



**Lee D. Hoffman**  
90 State House Square  
Hartford, CT 06103-3702  
p 860 424 4315  
f 860 424 4370  
lhoffman@pullcom.com  
www.pullcom.com

October 6, 2021

**VIA ELECTRONIC MAIL AND HAND DELIVERY**

Melanie Bachman  
Executive Director/Staff Attorney  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

**Re: Greenskies Clean Energy LLC Petition for Declaratory Ruling, Pursuant to Conn. Gen. Stat. §§4-176 and 16-50k, for the Proposed Construction, Operation and Maintenance of a 2.5 MW AC Ground-mounted Solar Photovoltaic Electric Facility Located at 361 Old Tavern Road, Orange, Connecticut**

Dear Ms. Bachman:

My client, Greenskies Clean Energy, LLC hereby submits an original and fifteen copies of its Petition for a Declaratory Ruling with the Siting Council for the proposed construction, maintenance and operation of a 2.5 MW AC ground-mounted solar photovoltaic electric generating systems located at 361 Old Tavern Road in Orange, Connecticut. I am also enclosing a filing fee of \$625 at this time.

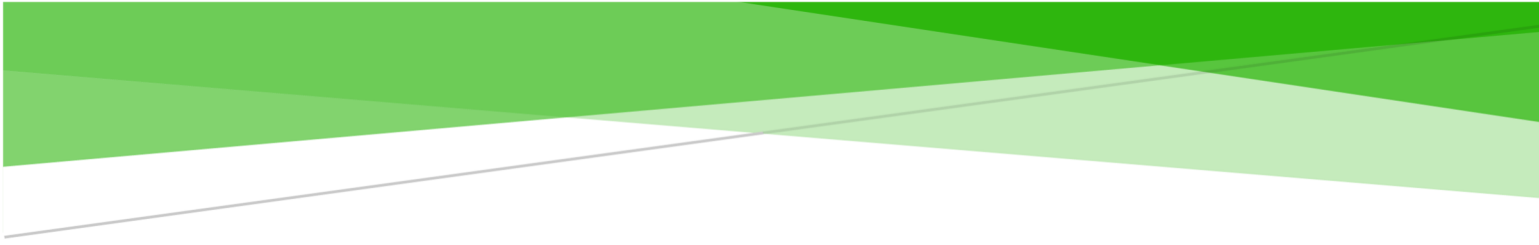
Given the voluminous nature of the appendices and figures to this Petition, those materials have been placed on a ShareFile drive. That ShareFile can be accessed by going to: <https://protect-us.mimecast.com/s/ofiUCqx2kDh1xAW4CZKlfh>. I certify that a copy of this letter has been submitted to the Town of Orange and the City of Milford. The Town and the City may access the materials on the ShareFile site as well.

Finally, it is our understanding that the Department of Agriculture and the Department of Energy and Environmental Protection have transmitted letters to the Council, pursuant to PA 17-218, regarding this Petition. If that is not the case, please let me know.

If you have any questions concerning this submittal, please contact me at your convenience. Thank you in advance for your consideration of this Petition.

Sincerely,

Lee D. Hoffman  
Enclosures



**Petition by Greenskies Clean Energy LLC for a  
Declaratory Ruling, Pursuant to Connecticut General  
Statutes §4-176 and §16-50k, for the Proposed  
Construction, Operation and Maintenance of a 2.5 MW  
AC Ground-mounted Solar Photovoltaic Electric Facility  
Located at 361 Old Tavern Road in Orange, Connecticut**

**Prepared for  
The Connecticut Siting Council**

**October 6, 2021**



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## 1.0 Introduction

This is a Petition for a declaratory ruling, pursuant to Connecticut General Statutes §§4-176 and 16-50k, that no Certificate of Environmental Compatibility and Public Need (“Certificate”) is required for the development, construction, operation and maintenance of a proposed solar photovoltaic project (the “Project”) proposed by Greenskies Clean Energy LLC (“GCE or “Petitioner”) in the Town of Orange, Connecticut. The Project consists of the development of a 2.5-megawatt (“MW”) alternating current (“AC”) ground-mounted solar photovoltaic (“PV”) system located at 361 Old Tavern Road, Orange, Connecticut (“Property”). See Figure 1 – Site Location Map and Figure 2 – Proposed Project Areas Aerial.

The Project will participate in the Renewable Energy Credit program selling power to Connecticut State College and Universities. GCE submitted the Project in response to a renewable energy RFP and was selected as one of the projects approved in that RFP process. As a result, the Project will generate zero emission renewable energy credits (ZRECs) as a Class I renewable energy resource. Given its winning bid, GCE entered into LL-09-24375 *Standard Contract for the Purchase and Sale of Connecticut Class 1 Renewable Energy Credits from Low or Zero Emission Projects* with United Illuminating, dated October 22, 2020, for the Project. The delivery term start date for this contract is October 22, 2022.

Authorization by the Connecticut Siting Council (“Council”) via approval of this Petition would allow the Petitioner to construct the Project and assist the State of Connecticut in achieving its goal of energy conservation and sustainability. Pending approvals, the Project will commence financing, detailed engineering, procurement, and construction efforts in 2022, with commercial operation planned for the entire Project in 2022.

The Project is located on one parcel within the Town of Orange’s RES residential zoning district and is comprised of approximately 8.5 acres on an 87-acre parcel. See Figure 3 – Zoning Map. The Town of Orange’s Assessor’s Office has the parcel listed as MBL – 11-3-2 and the parcel is currently owned by Addie Associates LLC. See Figure 4 – Tax Parcel Map and Figure 5 – Existing Conditions Map.

## 2.0 Petitioner

GCE is a limited liability company with offices at 127 Washington Ave, North Haven, CT 06473. GCE develops, finances, constructs, and maintains clean, renewable-energy projects throughout the United States. In conjunction with its affiliate, Clean Focus Yield, GCE offers integrated solar and battery-storage solutions to commercial and industrial (“C&I”), municipal, and utility customers. From beginning to end – origination through construction and then lifetime operation – customers work with a single delivery team. GCE focuses on delivering clean energy, peak performance, and maximum energy savings. The company is an offshoot of Greenskies Renewable Energy LLC, which was founded in 2009 and has constructed and operates over 250 MW of C&I solar projects throughout the country. The power generated by the portfolio is sold under long-term contracts that are typically 20 years, and the majority of the buyers have investment-grade credit ratings.

