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**Petition of Cobb Road, LLC**  
**For a Declaratory Ruling that no Certificate of**  
**Environmental Compatibility and Public Need is**  
**Required for the Proposed Construction,**  
**Operation and Maintenance of a 1.95 +/- MW AC**  
**Ground-mounted Solar Photovoltaic Electric**  
**Generating Facility Located on Short Hills Road**  
**in Old Lyme, Connecticut**

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Prepared for  
The Connecticut Siting Council

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October 7, 2019

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- Appendix D Stormwater Management Report

## List of Sources

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- Calhoun, A.J.K. and M.W. Klemens. 2002. Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. WCS/MCA Technical Paper No. 5
- Dowhan, J.J. and Craig, R. 1976. Rare and Endangered Species of Connecticut and Their Habitats. State Geological and Natural History Survey of Connecticut. The Natural Resources Center, Department of Environmental Protection.
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)* (Environmental Laboratory, 2012)
- US Army Corps of Engineers New England District's *Vernal Pool Best Management Practices (BMPs)* (January 2015)

## 1.0 Introduction

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### A. Purpose and Statutory Authority

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Pursuant to Conn. Gen. Stat. §§ 4-176 and 16-50k(a) and Regs. Conn. State Agencies § 16-50j-38 et seq., Cobb Road, LLC (the “Petitioner”; or “Cobb Road”), an affiliate of Independence Solar, LLC (“Independence Solar”), respectfully requests that the Connecticut Siting Council (the “Council”) approve by declaratory ruling the Petitioner’s Project in the Town of Old Lyme, Connecticut. The Project includes the development of a 1.95 +/- megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic (PV) facility (the “Facility”) on one parcel of land in Old Lyme, Connecticut (the “Project”).

Conn. Gen. Stat. §16-50k(a) provides, in relevant part, that:

*[n]otwithstanding the provisions of this Chapter or Title 16a, the Council shall, in the exercise of its jurisdiction over the siting of generation facilities, approve by declaratory ruling... (b) the construction or location... of any customer-side distributed resources project or facility or 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 Energy and Environmental Protection...*

As described in further detail below, the Project will be a grid-side distributed resources facility, as defined in Conn. Gen. Stat. § 16-1(a)(37), under 65 MW, that complies with the air and water quality standards of the Connecticut Department of Energy and Environmental Protection (“CTDEEP”). In addition, the Project will not have a substantial adverse environmental effect in the State of Connecticut and satisfies the criteria of Conn. Gen. Stat. §16-50k(a).

### B. Project Overview

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The Project was selected by Eversource and awarded a 15-year contract to participate in the Low Emissions Renewable Energy Credit (“LREC”) program.<sup>1</sup> The Project’s output will be used to help Connecticut meet its emissions reduction targets via the State of Connecticut’s Renewable Portfolio

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<sup>1</sup> Conn. Gen. Stat. §§ 16-244(r), 16-244(s), 16-244(t) and 16-245(a) require that Eversource & UI enter into 15-year contracts to purchase renewable energy credits (RECs) from qualifying projects in Connecticut at a fixed price for 15 years. A REC is issued for each Megawatt-hour (MWh) of energy generated from certain clean or renewable sources or for each MWh of energy saved through the installation of energy efficiency measures.

Standards.<sup>2</sup> The power from the Project is expected to be sold back to Eversource via its self-generation tariff.

The Project will be located at 20-1 Short Hills Road in Old Lyme, Connecticut (the “Site”; or “Project Site”). The Site itself is a privately-owned, irregular shaped parcel that consists of approximately 120.23 acres of primarily undeveloped land. The land is transected from west to east by overhead electric distribution lines (“Eversource ROW”). A single-family residence and a small cabin are located on the northeastern and southeast corners of the property, respectively. The Site vicinity is characterized as rural, with a mix of largely undeveloped land and sparse residential development. Presently, the surrounding area of the Site is in the process of being developed for residential sub-divisions. The Town of Old Lyme supports development of the Project in this location.

Upon its completion, the Facility will occupy approximately 11.16 acres of the Site with an additional  $\pm$  1.56 acres of disturbance beyond the Facility limits, for a total of  $\pm$  12.72 acres, to enable development (“Project Area”). The Facility will be comprised of approximately 7,704 TSM-DE14H 390W photovoltaic modules (“panels”) installed at a tilt angle of 25.0 degrees; twelve (12) Solectria XGI 1500-166 inverters; one (1) pad mounted switchgear; and one (1) 2,000 kVA transformer. A ground-mounted racking system, with posts mounted on screw anchors, will be used to secure the panel arrays; while the Facility will be enclosed within a seven (7)-foot tall chain-link security fence. Electrical interconnection to existing distribution poles located within the Eversource ROW will require the installation of five (5) new utility poles. No utility poles, however, will be located within the Facility.

The Project’s layout has been developed to minimize natural resource impact and carefully consider stormwater management both during and after construction. The characteristics of this type of solar facility minimizes the need for ground disturbance to the greatest extent feasible, avoids disruption of subsurface conditions, and allows for continued use of the Project Site as habitat for compatible species.

## **2.0 Petitioner**

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Cobb Road, LLC (“Cobb Road”) is a Connecticut limited liability company, with an address at 9 Novelty Lane, Unit 9B; Essex, CT 06426. Cobb Road is an affiliate of Independence Solar, LLC, a developer and installer of turnkey commercial solar energy projects in the New England and Mid-Atlantic regions. Since

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<sup>2</sup> All electricity sold in Connecticut includes a mandatory amount of renewable energy, referred to as Connecticut’s Renewable Portfolio Standard or RPS. The utilities and licensed suppliers buy or trade RECs to meet these standards.

2007, Independence Solar has managed the development of over \$200 million of solar projects, including the largest rooftop solar array (9 MW) in North America at the Gloucester Marine Terminal in New Jersey. Independence Solar's portfolio of projects also includes a 357-kW ground-mounted solar system for Bishop's Orchards (Guilford, CT), and multiple projects between 75 kW and 3,000 kW in New England for commercial customers.

Correspondence and communications regarding this Petition should be addressed to both of the following individuals:

James P. Schwartz  
Managing Member  
Cobb Road, LLC  
9 Novelty Lane, Unit 9B  
Essex, CT 06426  
[jschwartz@independencesolar.com](mailto:jschwartz@independencesolar.com)

Lee D. Hoffman  
Pullman & Comley, LLC  
90 State House Square  
Hartford, CT 06103-3702  
[lhoffman@pullcom.com](mailto:lhoffman@pullcom.com)  
(860) 424-4315

### **3.0 Proposed Project**

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The following sections provide details regarding Project Site selection; a description of the Project Site; a description of the Project's features; plans for stormwater management; the Project's construction schedule and sequencing; operational and maintenance ("O&M") information; and, a decommissioning plan. Additional details are provided in the Environmental Assessment ("EA") report for the project, which is included as Appendix A to this Petition.

#### **3.1 Site Selection**

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The Project Site was selected based on a number of important considerations, including:

- The Site is configured such that the Project can be placed within a continuous tree buffer, thereby making the Project unobtrusive visually to the surrounding area and residences. Additionally, there are no public roads passing by or within visual range of the Site;

- The Site is bisected by an approximately 90' wide clearing for the Eversource distribution right of way. The Project will be located directly adjacent to the distribution power lines so it will in effect become an extension of the existing clearing for the electrical infrastructure;
- The Site's direct proximity to the Eversource distribution lines means that the grid infrastructure will not need to be extended to reach the Site, which makes the Site a very efficient location for adding clean energy infrastructure to benefit the local utility network;
- The Site had been slated to be developed into a residential sub-division, more specifically an extension of The Oaks development that was recently built to the south of the Site. Extensive plans and perc testing had been performed for the proposed housing lots at the Site;
- The land owner believes that the proposed solar project would be a better use of the land and will keep the remaining 120 acres of the Site in a mostly natural state. Furthermore, the solar array will generate little, if any, traffic or noise during operation. In addition, the remainder of the land will be untouched by further residential development;
- The Site's existing topography is generally level, and as such, requires minimal, if any, grading and/or disturbance;
- The Site contains no prime farmland;
- The Site is not located within 0.25 miles of a NDDDB buffer area; the nearest NDDDB buffer area is located approximately 0.86 miles away; and
- The Site most appropriately balances the land that is required to construct the Project with the least amount of impact to wetlands and/or wildlife.

