Project during the growing season in June 2017. Surveys were conducted in accordance with the Inland Wetlands and Watercourses Regulations of the Town of Enfield. Additionally, natural resource surveys were completed according to the technical criteria described in the United States Army Corps of Engineers 1987 Wetland Delineation Manual, and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Regional Supplement Version 2.0.

Results of the wetland and watercourse surveys did not identify any wetland or stream resources that would be regulated by the United States Army Corps of Engineers, the Town of Enfield, or DEEP. There were no soils observed within the Survey Area that would be classified as poorly drained, very poorly drained, or floodplain. Soils within the identified vernal pool area are characterized as a dull reddish brown (5YR 4/3) with a coarse sandy loam texture and are not classified as hydric. Vegetation in this area is characterized by red maple (*Acer rubrum*) and paper birch (*Betula papyrifera*) in the tree stratum, with

mountain laurel (*Kalmia latifolia*), red maple and high-bush blueberry (*Vaccinium angustifolium*) growing sparsely in the shrub stratum. Very few herbaceous plants were observed and included evergreen wood fern (*Dryopteris intermedia*) and eastern spicy wintergreen (*Gaultheria procumbens*).

No portion of the Project Site is located within a 100-year flood zone (FEMA Zone A) or 500-year flood zone (FEMA Zone X), as indicated on the Federal Emergency Management Agency Flood Insurance Rate Map, Community Panel Number 09003C0232F (effective date September 26, 2008). Refer to Exhibit A, Figure 8.

Stormwater

The Project has been designed to comply with the 2004 Connecticut Stormwater Quality Manual for both Water Quality and Recharge and the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. In addition, construction-period stormwater design has been developed in direct consultation with DEEP staff, and in conformance with the DEEP September 2017 Stormwater Guidance document for solar projects. The Petitioner met with DEEP in February 2018 and August 2018 to discuss specific expectations for construction-period stormwater design and the phased approach described in Section 3.5. Copies of the DEEP meeting minutes are provided in Exhibit N.

Based on these consultations with DEEP, stormwater design will be installed in sub-phases to control stormwater flows during construction. A mixture of sub-phase sizes will be installed, utilizing a combination of sediment basins and traps. Multiple sub-phases will be active concurrently and are designed to discharge to separate upland locations in accordance with DEEP guidance. The Petitioner is planning to submit an application for a Construction General Permit for the Discharge of Stormwater and Dewatering Wastewater for Construction Activities to DEEP following submission of this Petition. The Project construction-period stormwater phasing plans are provided in Exhibit K.

The Petitioner has given consideration to time of year restrictions to be protective of tree roosting bat species maternity windows, as well as feasibility of implementing the phasing design. As such, tree clearing will occur during the winter months (November-March). If necessary, stormwater controls will be implemented during frozen conditions. During non-winter months, construction period erosion controls will be installed prior to grubbing and other earthwork activities. Sediment basins and traps will remain in place until Project Site stabilization is finalized. The Project Site will be stabilized using hydroseeding with a bonded fiber matrix and/or erosion control blankets.

An analysis of post-construction stormwater runoff is provided in the Stormwater Management Report (Exhibit K). The report indicates that peak discharge rates will be reduced for the 2, 10, 25, and 100-year storm events under the proposed conditions.

The Project will convert portions of the existing agricultural and forested areas to solar arrays that will be stabilized with native seed mix to allow for the establishment of a meadow habitat within the Development Area. This vegetation will provide stormwater treatment and control to reduce the potential for sheet flow and sediment detachment and transportation during storm events. While the proposed installation requires minor grading and some existing vegetation be removed, the existing topography shall remain generally unchanged.

During rain events, water will fall onto solar modules and flow off the module edge onto the vegetated surface or stabilized areas and flow along existing natural flow paths. Therefore, the only solar modules that are considered impervious will be the most up-gradient modules in each subcatchment and the remainder of the solar modules within the limit of work will be considered meadow, non-grazed[17].

6.16 Soils and Surficial Geology

As defined by the USDA NRCS, farmland soils are based on soil type and include Prime Farmland, Farmland of Statewide Importance, and Locally Important Farmland. USDA NRCS defines Prime Farmland Soils as those having the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops, and that also are available for these uses.

A figure showing mapped soil types is provided in Exhibit A, Figure 10. Two soil series mapped by USDA NRCS within the Project Site are Haven and Enfield association and Agawam, both considered Prime Farmland. There is a small pocket of Manchester soils that is considered Farmland of Statewide Importance. The entire eastern portion of the site is mapped as Prime Farmland, with the exception of the area mapped as Narragansett, extremely stony with slopes in excess of 15%, which separates the eastern and western solar arrays. No Locally Important Farmland Soils have been mapped by USDA NRCS on the Project Site.

A field assessment to confirm the presence of farmland soils was conducted on December 22, 2016. This assessment, including associated soils descriptions, was performed by a Certified Soil Scientist and a registered Professional Member of the Society of Soil Scientists of Southern New England, as per Connecticut DEEP requirements. Further detail is provided in the Prime Farmland Soil Memorandum in Exhibit D.

The soil investigation completed for the Project Site determined that USDA NRCS mapping is mostly accurate, and the site does contain Prime Farmland Soil types; however, there are some small differences in mapped soils versus observed ground conditions. As shown on the mapped soils figure (Exhibit A, Figure 10), the area of estimated disturbance to mapped Statewide Important Farmland Soils is approximately 1.27 acres. The estimated disturbance to mapped Prime Farmland Soils is approximately 2.44 acres. In total, a potential impact of approximately 3.7 acres to mapped farmland soils is estimated due to the installation of site roads, equipment pads, and the collector substation. Further information about soils and the Farmland Soil Mitigation Plan are provided in Exhibits D and E.