GCE has developed, owns and will operate other large-scale ground-mount projects in Connecticut, including a 5 MW AC facility in North Haven, a 5 MW AC facility in Stonington, a 5 MW AC facility in East Lyme, a 5 MW AC facility in North Stonington, a 5 MW AC facility in East Windsor, and a < 1 MW AC system at the East Haven Landfill. As the Siting Council is aware, GCE has other projects under construction in Connecticut. GCE’s commercial clients include Target Corporation, Walmart, Inc., and Amazon. According to the Solar Energy Industry Association, Target and Walmart are the number one and two solar users at US-based facilities, and Amazon is number ten. GCE is the partner of choice for large corporations and owners of real estate seeking to take a company- or portfolio-wide approach to solar energy adoption, and GCE is consistently ranked as one of the top solar developers in the United States.

As a vertically-integrated company, GCE manages every step of the solar development and implementation process. From project origination to design and engineering to construction and, ultimately, operation and maintenance, GCE brings years of industry knowledge and expertise at every level. Moreover, with hands-on management of on-site performance and sophisticated reporting processes in place, both during construction

and operation and maintenance, the company is able to ensure safety, quality control and optimal electrical generation throughout the life of each project.

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

Bonnie Potocki  
Project Developer  
Greenskies Clean Energy LLC  
127 Washington Ave  
West Building, Garden Level  
North Haven, CT 06473  
bonnie.potocki@greenskies.com  
(860) 740-5289

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



## 3.0 Proposed Project

### 3.1 Project Site Overview

The Project site is located on an 87-acre parcel at 361 Old Tavern Road, Orange, Connecticut in the southern portion of Orange. The Town of Orange's Assessor's Office has the parcel listed as MBL – 11-3-2 and currently owned by Addie Associates LLC ("Addie Associates"). See Figure 4 – Tax Parcel Map. There are current agricultural activities taking place on the Property. As is explained in greater detail below, the revenue generated from the lease with GCE would allow the landowners to continue farming operations on the Property for a shared use of agriculture and solar to support the State's commitment to renewable energy.

Addie Associates purchased the Property in 1996 and have historically carried out agricultural activities on the Property, including establishment of the Treat Farm (growing sweet corn, vegetables, pumpkins and Christmas trees). Addie Associates desires that the Property continue to be used for farming. By placing a solar project on approximately ten percent (10%) of the Property, Addie Associates would be able to continue its farming operations on the Property.

Due to the increasing economic challenges of farming in Connecticut, Addie Associates has sought to supplement its income by selling or developing a portion of its land. As it has sought to supplement its income, Addie Associates came to the realization that the best to options for supplemental income would come in the form of converting a portion of the land to residential development or to allow solar panels to be placed on a portion of its property. Residential developers have expressed interest in purchasing and subdividing the property, however the landowners wish to avoid parting with land that has a history of agricultural use if it can be avoided. Developing a solar farm on the site would allow Addie Associates to retain ownership of the property while generating a supplemental source of income through a lease agreement with GCE. This arrangement would allow the majority of the property to continue farm use now and for future

generations to farm the land use for solar upon decommissioning the Project, should they so choose.

### 3.1.1 Existing Site Land Use

The overall land use of the parcel/property consists of wetlands, farm fields, two houses (4-bedroom house dated year 1871, 2-bedroom house dated year 1861), and five accessory buildings (barn, sheds). Addie Associates has occupied the Property since 1996. The Property has remained residential with agricultural use under the name of “Treat Farm”. Figure 5 – Existing Conditions Map.

According to Orange’s Zoning Map, the principal use of the parcel is designated residential and located in a residential zoning district; however, the two principal dwellings on the parcel are not occupied currently. The Property is known locally as “Treat Farm” and provides road-side farm stand during the summer, a pumpkin patch and corn maze during the fall and Christmas trees during the winter. (<https://www.treat.farm/>). Nine farm fields on the Property total approximately 61.3 acres.

### 3.1.2 Surrounding Land Use

The area surrounding the Projects consists primarily of single-family residences. Peck Place School, an elementary school, exists approximately 1,000 feet to the north of the Site.

### 3.1.3 Project Site Alternatives

The Project site was selected by GCE because it was suitable for a solar PV project and would have minimal natural resource and environmental impacts. The Project as designed will not have adverse effects on quality forested wetlands or agricultural land, and the Project will not diminish the quality of life of those who live in the vicinity. It was also important to GCE to select a site that allows interconnection of the generation facility to a feeder and substation of the utility company that is compatible with their grid and goal of better serving customers.

GCE conducted an extensive search of both public and private land resulting in the selection of the Property. GCE uses third party consultants combined with site visits, thorough internal analysis and minimal impact requirements, and review of public data for environmental classifications/hazards to understand the biological, environmental, historical, and archeological impacts of solar development on selected sites. While all development has impact on the area and community, the social and environmental impacts of this Project site are a net positive.

## 3.2 Project Description

### 3.2.1 Site Access

The primary access point to the Project will be via an existing gravel farm road entrance to access the rear portion of the Property where the solar array is proposed. Existing farm roads traversing the site would be used to the maximum extent feasible during construction. Petitioner would construct an approximately 1,000 linear foot internal gravel roadway within the Project area to provide centralized access to the proposed solar array, electrical equipment, and stormwater detention basins. Petitioner proposes the construction of the roadway on prepared subgrades with a gravel topping which would match existing grades to the greatest extent feasible. See Figure 7 – Proposed Project Layout and Appendix A – Sheet 3.0 Layout and Materials Plan – Overall.

### 3.2.2 Solar Facility Design and Layout

It is currently anticipated that the Project will consist of photovoltaic (PV) arrays to be comprised of 550-watt panels (depending on the state of module technology at the time of construction) arranged two-high in portrait set at a 25-degree angle to balance the solar yield, located in the best available area within the property, to maximize annual energy production. The panels will be mounted on steel racking with driven posts to a depth to attain sufficient structural capacity to resist the loads from the weight of the panels, as well as environmental loads including snow, wind, and seismic forces.

