



**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 3.05 MW  
AC Ground-mounted Solar Photovoltaic Electric Facility  
Located at Middlefield Road, Durham, Connecticut**

**Prepared for  
The Connecticut Siting Council**

**January 17, 2024**

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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 Durham, Connecticut. The Project consists of the development of a 3.035-megawatt (“MW”) alternating current (“AC”) ground-mounted solar photovoltaic (“PV”) system (“Facility”) located at Middlefield Road, Durham, Connecticut (“Property”). See Figure 1 – Site Location Map and Figure 2 – Proposed Project Areas Aerial.

GCE submitted the Project in response to a renewable energy RFP and was selected as one of the projects approved in that RFP process. The three-megawatt solar array will be a Shared Clean Energy Facility under the SCEF program, which has been designated #SCEF 4-8730. This shared use would promote agricultural activities and renewable energy, specifically increased generation from renewable energy resources and diversification of the State’s renewable energy portfolio. The Tariff Terms Agreement Approval Date or In-Service Date for this portion of the Project is June 7, 2026.

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 2024, with commercial operation planned for the entire Project in 2025.

The Project is located on one parcel within the Town of Durham Farm Residential zoning district and is comprised of approximately 17 acres on a 23-acre parcel. See Figure 3 – Zoning Map. The Town of Durham’s Assessor’s Office has the parcel listed as P0196900

and the parcel is currently owned by Nelson and Donna J Prue. 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 is a fully integrated development platform that develops, finances, designs, constructs, owns, operates, 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. Since 2009, GCE and other affiliates of Greenskies have constructed and are operating over 310 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 operates other large-scale ground-mount projects in Connecticut, including but not limited to, a 16.78 MW AC facility in Waterford, 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, and a < 1 MW AC system at the East Haven Landfill. As the Council is aware, GCE has other projects under construction in Connecticut. GCE’s commercial clients include Target Corporation, Walmart, Inc., and Amazon.com, Inc., and our projects with them represent 136 MW across 276 sites in 16 states. According to the Solar Energy Industry Association, Target, Walmart, and Amazon are in the top six solar users at US-based facilities as of 2022<sup>1</sup>. 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

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<sup>1</sup> See, <https://www.seia.org/news/solarmeansbusiness2022>

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:

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## 3.0 Proposed Project

### 3.1 Project Area Overview

The Project's site is located on a 23-acre parcel at 141 Middlefield Road, Durham, Connecticut ("Project Area"). The Town of Durhams's Assessor Office has the parcel listed as P0196900 Currently owned by Nelson and Donna Prue. See Figure 4 – Tax Parcel Map. The parcel was a farm in the early 90s, has since been overgrown and now progressively cleared by the landowner. The proposed project would allow the landowners to restore the farmland via a shared use of agriculture and solar to support the State's commitment to renewable energy.

Nelson and Donna Prue purchased the Property in 2018. Imagery suggests that farming operations ended in the mid-1990s. The project area was then overgrown as it was left fallow and inactive it began to revert to the natural environment of the surrounding area. Nelson and Donna Prue sought to supplement their income by selling or developing a portion of their land. As they sought to supplement their income, the most appealing option would come in the form of converting a portion to allow solar panels to be placed on their property. Nelson and Donna have expressed no interest in converting the land into exclusively farmland. Rather they have shown interest in other forms of development with farming as a minor consideration. Developing a solar farm on the site would allow Nelson and Donna Prue to retain ownership of the Property while generating a supplemental source of income through a lease agreement with GCE.

#### 3.1.1 Existing Site Land Use

The overall land use of the 23-acre parcel/Property consists of an overgrown, vegetated portion and a cleared grass field with scattered trees, with a system of created vehicular access paths to navigate the site. There is a stream and wetland area off the property to



the eastern and southeastern edges. The parcel is largely undeveloped and unused except for the created access paths. See Figure 5 – Existing Conditions Map.

