



**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 5.0 MW
AC Ground-mounted Solar Photovoltaic Electric Facility
Located on Boom Bridge Rd in North Stonington,
Connecticut**

**Prepared for
The Connecticut Siting Council**

June 23, 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 North Stonington, Connecticut, pursuant to Connecticut General Statutes §4-176 and §16-50k. The Project consists of the development of a 5.0 megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic (PV) facility located at 227 Boom Bridge Rd, North Stonington, Connecticut. See Figure 1 – Site Location Map and Figure 2 – Proposed Project Area Aerial.

The Project will participate in the Renewable Energy Credit program, selling power to Connecticut State Colleges and Universities (“CSCU”). GCE was awarded five (5) zero emission renewable energy credits (ZRECs) and entered into five (5) *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 five 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 parcels within the Town of North Stonington’s R60 residential zoning district and is comprised of approximately 27 acres of development on 133 acres total. See Figure 3 – Zoning Map, Figure 4A – Tax Parcel Map 119 – 0928 and Figure 4B – Tax Parcel Map 119 – 6313. The site is bounded by I-95 to the north, forest to the south and west (zoned Medium Density Residential (R-60)), and undeveloped commercial land to the east (zoned Highway Commercial (HC)). The site parcels are all within the R-60 zone (Medium Density Residential).

Until 2016, the site consisted of forestland. It was cleared at that time by the landowner for potential farming purposes but has not been used as such. Since that time, the site has grown to be covered with low lying brush and smaller-sized saplings.

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.

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 Clean Energy 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.

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3.0 Proposed Project

3.1 Project Site Overview

The Project site is located on parcels in the southeast corner of the Town of North Stonington, south of Interstate 95 and east of Boom Bridge Rd. The Town of North Stonington's assessor's office has the parcels listed as MBL – 119 – 0928, owned by the Lewis Brothers Partnership, and MBL – 119-6313, owned by Lewis David Babcock LLC. The approximate acreage of the project site is 30 acres and is primarily located on parcel 119 – 0928. See Figure 4A – Tax Parcel Map 119 – 0928 and Figure 4B – Tax Parcel Map 119 – 6313. Both parcels are zoned R-60 Residential. See Figure 3 – Zoning Map. Additionally, a portion of the interconnection route will pass through parcel 119 – 7862, which is owned by and the primary residence of Ledyard E. Lewis. See Figure 4C – Tax Parcel Map 119 – 7862. Rental income generated by the solar project will support the landowner's business, the Beriah Lewis Farm, which has been in operation since 1791. The Beriah Lewis Farm sells meat and dairy products to restaurants and markets throughout southeastern Connecticut.

3.1.1 Existing Site Land Use

The Project site is currently vacant land. The landowners clear cut the area in 2015 and 2016 with the intention of starting a gravel pit, however those plans were put on hold after the landowners determined that using the land for solar would be a better alternative. The Project site has remained dormant since being cleared.

3.1.2 Surrounding Land Use

The landowners use a portion of parcel 119-6313 west of the project site to grow feed corn for Beriah Lewis Farm. Parcel 119-6313 is also home to a cell tower located north of the access road leading to the Project site. The Project site borders a gravel pit to the east, I-95 to the north, and single-family residences to the south. The closest residence to the

project site is located approximately 1000' west across I-95, with the second closest residence located approximately 1400' south downgradient.

3.1.3 Project Site Alternatives

The Boom Bridge project site was selected by Greenskies to not only be suitable for a solar PV project, but also to have minimal natural resource and environmental impacts; to not have adverse effects on quality forest land or agricultural land; and to not diminish the quality of life of those who live in the vicinity. It was 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, the project has been designed so 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.

The landowners have been actively looking for ways to utilize the project site as a source of supplemental income for their business, Beriah Lewis Farm. Prior to the current plan for solar development, the landowners were preparing the site for earth material extraction. After discovering that they could lease the land to develop a solar project, the landowners determined that solar would be a better option economically. Establishing a gravel pit remains their contingency plan should the Project not move forward.

3.2 Project Description

3.2.1 Site Access

The primary and sole access point is an existing farm road located off Boom Bridge Road. The existing road is a mix of gravel and dirt extending approximately 3,100 feet northeast from the street towards the proposed solar facility. It is intended to improve and/or repair the existing farm as needed to accommodate construction traffic.

In addition, approximately 1,900 feet of gravel access roads are proposed within the site 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 6 – 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, with the area of available areas within the property, to maximize annual energy production. The panels will be mounted on fixed, 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 circuits into 125- kilowatt string inverters 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 the project was submitted with Eversource in June 2019. An impact study of the project was conducted from January to April 2020, in which Eversource concluded that a Facility Study would be required. The scope and Facility Study Agreement were received in May 2020 and are pending review. The point of interconnection was defined as approximately Pole 5003 off Boom Bridge Rd. The proposed project will interconnect with the Shunock substation located approximately 3.85 circuit miles from the site Pendleton Hill Rd. in North Stonington and will not require a dedicated feeder. Specific required upgrades will be included in the Facility Study results and cost estimates. Eversource will provide GCE with interconnection agreements upon completion of the Facility Study.