In addition, several other sites were considered for this Project, but were rejected for various reasons. These sites include:

- East Windsor Site – The proposed site in East Windsor had wetlands located in close proximity to the array area. As a result, a decision was made to move on from this proposed site.
- Old Lyme Site – The proposed site in Old Lyme had limited screening options available to it. As such, the project would have been visible from abutting properties and public rights of way.
- Durham Site – Although the proposed site was acceptable from an environmental standpoint, there was a lack of availability of nearby three-phase utility power to accept output of solar facility. The Petitioner was informed that the proposed project required significant utility network upgrades to reach the site. As such, the proposed site was rejected.

While all development has an impact on the area and community, the social and environmental impacts of this Project Site are a net positive.

### 3.2 Project Site Description

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The Project Site is a privately-owned, irregular shaped parcel located at 20-1 Short Hills Road in Old Lyme, Connecticut. Regionally, the Site lies within the Eastern Coastal Ecoregion,<sup>3</sup> an area characterized by its location along the Connecticut coastline to Long Island Sound, with elevations within the region ranging from sea level to 400 +/- feet above mean sea level ("AMSL"), and metamorphic and igneous bedrock and soils developed on stratified deposits of sand, gravel and silt, glacial till and tidal marine deposits. The Site's existing topography is generally level with a slight slope down from east to west. Elevations within the Site range from approximately 230 feet AMSL on its eastern side to approximately 200 feet AMSL to the western side.

The Site consists of approximately 120.23 acres of primarily undeveloped land that is transected from west to east by an Eversource distribution line right of way ("ROW"). The majority of the Site, 83.87 +/- acres, consists of Mixed Hardwood Forest habitat. The forest within this upland habitat type is largely comprised of even-aged second growth forest with low structural diversity and strata development while understory and mid-story stratum are sparsely vegetated.

Old Field habitat encompasses approximately 5.55 acres of the Site. This habitat type occurs within the areas of the Site associated with the Eversource distribution line ROW. The habitat includes a narrow gravel access road; and vegetation within the maintained ROW (beneath the wires and around the structures) is managed as "Old Field" habitat, consisting of herbaceous species (e.g., grasses) interspersed with low woody shrubs.

Small, peripheral developed areas are also present on the Site. These areas consist of existing access roads, residential structures, edge-maintained lawn, and landscaped areas. Collectively, developed areas comprise approximately 2.05 acres of the Site. In addition, there are five (5) wetlands and one (1) vernal pool on the Site. However, the wetlands and vernal pool are outside of the planned location of the Facility, which will be centrally located on the Site.

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<sup>3</sup> Mehrhoff, Leslie, J. 1978. Rare and Endangered Vascular Plant Species in Connecticut. The New England Botanical Club, in Cooperation with the U.S. Fish and Wildlife Service.

### 3.2.1 Existing Site Land Use

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The Site is located in the Town of Old Lyme's Rural Residence (RU80) Zone. The Old Lyme Assessment Department lists the parcel as MAP ID no. 24/13, Vision ID No. 1351, and ownership is currently vested in Howard S. Tooker. Presently, a single-family residence and a small cabin are located on the northeastern and southeast corners of the property, respectively.

### 3.2.2 Surrounding Land Use

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The area surrounding the Project Site is characterized as rural, with a mix of largely undeveloped land and sparse residential development. The Old Lyme Land Trust's Lay Preserve abuts the Site to the west/northwest; and, additional open space/recreational areas are located east of the Site. The nearest residence is located approximately 750 +/- feet south of the Project Area.

Currently, the immediate surrounding parcel is in the process of being developed for residential subdivisions by a private developer.

## 3.3 Project Description

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The Project will consist of approximately 7,704 TSM-DE14H 390W solar photovoltaic panels and twelve (12) Solectria XGI 1500-166 inverters; one (1) 2,000 kVA transformer and one (1) service interconnection point. The solar panels will be installed on a ground-mounted racking system and will be positioned at a 25-degree tilt. The Facility will occupy approximately 11.16 acres of the Site, with an additional  $\pm$  1.56 acres of disturbance beyond the Facility limits, for a total of  $\pm$  12.72 acres, to enable development.

Provided in the subsections below are details relating to the Project's site access, Facility design/layout, electrical interconnection, and proposed fencing and security measures.

### 3.3.1 Site Access

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The main entrance to the Solar Facility will be located in the southeast corner of the Project Area. There is an existing gravel access drive that originates at the northern extent of the Great Oak Road cul-de-sac and extends north into the Site. This pre-existing road will be utilized to access the Site and will require no improvements. Additional on-site, 20-foot wide gravel roads will be constructed to provide access to the proposed solar PV facility. A total of 1,644 +/- feet of new gravel roads and 902 +/- feet of compacted

earth will be constructed to allow for access and maintenance of the Facility. See Figure 5, *Proposed Conditions Map* and Appendix D, *Project Plans* in the EA report.

The Site is relatively flat and minor grading is anticipated along the proposed access roads and paths. Grading is proposed along the western limits of the Project for the required stormwater management. The new access roads will be constructed according to the details provided on Drawing DN-1 of the permit plan set (Appendix D of the EA report). Subgrade will consist of an approximate 6-inch binder course comprising of rolled bank run gravel conforming to CTDOT Form 817 M.02.03 and M.02.06 Gradation A with an approximate 4-inch top course comprised of rolled bank run gravel conforming to CTDOT Form 817 M.02.03 and M.02.03 Gradation C or compacted 1 ¼ inch processed traprock mix. The proposed access paths along the north, east, and west will be compacted earth with seeding. Temporary material staging areas will be used during the approximately eleven (11)-month construction period and will be located along the eastern extents of the Project Area, as shown on the sedimentation and erosion control plan, Drawings EC-1 and EC-2 of the permit plan set (Appendix D of the EA report).

### 3.3.2 Solar Facility Design and Layout

The Facility will consist of approximately 7,704 TSM-DE14H(II) solar photovoltaic panels and twelve (12) Solectria XGI 1500-166 inverters; one (1) pad-mounted switchgear; one (1) 2,000 kVA transformer, and one (1) service interconnection point. The Facility will occupy approximately 11.16 acres of the Site, with an additional 1.56 +/- acres of disturbance beyond the Facility limits, for a total of +/- 12.72 acres.

Regarding the Facility's design, specifically, the solar panels are made to absorb incoming solar radiation and minimize reflectivity, such that only a small percentage of incidental light will be reflected off the panels. This incidental light is significantly less reflective than common building materials, such as steel, or the surface of smooth water. The panels will be tilted up toward the southern sky at a fixed angle of twenty-five (25.00) degrees, thereby further reducing reflectivity.

The leading edge of the panels will be situated approximately twenty-four (24) inches above the existing ground surface, which will provide adequate room for any accumulating snow to "sheet" off. Any production degradation due to snow build-up has already been modeled into the annual system output and performance calculations. At this time, the Petitioner does not envision requiring any "snow removal" operations; rather, the snow will be allowed to melt or slide off.

### 3.3.3 Electrical Interconnection

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The proposed Facility will interconnect to the electrical grid via an existing distribution pole located within the Eversource ROW to the south. The interconnection will include five new utility poles that will carry three phase electrical distribution wires, Project owned reclosure and air-break disconnect switch, and Eversource owned primary meter, recloser, and air-break disconnect switch. The primary meter will be the point of demarcation between the Facility and Eversource.

