



**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 4.99 MW
AC Ground-mounted Solar Photovoltaic Electric Facility
Located on Barber Hill Rd in East Windsor, Connecticut**

**Prepared for
The Connecticut Siting Council**

July 20, 2020



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1.0 Introduction

This is a Petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public need is required for the development, construction, operation and maintenance of the proposed Greenskies project (the Project) proposed by Greenskies Clean Energy LLC (GCE; Petitioner) in the Town of East Windsor, Connecticut, pursuant to Connecticut General Statutes §4-176 and §16-50k. The Project consists of the development of a 4.9 megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic (PV) facility located at Barber Hill Rd, East Windsor, Connecticut. See Figure 1 – Site Location Map and Figure 2 – Proposed Project Area Aerial.

The Project will participate in Renewable Energy Credit program. GCE was awarded three (3) low emission renewable energy credits (LRECs) and entered into three (3) *Standard Contract for the Purchase and Sale of Connecticut Class 1 Renewable Energy Credits from Low or Zero Emission Projects* with Eversource dated July 26th, 2019. The delivery term start date for all three contracts is April 1st, 2021.

Authorization by the Connecticut Siting Council (CSC) via approval of this Petition will allow the Project to be constructed 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 2020, with commercial operation planned for the entire Project in 2021.

The Project is located on two parcels within the Town of East Windsor's A-1 agricultural/residential zoning district and is comprised of approximately 28.7 acres of development on 39 acres total. See Figure 3 – Zoning Map. The parcels are currently active farmland with existing farm roads and tobacco barns and have frontage to the east on Rockville Road and Barber Hill Road. See Figure 4 – Tax Parcel Map. The topography of the site slopes gently north across the site limits. See Figure 5 – Site Survey and Figure 6 – Slope Map.

2.0 Petitioner

Petitioner GCE, a limited liability company with offices at 127 Washington Ave, North Haven, CT 06473, as Petitioner, proposes to develop, engineer, procure, construct (EPC) and own a Class I renewable energy resource (as defined by Section 16-1 (a) (20) of the Connecticut General Statutes). GCE develops, finances, constructs, and maintains clean, renewable-energy projects in the United States. In conjunction with its affiliate, Clean Focus Yield, the company offers integrated solar and battery-storage solutions to 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 230 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 and a < 1 MW AC system at the East Haven Landfill. 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 we GCE consistently ranked as one of the top solar developers in the United States.

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

operation and maintenance, and sophisticated reporting processes in place, 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:

Christopher Ross
Project Developer
Greenskies Clean Energy LLC
127 Washington Ave
West Building, Garden Level
North Haven, CT 06473
cross@greenskies.com
(860)398-5408

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 a 39-acre parcel in the Broad Brook neighborhood of East Windsor west-southwest of the intersection of Rockville Rd and Barber Hill Rd. The Town of East Windsor's Assessor's Office has the parcel listed as MBL - 029 68 010 and is currently owned by Leonard A. Mulnite, Trustee. The parcel makes up a portion of approximately 104 acres of contiguous farmland currently being used by Mulnite Farms Inc. to grow shade tobacco and corn. The Mulnite family has been farming the property since they acquired it in 1905. Rental income generated by the solar project will support the landowner's business, Mulnite Farms Inc.

Due to the increasing economic challenges of farming in Connecticut, The Mulnite family has sought to supplement their business by selling or developing a portion of their land, the two most appealing options being residential and solar. Residential developers have expressed interest in purchasing and subdividing the property, however the Mulnite family is reluctant to part with land that has been in the family for over a century. Developing a solar farm on the site allows the Mulnite family to retain ownership of the property while generating a supplemental source of income through a lease agreement with Greenskies. This arrangement allows future generations to farm the land upon decommissioning the project, should they so choose.

3.1.1 Existing Site Land Use

Currently, the Project site is being used exclusively for agricultural purposes. From May to July the site is used to grow shade tobacco, which is then cured and processed in tobacco sheds for 60 days. While the site is primarily used to grow tobacco, other crops such as squash and corn are occasionally grown as well. During fall and winter the site is cover cropped and remains dormant until the growing season when it is tilled and seeded.