According to the Town of Durham’s Zoning Map, the principal use of the parcel is designated for residential and located in the farm residential zone. There is a single dwelling on the property that will not be impacted by the development. There is currently no farming activity on the property. Access to the property will initially be the driveway used by the landowners until an additional access route is created north of the dwelling. Then all construction, maintenance, and all other activities related to the Project Area will use the new access road. The Farm Residential zone of Durham is characterized by agricultural uses, and low-density housing. The zone allows for certain uses to be permitted via a special permit. Some of the uses requiring a special permit are Golf Courses, Day or Boarding Camps, Schools of all types including dormitories, Public Utility buildings, and Extraction/Earth Removal. Petitioner believes that the proposed project falls within the intensity of the uses allowed with a special permit in the Farm Residential zone of Durham.

### 3.1.2 Surrounding Land Use

The character and quality of Durham is defined by its abundant agriculture and forested rolling hills. This area of Durham just north of the center of town is split between the semi developed light industrial Route 17 and the more farm focused Middlefield Road. The Project sits right in the fork between these two roads. Residential houses to the South and West back up to the Coginchaug River and associated wetlands. To the north of the Project area is Gastler Farm and Dumas Tree farm. These farms are nestled between the Transfer Station, Livestock Auction and other light industrial services. To the East of the Project are small office buildings, including a Marine Retail company, machine shop and insulation company. The proposed project fits well withing this transitional section of town, being a melding of energy generation, and agricultural production.

### 3.1.3 Project Area Alternatives

The Project Area 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 areas, agricultural land, or the designated wetlands, 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 its grid and goal of better serving customers. The proposed Project Area allows for interconnection to the Eversource distribution grid at a cost that is viable and avoids long term studies or any negative impacts to the electrical grid. Every attempt is made to minimize adverse effects of development on the land.

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 an impact on the area and community, the social and environmental impacts of this Project are a net positive.

## 3.2 Project Description

### 3.2.1 Site Access

The primary access point to the Project will be via a proposed gravel access road at the northwest corner of the parcel abutting the street from Middlefield Road to the portion of the Property where the solar array is proposed. Petitioner would construct an approximately 1,850 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 C-2.0 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 540-watt panels (depending on the state of module technology at the time of construction) arranged two-high in portrait set at a 20-degree angle to balance the solar yield, located in the best available area within the property while avoiding the region closest to the neighbors in order to minimize their view of the project, as well as avoiding wetland buffers and culturally significant areas and to maximize annual energy production while balancing environmentally responsible design. 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 3.035 MW AC and designed with 285 strings of 24 modules, for a total of 6,840 modules. There would be 24

125 kW inverters that are to be centralized within the array and mounted to or adjacent to the racking structure. The DC capacity is 3.69 MW and the AC capacity is 3.035 MW. The DC to AC ratio is designed as 1.21. The Power from the inverters would be directed to a transformer, meter, disconnects and switchgear prior to interconnecting with utility distribution feeder. The Power will Interconnect to the pole to the south of the access road at Middlefield Road.

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 (Eversource Energy), 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 Eversource Energy on May 4, 2021. The proposed project is proposed to interconnect with the Dooley 30K Substation located via a 13.2kV 30K15 feeder and is approximately 3.35 miles from the solar project. The point of interconnection will be at a pole to the south of the access road at Middlefield Road.

In September 2023, Eversource conducted an Impact Study and Eversource concluded that “The project did not cause any adverse impacts to voltage, power quality, or thermal limits whilst operating under a standard Volt/VAR curve. This project will be able to interconnect to the Eversource grid as proposed after all requirements spelled out in the system upgrades and services section above are completed.” Petitioner is anticipating to receive an Interconnection Agreement in either Q4 of 2023 or Q1 of 2024.

### 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 fields to provide site security, as well as to address National Electric Code requirements. The perimeter fencing would extend around each array. There would be three access gates, with locking hardware, proposed along the perimeter for access to the array and permanent stormwater basins. See Appendix A – Sheet C-2.0- Layout and Materials Plan.

### 3.3 Stormwater Management

Under existing conditions, the project site is divided into five (5) sub watersheds that direct overland flow from stormwater off the site. Two (2) design points have been selected where stormwater enters one of the two intermittent streams on the outside of the development area. The installation of four (4) permanent stormwater basins is proposed as part of the project to capture, retain, and infiltrate tributary Project runoff before it is released into surrounding wetlands and stream courses.