6.17 Avoidance, Minimization and Mitigation Measures

As presented throughout this Petition, a series of avoidance, minimization, and mitigation measures will be provided for the Project.

While the vernal pool identified in the Project Site was found to be relatively low functioning, measures are being taken to protect the surrounding CTH through a

[17] Cook, L.M. & McCuen, R. H., (2013). Hydrologic Response of Solar Farms. *Journal of Hydrologic Engineering*, 18(5). pp.536-541.

comprehensive vegetation management plan. In the selective vegetation management area, clearing impacts will be minimized through use of hand cutting for incompatible vegetation, using chain saws or brush saws, and loppers or hand pruners. The selective cutting areas will be inspected and vegetation present within the buffer observed to be capable of exceeding the canopy height limit (20-40-feet) within the next 5 years will be removed. Figure 11 in Exhibit A provides further details regarding the selective vegetation management plan. The remaining vegetation will, over time, be expected to develop into early successional communities that would naturally inhibit the growth of tree species capable of growing to a height that would exceed the canopy limits, thereby reducing the need for maintenance or disturbance. Shrub plantings will be employed along the eastern edge of the proposed site road to the west of the vernal pool after clearing and grading, to provide cover and habitat for amphibian species. A Herpetofauna Avoidance and Mitigation Plan has been developed and is provided in Appendix E of Exhibit D.

Construction-period measures that are protective of water and wildlife resources include seasonal clearing restrictions, implementation of a SWPCP, an environmental monitoring program (including exclusion fencing sweeps), and on-site training for contractors. The Project design incorporates a number of mitigation measures, including: a perimeter fence with a 6-inch gap at the bottom to allow for passage of wildlife; growth of native meadow habitat beneath the solar array; and selective vegetation management as described above.

Regarding mitigation of soil impacts, a Farmland Soil Mitigation Plan will be implemented for the Project, as described in Section 6.16. Further information about soils and the Farmland Soil Mitigation Plan are provided in Exhibits D and E.

To mitigate any visual impact to the community, the Petitioner also proposes to install vegetative screening and agricultural fencing. See Exhibit I for photo simulations of the proposed visual mitigation for the Project.

A summary of the avoidance, minimization, and mitigation measures that address scenic values, water resources, wildlife resources, and soils and geology is presented in Table 6-2 below.

TABLE 6-2
Avoidance, Minimization, and Mitigation Measures - Nutmeg Solar Project

Resource	Timing	Avoidance, Minimization, and Mitigation Measures
Scenic Values	No time of year restrictions	- Visual screening/ landscape plantings - Agricultural fencing along public roads
Water Resources	No time of year restrictions	- No jurisdictional wetlands or stream resources are present within the Study Area - Avoid direct and indirect impacts to water resources - Construction monitoring - On-site training for contractors - Revegetation of disturbed soils throughout the construction period - No clearing within the vernal pool or vernal pool envelope - Selective vegetation management in the Critical Terrestrial Habitat of the vernal pool (see **Herpetofauna Avoidance & Mitigation Plan at Appendix E, Exhibit D**) - Stormwater, sediment and erosion control plan
Wildlife Resources	Winter tree clearing (November-March)	- Used wildlife resource data collected to inform project design - Exclude areas mapped as Windsor soils - Seasonal clearing restrictions (bats) - Sediment and erosion control measures - Exclusion fencing during construction - Construction monitoring and exclusion fencing sweeps (herpetofauna) - On-site training for contractors including field identification of RTE species - Internal environmental audits - Fencing with 6" wildlife access gap at bottom - Native seed mix use for development of meadow habitat within Development Area - Post-grading shrub plantings within Critical Terrestrial Habitat
Soils and Geology	No time of year restrictions	- Redistribute and seed impacted classified farmland soils (see **Farmland Soil Mitigation Plan, Exhibit E**) - Sediment and erosion control measures - Maintain meadow habitat

Tighe&Bond

SECTION 7

Section 7
Conclusion

The Project will provide significant benefits to the Town of Enfield, Connecticut, and its citizens and will place the Town at the forefront of renewable energy development while producing substantial environmental benefits with minimal environmental impact.

The 19.6 MW Project proposed by the Petitioner is a "grid-side distributed resources" facility, as defined in CGS § 16-1(a)(37), because the Project involves "the generation of electricity from a unit with a rating of not more than sixty-five megawatts that is connected to the transmission or distribution system..." and, as amply demonstrated herein, the Project will meet DEEP air and water quality standards. Further, the Project:

- Will not produce air emissions during operations (PM_{10}, $PM_{2.5}$, volatile organic carbons, ozone, or GHGs);
- Will not utilize water to produce electricity or be in conflict with any federal, state, or local requirements related to water quality and quantity;
- Will not produce significant noise;
- Will not result in impacts to wetlands or watercourses, and potential impacts to other biological or natural resources will be avoided to the greatest extent practicable;
- Will not have substantial adverse visual, land use, stormwater, recreational, cultural, or community impacts; and
- Will further the state's energy policy by developing and utilizing renewable energy resources.

For all the foregoing reasons, the Petitioner requests that the Siting Council issue a declaratory ruling that the proposed Project will comply with DEEP air and water quality standards, will not have a substantial adverse environmental effect and, therefore, that a Certificate of Environmental Compatibility and Public Need is not required for the construction and operations of the Project.