### 3.3.4 Fencing and Site Security

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The entire proposed Facility/Project Site, including all equipment, will be enclosed within a seven (7)-foot tall chain-link fence, consistent with all applicable codes (e.g., National Electric Code and National Electric Safety Code). There will be three (3) locked gates providing access to the Facility. Two (2) are located along the western fence line while the third, providing the main point of ingress/egress to the Facility, is located in the southwest corner of the Project Area. Locked gates will be used for emergency access and for standard operation and maintenance inspections and activities. All Town of Old Lyme emergency response personnel will be provided access codes to all on-site locks. To allow the passage of small wildlife species through and into the Project Site all fencing will be installed with a gap at the bottom of the fencing of approximately six (6) inches above the ground. See Appendix D of the EA Report– *Project Plans*.

## 3.4 Stormwater Management

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Water quality measures included in the stormwater management design will maintain water quality both during construction and after completion of the Project. Implementation of a post-construction Operation and Maintenance Plan shall sustain long-term functionality of stormwater Best Management Practices (“BMPs”) and uphold the protection of areas downgradient of the Project. The Erosion & Sedimentation (“E & S”) Control Plan shall mitigate the short-term impacts of the site improvements during construction, part of the permit plan set located in Appendix D of the EA Report– *Project Plans*.

The E&S Control Plan was created in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, and includes descriptive specifications concerning sequence of construction, land grading, topsoiling, temporary vegetative cover, permanent vegetative cover, vegetative cover selection

and mulching, and erosion control measures. Disturbed areas of the Project Site where construction activities permanently cease shall be stabilized with permanent seed no later than seven (7) days after the last construction activity. The permanent seed mix shall be in accordance with the Project specifications and plans.

Overall, the Project's design minimizes the creation of impervious surfaces; and, with the creation of several stormwater infiltration basins along the western portion of the Project Area, is adequately designed to handle stormwater runoff. Some site manipulation (i.e., cuts/fills) and regrading will be required to allow for stormwater infiltration basin development; but overall, the majority of the Project Area will use existing grades for the installation of the solar arrays.

Stormwater generated by the proposed development will be properly handled and treated in accordance with the *2004 Connecticut Stormwater Quality Manual*. Supporting stormwater management calculations, including the design of the infiltration basins, are provided in the Stormwater Management Report, which is provided under separate cover. The Project has also been designed to meet the CTDEEP's *Appendix I, Stormwater Management at Solar Array Construction Projects*.

To further safeguard resources from potential impacts during construction a Stormwater Pollution Control Plan ("SWPCP") will be prepared for the Project and included as part of the application submittal to obtain a *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities* ("General Permit") from the Connecticut Department of Energy and Environmental Protection ("CTDEEP"). The SWPCP will be implemented throughout the duration of the Project construction to minimize the impact to water resources from soil erosion and sedimentation during and after construction. The SWPCP includes monitoring requirements including regular inspection requirements and documentation of all site activities in accordance with the General Permit.

### 3.5 Construction Schedule and Phasing

Construction of the Project itself is expected to begin in the spring of 2020, however, site clearing may begin in the winter months, if the Project is fully approved and the weather permits such clearing. Initial work will include site preparation activities, such as clearing and installation of related erosion and sedimentation control measures. In late 2019 or early 2020 the ground surface will be stabilized upon completion of each area of installation; BMPs for stormwater management will stay in for the life of the Project. Site preparation and site work is anticipated to continue through Summer of 2020. Final installation of all solar facility equipment is expected in late Fall of 2020, along with interconnection,

testing, commissioning, and final site stabilization. Expected construction hours are Monday through Saturday between the hours of 7:00 AM and 6:00 PM. If Sunday work-days are required, the construction hours will be between the hours of 9:00 AM to 5:00 PM. All Federal holidays will be observed. A construction schedule is provided in Appendix E of the EA report (which is attached as Appendix A of the Petition).

A Project construction health and safety plan, addressing site specific concerns as well as those associated with the surrounding land uses, will be prepared prior to construction.

### 3.6 Operation and Maintenance

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Upon commissioning of the Facility, no on-site staff/personnel will be required for ongoing operations since the solar PV system will be automated. Ongoing site maintenance activities will occur regularly to ensure proper Facility operations, on-site and public safety, and prevent shading impacts to the Facility. Cobb Road is based in Old Lyme, Connecticut, and will use personnel that will be responsible for all required Project monitoring and maintenance activities. Facility monitoring is performed continually via an online system to confirm proper performance and operation, including the use of remote telemetry for energy metering.

The Project Area will be thoroughly inspected by Cobb Road O & M personnel, at a designated frequency, for evaluation of potential issues associated with security, safety, and environmental protection. Routine, general inspection tasks include: verifying that Safety and Identification labeling is present and legible; inspecting and confirming Site access/egress locations are free of obstructions and hazards; checking security means and installation methods; verifying equipment access lanes are free of obstructions and hazards; and, inspecting for changes in environmental conditions, such as nearby construction activity, agricultural activities, water table changes, acts of vandalism, and shading.

In addition to general inspections, Cobb Road O & M personnel will perform inspections of mechanical systems (e.g., racking, modules); the DC and AC electrical system (e.g., DC collection panels, AC collection panels, safety disconnect switches); inverters; the stormwater management system (e.g., where applicable, drainage swales, basins); and the data acquisition system. Issues found during inspection visits, and deemed readily repairable, will be promptly addressed.

### 3.7 Decommissioning

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Decommissioning consists of the physical removal of all Facility components, such as solar arrays, equipment (e.g., inverters, and transformers), structures, security barriers and fencing, Facility signage and transmission lines from the Site. In addition, Cobb Road will dispose of all solid and/or hazardous waste in accordance with all applicable regulations. Decommissioning will also include restoration of the Site. Cobb Road will stabilize and re-vegetate the Site as necessary to minimize erosion. If desired, Cobb Road would seek Council approval to leave landscaping or specified below-grade foundations in order to minimize erosion and Site disturbance.

When operation of the Project has been discontinued, or the Facility has been decommissioned, abandoned or has reached the end of its useful life, Cobb Road plans to remove the Facility within 90 days of discontinued operations. Cobb Road will notify the Council and appropriate Town officials of the proposed date of discontinued operations and will provide plans for the Facility's removal. In the event of major damage, Cobb Road plans to initiate repairs as soon as is practical, depending on the scope of such damage.

Cobb Road has provided a fully inclusive estimate of the costs associated with the Facility's removal in its Decommissioning Plan, which is included as Appendix B. This amount includes an escalator for calculating increased removal costs due to inflation.

Key assumptions in estimating the Project's decommissioning costs include the fact that fencing, electrical cabinetry, solar racks, solar panels, wiring and all other equipment are one hundred percent (100%) recyclable; therefore, the primary cost of decommissioning the Project is the labor to dismantle and load as well as the cost of trucking. The concrete pads will be broken up at the Site and hauled to a nearby facility where such remains will be accepted, most likely without charge or for a minimal charge. Most items from the array will be recycled, and many of these will have a salvage value of 20 years.

## 4.0 Project Benefits and Needs

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### 4.1 Project Benefits

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The Project will provide the state's electrical system with additional generating capacity that will meet demand using renewable energy and contribute to grid stability. The Project was selected as part of the LREC/ZREC Program and was found to be consistent with Connecticut's Comprehensive Energy

Strategy (“CES”). This version of the CES sets forth clear goals for increasing the use of renewable energy as a part of the state’s power generation portfolio:

*The Global Warming Solutions Act (Connecticut Public Act 08-98) sets a goal of reducing greenhouse gas emissions by 80% by 2050. Connecticut’s Renewable Portfolio Standard (RPS) requires that 20% of generation serving state customers be from renewables by 2020. Meeting the 2020 RPS goal will require the development of 6,196 gigawatt-hours, or nearly 3 gigawatts of low-carbon supply – more than 25 times the amount of power generated by Class I resources (i.e., solar power, wind power, and fuel cells) within Connecticut in 2011.<sup>4</sup>*

The Project will provide clean, renewable solar-powered electricity that will support achieving the state’s legislatively mandated obligations under the Renewable Portfolio Standards (“RPS”), as well as its other energy policies, including the goal to “develop and utilize renewable energy resources, such as solar and wind energy, to the maximum practical extent.”<sup>5</sup> The construction of the Project becomes even more important in light of the 2018 CES’s aspirations for even greater greenhouse gas emission reductions through the promotion of grid-scale renewable energy.