The current PV array on electrical site plan has a nameplate capacity of 2.5 MW AC and designed with 240 strings of 24 modules, for a total of 5,760 modules. There would be 20 125 KW inverters that are to be distributed throughout the array and mounted to or adjacent to the racking structure. The DC capacity is 3.168 MW and the AC capacity is 2.5 MW. The DC to AC ratio is designed as 1.267. The Power from the inverters would be directed to a transformer, meter, disconnects and switchgear prior to interconnecting with utility distribution feeder.

The Petitioner is aware that the electrical plans are not consistent with the site civil plans at the time of this Petition submission. The electrical plans (Appendix B) are currently being reviewed by the utility provider (The United Illuminating Company), and it is the intent of the Petitioner that the electrical layout shown on the site civil plans (Appendix A) should be considered to be the most current electrical layout at this time. The Petitioner intends to provide the Council with updated electrical plans as appropriate once the ongoing consultation with the utility provider is completed.

### 3.2.3 Electrical Interconnection

The interconnection application for the solar array was submitted to The United Illuminating Company (“UI”) in July 1, 2020. The proposed project is proposed to interconnect with the Woodmont Substation Circuit 3653 located in Milford and is 2.7 miles from the solar project.

Because the solar project failed UI’s Distribution System Generator Capacity Screen, UI will conduct a limited scope ‘Distribution System Impact Study’ to determine the effect the solar project will have on UI facilities. A Facility Study will also be required for the solar project. There is approximately 2,000 feet of single-phase circuit that will be revamped to 3 phase. The Facility Study Agreement will be sent after GCE has reviewed the Impact Study Report and has notified UI to proceed with the Facility Study.

### 3.2.4 Fencing and Site Security

Petitioner proposes a 7-foot high chain link fence to be installed around the perimeter of the solar array field to provide site security, as well as to address National Electric Code requirements. The perimeter fencing would extend around the array. There would be five access gates, with locking hardware, proposed along the perimeter for access to the permanent stormwater basins. See Appendix A – Sheet 3.1-3.2 - Layout and Materials Plan.

### 3.3 Stormwater Management

Petitioner prepared a Stormwater Management Report in accordance with the 2004 State of Connecticut Stormwater Quality Manual and with the Connecticut General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (“Stormwater General Permit”) effective December 31, 2020. A copy of this Report is attached as Appendix F.

Petitioner also reviewed soil mapping and performed a field geotechnical study in July 2021 to investigate the native soil conditions and infiltration rates at the proposed locations of the stormwater basins. As indicated in the attached Stormwater Management Report, predevelopment drainage patterns have been maintained to the greatest extent feasible in an effort to maintain pre-development flows off-site areas.

A total of five (5) stormwater management basins with supporting swales have been designed and are strategically located throughout the Project site to maintain existing drainage patterns. Each basin will discharge stormwater runoff to one of the two onsite wetland systems. Although the proposed basins would not exceed the 3 acre-ft volume limit that would trigger a Dam Safety permit, they would be registered with CT Dam Safety.

Petitioner developed a HydroCAD model, using TR-55 methodology, to evaluate the existing and proposed drainage conditions of the Property. The results of the analysis demonstrate that there would not be an increase in peak stormwater runoff rates for the

2-, 25-, 50-, and 100-year storm events. Water quality treatment and stream channel protection of the Project area is proposed to be handled in these permanent stormwater management basins.

### 3.4 Construction Schedule and Phasing of Construction

Project construction is anticipated to begin in Spring/Summer 2022 pending regulatory approvals. Initial work would involve the installation of erosion and sediment control measures, including installation of sediment basins. A temporary staging area would be located in the field south of the Project.

Formal construction notice to proceed would be anticipated in Spring/Summer 2022, with delivery of equipment likely commencing in late Summer 2022. As each discrete area of installation is completed, the ground surface would be stabilized, although best management practices will remain in place until final stabilization occurs.

Final installation of array equipment and landscaping/screening measures would be anticipated in Summer or Fall of 2022. Final site stabilization, testing, and commissioning would be expected to be completed in the late Fall of 2022. Construction activities would be expected to occur Monday through Saturday between the hours of 7:00 a.m. and 5:00 p.m. A draft construction schedule timeline is provided as Figure 8 – Construction Schedule.

The Construction Sequence for the Project begins by defining a weekly qualified inspector, emergency contact, and tentative schedule of all inspections, as well as holding a pre-construction meeting with representation from the general contractor, site contractor, CTDEEP, Town of Orange, the engineer of record, and the qualified inspector. The contractor will contact Call-Before-You-Dig and notify the Town of Orange at least 48 hours prior to commencement of any construction activity. Upon achieving completion of construction and final site stabilization, the engineer of record would investigate the Site and all temporary erosion controls shall be removed.

Prior to construction, a health and safety plan would be finalized by contractor and would address not only the specific characteristics of the Project site and the Project, but also will reflect the nature of the surrounding land uses. A Storm Water Pollution Control Plan (SWPCP) would also be developed and implemented by the project civil engineer that will include regular inspection of erosion control measures to prevent sedimentation or water quality impact. The Stormwater Management Report (Appendix F) provides Erosion and Sedimentation Control Best Management Practices – Maintenance/Evaluation Checklists for Construction Practices and Long-Term Practices. Construction sequencing is described in detail on sheet C-5.0 in Appendix A.

### 3.5 Operation and Maintenance

GCE has a dedicated O&M team that currently monitors and maintains all operational assets in the GCE portfolio. This team would manage the efficient operation of the Project after it is turned on and the construction is complete. A team of individuals including system analysts and field operators would monitor the system 24 hours a day, 7 days a week. The operation center utilizes Also Energy's platform for site monitoring and generation reporting, along with a custom-built in-house platform designed for improved site analytics. Custom alarm management provides instantaneous notifications. System performance analytics would be completed weekly to better understand the health of each asset and find trends in under producing systems. See Appendix C – Operations & Maintenance Plan.