### 3.4 Construction Schedule and Phasing of Construction

Project construction is anticipated to begin in Spring/Summer 2024 pending regulatory approvals. Initial work would involve the installation of erosion and sediment control measures, including installation of sediment traps. It is currently anticipated that a temporary staging area would be located in the field south of the Project pending future selection and consultation with an EPC contractor.

Assuming the project is approved, formal construction notice to proceed would be anticipated in Spring/Summer 2024, with delivery of equipment likely commencing in Summer 2024. 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 2024. Final site stabilization, testing, and commissioning would be expected to be completed in the late Fall of 2024. Construction activities would be expected to occur Monday through Saturday between the hours of 6:30 a.m. and 5:00 p.m. Notice will be provided to the Council in the event that Saturday work is planned. 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, Conservation District, Town of Durham, the engineer of record, and the qualified inspector. The contractor will contact Call-Before-You-Dig and notify the Town of Durham 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 the 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 E) 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-4.0 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 Durham and the Connecticut Siting Council a request plan for continued beneficial use of any components to be left on site, as requested, and determined by the landowner, such as 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.

## 4 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. As such, the State has set a Renewable Portfolio Standard target to achieve 40% Class I renewable energy by 2030 and a 100% zero carbon target for the State’s energy sector by 2040. The Project would provide a renewable energy source to be connected to Eversource’s grid for additional zero carbon electric generating capacity.

The proposed Project will help Connecticut achieve these goals and will provide economic and social benefits to the State and the Town of Durham in the form of lower electricity costs, greater grid stability, and the creation of construction jobs. Other benefits include:

- By working through the State of Connecticut’s SCEF program, at least sixty percent of the total capacity of the Facility will be supplied to low- and moderate-income customers and/or low-income service organizations;
- Once operational, the Project will generate renewable energy and offset tons of carbon dioxide emissions per year;
- Reduction in energy demand during peak usage will decrease energy costs for ratepayers throughout Connecticut;
- The creation of construction jobs in the region; and
- The Project will effectively increase new annual municipal tax revenues for Durham with no additional burden on town services.

### 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 October 26 2023 GCE initiated communication with the Town of Durham.

Correspondence between Jennifer Perry, the Administrative Coordinator and Robin Newton, the Consulting Town Planner have been ongoing. GCE and Partners plan on attending a Planning and Zoning meeting for the town on Jan 17, 2024,

On November 3, 2023 GCE mailed letters to the Project site abutters in Durham providing an overview of the proposed Project. GCE received communication from one direct abutter to the north of the project. The abutter had concerns about the visibility of the project. GCE explained there is no intent to remove the existing vegetation along the property line. GCE had one letter returned as undeliverable to 27 Parsons Lane. Additionally, GCE has been in communication with the landowner at 105 Middlefield Road. The landowner has not expressed any desire to prevent the development of the project. Throughout a period of time leading up to Petition application, GCE provided the landowner with conceptual designs, detailed designed, tree clearing plan and discussed adding screening to limit view of the proposed solar project. After discussions with the landowner, Greenskies decided relocate the solar array and to maintain a 100-foot forested buffer south of the project array within the Project site to maintain screening. A site visit with Greenskies, VHB, and the property owner was conducted in December of 2023. Greenskies is in continued discussions with the landowner to make sure the solar project does not adversely affect their enjoyment of their residential property and home. Detailed accounts of the above summarized discussions can be provided upon request.

On November 14, 2023 GCE had a meeting with the Connecticut Department of Energy and Environmental Protection (CT DEEP) Concierge team. The meeting was attended by Darren Wright, Emily Tully, Chris Stone, Brian Dinh, Fredrick Riese, Jessica Bilyard, and Chris Martin. GCE addressed questions posed about tree clearing, stormwater controls, farmland considerations, and the visual impacts. Meeting minutes are available to the Siting Council if requested.