Selection of this Project under the LREC/ZREC Program affirms the Project’s consistency with the state’s energy plans and objectives. In addition to the direct contribution the Project will make to increase the use of renewable energy, additional reduction of greenhouse gases and criteria air emissions will be associated with the displacement of older, less efficient fossil fuel generation.

#### 4.2 Project Needs

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Connecticut has committed to develop its renewable energy market and mitigate the negative environmental impacts associated with traditional electric power generation. In so doing, it has set aggressive targets to reduce greenhouse gas (“GHG”) emissions and to increase the deployment of Class I renewable energy.

The Global Warming Solutions Act (“GWSA”), for example, requires the state to reduce its total GHG emissions to 10 percent below 1990 levels by 2020, to 45 percent below 2001 levels by 2030, and to 80 percent below 2001 levels by 2050. Further, in April 2019, Governor Lamont signed an executive order directing state office buildings and vehicle fleets to become greener and more energy efficient. This initiative calls for state operations to achieve a 70 percent reduction in GHG emissions from 2016 levels by 2040 and net zero GHG emissions by 2050.

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<sup>4</sup> 2013 CES, at 76 (footnotes omitted).

<sup>5</sup> CGS §16a-35k.

Additionally, Connecticut's RPS policies require utilities to purchase an increasing percentage of electric power from Class I renewables. Under current law, utilities must obtain at least 21 percent of their retail loads from Class I renewable energy sources by January 1, 2020 and 40 percent by January 1, 2030. These levels of required renewable energy sourcing will likely increase in the ensuing years if the recommendations of Governor Lamont's Energy Policy Committee are followed. That Committee recommends revising the Class I RPS goals to 35 percent by 2025, 50 percent by 2030, 80 percent by 2040 and 100 percent by 2050.

These policies significantly increase demand for new, zero-emitting renewables in the state. Development of the Project would not only help satisfy this demand, but also would assist the state in meeting the GWSA requirements and the RPS goals.

## **5.0 State and Local Outreach/Input**

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For the past eighteen months, the Petitioner has worked closely with Town of Old Lyme officials to publicize the Project, solicit input and feedback on Project elements, and develop a structured tax agreement with the Town. Petitioner met with Old Lyme First Selectwoman, Bonnie Reemsnyder, on July 29, 2019 to discuss the project. The Town did not raise any concerns at the meeting and was interested to review the petition when it was filed with the Siting Council. Petitioner has also had initial conversations with the Old Lyme Fire Department Chief to review the project and answer their questions. Moreover, as indicated in Appendix C. Petitioner has reached out to all relevant state and local officials, as well as abutters to the Project. Copies of the relevant letter and return receipts is included in Appendix C.

## **6.0 Potential Environmental Effects/Impacts**

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This section will analyze and discuss the Project's potential effects, as they relate to the community, general public, the environment and wildlife. While all development has some level of impact on the surrounding area and community, it is the Petitioner's opinion that the social and environmental impacts of this Project are a net positive.

## 6.1 Site/Community Setting and Scenic Character and Values

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The Site is not located near a State Designated Scenic Road or scenic area. The nearest recreational area is The Old Lyme Land Trust's Lay Preserve which abuts the Site to the west/northwest. Additional open space/recreational areas are located east of the Site. There are additional recreational areas located within the Town of Old Lyme, but not proximate to the Site.

## 6.2 Public Health and Safety

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The Project is not expected to create any impact with regard to public health or safety issues. The Project will meet or exceed all local, state, national and industry health and safety standards and requirements.

During construction and post-construction operations and maintenance, workers and personnel will follow all health and safety standards applicable to solar energy generating facilities. In addition, a Site-specific construction health and safety plan will be developed prior to initiation of any on-site Project-related tasks. During the construction phase of development, all contractors, sub-contractors and personnel will be appropriately trained and briefed on any potential Site health and safety issues. There will be a designated construction manager and/or Site safety officer or representative present at all times during construction, and such individual will be responsible for overseeing/implementing the Site construction health and safety plan.

Due to the Site's location, the proposed Project will have a limited, temporary impact on local traffic patterns. Traffic relative to the Site includes standard construction trucks, small earth moving equipment, and all terrain fork lift equipment. Vehicle trips would be relative to scheduled deliveries of the major materials, such as solar racking, solar panels, electrical equipment to serve the Facility, and fencing materials to be installed around the perimeter. Construction activity and associated traffic will generally take place from 7:00 AM to 6:00 PM daily, Monday through Fridays. After construction is complete and the Facility (unstaffed) is operable, traffic at the Site will be minimal.

Environmental items considered "chemicals" that might be used on the Site would include PVC glue for use with electrical conduit installations and carbon-based fuels for vehicles and equipment. It is anticipated that there will be less than 5 gallons of PVC glues and less than 40 gallons of fuel stored on-site. All flammable liquids will be kept in code compliant cabinets and containers. Spill kits will be in all

vehicles and equipment on-site and daily monitoring of chemical usage will be managed to ensure compliance to requirements. No risk of release to the environment is anticipated.

## 6.3 Noise

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### 6.3.1 Noise Level Guidance and Regulatory Requirements

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Applicable regulations pertaining to potential Project-related noise are provided in Connecticut regulations for the Control of Noise established by the CTDEEP at Conn. Gen. Stat. § 22a-69 (the “Regulations”) and the Town of Old Lyme’s Noise Ordinance (the “local ordinance”), respectively.

The Town of Old Lyme’s Noise Standards for Daytime Residential Noise District Receptors (Article IV, § 95-14 C [1(a)]) is 55 dBA. The Noise Standards for Nighttime Residential District Receptors (Article IV, § 95-15 C[1(d)]) is 45 dBA. Notably, the local ordinance provides an exemption for noise generated by transmission facilities:

*[t]his chapter shall apply uniformly to the creation and maintenance of all noises in the Town of Old Lyme except for the following uses and activities... (S) [n]oise generated by transmission facilities, distribution facilities and substations of public utilities providing electrical power, telephone, cable television or other similar services and located on property which is not owned by the public utility and which may or may not be within utility easements.<sup>6</sup>*

The CTDEEP regulations applicable to the proposed Project require the Facility to meet the following sound levels: 61 dBA at the nearest residential property during the day (when the Project would be generating electricity); 51 dBA at the nearest residential property at night (when some accessory equipment might still be in operation); 66 dBA at the nearest commercial property; and 70 dBA at the nearest industrial property. The Regulations also account for impulse and other types of noise. Construction noise is exempt from the Regulations.

### 6.3.2 Proposed Project-generated Noise

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Due to the nature of the use, facility design, required equipment, and distance from potential noise receptors, the proposed Project is expected to have no adverse noise-related impact on the surrounding area. Presently, the surrounding area is characterized as rural, with a mix of largely undeveloped land and sparse residential development.

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<sup>6</sup> The Town of Old Lyme Ordinance, Chapter 95 (“Noise”), Article I (“General Provisions”), Section 3 (“Applicability”).

Based on information provided by specified equipment manufacturers, the selected inverters and transformer for the proposed Facility will typically generate approximately 56 dBA and 61 dBA, respectively<sup>7</sup>. The closest property line relative to the nearest proposed noise generating equipment (transformer) is approximately 138 feet to the southeast.