3.1.2 Surrounding Land Use

The area surrounding the Project site primarily consists of farm fields and single-family residences. The fields north and south of the project site are owned by Leonard Mulnite and are a part of Mulnite Farms Inc.'s farming operation. Most of the direct abutting residences are concentrated east of the Project site on Barber Hill Rd and Rockville Rd. Three abutting parcels west of the Project contain single-family residences, two of which also contain dirt bike tracks. A transmission line runs north/south parallel to the western Project property line and a three-phase line runs east/west parallel to the northern Project property line.

3.1.3 Project Site Alternatives

The Mulnite Farms Project site was selected by Greenskies to not only be suitable for a solar PV project but to also have minimal natural resource and environmental impacts, to not have adverse effects on quality forest land or agricultural land, and not diminish the quality of life of those who live in the vicinity. It is also important 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.

Greenskies conducted an extensive search of both public and private land resulting in the selection of this parcel. Third party contractors are used 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, it is our opinion that the social and environmental impacts of this project site are a net positive.

In the course of selecting the Project Site, members of GCE evaluated several potential sites for renewable energy projects throughout the state. Alternative sites that were of suitable size were investigated and, in each case, environmental concerns and cost considerations rendered the sites less suitable than the project site. The cost considerations were chiefly due to either measures that would need to be taken to address wetlands or wildlife concerns or due to the costs of interconnection to distribution or

transmission facilities from these sites. As such, the project site was selected as the site that most appropriately balanced the land required to construct the project with the least amount of impact to wetlands, wildlife, core forest and/or prime farmland soils.

3.2 Project Description

3.2.1 Site Access

The primary and sole site access point is proposed to be via an unpaved full-service access driveway from Barber Hill Road, which is a paved local road, at the eastern end of the Project Site. There is currently an existing dirt road access drive extending from the west side of Barber Hill Road and Rockville Road that provides site access. An improved stone driveway apron is proposed to be constructed at the site driveway location for erosion control.

Approximately 2,800 LF of 14.6-ft wide internal gravels roads will be constructed within the Project area to provide centralized access to the proposed solar array, electrical equipment, and stormwater detention basins. To minimize site disturbance, the roadways are proposed to be constructed on prepared subgrades with a 12-inch layer of processed stone and matching 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

The photovoltaic arrays are anticipated to be comprised of 395-watt panels (depending on the state of module technology at the time of construction) arranged two-high in portrait set at an optimal 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 arrays are anticipated to be electrically oriented in direct current strings of 26 panels, which will be combined with adjacent circuits for a total of 16 into 125 kilowatt and 21 circuits into 166 kilowatt string inverters, respectively, mounted throughout the array racking. The power from these inverters will be directed to a transformer, which will modify the voltage to enable the distances of the conduit runs.

3.2.3 Electrical Interconnection

Interconnection applications for all three systems were submitted with Eversource in June 2019. An impact study of the project was conducted from January to May 2020, in which Eversource concluded that the project will not have an impact on the distribution system. The proposed project will interconnect with the Barbour Hill 23J substation located near the intersection of Frazer Fir Rd and Barbour Hill Rd in South Windsor. The project site is located approximately 2.61 circuit miles to the substation and will require some upgrades to existing infrastructure. Eversource provided GCE with interconnection agreements on May 1st, 2020.

3.2.4 Fencing and Site Security

A 7-foot high chain link fence is proposed to be installed around the perimeter of the solar array field to provide site security, as well as address NEC code requirements. The perimeter fencing will extend around the array and will provide a 3-6-inch gap between the bottom of the fence and existing ground, to allow small wildlife to traverse the site. There are three access gates, with locking hardware, proposed along the primary site access drive at the first corner and at both north-south gravel roads. See Appendix A – Sheet 3.1 and 3.2 - Layout and Materials Plan.

3.3 Stormwater Management

A Stormwater Management Report has been prepared in accordance with the 2004 State of Connecticut Stormwater Quality Manual, the Minnesota Drainage Manual, along with CT DEEP document *Guidance Regarding Solar Arrays*. A copy of this Report is attached as Appendix G.