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 6-inch gap between the bottom of the fence and existing ground, to allow small wildlife to traverse the site. There are eleven access gates, with locking hardware, located at the entrance of the site and close to basins for maintenance purposes. See Appendix A – Sheet 3.1 through 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, along with a stormwater basin geotechnical investigation and boring pits. 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 wetland and watercourse areas.

A total of nine 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 season. Brush clearing will be required to prepare the site for construction. 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.

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 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 North Stonington, the engineer of record, and the qualified inspector. The contractor shall contact Call-Before-You-Dig and notify the Town of North Stonington 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 will be finalized by contractor that will 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) will also be developed and implemented 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 to 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 return the site 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 or specified below-grade foundations 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 any 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 Petition, the estimated salvage value is expected to exceed the decommissioning costs. See cost estimates provided in Appendix D – Draft Decommissioning Plan.

The project shall be decommissioned 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 the Eversource 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. . Selection of this Project for a PPA under the CSCU RFP process affirms the Project's consistency with the state's energy plans and objectives. In addition to the direct contribution the Project will make to increase the use of renewable energy, additional reduction of greenhouse gases and criteria air emissions will be associated with the displacement of older, less efficient fossil fuel generation.

4.2 Project Needs

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 of 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 also 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. GCE met with North Stonington First Selectman Mike Urgo and Town Planner Juliet Hodge on January 23, 2020 to introduce the project. On May 7, 2020, GCE and VHB conducted a site walk with Town Planner Juliet Hodge to go over the latest site plans, answer any questions, and incorporate any feedback into the final plan set.

On June 3, 2020, GCE had a pre-application with DEEP Stormwater permitting staff and representatives of other DEEP departments, including: Dam Safety, Permitting, and 401 Water Quality. GCE plans to submit a stormwater general permit application to DEEP shortly after submission of this Petition. A site walk will be scheduled at DEEP's discretion. Because the proposed project, as designed, will not permanently alter any land classified as "prime farmland," GCE requested that the CT Department of Agriculture ("DOAg") provide the Council with a "no impact" letter, which GCE anticipates will be sent to the Council by DOAg.

On March 4th, 2020, GCE mailed letters to the two residential abutters which fall within 300' of the proposed project area. The letters included an offer to answer questions about the project over the phone or in person. At this time, GCE has not heard from either abutter. In addition, on June 17, 2020, GCE sent abutter notifications to all abutters of the property, regardless of status as residential or commercial. GCE sent regulatorily-required noticed to state and local officials as required by applicable regulations on June 18, 2020. 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 30 acres and is located in the southeastern corner of North Stonington. The surrounding area is largely characterized by its rural and agricultural setting with some commercial and industrial uses concentrated near the intersection of I-95 and State Highway 216. The Project will not have an adverse effect on the agricultural setting or the scenic character of the area. The Project is not sited on prime farmland soils and is located out of view from all nearby residences and nearly all public roads. The only area in which the project may be visible is a 300' long stretch of northbound I-95, and only during months in which the vegetation screening the highway from the property has lost its foliage.

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 and/or site safety officer or representative present at all times during construction, and such individual will be responsible for overseeing/implementing the site construction health and safety plan.

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 and 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 narrative can be found 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, earth material extraction, and single-family residential development.

Based on information provided by specified equipment manufacturers, the selected inverters for the proposed Project will typically generate 55 dBA at a distance of 3.0 meters or 9.8 feet; all other selected system equipment will typically generate the same or lower levels of noise.

The nearest residence is approximately 1,100 feet from the Project area and approximately 1,600 feet from the closest on-site equipment location and pad. The nearest commercial and/or industrial use is approximately 1,700 feet from the Project area and approximately 2,200 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 H 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 3,781

metric tons of carbon dioxide (CO₂) equivalent emissions based on 8,502 MW-hours of electricity generated within the first year of operation. This amounts to an equivalent reduction of taking off the road 817 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 1, 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. The Phase I ESA also recommended further investigation of particular areas on the site. A copy of the Phase I ESA report is included in Appendix F.

A Phase II ESA was performed in September and October 2019 and a report was prepared dated October 30, 2019. The findings of this report were that the subsurface areas of interest from the Phase I ESA did not signify a past hydrocarbon "release" to soil and, based upon the observations, no special soil handling protocols or further testing was

recommended for construction. A copy of the Phase II 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 Canton and Charlton fine sandy loam complex across a majority of the project area, with slopes ranging from 0 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 topsoil underlain with sandy loam and cobbles, with areas exhibiting signs of seasonal shallow high groundwater, and to be of Hydrologic Soil Group B. Soils information and results from the onsite testing are included in Appendix L and also incorporated into Appendix G.