Sound studies have shown that with distance comes reduction while also indicating that a 3 dBA increase in sound level is barely noticeable to the human ear. In fact, you have to raise a sound level by 5 dBA before most listeners report a noticeable or significant change. Further, it takes a 10dBA increase before the average listener hears double the sound.<sup>8</sup> While the inverters are inactive at night the transformer is not. Due to the proposed separation distance and information associated with the aforementioned sound studies, noise levels at nearby property lines and/or residences are not expected to change from the conditions as they currently exist.

All other selected system equipment will typically generate lower levels of noise than that of the inverters or transformers. As such, the Project will meet the applicable regulations pertaining to noise.

#### 6.4 Air Quality

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Due to the nature of the proposed Project as a solar energy generating facility, no air emissions will be generated during operations and, therefore, an air permit will not be required. The construction of the Project will result in elimination of 2,788 +/- metric tons of carbon dioxide ("CO2") equivalent emissions based on 3,942 +/- MW-hours of electricity generated within the first year of operation. This amounts to taking approximately 592 carbon-based fuel operated, passenger vehicles off the road and will offset 321 +/- times as much carbon in a year as the 12 acres of forest that is currently in place within the Project.

Temporary, potential, construction-related mobile source emissions will include those associated with construction vehicles and equipment. Any potential air quality impacts related to construction activities can be considered *de minimis*. Such emissions will, nonetheless, be mitigated using available measures, including, *inter alia*, limiting idling times of equipment; proper maintenance of all vehicles and equipment; and, watering/spraying to minimize dust and particulate releases. In addition, all on-site and off-road equipment will meet the latest standards for diesel emissions, as prescribed by the United States

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<sup>7</sup> Inverter noise levels are measured at a distance of three (3) meters away while transformer noise levels are taken from beside the unit itself.

<sup>8</sup> ABD Engineering and Design, "Perception Vs. Reality: What Our Ears Hear"; December 12, 2008.

Environmental Protection Agency (“USEPA”) and will consider reducing exhaust emissions by utilizing effective controls.

## 6.5 Environmental Site Assessment/Conditions

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All-Points Technology Corporation, P.C. (“APT”) prepared an Environmental Assessment report for the Project, which is summarized herein. A copy of the EA report has been included with this Petition as Appendix A.

## 6.6 Site Soils and Geology

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### 6.6.1 Existing Site Soils and Geology

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Surficial materials on and within the vicinity of the Site are comprised of thin and thick deposits of glacial till; while soils located on and within the vicinity of the Site are identified as Paxton and Montauk fine sandy loams (three (3) to eight (8) percent slopes, very stony) and Charlton-Chatfield complex (zero (0) to fifteen (15) percent slopes, very rocky). Paxton and Montauk fine sandy loams are well-drained soils consisting of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Charlton-Chatfield complex are well-drained soils consisting of coarse-loamy melt-out till derived from granite, gneiss, and/or schist.

Bedrock geology beneath the Site is identified as Plainfield Formation plus Potter Hill Granite Gneiss plus Narragansett Pier Granite. Plainfield Formation is described as an interlayered light-gray, thin-bedded quartzite, in places with feldspar, mica, graphite, or pyrite, light to medium-gray gneiss composed of quartz, oligoclase, and biotite (rarely microcline), medium to dark-gray schist composed of quartz, oligoclase, biotite, sillimanite, and garnet, dark-gray or green gneiss composed of plagioclase, quartz, biotite, and hornblende (commonly with diopside), amphibolite, diopside-bearing quartzite, and calc-silicate rock.

Potter Hill Granite Gneiss is described as a light-pink to gray, tan-weathering, fine to medium-grained, rarely porphyritic, well-foliated (not lineated) granitic gneiss, composed of microcline, quartz, oligoclase (or albite), biotite, and magnetite, minor muscovite, and local garnet.

Narragansett Pier Granite is described as a pink to red, medium to coarse-grained (commonly pegmatitic), generally massive (not gneissic) granite, composed of microcline, oligoclase, quartz, and biotite, and accessory muscovite and magnetite. Considerable associated pegmatite.

According to the Connecticut Environmental Conditions Online Resource Guide, there are currently no prime, unique, or farmlands of statewide or local importance located on the Site.

## 6.7 Historic and Archaeological Resources

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### 6.7.1 Overview of Studies and Field Studies

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#### *Phase 1A Cultural Resources Assessment Survey*

Heritage Consultants, LLC (“Heritage”) performed a Phase IA Cultural Resources Assessment Survey (“Phase 1A CRAS”) at the Project Site in accordance with the *Environmental Review Primer for Connecticut’s Archaeological Resources* (Poirier 1987) promulgated by the Connecticut Historic Commission, State Historic Preservation Office.

The Phase 1A CRAS, provided in Appendix C of the EA report, consisted of the completion of the following tasks: 1) a contextual overview of the region’s prehistory, history, and natural setting (e.g., soils, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously completed cultural resources surveys and previously recorded cultural resources in the region encompassing the study area; 3) a review of readily available historic maps and aerial imagery depicting the study area in order to identify potential historic resources and/or areas of past disturbance; 4) pedestrian survey and photo-documentation of the Project parcel to determine its archaeological sensitivity; and, 5) preparation of the current Phase IA cultural resources assessment survey report.

#### *Phase 1A Cultural 1B Assessment Survey*

Heritage also performed a Phase 1B Cultural Resources Reconnaissance Survey (“Phase 1B Survey”) at the Project Site in accordance with the *Environmental Review Primer for Connecticut’s Archaeological Resources* (Poirier 1987) promulgated by the Connecticut Historic Commission, State Historic Preservation Office.

The Phase 1B Survey, provided in Appendix C of the EA report, was completed utilizing a pedestrian survey, systematic shovel testing, and photo-documentation of all moderate/high sensitivity areas. The Phase 1B Survey was designed to identify potential prehistoric and historic cultural resources located within the Project Area. Fieldwork for the Project was comprehensive in nature; planning considered the distribution of previously recorded archaeological sites located near the Project Site and the Project Area, as well as an assessment of the natural qualities of the Project item locations. This undertaking entailed pedestrian survey, systematic subsurface testing, detailed mapping, and photo-documentation.

The shovel testing regime included the excavation of 171 shovel tests along parallel survey transects throughout the moderate/high archaeologically sensitive portions of the Project Area. The shovel tests were situated at 15 m (49.2 ft) intervals along parallel survey transects spaced 15 m (49.2 ft) apart. Each shovel test measured 50 x 50 cm (19.7 x 19.7 in) in size and each was excavated to the glacially derived C-Horizon or until immovable objects (e.g., tree roots, boulders, etc.) were encountered. Each shovel test was excavated in 10 cm (3.9 in) arbitrary levels within natural strata, and the fill from each level was screened separately. All shovel test fill was screened through 0.635 cm (0.25 in) hardware cloth and examined visually for cultural material. Soil characteristics were recorded using Munsell Soil Color Charts and standard soils nomenclature. Each shovel test was backfilled immediately upon completion of the archeological recording.

#### 6.7.2 Findings

To summarize, no impacts to significant cultural resources are anticipated by construction of the proposed Facility. Thus, no additional archaeological examination of this Project item is recommended. The results of the Phase 1A CRAS and Phase 1B Survey are briefed below.

##### *Phase 1A Cultural Resources Assessment Survey*

A review of historic maps and aerial images of the Project Area, examination of files maintained by the Connecticut State Historic Preservation Office, and a pedestrian survey of the development area, resulted in the identification of two (2) previously identified archeological sites in the vicinity of the Project Area. Both sites consist of prehistoric rock shelters; and their presence demonstrates archeological resources exist in the region where the Project Area is so situated. In addition, the pedestrian survey determined that approximately seven (7) acres of land within the eastern portion of the Project Area have the potential to contain intact archaeological deposits, while the remaining  $\pm$  4.7 acres located within the western portion of the Project Area were considered to possess a no/low sensitivity for containing intact archaeological deposits.