### 3.6 Decommissioning

At the end of the Project life, decommissioning would include disassembly and removal of above-ground structures, removal of subsurface structures to a minimum depth of 24 inches below grade, and re-grading and restoration of disturbed areas. Where reasonably required, restoration would include regrading, seeding, and mulching to establish vegetation and prevent soil loss and erosion.

Racking posts pulled from the ground are expected to create minimal ground disturbance. Any disturbed areas will be seeded with the same seed mix used across the site during the life of the Project or, if landowner prefers, another acceptable mix would be selected.

At the time of decommissioning, the Project owner would submit to the Town of Orange and the Connecticut Siting Council a request plan for continued beneficial use of any components to be left on site, including gravel roads, landscaping and/or visual screening and stormwater buffers.

Under the proposed decommissioning plan, the Project owner would be responsible for all decommissioning costs. Any additional permits or approvals required for decommissioning, removal, and legal disposal of Project components would be obtained before decommissioning activities begin. All activities would be conducted in accordance with all permits and applicable rules and regulations. Disposal of all solid and hazardous waste would be conducted in accordance with local, state, and federal waste disposal regulations.

#### Facility Materials/Equipment

PV facilities are constructed using the same basic materials and methods of installation common to their application. Materials include:

*Metals:* Steel from pier foundations, racking, conduits, electrical enclosures, fencing; aluminum from racking, module frames, electrical wire, and transformers; stainless steel from fasteners, electrical enclosures, and racking; copper from electrical wire, transformers, and inverters.

*Concrete:* Equipment pads and footings.

*PV modules:* PV Modules are typically constructed of glass front sheets (some use glass back sheets as well), plastic back sheets and laminates, semiconductor rigid silicon cells, internal electrical conductors (aluminum or copper), silver solder, plus a variety of micro materials. The semiconductor PV cell materials represent a very small part of a PV module's weight, between 1 and 2%. As manufacturers pursue lower-cost modules, thinner layers of semiconductor materials are used which reduces this percentage. The most commonly used semiconductor material for the construction of PV modules is



silicon. Glass, aluminum, and copper are easily recyclable materials, and silicon can be recycled by specialty electronics recyclers.

*Glass:* Most PV modules are approximately 80% glass by weight.

*Plastics:* A limited quantity of plastic materials are used in PV systems due to a system's continuous exposure to the elements and long operational lifetime. Plastics typically are found in PV facilities as wire insulation, electrical enclosures, control and monitoring equipment, and inverter components.

### Sequence of Decommissioning

The following sequence for the removal of the components will be used:

#### *PV Site:*

- Disconnect PV facility from the utility power grid;
- Disconnect all aboveground wirings, cables and electrical interconnections and recycle offsite by an approved recycling facility;
- Remove concrete foundations. Electric components and their foundations will be removed and recycled off-site by a concrete recycler;
- Remove PV modules and transport to recycling facilities for recycling and material reuse;
- Remove the perimeter fence and recycle off-site by an approved metal recycler; and
- Remove all waste.

#### *Inverters/Transformers:*

- Disconnect all electrical equipment;
- Remove all on site inverters, transformers, meters, fans, and other electrical components and recycle off-site by an approved recycler; and
- Remove all waste.

#### *Access Road:*

- The access road built on the project, and associated drainage infrastructure will remain as a means to access the site in the future, if landowners choose to do so and are granted permission from the Siting Council and Town.

#### *Below Ground Structure Decommissioning:*

- Disconnect and remove all underground cables and transmission lines to a depth of 24” below grade and recycle off-site by an approved recycling facility; and
- Removal of steel rack foundations.

*Site Restoration:*

- Seeding and mulching; and
- Minor regrading.

## 4.0 Project Benefits and Needs

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 GC3 recommendation is that the Connecticut’s Renewable Portfolio Standard (“RPS”) reach a target of 40 percent Class I renewable energy sources by 2030, with an aim to reduce the carbon intensity of the RPS to achieve the State’s decarbonization goals. Owners of renewable-electricity generation projects receive one renewable energy certificate (REC) for every megawatt-hour of renewable electricity they produce. Those RECs are traded in a regional market for state RPS compliance. Connecticut establishes required annual REC percentages from three classes of renewable energy resources.

Also included in the overarching GC3 recommendation is to continue to deploy at least 50 megawatts per year of larger distributed solar and 10 megawatts per year of distributed fuel cells. Since 2012, Connecticut utilities have been required to procure Class 1 RECs under 15-year contracts through an annual auction under the Low and Zero Emission Renewable Energy Credit (LREC/ZREC) Program. Given the program’s success, Public Act 19-35 extended the program by \$8 million per year through 2021. The successor procurement begins in 2022, with 50 MW per year for ZREC resources and 10 MW per year for LREC resources. As mentioned above, a portion of the Project was successful in securing an LREC/ZREC contract at the end of 2020.

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 would also assist the State in meeting the requirements and Connecticut’s RPS goals.

The Project would further the State’s energy policy. In September of 2019, Governor Ned Lamont issued Executive Order No. 3, re-establishing the Governor’s Council on Climate Change (“GC3”) and committing Connecticut to a 45% reduction in Greenhouse Gas emissions below 2001 levels by 2030. The report called for

evaluating current and locally-scaled scientific information and analysis of the effects of climate change. The GC3 council requested the preparation of the Phase 1 Report and adopted the recommendations presented this report early this year. There is a “Progress on Mitigation Strategies” section of the GC3 council’s Phase 1 report. Recommendation 12# for electricity generation is *Achieve at least 66 percent zero-carbon electricity generation by 2030* through continued deployment of renewable energy sources and improved transmission and storage deployment, while creating green jobs to grow local economies.