As required and/or recommended, available soil mapping was reviewed and a hydrologic soil group confirmation study was performed in February 2020, as well as a stormwater basin geotechnical investigation. In addition, in-situ soil percolation testing was performed in February 2020. As indicated in the attached Report, predevelopment drainage patterns have been maintained to the greatest extent feasible in an effort to maintain pre-development flows to existing offsite areas and wetland/watercourse areas.

A total of three stormwater management basins with supporting swales have been designed and are strategically located throughout the project site to maintain existing drainage patterns.

A HydroCAD model, using TR-55 methodology, was developed to evaluate the existing and proposed drainage conditions of the property. The results of the analysis demonstrate that there will not be an increase in peak stormwater runoff rates for the 2-, 25-, 50-, and 100-year storm event. Water quality treatment for the project is proposed to be handled in the stormwater management basins.

3.4 Construction Schedule and Phasing

Project construction is anticipated to begin in Spring 2021 pending regulatory approvals and upon completion of agricultural activities for the 2020 growing season. Site conditions are expected to be fields seeded with cover crops such as clover or rye. Initial work will involve the installation of erosion control measures, including installation of sediment basins. A temporary staging area will be located in the field south of the project site at the end of the primary access drive.

A formal construction notice to proceed is anticipated in Spring 2021, with delivery of equipment likely commencing in late Spring 2021. As each discrete area of installation is completed, the ground surface will be stabilized, although best management practices will remain in place until final stabilization occurs.

Final installation of array equipment and landscaping/screening measures is anticipated in Summer of 2021. Final site stabilization, testing, and commissioning are expected to be completed in the late Fall of 2021. Construction activities are 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 East Windsor, the engineer of record, and the qualified inspector. The contractor shall contact Call-Before-You-Dig and notify the Town of East Windsor at least 48 hours prior to commencement of any construction activity. Upon achieving completion of construction and final site stabilization, the engineer of record will investigate the Site and all temporary erosion controls shall be removed.

Prior to construction, a health and safety plan is typically finalized by contractor and includes specific characteristics of the Project Site and the Project, taking into account the nature of the surrounding land uses. A Storm Water Pollution Control Plan (SWPCP) will 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 B) provides Erosion and Sedimentation Control Best Management Practices – Maintenance/Evaluation Checklists for Construction Practices and Long-Term Practices; both are included in Appendix C. Construction sequencing is described in detail on sheet C-5.0 in Appendix A.

3.5 Operation and Maintenance

Greenskies has a dedicated O&M team that currently monitors and maintains all operational assets in the Greenskies portfolio. This team will manage the efficient operation of the solar project after it is turned on and the construction is complete. A team of individuals including system analysts and field operators will 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 are 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

Decommissioning consists of physical removal of all facility components, such as solar arrays, equipment (e.g. batteries, inverters, and transformers), structures, security barriers and fencing, facility signage and transmission lines from the site. The process of removing structures involves evaluating and categorizing all components and materials into categories of recondition and reuse, salvage, recycling and disposal. The Project consists of numerous materials that can be recycled, including steel, aluminum, glass, copper and plastics. See Appendix D – Draft Decommissioning Plan

Decommissioning will also include restoration of the site, which comprises removal of above-ground structures; grading, to the extent necessary; restoration of topsoil (if needed) and seeding. GRE will stabilize and re-vegetate the site either to allow for the site to be returned to agricultural use or as necessary to minimize erosion if the site is to remain fallow. Areas disturbed during the decommissioning phase will be with seeded with a drought-tolerant grass seed mix appropriate for the area, unless such areas are being immediately redeveloped for other uses. If desired, GRE would seek Council approval to leave landscaping in order to minimize erosion and site disturbance.

The cost of decommissioning a solar array more than 20 years into the future cannot be known with high precision. However, given the cost of components today, and the salvage value associated with such components today, one can begin to have an educated estimate as to the cost of salvage. For purposes of the Project, this means that the cost of decommissioning the solar arrays will be offset by the salvage value of the solar panels and components (i.e. glass, metal, copper). As of the date of this plan, the estimated

salvage value is expected to exceed the decommissioning costs. See cost estimates provided in Appendix D – Draft Decommissioning Plan.