6.6.2 Preservation of Prime Agricultural Soils

It is not proposed to permanently alter any land classified as prime farmland as part of the Project and, accordingly, it is not anticipated that any coordination with Department of Agriculture on the topic is needed. See Figure 9 – Prime Farmland Soils.

6.7 Historic and Archaeological Resources

A Phase 1A Cultural Resources Assessment Survey was prepared for the site dated June 2019. Generally, the report suggested that a 2.4-acre portion of the Site should be investigated further if development was proposed in the location. The report was 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 additional archaeological investigations of the 2.4-acre area of moderate sensitivity would be required if development is proposed in the location. The Project does

not propose development in this location. A copy of the Phase 1A report and SHPO concurrence letter is included in Appendix H.

6.8 Wetlands and Watercourses

6.8.1 Wetlands Delineation and Methodology

Between June 27, 2019 and July 15, 2019, soil scientists from VHB investigated the Project area in North Stonington 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

Multiple wetland systems were delineated as a result of this effort and are depicted in the report. Generally speaking, wetland systems exist to the north and to the west of the Project area. A more comprehensive analysis of the various wetland systems can be found in the Wetland Delineation Report included in Appendix I.

6.8.3 Vernal Pools

During March 2020, VHB identified thirteen (13) vernal pools on the Site. No evidence of vernal pool breeding was observed within Wetlands 2, 3, 4, or 5, however, Wetland 1 was found to contain the thirteen (13) cryptic vernal pool breeding areas. Observed obligate vernal pool species included wood frogs, and spotted salamanders. No fairy shrimp, marbled salamander larvae, or state-listed vernal pool breeding amphibians were observed. Each vernal pool area exhibits a soft, leafy, silty, peaty bottom and flood depths within the breeding areas ranged between 6 and 30 inches. The Vernal Pool (VP)

1 and VP 13 breeding areas were somewhat broad in size, however, most pools were small, discrete pockets that exhibited slightly deeper inundation than the surrounding Wetland 1 areas. All 13 breeding areas lack permanent outlets. Based on its deeper inundation and presence of 1-2 year-old green and/or bullfrog larvae (*Lithobates clamatans* and *L. catesbeianus*; VP 13 may occasionally dry down completely, but likely experiences only partial drying during most years (i.e., semi-permanent). The following table provides the details of the VP observations conducted on site:

Obligate Vernal Pool Species Indicators and Observations

Cryptic VP ID	Wood Frog Egg Masses	Spotted Salamander Egg Masses	Total Egg Mass Count	Other amphibians
VP 1	5	15	20	-
VP 2	2	13	15	-
VP 3	0	4	4	-
VP 4	1	5	6	-
VP 5	1	6	7	-
VP 6	0	1	1	-
VP 7	0	3	3	-
VP 8	0	2	2	-
VP 9	0	2	2	-
VP 10	0	3	3	-
VP 11	0	4	4	-
VP 12	0	1	1	-
VP 13	0	83	83	Green/bullfrog larvae

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

The land uses surrounding the small breeding pockets throughout Wetland 1 indicate that the Site and surrounding areas do not provide exemplary habitat for obligate vernal pool species. Actual habitat use is presumed to be limited to drier areas of Wetland 1, a

narrow strip of upland forest along Interstate-95, the narrow scrub-shrub areas along the northern upland-wetland edge of Wetland 1, and upland forest located offsite to the south.

6.8.4 Proposed Project and Mitigation

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

The minimum buffer proposed for any grading activities or infrastructure development is generally 100-feet from any wetland resource. A single stormwater basin (Stormwater Basin #9) is proposed to be installed to within 60-feet of an onsite wetland which is required due to the flat topography of the area.

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 12, 2019 was provided by CTDEEP Wildlife Division. A copy of this letter is included in Appendix J.

In response to the CTDEEP Wildlife Division assessment, 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 (e.g. Sparkling jewelwing and Eastern pearlshell), VHB will provide field confirmation only. For species that are more likely to

be utilizing the site, or a portion of it, due to presence of suitable habitat (e.g. three species of vascular plant) VHB biologists will survey the property and report findings. Dennis Quinn will perform an Eastern Spadefoot study at the site. 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.

6.9.2 Core Forest

No tree clearing is proposed and accordingly, the Project will not alter areas of core forest. See Figure 11 – 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.

6.11 Stormwater Management

6.11.1 Existing Conditions

Under existing conditions, untreated stormwater runoff from most of the Site flows in various directions overland towards the on-site wetlands. A small area of the eastern portion of the site runs overland to the neighboring properties where it is likely captured and discharged to a waterbody tributary of the Pawcatuck River (See Figure 2).

The majority of the site is comprised of brush and smaller trees with woodland along the perimeter. Generally, the site is at its highest elevation in the central-southern portion of the Project and slopes down in all directions to the adjacent wetland systems and adjacent woodland east of the site. The majority of terrain slopes in the Project area range from 0% to 15% with small portions ranging up to 25% slope.

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 nine 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 cleared of vegetation previously; and
- The Project will not alter areas of core forest or prime farmland.

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.

Respectfully Submitted,

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