The Project would provide a renewable energy source to be connected to United Illuminating’s Grid for additional generating capacity. This Project would assist in meeting energy demand and contribute to grid stability. Additionally, the Project would contribute to meeting the State’s renewable energy goals described in <https://portal.ct.gov/DEEP/Climate-Change/GC3/Governors-Council-on-Climate-Change> and would represent a 2021 State of Connecticut’s “mitigation strategy” described in “Taking Action on Climate Change and Building a More Resilient Connecticut for All” Phase 1 Report: Near-Term Actions dated January 2021 prepared for Governor’s Council on Climate Change. [https://portal.ct.gov/media/DEEP/climatechange/GC3/GC3\\_Phase1\\_Report\\_Jan2021.pdf](https://portal.ct.gov/media/DEEP/climatechange/GC3/GC3_Phase1_Report_Jan2021.pdf)

## 5.0 State and Local Outreach/Input

GCE has been in communication with and has engaged state and local regulators regarding the design and development of the project.

On June 21, 2021 a pre-application meeting with CT DEEP Stormwater staff was conducted with the project engineer VHB and GCE. CTDEEP Stormwater staff included Laura Gaughran, Karen Allen, Chris Stone, and Neal Williams. At the meeting, staff requested history of the farmland related to the isolated wetland in the Northeast corner of the Project site and inquired if the Project site was a mound which would influence surface water drainage patterns to the surrounding wetlands. Once the onsite visit with CT DEEP Stormwater permitting staff occurs, the project engineer will submit an application for a General Construction Stormwater Permit for the proposed Project; this process will run in parallel to Siting Council review and decision on this Petition.

On July 1, 2021, GCE met with the CT DEEP's Concierge team. The DEEP staff present at that meeting represented Natural Diversity Database, Dam Safety, Fisheries, and Stormwater Programs. CT DEEP staff provided feedback on the Project after VHB's presentation. Dam Safety staff stated that although the proposed stormwater basins do not exceed the 3 acre-ft volume limit that would trigger a dam safety permit, the basins would still need to be registered with DEEP. GCE indicated it had no objection to registering its basins in accordance with DEEP's directive. CT DEEP staff noted another requirement that because the Project site is located on wetlands, with vernal pools, the review of the design and its impact on the wetlands and vernal pools will be included in the Council review.

As is discussed in greater detail in Section 6.8.3 below, GCE also had several interactions with the Connecticut Department of Agriculture. On July 29, 2021, GCE transmitted a letter to the Department outlining various agricultural co-uses that could be maintained at the Project Site. GCE and the Department of Agriculture (DoAG) met via Zoom on August 25, 2021 to discuss that letter in greater detail.

After the August 25th meeting, GCE submitted additional information to the Department on September 7, 2021, which articulated the specific agricultural co-uses GCE would utilize at the Project Site. Since the submission of that September 7, 2021 letter, GCE's counsel, Pullman & Comley, has been in contact with representatives of the Department. Through those discussions, the Department has indicated that if GCE undertakes the agricultural co-uses articulated in its July 29th letter, the Project as proposed would not have an adverse impact on prime farmland soils. The Project anticipates that the Department will send a letter to the Siting Council articulating this finding in the near future.

On August 2, 2021, CT DEEP Bureau of Natural Resources Division of Forestry found that there was no material impact to core forest letter for the solar array project - Orange Farms, Orange CT. See Appendix M for CT DEEP's letter.

In addition to its contacts with state officials regarding the Project, GCE has also had significant contact with local officials related to the Project. On May 24, 2021, GCE met with Town of Orange's First Selectman James Zeoli and other town staff: Wetlands and Zoning Enforcement Officer Jack Demirjian, Electrical Inspector Ron Petrillo, Town Attorney/Marino, Zabel & Schellenberg, PPL Vincent Marino to introduce the Project. On June 16, 2021, GCE had another meeting with other town staff as address outstanding questions generated at the May 24th meeting.

In August 2021, GCE contacted the Town Planner of the City of Milford via email and offered a meeting. David Sulkis, the Town Planner responded that a meeting with Milford officials was not necessary to discuss the Project.

On May 25, 2021, GCE mailed letters to Project site abutters in Orange providing an overview of the proposed Project. In light of the COVID pandemic, GCE decided against having a large public meeting to discuss the Project. In lieu of a public gathering, GCE provided contact information to all recipients and offered to speak directly with neighbors over the phone, via email or in person, either one-on-one or in small groups to answer questions about the Project. GCE spoke with six neighbors, followed up with written

responses to multiple questions for two of six neighbors via email and will continue to offer an open line of communication with neighbors. See Appendix J – Public Outreach Documentation. In addition, GCE has sent out formal notifications concerning this Petition to all abutters and applicable governmental officials. The 61 “green cards” indicated successful delivery of these letters have all been returned to GCE. A table summarizing this outreach is included in Appendix J.

## 6.0 Potential Environmental Effects/Impacts

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

The Project Site consists of approximately 87 acres located in a residential neighborhood of Orange. The overall land use of the parcel/property consists of wetlands, farm fields, two houses (4-bedroom house dated year 1871, 2-bedroom house dated year 1861), and five accessory buildings (barn, sheds). Addie Associates has occupied the Property since 1996. The Property has remained residential with agricultural use under the name of “Treat Farm”.

The Treat Farm is a working farm. The Wilson family has owned “Treat Farm” and actively farmed land at this project site. Treat Farm operates a retail farm stand where corn, pumpkins and other vegetables are sold late summer and fall. For the community, it has offered occasional hay rides on one field on the northside of the property. The family may also establish a new corn maze on the farthest field on the property to the east.

The solar project will have a positive impact to production agriculture at the Site. The project will allow for the Treat Farm to place additional acreage into production for growing produce. The development of the project will result in a net increase of approximately 5.5 acres of produce production and will represent a net increase of 49% in produce production for Treat Farm.

See Section 6.6.3 for a description of agricultural activities. In addition, outside the Project fence lines, a pollinator-friendly seed mix will be used on the perimeter of the

Project area which will support native pollinators and attract pollinators to crops that will be growing in the interspacing of the solar modules.

## 6.2 Public Health and Safety

The proposed Project is not expected to create any adverse impact with regard to public health or safety issues. The proposed 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 would follow all health and safety standards applicable to solar energy generating facilities.

A site-specific construction health and safety plan is typically 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.

Construction traffic relative to the site includes standard construction trucks, small earth moving equipment, and all-terrain forklift equipment. Vehicle trips would be relative to scheduled deliveries of the major materials such as solar racking, solar panels, electrical equipment to serve the solar site, and fencing materials to be installed around the perimeter of the solar field. Construction activity and associated traffic would generally take place from 7:00 AM to 5:00 PM daily Monday through Fridays.