##### *Phase 1A Cultural 1B Assessment Survey*

The shovel testing regime resulted in the recovery of prehistoric artifacts from fourteen (14) of the excavated shovel tests. Laboratory analysis of the collected items indicated that they all represented waste from stone tool manufacturing, including flakes and pieces of shatter. No temporally diagnostic artifacts

or cultural features were identified during the Phase 1B Survey, which suggests that the collected items represent a very short-term occupation dating from an unknown prehistoric period. Because the excavated areas did not produce evidence of a substantial number of artifacts, temporally diagnostic materials, and/or cultural features, the Project Area was assessed as lacking in research potential. Therefore, the excavated areas were assessed as ineligible for listing on the National Register of Historic Places; and no additional archaeological examination of these areas or the remainder of the Project Area is recommended prior to construction of the proposed Project.

Copies of the *Phase 1A and 1B Cultural Resources Assessment and Reconnaissance Survey Reports* and the responses of the SHPO thereto are included in Appendix C of the EA report.

## 6.8 Wetlands and Watercourses

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### 6.8.1 Wetlands Delineation and Methodology

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On March 21, 2019, a Senior Wetland Scientist (“SWS”) with APT visited the Site and investigated areas generally within 200 feet of the proposed solar facility (the “study area”) for wetland and watercourse resources. During this visit, the SWS verified the existence of wetlands in the study area; and noted the respective boundaries and edaphic, hydrologic, and biologic characteristics of each wetland. The SWS employed direct observation techniques, as well as dip nets, to evaluate aquatic biota within all wetland environments containing surface water.

APT surveyed all federal and state jurisdictional wetland resources located in the survey area in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0) (Environmental Laboratory, 2012) and the Connecticut Inland Wetlands and Watercourses Regulations. The federal delineation methodology uses a three (3)-parameter approach, where an area needs to have the presence of hydric soils, wetland surface hydrology, and a dominance of hydrophytic vegetation to be deemed a wetland. Connecticut defines its “inland wetlands” based on the presence of very poorly drained, alluvial, and/or floodplain soils. APT marked wetland boundaries in the field with a numeric designation (i.e., Wetland 1, Wetland 2, Wetland 3, etc.), and then surveyed the flag points by using GPS equipment. Data was then collected on each wetland, pursuant to the National Wetland Inventory classification hierarchy described by Cowardin et al. (1979).

## 6.8.2 Existing Wetlands and Watercourses

Five (5) wetlands (Wetlands 1 through 5) were identified on the Project Site; not one of them, however, is located within the Project Area.

**Wetland 1** is located approximately 214 feet east of the Project Area and consists of a very small (approximately 400 +/- sf.) isolated anthropogenic (man-made) feature that formed when a dug borrow pit intercepted the seasonal high groundwater table. As a result, this dug pit presently sustains seasonal wetland hydrology and supports a predominance of hydrophytes (wetland plants). The hydrology associated with Wetland 1 is classified as “temporarily flooded,” which refers to a wetland resource that is flooded for brief periods of time during the growing season but is dry for the majority of the year (as the water table is otherwise well below the ground surface). Due to the small size of the wetland and its limited hydroperiod (i.e., little to no standing water), its ability to support wetland-dependent wildlife is severely limited. It offers no breeding habitat for species that require standing water (e.g., vernal pool species) or groundwater discharge (e.g., stream salamanders). Vegetation within Wetland 1 consists of a scrub-shrub community; dominant plant species include willow (*Salix sp.*), tussock sedge (*Carex stricta*), rushes, broadleaf meadowsweet (*Spirea latifolia*) and the invasive, non-native multiflora rose.

**Wetland 2**, located approximately 379 feet east of the Project Area, is a headwater wetland system that drains to the east via an earthen outlet and eventually flows to the Threemile River. Within this wetland lies a man-made pond. The hydrology associated with Wetland 2 ranges from “seasonally saturated,” along the wetland fringe, to “permanently flooded” within the pond basin. The central (deepest) portions of the pond exceed six (6) feet. The pond basin is largely unvegetated. Shallow backwater areas adjacent to the pond contain some shrub islands dominated by highbush blueberry, sweet pepperbush (*Clethra alnifolia*) and winterberry (*Ilex verticillata*). Tree cover consists of red maple, swamp white oak (*Quercus bicolor*), green ash (*Fraxinus pennsylvanica*) and tupelo (*Nyssa sylvatica*). Ground cover is sparse due to the deep shade cast by a shrub layer of mountain laurel.

**Wetland 3** is located 396 +/- feet southwest of the Project Area. It is a hillside seep wetland that extends northward into the Eversource ROW. This wetland system extends further south off the Site and eventually drains west into a larger riparian forested wetland system that is associated with an unnamed perennial stream (designated herein as “Wetland 5”). Vegetation consists of a scrub-shrub community dominated by non-native multiflora rose, highbush blueberry, green bulrush (*Scirpus atrovirens*), soft rush (*Juncus effuses*), sensitive fern (*Onoclea sensibilis*) and brambles (*Rubus spp.*).

**Wetland 4**, located 104 +/- feet west of the Project Area, is a shallow depressional wetland that extends northward off the Project Site. A topographic swale extends south/southwest from the southern end of this wetland, eventually making its way to Wetland 5. That said, however, there is no defined bank and channel within this topographic swale feature; and there is no evidence of any surface flow from Wetland 4 into this feature. Therefore, it does not satisfy the Connecticut Inland Wetlands and Watercourses Act definition as an “intermittent watercourse” and as such, is not a jurisdictional resource. Vegetation within this wetland consists of a forested community dominated by red maple, yellow birch (*Betula alleghaniensis*) and winterberry. Ground cover is sparse due to the deep shade cast by the forest overstory.

**Wetland 5** is located over 500 feet west of the Project Area. It is a large, forested wetland system with an interior unnamed perennial watercourse that flows north. Bordering forested wetlands are characterized by hillside seep systems that drain westward, providing base flow to the perennial stream. Vegetation consists of a forested community dominated by red maple, yellow birch, highbush blueberry, sweet pepperbush, winterberry and skunk cabbage (*Symplocarpus foetidus*).

### 6.8.3 Vernal Pools

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The majority of the identified wetland areas are broad, forested, low-gradient drainage corridors that lack sufficient geomorphology to provide pool habitat. However, a single embedded vernal pool was identified within the man-made pond in Wetland 2. Two (2) indicator species were confirmed breeding in the pool: wood frog (*Rana sylvatica*) and spotted salamander (*Ambystoma maculatum*). These two species are common statewide, as well as within the southeast coastal region.

Egg mass counts were conducted in order to quantitatively assess breeding productivity: a total of 926 spotted salamander and sixteen (16) wood frog egg masses were observed. Other species observed in the vernal pool (and surrounding wetland) include red-spotted newt (*Notophthalmus viridescens*), gray tree frog (*Hyla versicolor*), green frog (*Rana clamitans*), wood duck (*Aix sponsa*) and crayfish.

### 6.8.4 Proposed Project

#### A. Wetlands

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No wetlands or watercourses will be directly impacted by the Project. The Project has been designed to avoid encroaching closer than 100 feet to any nearby wetland resource. All clearing and grading limits for the Facility’s infrastructure (e.g., the solar arrays, associated equipment, storm water basins, access road,

etc.) will maintain a minimum setback of approximately 100 feet to all wetland areas identified above. The nearest distances of the Project Area and Facility relative to the five (5) wetland features are summarized in Table 1 below.

Table 1: Wetland Buffer Distances to Project

Wetland ID	Distance to Project Area (feet)	Distance to Facility (feet)
Wetland 1	±214	+235
Wetland 2	±379	+431
Wetland 3	±396	±466
Wetland 4	±104	±194
Wetland 5	±511	±597

Potential short-term temporary impacts associated with the Project's construction activities will be minimized by the proposed sedimentation and erosion controls, which will be installed and maintained during construction activities in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*. A phased sedimentation and erosion control plan will be implemented, consisting of four (4) temporary sediment traps along the western side of the Project Area. These measures will properly protect nearby downgradient wetland resources (i.e., Wetlands 4 and 5).