As discussed in greater detail in Section 6.8.3 below, on November 15, 2023 GCE transmitted a letter to the Department of Agriculture outlining various agricultural co-uses that could be maintained at the Project Site.

On November 14, 2023 GCE submitted the proposed project into the CT DEEP Bureau of Natural Resources Division of Forestry for analysis that there would be no impact to Core Forest. On November 30, 2023 a letter was sent to the Siting Council from the DEEP Bureau of Natural Resources Forestry Division that confirmed the Project would not materially affect the status of core forest. A copy of that letter is available in Appendix L.

On December 1, 2023 Petitioner received final determination from the CT DEEP Bureau of Natural Resources Wildlife Division that the project is not located on land that is known to have extant populations of Federal or State Endangered, Threatened, or Special Concern Species. A copy of the Final Determination is available in Appendix H.

On November 15, 2023 Greenskies sent an Agricultural Dual Use plan to the Department of Agriculture for their approval and a letter of no material impact on farmland soils. More details of that plan can be found in section 6.8.3. The Department confirmed receipt of the plan on December 11, 2023. On December 12, 2023 Greenskies reached out to the Department to confirm their 30 day review process that had been previously communicated. It was then communicated to Greenskies on December 18, 2023 that the Department would begin their review of projects in January 2024. A full record of these communications is available upon request. It is Greenskies' hope that the Department will approve these plans in short order and convey that approval to the Siting Council.

## 6.0 Potential Environmental Effects/Inputs

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

The Project Site consists of approximately 23 acres and is located on Middlefield Road between Gastler Farms and Route 17. The Site is an undeveloped parcel that was a farm around 30 years ago. The Prue's recently acquired this property and it has not been actively farmed for multiple decades. The parcel has been overgrown and more recently the new landowners have been clearing the land of their own accord. To restart farm

activities on this property GCE will work with a farmer to ensure the proper conditions for their practices are maintained. GCE does not anticipate a reduction in acreage used for agricultural uses as the land is not currently farmed there will only be an increase in total agricultural output. See Section 6.6.3 for description of agricultural activities.

## 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 always a designated construction manager and/or site safety officer or representative present during construction, and such individuals 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 6:30 AM to 5:00 PM daily Monday through Fridays. Notice will be provided to the Council in the event that Saturday work is planned.

Potential pollutants 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 Durham Noise Zone Standards Article 2 Sections 11-41 through 11-55 of the town's code of ordinances.

The Town of Durham's Noise Zone Standards provides: "It is recognized that people have a right to and should be ensured an environment free from excessive sound and vibration that may jeopardize their health, safety or welfare or degrade the quality of their lives. This chapter is enacted to protect, preserve, and promote the health, safety, welfare and quality of life for the citizens of the Town through the reduction, control and prevention of noise." For the Class which the Property, and surrounding receptors, are located in, local ordinance prescribes a maximum level of 55 dBA for daytime hours or 45 dBA at property boundaries for nighttime hours.

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, single-family rural residential, and commercial development.

The selected inverter has acoustic noise rating 73 dBA at 1 meter distance and 67 dBA at 3 meters distance as noted in the inverter specification sheet provided in Appendix B. The western equipment pad is the closest to a property line and will have 10 inverters located on it. Based off these data points and using the inverse square law, at a distance of 75.5 feet the noise level will be less than 55dBA. No noise will be generated at night when the sun is not present and therefore this project will abide by the 45dBA sound requirement during nighttime hours. All other selected system equipment will typically generate the same or lower levels of noise.

The nearest abutting property line to a noise generating equipment pad is located at 159R Middlefield Road approximately 97 feet from the closest equipment pad. Since sound dissipates with distance, Petitioner does not anticipate that any Project-generated noise would be detectable by potential residential receptors and will be below regulated limits.

## 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

The Petitioner selected the Project's location, among other reasons, due to its limited impact on public viewsheds. The Project should also have limited visual impact to abutters. 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. Discussions between the Petitioner and abutting parcel owners to the Project are ongoing and the Petitioner intends to incorporate mitigation screening into the site development plan.