Environmental items considered “chemicals” that might be used on the site would include polyvinyl chloride (“PVC”) glue for use with electrical conduit installations and carbon-based fuels for vehicles and equipment. Petitioner anticipates that there will be less than one gallon of PVC glues and less than 25 gallons of fuel stored on-site. Petitioner would keep all flammable liquids in code compliant cabinets and containers. Petitioner would also keep spill kits in all vehicles and equipment on-site. Petitioner would monitor



chemical usage daily to ensure compliance to requirements. No risk of release to the environment is anticipated.

## 6.3 Noise

### 6.3.1 Noise Level Guidelines and Regulatory Requirements

Potential Project-related noise is regulated by General Statutes section 22a-69 and the Town of Orange's Noise Ordinance.

The Town of Orange's Noise Ordinance provides: "It shall be unlawful for any person to emit or cause to be emitted any noise beyond the boundaries of his premises in excess of the noise levels established in this chapter." For the Residential District which the Property, and surrounding receptors, are located in, local ordinance prescribes a maximum level of 55 dBA for daytime hours (defined as 7 AM to 9 PM Monday-Saturday, and 9 AM to 9 PM Sunday) or 45 dBA for nighttime hours (defined as 9 PM to 7 AM Sunday evening through Saturday morning, and 9 PM to 9 AM Saturday evening through Sunday morning).

General Statutes section 22a-69 is applicable to the proposed Project and requires the Project 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/educational property; and 70 dBA at the nearest agricultural/industrial property. The statute also accounts for impulse and other types of noise. Construction noise is exempt from the statute.

### 6.3.2 Proposed Project-generated Noise

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. Existing uses around the perimeter of the Project site include farming activities and single-family residential development.

The selected inverter has acoustic noise rating 55 dBA at 1 meter distance. All other selected system equipment will typically generate the same or lower levels of noise. Based on information provided by specified equipment manufacturers, the selected inverters for the proposed Project typically generate less than 55 dBA at a distance of 1 meter, as noted in the inverter specification sheet provided in Appendix B.

The nearest residence is located at 353 Old Tavern Road approximately 370 feet from the Project area and closest equipment pad. Peck Place School is approximately 230 feet from the Project area and approximately 1,300 feet from the closest on-site equipment location and pad. Since sound dissipates with distance, Petitioner does not anticipate that any Project-generated noise would be detectable by potential residential or surrounding commercial/educational receptors.

#### 6.4 Air Quality

Because the Project is a solar energy generating facility, no air emissions will be generated during operations and, therefore, an air permit would not be required. Temporary, potential, construction-related mobile source emissions would include those associated with construction vehicles and equipment. Any potential air quality impacts related to construction activities can be considered *de minimis*. Such emissions would be mitigated using available measures including 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 would meet the latest standards for diesel emissions, as prescribed by the United States Environmental Protection Agency (USEPA) and, with the above mitigation measures, should reduce the exhaust emissions.

#### 6.5 Visual Impact Assessment

Petitioner anticipates that the location of the proposed Project, coupled with the design of the proposed solar energy facility, would significantly limit, if not eliminate, any potential views from any public viewsheds or private properties. The Project has been sited on land which is generally low visibility from surrounding roads, residences, and

any designated public recreation area (i.e. playing fields, walking trails, or parks). Visual impacts of the Project from multiple directions are naturally mitigated due to a variety of distance, topography, and existing vegetation. Cross sections displaying the proposed Project elements in relation to three (3) different abutting parcels have been prepared in support of this Petition and are included in Appendix K. Discussions between the Petitioner and all abutting parcels to the Project are ongoing and Petitioner intends to incorporate mitigation screening into the site development plan as needed to address screening deficiencies which may exist. The Petition is also consulting with the State Historic Preservation Office (SHPO) concerning screening, as is discussed in section 6.9 below. The Petitioner intends to provide the Council any updates to visual impact studies or proposed mitigation screening plans.

## 6.6 Federal Aviation Administration Determination

Petitioner used the Federal Aviation Administration (“FAA”) Notice Criteria Tool to screen the Project site to assess if the Project triggers the FAA Notice Criteria. The result of the initial screening on September 17, 2021 is that no additional notice is required for FAA. See Appendix L, FAA Determination.

## 6.7 Environmental Site Assessment/Conditions

A site investigation by a Licensed Environmental Professional (LEP) from GEI Consultants investigated the project area for potential signs of contamination on March 24, 2021. GEI performed a Phase I Environmental Site Assessment (ESA) and prepared report summarizing the findings dated June 28, 2021. GEI concluded that no Recognized Environmental Conditions (RECs) were identified on the site; however, Areas of Concern (AOCs) identified include the historic agricultural use and farm equipment storage at the site. A copy of the Phase I ESA report is included in Appendix E. None of these issues are anticipated to be exacerbated as a result of the construction of the Project.

## 6.8 Site Soils and Geology

### 6.8.1 Existing Site Soils and Geology

A review of available NRCS online soils mapping indicated the likely presence of Agawam fine sandy loams and Canton and Charlton fine sandy loam complex across a majority of the project area, with slopes ranging from 3 to 8%. Geotechnical subsurface investigations were performed at the site in July 8 and July 13, 2021. The conclusions of that investigation generally found the majority of the project area to be topsoil underlain with sandy loam and cobbles, with areas exhibiting signs of seasonal shallow high groundwater, and to be of Hydrologic Soil Group B. Soils information and results from the onsite testing are included in Appendix F.

### 6.8.2 Preservation of Prime Agricultural Soils

The site is currently undeveloped farmland. A review of the USDA's soil mapping for the area indicates that the Property in its entirety is prime farmland. During construction the layer of prime farmland soils will be carefully removed from the surface and carefully replaced onsite. Upon the completion of earth movement, the prime farmland soils will be replenished back to the Site.