The project shall begin decommissioning within 180 days of the end of the project's operational life. GRE will notify the Council and appropriate Town officials of the proposed date of discontinued operations and will provide plans for removal. In the event of major damage, GRE plans to initiate repairs within 30 days of the damage.

4.0 Project Benefits and Needs

4.1 Project Benefits

The Project will provide the state's electrical system with additional generating capacity that will meet demand using renewable energy and contribute to grid stability. As noted in the introduction, the Project was selected as part of Eversource's 2019 ZREC/LREC program and was found to be consistent with Connecticut's 2013 Comprehensive Energy Strategy (CES). This version of the CES, along with the most recent version of the CES, sets forth clear goals for increasing the use of renewable energy as a part of the state's power generation portfolio:

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

As the Council is well aware, Connecticut's RPS has only increased since the 2013 CES. The construction of the Project becomes even more important in light of the 2018 CES's aspirations for even greater greenhouse gas emission reductions through the promotion of grid-scale renewable energy, as is evidenced by Governor Lamont's issuance of Executive Order No. 3, which calls for the complete decarbonization of the electric generation sector by 2040. . In addition to the direct contribution the Project will make to increase the use of renewable energy, additional reduction of greenhouse gases and criteria air emissions will be associated with the displacement of older, less efficient fossil fuel generation.

The Project anticipates using local and regional labor, as practical, for construction, and will be a source of both direct and indirect revenue contribution to the local community. During construction, jobs will be created including direct, indirect, and induced. From a municipal perspective, the proposed project will result in no impact to Town services such as education/schools, highway maintenance, water and/or wastewater.

Aside from the long-term environmental benefits of the renewable energy that will be generated, the proposed project will have additional environmental benefits. Limiting the planting of single crop tobacco, in conjunction with the solar array pollinator friendly and native mix vegetation, will improve soil health over the life of the project and allow for long term agricultural or conservation use of the land as deemed appropriate by the land owner. The project will also implement another agricultural co-use activity, namely the grazing of sheep at the facility. The Project is working the solar grazing association to develop the sheep grazing protocol for the site, however, it is anticipated that the sheep will be on-site from April/May of each year until October/November of each year to manage the vegetation on site. The pollinator-friendly mix that will be planted will also include sufficient grasses and forbs for the sheep to live at the site during the growing season. The Project has submitted this proposal to the Department of Agriculture, and the Project expects that the Department of Agriculture will notify the Siting Council of its acceptance of this proposal in the near future.

4.2 Project 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 Global Warming Solutions Act (GWSA), for example, requires the State to reduce its total GHG emissions to 10 percent below 1990 levels by 2020, to 45 percent below 2001 levels by 2030, and to 80 percent below 2001 levels by 2050. Further, in April, 2019, Governor Lamont signed an executive order directing state office buildings and vehicle fleets to become greener and more energy efficient. This initiative calls for state

operations to achieve a 70 percent reduction in GHG emissions from 2016 levels by 2040 and net zero GHG emissions by 2050.

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

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

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. As referenced above, GCE met with Stephen Anderson and Cameron Weimar from the Department of Agriculture to discuss the impact that the proposed project would have on prime farmland soils. GCE prepared site information outlined in the Department's Solar Energy Project Considerations, revised on January 16th, 2020. After several discussions with the Department, GCE submitted its proposal for sheep grazing, as outlined in section 4.1 above. GCE anticipates that the Department of Agriculture will notify the Siting Council of its approval of this plan shortly.

On May 12, 2020, Steve Kochis, P.E. (VHB), project civil engineer, submitted a request for pre-application meeting with CT DEEP Stormwater permitting staff via DEEP's electronic permitting application system. The pre-application meeting took place on

June 3rd and a site visit with DEEP staff and project engineer will follow. The Project 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 February 18th, 2020, GCE met with East Windsor town officials and First Selectman Jason Bowsza to introduce the project. GCE and VHB met with Director of Public Works/Town Engineer Leonard Norton and Operations Manager Joseph Sauerhoefer on February 25th, 2020 to review the site plans and proposed stormwater design. On May 4th, 2020, GCE and VHB conducted a site walk with First Selectman Bowsza, Leonard Norton, and Joseph Sauerhoefer to review the site plans and incorporate any feedback into the final design.