Potential long-term secondary impacts to wetland resources associated with the operation of this Facility are minimized by the following factors: 1) the Facility will be unstaffed (thereby generating negligible traffic); 2) gravel and compacted earth roads reduce the creation of impervious surfaces; 3) treating the majority of the ground beneath the solar arrays with native grass/vegetation provides opportunity for surface water to infiltrate or slow prior to entering the four (4) grass lined infiltration basins; and, 5) any stormwater runoff that enters the basins will be infiltrated, with the larger storm events discharging through the basins' overflow weir and onto the surrounding upland forest floor (where a minimum 100-foot buffer has been established to the nearest wetland resources). The infiltration basins have been designed to treat 100 percent of the Water Quality Volume. Stormwater generated by the proposed development will be properly handled and treated in accordance with the *2004 Connecticut Stormwater Quality Manual*. Supporting stormwater management calculations, including the design of the infiltration basins, are provided in the Stormwater Management Report, which is provided in Appendix D.

## B. Vernal Pool

Construction and operation of the Facility would not result in a physical impact to Vernal Pool 1 (“VP1”) located within Wetland 2. It is widely documented that vernal pool dependent amphibians are not solely dependent upon the actual vernal pool habitat for breeding (i.e., egg and larval development). Instead, they require surrounding upland forest habitat for most of their adult lives. Accepted studies recommend protection of adjacent habitats up to 750 feet from the vernal pool edge for obligate pool-breeding amphibians.<sup>9</sup>

In order to evaluate potential impacts to VP1 and its surrounding upland habitat, the resource was assessed using methodology developed by Calhoun and Klemens (2002), in combination with the US Army Corps of Engineers New England District’s *Vernal Pool Best Management Practices (BMPs)* (January 2015).<sup>10</sup> Collectively, these methodologies assess vernal pool ecological significance based on two (2) parameters: 1) biological value of the vernal pool and, 2) conditions of the critical terrestrial habitat. The biological rating is based on the presence of state-listed species and the abundance and diversity of vernal pool indicator species. The terrestrial habitat is assessed based on the integrity of the vernal pool envelope (“VPE” - within 100 feet of the pool’s edge) and the critical terrestrial habitat (“CTH” - within 100-750 feet of the pool’s edge). Based on these observations, intact forest represents the highest value habitat within both of these conservation zones to support breeding opportunities for the various obligate vernal pool indicator species that rely on forested habitat (e.g., wood frog and spotted salamander). Based on the observations of two (2) obligate vernal pool species breeding, VP1 meets the biological criteria for a Tier 1 pool.

The landscape condition of the VP1 was then evaluated to determine the existing and proposed quality of the terrestrial (non-breeding) habitat. Vernal pools with 25% or less developed areas in the CTH are identified as having “high priority” for maintaining this development percentage (including, site clearing, grading and construction).

The results of the landscape analysis show that, due to the relatively small amount of disturbance associated with the Project, the proposed development would not result in a degradation of the existing

<sup>9</sup> Calhoun, A.J.K. and M.W. Klemens. 2002. Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. WCS/MCA Technical Paper No. 5

<sup>10</sup> <https://www.nae.usace.army.mil/Portals/74/docs/regulatory/VernalPools/VPBMPsJan2015.pdf>

tier rating or terrestrial habitat integrity of VP1. The VPE (total area is 1.64 acres) will not be impacted by the proposed development and is approximately 307 feet from any and all Project-related activities.

The total area of the CTH ( $\pm 45.55$  acres) associated with the vernal pool includes a combination of Mixed Hardwood Forest ( $\pm 37.66$  acres), forested wetlands ( $\pm 4.56$  acres), transitional Old Field (ROW) habitat ( $\pm 3.14$  acres), and developed areas ( $\pm 0.19$  acres). VP1's CTH has  $\pm 1\%$  development under existing conditions, resulting in the 75% non-development criterion tipping point not being exceeded (99% non-development).

The proposed Facility and its entrance<sup>11</sup> are located within a portion of the CTH and would result in  $\pm 6.1$  acres of additional development. This represents an increase of  $\pm 14\%$  development within the CTH associated with VP1 and maintains a total area of development well below the 25% threshold. Therefore, the proposed increase in development will not result in a degradation of the tier status of this vernal pool. The loss of 6.4 acres, proposed along the western periphery of the CTH, consists of Mixed Hardwood Forest ( $\pm 6.28$  acres) and Old Field (ROW) ( $\pm 0.2$  acres). Please refer to Figure 6 of the EA report, *Vernal Pool Analysis Map*, for a table that identifies area calculations for both the existing and proposed conditions of the vernal pool.

The proposed habitat loss within the CTH is not anticipated to result in a significant negative impact on the obligate vernal pool species populations utilizing VP1. Mixed Hardwood Forest habitat occurs within a majority of the CTH and beyond, in all cardinal directions, with the exception of the existing Old Field habitat (associated with the maintained ROW), which generally bisects the CTH, just south of VP1. Due to the extensive amount of suitable, supporting upland habitat surrounding VP1, it is reasonable to assume that the proposed development within the Project Area will not eliminate a substantial portion of this habitat.

Further, as part of the post-construction management plan, the ground cover within the transition zones from the newly Developed Facility to the existing Mixed Hardwood Forest and Old Field (ROW) habitats to the east and south will be re-vegetated with New England Showy Wildflower Mix. As there are no physical barriers to amphibian migration proposed,<sup>12</sup> it is expected that migration across the Project Area can still occur unimpeded.

Potential short-term impacts to the herpetofauna associated with the VP1 habitat (e.g., migrating individuals entering the Project Area during construction) will be minimized by proper installation and

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<sup>11</sup> The proposed entrance, originating off of an existing access road, is  $\pm 465'$  at its nearest distance to VP1).

<sup>12</sup> The proposed chain link fence surrounding the arrays will be raised 6 inches to accommodate migration.

maintenance of sedimentation and erosion controls in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*. Implementation of those BMPs, combined with the implementation of the Wetland and Vernal Pool Protection Plan during construction, will provide adequate measures to avoid/minimize short-term impacts to herpetofauna.

## 6.9 Wildlife and Habitat

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On behalf of Cobb Road, APT performed an evaluation with respect to potential federally- and state-listed, threatened, endangered or Special Concern species in order to determine if the proposed Project would result in a potential adverse effect to listed species.

The federal consultation was completed in accordance with §§ 7 and 10 of the Endangered Species Act through the U.S. Fish and Wildlife Service's Information, Planning, and Conservation System ("IPaC"). The state consultation was completed utilizing the CTDEEP Wildlife Division Natural Diversity Data Base ("NDDB") maps. These maps represent approximate locations of (i) endangered, threatened and Special Concern species and, (ii) significant natural communities in Connecticut. As such, APT reviewed the most recent CTDEEP NDDB Mapping (June 2019) to determine if any such species or habitats are present within the vicinity of the Site.

### 6.9.1 Rare, Threatened and Endangered Plants and Wildlife

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#### *Federal Search Results*

Based on the results of the IPaC review, one federally-listed threatened species is known to occur in the vicinity of the Site: the northern long-eared bat ("NLEB"; *Myotis septentrionalis*). However, consultation with the CTDEEP NDDB revealed that the proposed Facility is not within 150 feet of any known, occupied maternity roost tree; nor is the Facility within 0.25 miles of any known NLEB hibernaculum. The nearest NLEB habitat resource to the proposed Facility is located in North Branford, approximately 24 miles to the west of the Site. As such, the Project is not anticipated to have any impact on the NLEB.