### 6.8.3 Agricultural Dual-Use (GCE)

As noted above in Section 5.0, on July 29th, 2021 GCE initiated communication with the Department of Agriculture (DoAG) to discuss the impact that the proposed Project would have on prime farmland soils. Since that time, the DoAG and Petitioner have been in discussions regarding the agricultural co-uses the Petitioner has proposed for the Project. During these discussions, GCE proposed that GCE and the landowner will work collaboratively to continue diverse crop production within the solar array and outside the solar array. GCE, in agreement with the landowner, has already started working with USDA NRCS New Haven Conservation District to develop a crop production plan within the proposed project fence line of solar project to replace corn maze. In May 2021,

Greenskies, the landowner and USDA NRCS met on the farm to formulate the “farm plan.” GCE is now a registered customer of USDA NRCS and will receive technical services on this solar project. GCE will post the availability of 8.5 acres for several small growers to lease the parcel inside the project’s fence.

Petitioner would make these co-use activities available for the life of the Project and have the support of Addie Associates in doing so. Additionally, there will be no negative impact to the Property’s production of agriculture from the Project. The Project will allow for Addie Associates to place additional acreage into production for growing produce. The Project is working with USDA NRCS to develop an agricultural co-use to be contained within the fence line of the project.

Based on the foregoing, Greenskies has committed to undertake the following activities in support of its agricultural co-use plans for the project:

1. Greenskies will launch a marketing campaign to attract new small growers to the site. Greenskies does not anticipate that a single grower will use the leased area, however, it will remain an option. Rather, Greenskies anticipates that multiple growers who need land to grow their crops will use the project site.”
2. Greenskies, with support from NRCS will interview the interested growers to identify what their crop/produce goals are and their experience with growing their crops/produce.
3. Once the growers are selected after interviewing, Greenskies will work with the growers to ascertain how many rows/amount of land each grower can effectively manage to attain their goals. If necessary, Greenskies can connect the new farmers with NRCS to assist in the preparation of their business plans. See <https://www.farmers.gov/your-business/beginning-farmers/business-plan>. NRCS and UCONN can help prepare their crop growing plan.
4. Once Greenskies has identified/selected the number of initial growers/farmers to use the leased area and know what type of crop/produce/cut flowers etc. will be planted

Greenskies will overlay that information with the design of the project. There are approximately 34 rows spanning the entire solar array, however, not all the rows are designed exactly the same. Greenskies will inform each grower of the rows available for use to that grower.

Based on GCE's agreement that it would perform the foregoing activities, the DoAG concluded the Project would not materially affect the status of the site as prime farmland, as a result of the co-use and continuing farming activities proposed for the site. GCE expects that the DoAG will be submitting a letter with its concurrence regarding the Project shortly.

## 6.9 Historic and Archaeological Resources

Heritage Consultants prepared a 1A Cultural Resources Assessment Survey on April 2021. Heritage found that the entire site contained a moderate sensitivity for archaeological resources and recommended that a Phase 1B study be performed within the limits of the Project. Heritage performed a Phase 1B shovel test and a report of the findings was prepared on August 2, 2021. Both historic and pre-historic resources were discovered within the Project area. It is GCE's intent to excavate and remove artifacts at the start of construction of the solar project and submit a management summary report, and any associated consultation with SHPO, will be provided to the Council for reference. A copy of the Phase 1A and Phase 1B reports are included in Appendix G.

In addition, SHPO has indicated that visual screening between the Project and existing barn structures should be undertaken. GCE is working with SHPO to determine what form that screening should take and finalize those screening measures. When the screening measures are completed, the Petitioner will submit them to the Council.

## 6.10 Wetlands and Watercourses

### 6.10.1 Wetlands Delineation and Methodology

In November 2020, soil scientists from VHB investigated the site to determine if regulated Inland Wetlands or Watercourses were present. In Connecticut, Inland Wetlands are defined by areas of poorly drained or very poorly drained soils or alluvial soils of any drainage class. The investigation was facilitated by the use of a tile spade and soil augers that were used to examine soil profiles and evaluate drainage classes. A Wetlands Delineation Report dated December 9, 2020 was prepared outlining the survey process and findings. A copy of this report is included in Appendix H.

### 6.10.2 Existing Wetlands and Watercourses

Multiple wetland systems were delineated as a result of this effort and are depicted in the report. Generally speaking, wetland systems exist to the west and to the east of the Project area. An isolated wetland located within an area that is planted yearly near the northern end of the Project area was also delineated. A more comprehensive analysis of the various wetland systems can be found in the Wetland Delineation Report included in Appendix H.

### 6.10.3 Vernal Pools

During April 2021, VHB identified four (4) vernal pools on the Site. No evidence of vernal pool breeding was observed within Wetlands 2 or 3; however, Wetland 1 was found to contain the four (4) cryptic vernal pool breeding areas. Observed obligate vernal pool species included wood frog tadpoles and spotted salamanders. No fairy shrimp, marbled salamander larvae, or state-listed vernal pool breeding amphibians were observed. Each vernal pool area exhibits a firm, leafy bottom and average flood depths within the breeding areas ranged between 6 and 12 inches. The Vernal Pool (VP) 2 breeding area was somewhat broad in size; however, most pools were small, discrete pockets that exhibited slightly deeper inundation than the surrounding Wetland 1 areas. None of the identified vernal pools contained permanent outlets. The following table provides the details of the VP observations conducted on site:

### **Obligate Vernal Pool Species Indicators and Observations**

<b>Cryptic VP ID</b>	<b>Wood Frog Egg Masses</b>	<b>Spotted Salamander Egg Masses</b>	<b>Total Egg Mass Count</b>	<b>Other amphibians</b>
VP 1	0	35	35	-
VP 2	0	50	50	-
VP 3	0	6	6	-
VP 4	0 (wood frog tadpoles noted)	15	15	-

The vernal pools on the site, which each occupy less than 2 acres were documented as providing breeding habitat for one or more obligate vernal pool species. They appeared to exhibit suitable hydrology for full larval development and metamorphosis of obligate vernal pool-breeding species. They lacked permanent stream outlets, did not contain fish, and were appeared to dry down entirely or substantially each year.