In addition to outreach with local officials, GCE had intended to host an informational meeting with neighbors at the town hall on March 23rd, 2020. GCE was never able to host the meeting as much of the state began taking measures to reduce the transmission of COVID-19, banning public gatherings altogether. Invitations were mailed on March 10th, 2020 and cancellation notifications were mailed on March 17th, 2020. In lieu of a public gathering, GCE provided contact information to all invitees and offered to speak directly with neighbors over phone or email to answer questions about the project. GCE will continue to offer an open line of communication with neighbors of the project until a public meeting can be rescheduled. See Appendix K – Public Outreach Documentation.

6.0 Potential Environmental Effects/Impacts

6.1 Site/Community Setting and Scenic Character and Values

The project site consists of approximately 28 acres and is located in the Broad Brook neighborhood of East Windsor. The site and surrounding area consist of actively farmed fields and homes, with much of the now developed areas previously used as farm fields. The Mulnite family has owned and actively farmed land in this area, including the project site, since 1905. The Mulnites will continue to farm the fields north and south of the project site.

To maintain the agricultural character and aesthetic of the area, GCE has committed to incorporate an agricultural co-use within the project site. As noted above, this will consist of sheep grazing at the site, along with the use of a pollinator-friendly seed mix throughout the site which will support native pollinators and lay the groundwork for a potential apiary. Furthermore, GCE and VHB have devised a screening plan along the eastern side of the project site, which will conceal the project using a mix of native trees, shrubs, and grasses. See Appendix M – Visual Simulations.

6.2 Public Health and Safety

The proposed Project is not expected to create any 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 will follow all health and safety standards applicable to solar energy generating facilities.

A site-specific construction health and safety plan will be developed prior to initiation of any on-site Project-related tasks. During the construction phase of development, all contractors, sub-contractors and personnel will be appropriately trained and briefed on any potential site health and safety issues. There will be a designated construction

manager or representative present during construction, and such individual will be responsible for overseeing/implementing site construction plans and protocols.

Traffic relative to the site includes standard construction trucks, small earth moving equipment, and all terrain fork lift equipment. Vehicle trips would be relative to scheduled deliveries of the major materials such as solar racking, solar panels, electrical equipment to serve the solar site, and fencing materials to be installed around the perimeter of the solar field. Construction activity and associated traffic will 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 PVC glue for use with electrical conduit installations and carbon-based fuels for vehicles and equipment. It is anticipated that there will be less than one gallon of PVC glues and less than 25 gallons of fuel stored on-site. All flammable liquids will be kept in code compliant cabinets and containers. Spill kits will be in all vehicles and equipment on-site. Daily monitoring of chemical usage will be managed to ensure compliance to requirements. No risk of release to the environment is anticipated. A traffic and site safety summary is provided in Appendix C.

6.3 Noise

6.3.1 Noise Level Guidelines and Regulatory Requirements

Applicable regulations pertaining to potential Project-related noise are provided in Connecticut regulations for the Control of Noise established by CTDEEP at Conn. Gen. Stat. §22a-69 and the Town of Stonington’s Nuisance Ordinance.

The local ordinance provides: “It shall be unlawful for any person to create, make, permit or allow unreasonably loud, disturbing, or unnecessary activity or noise if generated to such a volume as to be objectionable when heard within the confines of a residential home or residential premises before 6:00 AM and after 10 PM Monday through Saturday and before 8:00 AM and after 10:00 PM on Sunday. Such activity or noise shall violate this

Ordinance when it is of such character, intensity or duration as to be detrimental to the quiet, comfort, repose, life or health of others.....”

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

6.3.2 Proposed Project-generated Noise

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.

Based on information provided by specified equipment manufacturers, the selected inverters for the proposed Project will typically generate 56 dBA at a distance of 3.0 meters or 9.8 feet, as noted in the inverter specification sheet provided in Appendix B. All other selected system equipment will typically generate the same or lower levels of noise.

The nearest residence is approximately 50 feet from the Project property line and approximately 300 feet from the closest on-site equipment location and pad. The nearest commercial and/or industrial use is approximately 2,000 feet from the Project property line and approximately 3,100 feet from the closest on-site equipment location and pad. Since sound dissipates with distance, it is not anticipated that any Project-generated noise will be detectable by potential residential, commercial and/or industrial receptors.