## 6.6 Federal Aviation Administration Determination

The Petitioner used the Federal Aviation Administration ("FAA") Notice Criteria Tool to screen the Project Area to assess if the Project triggers the FAA Notice Criteria. The result of the initial screening on November 13, 2023 is that no additional notice is required for FAA. See Appendix K, FAA Determination.

## 6.7 Environmental Site Assessment/Conditions

A site investigation by a Licensed Environmental Professional (LEP) from VHB investigated the project area for potential signs of contamination in June 2023. VHB performed a Phase I Environmental Site Assessment (ESA) and prepared a report summarizing the findings. VHB concluded that no Recognized Environmental Conditions (RECs) were identified on the site, however one Area of Concern (AOC) was recognized; due to the use of the site as agricultural farmland, it was noted that there may be a possibility of herbicide or pesticide contamination in the soils. A copy of the Phase I ESA report is included in Appendix E. This issue is not 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

Soils within the proposed development area predominantly belong to Hydrologic Soil Group C, Wethersfield Loam soils. Group C soils are characterized as slowly draining when thoroughly wet. Test pits are scheduled to be performed in the proposed basin locations to field-determine soil geology and infiltration rates, and results will be provided to the Council.

### 6.8.2 Preservation of Prime Agricultural Soils

The site is currently undeveloped land. A review of the USDA's soil mapping for the area indicates that the project will be placed on approximately 7.7 acres of prime farmland. GCE has been working in coordination with the Department of Agriculture about eliminating any negative impacts to the prime farmland. In order to achieve this, GCE created and submitted a proposal for dual agriculture use for the project on November 15th. At the time of this submission GCE has not received a response from Dept of Ag. GCE does expect that Dept of Ag will provide the Siting council with a letter of no impact to prime farmland for the proposed project within 30 days.

### 6.8.3 Agricultural Dual-Use

GCE is committed to the protection of Connecticut's prime farmland soils and the benefit that local agricultural brings to a community. Greenskies was the first solar developer in CT to develop and gain Department of Agriculture approval on a solar and agricultural co-use project. Since then, Greenskies and GCE have strived to push the growing agrivoltaic industry forward in a healthy direction and innovate best ways to combine solar and farming. In this proposed Project, GCE has created a Solar + Farming plan that

balances the needs of renewable generation, protecting soils and ag use all on the same site and is focused on regenerative approaches to farming to actually improve soil health over the lifetime of the Project.

As noted above in section 5.0 on November 15, 2023 GCE initiated communications 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 a combination of management strategies was the best fit for the site. These uses included planting of perennial herbs and botanical plants grown under the panels paired with pollinator habitat to produce honey.

Greenskies has proposed regenerative land management of a Solar + Farming by planting of three general types of plants to ensure quality of soil health and implementation agriculture(farming) activity on site. Broadly, the three types are 1) perennial herbs and botanicals for harvest and sale, 2) perennial cold season grasses to provide ground cover and reduce erosion and sediment runoff, and 3) pollinator friendly species to encourage beekeeping and honey production. At a very high level, maintenance would include the following:

- Delayed mowing would ensure that the selected plants can reach harvest stage and flowering stage and provide nutritional value to the pollinators
- Harvesting of agricultural products of plants and honey
- Overseeding as needed to maintain sufficient land coverage of plants
- Removal of invasive plants as needed
- General monitoring and upkeep of the soil, plant, and bee health

This use will protect the soils and replenish them for future agricultural use once the solar array is removed. Potential herbaceous plants being considered are: mint, dandelion, mullien, oregano, purslane, red clover, rosemary, thyme, yarrow and lavender. In addition, GCE will also review the Xerces Society guidance Pollinator Plants for Northeast Region and Pollinator Habitat Installation Guide to select plants for the Project. The

planting mix will also perform well for stormwater controls. Allowing these plants to grow for years will improve soil health and maintain prime farmland soils. The deep roots of the perennial plants will improve water infiltration to the soils.