The land uses surrounding the breeding pockets throughout Wetland 1 indicate that the site and surrounding areas do not provide exemplary habitat for obligate vernal pool species. Actual habitat use is presumed to be limited to drier areas of Wetland 1 and its associated forested area. Refer to Appendix H – Vernal Pool Study for further information.

#### 6.10.4 Proposed Project and Mitigation

The Project has been designed to provide a vegetated buffer between the development itself and these wetland systems to maintain an ecological edge zone that separates the solar development and stormwater features from the wetland communities. The wetlands will be further protected by incorporation of the stormwater management features that have been designed to mitigate peak runoff rates and treat water quality that is generated from the development area.

In concurrence with CTDEEP Stormwater General Permit, the minimum buffer proposed for any grading activities or infrastructure development is generally 50-feet from any wetland resource, and the minimum buffer proposed for any solar panels is generally 100-feet from any wetland resource. Solar panels are currently not proposed within 50-feet



of the small isolated wetland within the farm field (Wetland 3). Discussions with CTDEEP on this topic are ongoing.

The Project recognizes that it will be constructed, in part, inside of the 750-foot Critical Terrestrial Habitat buffer of multiple vernal pools on the Site. It is not anticipated that this construction will have an adverse effect on the surrounding amphibians accessing these pools. None of the construction will occur within the vernal pools or inside of the 100-foot Vernal Pool Envelope. Moreover, all construction will be done in accordance with the 2015 Vernal Pool Best Management Practices of the US Army Corps of Engineers to minimize any potential harm. Finally, the construction of the project will not result in any diminution of habitat within the 750-foot Critical Terrestrial Habitat perimeter.

## 6.11 Wildlife and Habitat

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

A Request for Natural Diversity Data Base (NDDDB) State Listed Species Review was completed and distributed to CTDEEP Wildlife Division for review. In return, a Final Determination dated November 17, 2020 was provided by CTDEEP Wildlife Division which found that extant populations of three State Species of Concern: Eastern Box Turtle (*Terrapene carolina Carolina*), Wood Turtle (*Glyptemys insculpta*), and Brown Thrasher (*Toxostoma rufum*) were in vicinity of the project therefore CTDEEP recommended protection strategies for three species during construction activities. The final determination letter approves construction as proposed. A copy of this letter is included in Appendix I.

### 6.11.2 Potential Impacts and Mitigation

The Final Determination provided by CTDEEP Wildlife Division lists Eastern Box turtle, Wood turtle, and Brown Thrasher as the identified protected species at the site and suggests proposed conservation measures for each. The Petitioner has incorporated these

conservation measures into the site development plan and will coordinate the construction work with CTDEEP Wildlife Division as needed.

### 6.11.3 Core Forest

Review of CTDEEP Forestland Habitat Impact Map indicates that no known core forest exists at or in proximity to the site and also, no tree clearing is proposed. Accordingly, it is the Petitioner's opinion that the Project will not alter areas of core forest. See Figure 11 – Core Forest.

## 6.12 Water Supply

No water for the construction of the facility will be sourced on site from either a well or utility hook up. All water used for construction will be trucked in. Minimal long-term water use will be required for operations for the purpose of cleaning modules and this water will also be trucked in.

## 6.13 Stormwater Management

### 6.13.1 Existing Conditions

Under existing conditions, untreated stormwater runoff from most of the Site generally flows westerly and easterly overland towards one of the two on-site wetland systems (Wetlands 1 and 2). These two wetland systems convey runoff north-to-south towards Old Tavern Road and Treat Lane and are each conveyed across the road by culvert and discharged to receiving areas.

Approximately 40% of the site is comprised of forested wetland and the remaining 60% are generally comprised of grass and farm fields. Generally, the site is at its highest elevation within the central portions of the grass and farm fields, and slopes down in all directions to the adjacent forested wetland systems. The majority of terrain slopes in the Project area range from 0% to 5% with small portions ranging up to 8% slope.

Information and computations regarding existing conditions hydrology is contained in the Stormwater Report. A copy is included in Appendix F.

### 6.13.2 Proposed Conditions

The proposed stormwater management system for the Project has been designed to meet State standards found within 2004 Connecticut Stormwater Quality Manual and CTDEEP Stormwater General Permit effective December 31, 2020. The system consists of five proposed permanent stormwater management basins and accompanying drainage swales which have been strategically located throughout the Project site to maintain existing drainage patterns to the onsite wetlands. A seed mix of either pollinated-friendly grasses and/or permanent turf forming grasses will be used to establish vegetation directly under the modules to help stabilize the topsoil from erosion, sequester nutrients and pollutants, and lower runoff rates. During the growing season, produce will be grown using no-till planting to limit soil disturbance. During the non-growing season, the farmers will establish cover crops, which will be selected and planted to stabilize the soil in the interspacing of the rows. The only impervious surfaces created by the Project will be a small amount of gravel access road and equipment pads.

Post construction stormwater runoff will be collected and conveyed to the stormwater basins via overland sheet flow and permanent diversion swales. Each pond will include an outlet control structure designed to mitigate peak stormwater flows to predevelopment levels. Water quality treatment and stream channel protection is provided in the basins and infiltration of stormwater runoff into the ground has been promoted to the maximum extents practicable. Information and computations regarding proposed conditions hydrology is contained in the Stormwater Report. A copy is included in Appendix F.

## 7.0 Conclusions

The Project clearly meets the standards set forth in Conn. Gen. Stat. §16-50k(a). Specifically:

- The Project meets CT DEEP's air and water quality standards, with no material emissions associated with either construction or operation, and water quality standards associated with construction and operational stormwater management a primary focus of the Project's design;
- The Project has been configured to avoid any substantial environmental impacts by utilizing land which has been subject to former agricultural uses; and
- The Project will not alter areas of core forest; and
- Petitioner has coordinated with the Department of Agriculture to promote agricultural co-uses, with the Department concluding that the project would not materially affect the status of the Project land and prime farmland.

In addition, the Project would not be visible from any public viewsheds or from surrounding properties, nor will there be any impacts from noise.

Given the benefits this Project will provide to the State of Connecticut, GCE respectfully requests that the Council approve this Project as currently designed and issue a declaratory ruling that a Certificate is not required.