#### *State Search Results*

A review of the CTDEEP NDDB mapping reveals that there are no threatened or endangered species, species of Special Concern or critical habitats present on, or proximate to, the Site. The nearest buffer area is located approximately 0.86 miles to the east of the Site. As such, based upon both CTDEEP NDDB and the CT Siting Council screening criteria, consultation with the CTDEEP NDDB regarding this Project is not required. Therefore, the Project is not anticipated to have an adverse effect on rare species.

A graphic showing the nearest NDDDB buffer area to the Project is included in Appendix G of the EA report, *USFWS-NDDDB Compliance Statement*.

### 6.9.2 Potential Impacts and Mitigation

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The Facility will be located within a forested area that will require some clearing, which may, in turn, impact potential habitat for the NLEB. Although the Project is not anticipated to have any effect on the NLEB directly, the Petitioner would consider implementing the following recommended measures for NLEB conservation, as encouraged in the April 29, 2016 FCC Public Notice:

- Conduct tree removal activities outside of the NLEB pup season (i.e., June 1<sup>st</sup> – July 31<sup>st</sup>) and active season (i.e., April 1<sup>st</sup> – October 31<sup>st</sup>) to minimize impacts to pups at roosts not yet identified;
- Maintain dead trees (snags) and large trees, when possible;
- Utilize herbicides and pesticides only when necessary; and in those moments of necessity, utilizing spot treatment as opposed to aerial application; and,
- Minimize exterior lighting, opting for down-shielded, motion-senor security lights instead of constant illumination.

Moreover, the following construction protocol will be followed to minimize potential impacts to wildlife encountered in the Project Area, more generally:

- Exclusionary practices will be used to prevent access into disturbance areas. These measures will be installed at the limits of disturbance as shown on the plans;
- Exclusionary fencing will be at least 20 inches tall and must be secured to and remain in contact with the ground and be regularly maintained (at least bi-weekly and after major weather events) to secure any gaps or openings at ground level that may let animals pass through;
- Staging and storage of equipment and supplies will be confined to areas within the limits of exclusionary fencing;
- All construction personnel working within the habitat must be apprised of the species description and the possible presence of a listed species and instructed to relocate them out of harm's way;
- Any protected reptile and/or amphibian species encountered within the immediate work area shall be carefully moved to an adjacent area outside of the excluded area, and fencing should be inspected to identify and remove the access point; the animal should be left on Site;
- In areas where silt fence is used for exclusion, it shall be removed as soon as the area is stable, and disturbance is finished to allow for potential reptile and amphibian passage to resume.

- The Contractor will search the work area each morning prior to any work being done.
- Should a protected species be encountered during construction, the observation will be reported to CTDEEP NDDB.

In order to minimize the impacts to wildlife habitat post-construction, the Petitioner proposes to create a wildflower meadow, totaling  $\pm$  1.23 acres, by planting a habitat-specific blend of grasses and wildflowers (New England Showy Wildflower Mix) along the southern and eastern sides of the Facility up to the Project Area's limits of disturbance. These planting areas will create additional early-successional habitat contiguous with the Eversource distribution line ROW along the southern portions of the Project Area; while along the eastern portion, manipulated areas would be transitioned to Old Field habitat, thereby creating a "soft" transitional ecotone that can provide nesting habitat for species favoring such ecotones, as well as stopover habitat for migratory birds and pollinators. The meadow will be mowed once annually, and the resulting habitat will be of far greater value than that provided by a typical cool-season lawn planting.

### 6.9.3 Core Forest

The Petitioner also engaged APT to evaluate the size and extent of the contiguous forest block present within and adjacent to the Project Site.<sup>13</sup> APT began its evaluation by reviewing two publicly available GIS-based datasets designed to assess impacts to core forest habitation: the CTDEEP's Forestland Habitat Impact Map and UConn's Center for Land Use Education and Research's ("CLEAR") Forest Fragmentation Analysis ("FFA") study . While the CTDEEP's Forestland Habitat Impact Map does not include the Project Site within an area mapped as core forest, the FAA study indicated that the Site falls within a "large core" forest block that stretches north and east towards Route 1 and west towards Whippoorwill Road. In addition, APT conducted its own GIS analysis based on 2016 "leaf-off" aerial photography. Said analysis indicated that the total contiguous forest cover, including areas both on and off the Site, is approximately 709 acres. The portion of forest cleared for the Project, however, will be limited to only what is necessary to maintain system size and reduce shading losses.

That said, the Project will require approximately twelve (12) acres of tree clearing within a Mixed Hardwood Forest. Of these  $\pm$  twelve (12) acres, approximately eight (8) acres are part of a core forest block and approximately four (4) acres are edge forest. In addition to the removal of this small forest

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<sup>13</sup> It should be noted that the strictures of PA 17-218 regarding core forest do not apply to the Project due to the fact that it is less than 2 MW in nameplate capacity. Nonetheless, for purposes of transparency, this analysis was undertaken.

component, development of the Facility will convert approximately ten (10) acres of interior core forest to edge forest. Table 2, below, summarizes the anticipated effects the Project will have, as it relates to the proposed tree clearing on contiguous forest.

Table 2: Forest Interior Habitat Impacts

Total Forest Lost	±12 acres
Core Forest	±8 acres
Edge Forest	±4 acres
Total Conversion – Core Forest to Edge Forest	±10 acres

From a landscape perspective, looking at the entirety of the forest block, the resulting development will reduce the overall contiguous forest block to ± 697 acres (with the loss of approximately twelve (12) acres), which represents only ± 1.7% of the forest block. Additionally, it is anticipated that the development will reduce the current core forest from ± 421 acres to ± 403 acres, due to the combined loss of approximately eight (8) acres of core forest and the conversion of approximately ten (10) acres to edge forest. However, this represents only ±1.9% of the core forest. The Facility’s location in the southern portion of the contiguous forest block assists in minimizing habitat loss. Thus, as a result of the Facility’s location at the periphery of the forest block, and considering the relatively small area of forest block reduction, the Project is not anticipated to adversely impact forest interior species. See Figure 3, *Existing Contiguous Forest Map*, and Figure 7, *Proposed Contiguous Forest Map*, within the EA report for a graphic comparison of pre- and post-development effects on core and edge forest

#### 6.10 Water Supply

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Solar energy facilities, such as this Project, do not require usage of water and do not generate wastewater as part of their operations and maintenance. The proposed Project will not impact public water supplies or groundwater because it does not require consumption of water resources, nor does it generate water discharges. In addition, there is no potential for indirect impact to water supplies or groundwater based on the site location, setting and existing conditions. The nearest named surface waterbody is the Northeast Branch Black Hall River, which is located approximately 825 feet north of the Project site.

Further, based upon a review of available CTDEEP mapping, the Project site is not located within a mapped Aquifer Protection Area (APA) or Groundwater Protection Overlay District (GPOD).

During construction activities, if dust control is required, water will be supplied by tanker trucks on a temporary basis. As far as sanitation, portable restrooms will be provided during construction for site workers. No permanent sanitary facilities will be installed. Stormwater will be managed during construction and post-construction operations and maintenances. See Section 3.4, below, for a discussion of Stormwater Management on the Project site. Erosion and sediment control measures will also be utilized to prevent on- and off-site impacts.

During operation, the Project will not require water use and will not generate wastewater. The Project will be unstaffed and, therefore, no potable water supplies will be provided, and no sanitary discharges will occur. *De minimis* quantities of flammable liquids or fuels will be properly stored at the Project during construction; no such materials will be used/stored on-site during operations and maintenance.

## **7.0 Conclusions**

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The Project clearly meets the standards set forth in C.G.S. § 16-50k(a). Specifically, the Project will comply with the CTDEEP air and water quality standards, will not have an undue adverse effect on the existing environment and ecology, and will not affect the scenic, historic and recreational resources located within the vicinity of the Project Site.

Given the Project will result in no adverse environmental impact and the benefits this Project will provide to the State of Connecticut, Cobb Road, LLC respectfully requests that the Siting Council approve this Petition for the Project as currently designed.