In addition to the farming aspect of this Project, the Facility will be designed in such a way that it will enable the successful implementation of the proposed farming activities. The Project is being designed to accomplish this goal with three specific attributes. 1) The lowest point of the solar modules will be raised higher than is needed for solar only to allow for increased sunlight to the area below the modules as well as increased accessibility for farmers. The leading edge of the modules will be a minimum of 3.5 feet, but at places will be higher depending on topography. This minimum clearance was established based on prior experience with seeing improved sunlight at that higher height, needing to balance the required strength of the racking system, and in connection to the row spacing and required production level for the solar project. 2) The spacing in between rows is being designed to allow for sufficient acreage to grow plants, provide sufficient area of high sunlight levels, and provide workability for farmers while again balancing the needs of the required solar capacity. The current design has a relatively high row to row spacing of 26.5 ft. 3) The site is being designed with farmer's safety in mind. All electrical feeders will be either secured to the modules/racking directly or be underground. There will be increased signage and fencing to ensure that farm workers are never exposed to unsafe conditions.

## 6.9 Historic and Archeological Resources

Heritage Consultants prepared a Phase 1A Cultural Resources Assessment Survey in August 2023. Heritage found that the majority of the site contained a moderate sensitivity for archaeological resources and recommended a Phase 1B study be performed within the limits of the Project. Petitioner retained Heritage Consultants to perform a Phase 1B shovel test in these areas and the work is ongoing. A copy of the Phase 1A report is included in Appendix F and the

Petitioner will provide the results of the Phase 1B investigation, as well as any SHPO correspondence, to the Council.

## 6.10 Wetlands and Watercourses

### 6.10.1 Wetlands Delineation and Methodology

In May 2023, 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 July 18, 2023 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 offsite in the forested areas to the east of the property with a small intermittent watercourse in the southwest corner of the site. A more comprehensive analysis of the various wetland systems can be found in the Wetland Delineation Report included in Appendix G.

### 6.10.3 Vernal Pools

No habitat for vernal pools were discovered within the Project Area during the on-site field investigation in 2023 and VHB soil scientists attest that no further in-season surveys are required as part of the development.

### 6.10.4 Proposed Project & Mitigation

The Project has been designed to provide a vegetated buffer between the limits of disturbance and the described 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 permanent stormwater basins and vegetation at the site. The Project limits meet or exceed the CTDEEP Stormwater General Permit's minimum suggested setbacks for both solar panels (100') and overall disturbance (50') to wetlands.

#### 6.11 Wildlife & Habitat (NDDB)

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

A Request for Natural Diversity Data Base ("NDDB") State Listed Species Review was completed and distributed to CTDEEP Wildlife Division for review. In return, a Final Determination dated December 1, 2023 was provided by CTDEEP Wildlife Division which states that no known species are likely to exist within the Project area. The Final Determination letter approves construction as proposed. A copy of this letter is included in Appendix H.

##### 6.11.2 Core Forest

Review of CTDEEP Forestland Habitat Impact Map indicates no core forest is present on site. Core forest is located across the street to the west of the property which will not be impacted in any way by the proposed project. Approximately 6.0 acres of tree clearing is proposed within the limit of work area that is not core forest. Accordingly, it is the Petitioner's opinion that the Project will not alter areas of core forest. See Figure 11 – Core Forest. The Department of Forestry has issued a letter to the Siting Council on November 30, 2023 confirming no impact on Forestland Habitat from the project.

## 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 Project Area generally flows southerly towards one of the two delineated wetland systems. Generally the Project Area is at its highest elevation in the northernmost point and slopes towards the wetland systems. The majority of terrain slopes in the Project Area are in the 10% range with small portions ranging up to 15% slope. Information and computations regarding existing conditions hydrology is contained in the Stormwater Report. A copy is included in Appendix E.

### 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 four (4) proposed permanent stormwater management basins which have been strategically located throughout the Project Area to maintain existing drainage patterns to the wetland systems. 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. 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 swales. Each basin will include a riprap outlet control structure designed to mitigate peak stormwater flows to predevelopment levels and to provide water quality treatment. Information and computations regarding proposed conditions hydrology is contained in the Stormwater Report. A copy is included in Appendix E.

## 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 unused and left fallow for decades; 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.