6.4 Air Quality

Due to the nature of the proposed Project as a solar energy generating facility, no air emissions will be generated during operations and, therefore, an air permit will not be required. A Carbon Debt Analysis is provided in Appendix E and shows the net improvement in carbon debt that will result from the proposed Project. As reflected in the results, the proposed solar energy generating facility will result in elimination of 4,287 metric tons of carbon dioxide (CO₂) equivalent emissions based on 9,622 MW-hours of electricity generated within the first year of operation. This amounts to an equivalent reduction of taking off the road 926 carbon-based fuel operated, moving vehicles.

Temporary, potential, construction-related mobile source emissions will include those associated with construction vehicles and equipment. Any potential air quality impacts related to construction activities can be considered *de minimis*. Such emissions will 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 will meet the latest standards for diesel emissions, as prescribed by the United States Environmental Protection Agency (USEPA) and will consider reducing exhaust emissions by utilizing effective controls.

6.5 Environmental Site Assessment/Conditions

A site investigation by a Licensed Environmental Professional (LEP) from O'Reilly, Talbot & Okun Engineering Associates investigated the project area for potential signs of contamination in June 2019. A Phase I Environmental Site Assessment (ESA) was performed and a report summarizing the findings dated July 15, 2019 was prepared. The report generally concludes that there is a likely presence of pesticides, herbicides, and fertilizer in groundwater within the area of the Site given its nature of farming and recommends that any material intended to be exported from the Site be tested first. Dust suppression and anti-tracking pads shall be incorporated during construction. A copy of the Phase I ESA report is included in Appendix F.

6.6 Site Soils and Geology

6.6.1 Existing Site Soils and Geology

A review of available NRCS online soils mapping indicated the likely presence of a consistent Narragansett silt loam across the entire project area, with slopes ranging from 2 to 8%. In accordance with the CTDEEP publication *Guidance Regarding Solar Arrays*, soil scientists from VHB dug test pits at the site to confirm the soils mapping in February 2020. The conclusions of that investigation generally found the majority of the project area to be a thick layer of sandy loam (12" to 18") underlain with sand and cobbles, not to contain shallow restrictive layers, and to be of Hydrologic Soil Groups A and B. Soils information and results from the onsite testing are included in Appendix L and also incorporated into Appendix G.

6.6.2 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 stripped from the surface and piled onsite. Upon the completion of earth movement, the prime farmland soils will be replenished back to the site. As noted above in Section 5.0, GCE met with the DOAg on several occasions, with the result being the sheep grazing program discussed above.

6.7 Historic and Archaeological Resources

A Phase 1A Cultural Resources Assessment Survey was prepared for the site dated July 2019. Generally, the report suggested that there were no listed historic registry places within one mile of the Site but summarized 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. A Phase 1B Cultural Resources Reconnaissance Survey was performed and prepared for the site in October 2019. The

reports were shared with State Historic Preservation Office (SHPO) who reviewed them and issued a letter dated March 18, 2020. SHPO's conclusions were that they concurred with the findings of the report, that no additional archaeological investigation of the project area were warranted, and requested that the three tobacco sheds in proximity to the project area be retained. It is not proposed to remove any of these barns. Copies of the Phase 1A and Phase 1B reports and SHPO concurrence letter are included in Appendix H.

6.8 Wetlands and Watercourses

6.8.1 Wetlands Delineation and Methodology

Between July 24, 2019 and August 5, 2019, soil scientists from VHB investigated the farmed Site fronting on Rockville Road and Barber Hill Road in East Windsor 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 August 13, 2019 was prepared outlining the survey process and findings. A copy of this report is included in Appendix I.

6.8.2 Existing Wetlands and Watercourses

One wetland was delineated in the extreme southern part of the property near Lindsay Lane. No watercourses, perennial or intermittent were identified on the Site. No wetlands were discovered within 150 feet of the current project limits. See Figure 12 – Wetlands Delineation Map.

6.8.3 Vernal Pools

Over the course of the Wetlands Delineation, the feasibility of potential vernal pools was searched for. No evidence of potential vernal pool habitat was located on the site or in

close proximity to the site which would necessitate further investigation during pool breeding season.

6.8.4 Proposed Project

The closest water or wetland feature to the project area to which stormwater runoff discharges is Windsorville Pond which is approximately 500 feet away to the northeast. The incorporation of a stormwater management system in the site plan design will mitigate peak flow increases and treat water quality of runoff serve to protect this resource.

6.9 Wildlife and Habitat

6.9.1 Rare, Threatened and 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 Preliminary Assessment dated August 20, 2019 was provided by CTDEEP Wildlife Division. A copy of this letter is included in Appendix J. See Figure 13 – NDDB Areas Map

In response to the CTDEEP Wildlife Division review, VHB plans to perform an NDDB Preliminary Assessment of protected species whose presence is likely, or probable, at the Project site. Such species fall with the following categories: invertebrates, vertebrates and vascular plants. In cases where the primary habitat of the species identified by NDDB is not present on the site, VHB will provide field confirmation only. For species that are more likely to be utilizing the site, or a portion of it, VHB biologists will survey the property and report findings. Such species include several birds such as the American kestrel, Red-headed woodpecker and Savannah sparrow, as well as the Wood turtle. A botanical survey will be performed as well. All studies will take place between May 2020 and July 2020. A report with findings will be submitted to the CTDEEP Wildlife Division for review and final determination. See Appendix J for a memo outlining the scope of the NDDB surveys.

6.9.2 Potential Impacts and Mitigation

The Preliminary Assessment provided for the Project listed multiple species of concern as possible inhabitants of the site. In accordance with the guidance from this letter, GCE intends to survey for, or otherwise adequately describe how to protect, all listed species during the seasonal periods of the year they would be present. A report summarizing the findings will be prepared and provided under separate correspondence.

6.9.3 Core Forest

There's no mapped core forest on the Project site, as shown in Figure 13 – Core Forest Map. No tree clearing is proposed and accordingly, the Project will not alter areas of core forest.

6.10 Water Supply

No water 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.

According to the Town of East Windsor mapping, the Project site is not located within an Aquifer Protection Area (APA) or Groundwater Protection Overlay District (GPOD); see Figure 14 – Aquifer Protection Areas Map. Groundwater beneath the entire Project site is not designated through CTDEEP's ground water classifications for drinking water; see Figure 15 – Water Quality Classifications, East Windsor, CT.

6.11 Stormwater Management

6.11.1 Existing Conditions

The existing hydrology of the site consist of three major watersheds. Runoff from the site is generally directed north towards Windsorville Pond. Runoff from western portions of the project area flow overland to the north across an existing farm road towards an abutter's yard. That yard is improved with a culvert inlet which collects overland runoff

and discharges it across Rockville Road towards Windsorville Pond. Runoff from the central portions of the Project area drain overland to a natural break in a berm separating the Project site from a farm field, and into the adjacent farm fields. Runoff from the eastern portions of the Project area drain overland to an existing 15" RCP which discharges across Rockville Road towards Windsorville Pond. Information and computations regarding existing conditions hydrology is contained in the Stormwater Report. A copy is included in Appendix G.

6.11.2 Proposed Conditions

The proposed stormwater management system for the Project has been designed to meet State standards as well as the CTDEEP guidance document *Guidance Regarding Solar Arrays*. The system consists of three proposed permanent stormwater management basins and accompanying drainage swales which have been strategically located throughout the Project site to maintain existing drainage patterns. In the majority of the on-Site areas, the Project proposes to install permanent turf-forming grasses to help stabilize the topsoil from erosion, sequester nutrients and pollutants, and lower runoff rates from the facility to the surrounding discharge points

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 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 G.

7.0 Conclusions

The Project clearly meets the standards set forth in CGS §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 and minimize other environmental impacts by utilizing land which has been subject to former agricultural uses; and
- The Project will not alter areas of core forest, and the Petitioner will develop a unique agricultural co-use for the project in the form of grazing sheep.

Given the benefits this Project will provide to the State of Connecticut, Greenskies Clean Energy respectfully requests that the Siting Council approve this Project as currently designed.