DRS | DELAWARE RIVER SOLAR

Draft #:_1__ Date: ____4/8/2024____

Approved Date: ______

Project Summary

North Triphammer Road
Project #1 and #2
Project #1 - SBL: #144-1-1.2 5MW Solar Facility
Project #2 - SBL#: 44-1-3.3 3MW Solar Facility

Prepared for:

Town of Lansing

Tompkins County, New York

Prepared by:
NY Lansing I, LLC & NY Lansing II, LLC
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Callicoon NY, 12783

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ACRONYMS

AC	Alternating Current
DC	Direct Current
kV	Kilovolt
MW	Megawatt
PV	Photovoltaic
roHS	Restriction of Hazardous Substances

Project Information

Project Owner:	#1: NY Lansing I, LLC & #2: NY Lansing II, LLC
Property Owner:	John, James, Julie Young & Susan Barnett
Property Address:	North Triphammer Road, Lansing
Town:	Town of Lansing, Tompkins County, New York
Utility:	New York State Electric & Gas ("NYSEG")
Solar Law:	Local Law #3 of 2020 802.18
Property:	66.83 combined acres between 2 parcels: Tax ID: 44-1-2.5 & 44-1-3.3
Project Site:	66.83 acres
Lot Coverage:	9.4%
Maximum Array Height:	Average <15 feet in height
Access point:	Driveway located North of 2699 N Triphammer Road
	The access for both projects may be a shared driveway, subject to change after lot improvement
Construction Schedule:	Six months from building permit
Community Solar Program:	Discount utility rate program
Building Code:	New York State Uniform Fire Prevention
Energy Code:	New York State Energy Conservation Code
Substation Circuit:	South Lansing Tap
Solar Facility:	Project #1 5 MWac x 5.9MWdc
	Project #2 3MWac x 3.5MWdc
Project #1	
Flat Panel area	29.52 SF x 10,080 panels = 297562 SF = 6.83 ac.
Access Road	0.50 ac.
Rain Gardens	0.33 ac.
Total	7.66 ac.
Site Coverage	7.66 ac./66.83 ac. = 11.5%
Project #2	
Flat Panel area	29.52 SF x 6,048 Panels = 178,541 SF = 4.1 ac.
Access Road	1.84 ac.
Rain Gardens	0.32 ac.
Total	6.26 ac.
Site Coverage	6.26 ac./66.83 ac. = 9.4%
Lot coverage per Town code:	Max Lot Coverage per code is 25%. Requesting 9.4%

INTRODUCTION

Project Owner has prepared this project summary for the proposed development, installation, and operation of a Solar Energy Facility ("Solar Facility") including an interconnection line to interconnect the Solar Facility to the Utility electrical grid. The proposed Solar Facility and Interconnection Line are referred to collectively as the Project.

This Project is being submitted to the Town as part of the application with respect to the special use permit and site plan review by the Town as set forth in the Code of the Town's Solar Law. The Solar Facility is considered a Solar Energy Facility.

The proposed site for the Solar Facility Project Site is on land within the Property. Lot Coverage was calculated by total impervious surface coverage which includes flat panel area, access road, rain gardens as a percentage of the area of the Solar Facility Project Site. The Property access is located north of 2699 N Triphammer Road, within the jurisdiction of the Town.

The connection of the Solar Facility to the Utility electrical grid, including the specific interconnection equipment, is pursuant to a standard Interconnection Agreement executed between the Project Owner and Utility. The Solar Facility will have a total generation capacity of not more than 5.0 MW AC for project #1 and 3 MW AC for Project #2. The generation capacity will be limited by the final site plan approved by the Town.

Energy generated from the Solar Facility will be distributed to the Utility for use by the Utility's customers and directly benefit customers enrolled in a Community Solar Program provided by or on behalf of the Project Owner. The objective of the Community Solar Program is to offer electricity at a discount to the Utility's rate. The Project Owner's goal is to provide residences and businesses in the Town with the opportunity to enroll in a Community Solar Program.

The Solar Facility design will adhere to technical and environmental requirements in accordance with current federal state and Town laws, including all applicable codes, regulations, and industry standards as referenced in the and Building Code, the Energy Code, and the Solar Law.

Key Attributes of the Project Include:

- Direct conversion of sunlight to electricity without generation of waste materials.
- Solar power generated producing no carbon emissions or air pollutants.
- Minimal ambient noise generated during solar power generation, no nighttime noise.
- Minimal traffic disturbance during Project operational lifespan.
- No use of public water utilities.
- Uniform Array Height with minimal visual effects
- Non-array structures approximately 8 feet in height to minimize visual effects.
- Existing vegetation around the Project Site will minimize visual effects.
- Modules secured using a racking system minimizing ground grading and ground disturbance.

This Project Summary includes general descriptions of and guidelines for design, construction, operation, maintenance, and decommissioning of the Projects. Design, construction, operation, maintenance, and decommissioning of the Projects will meet or exceed the requirements of the National Electrical Safety Code and U.S. Department of Labor Occupational Safety and Health Standards, as well as Town requirements for the safety and protection of landowners and Property. Project Owner may submit additional materials/documents regarding the above containing more detail (including a separate Decommissioning Plan and Operations and Maintenance Plan).

The Project Owner has compiled this Project Summary to the best of its knowledge, based upon currently available information. Certain additional reports, such as topography, geotechnical, and environmental, have been completed.

THE INFORMATION CONTAINED IN THIS PROJECT SUMMARY IS NOT INTENDED TO DESCRIBE ALL RELEVANT PROJECT INFORMATION AND IS QUALIFIED IN ITS ENTIRETY BY THE PROJECT OWNER'S FINAL APPLICATION AND SITE PLANS APPROVED BY THE TOWN DURING THE TOWN'S REVIEW PROCESS.

1.1. Purpose

Provide a cost-effective source of renewable solar electricity. Additional objectives include:

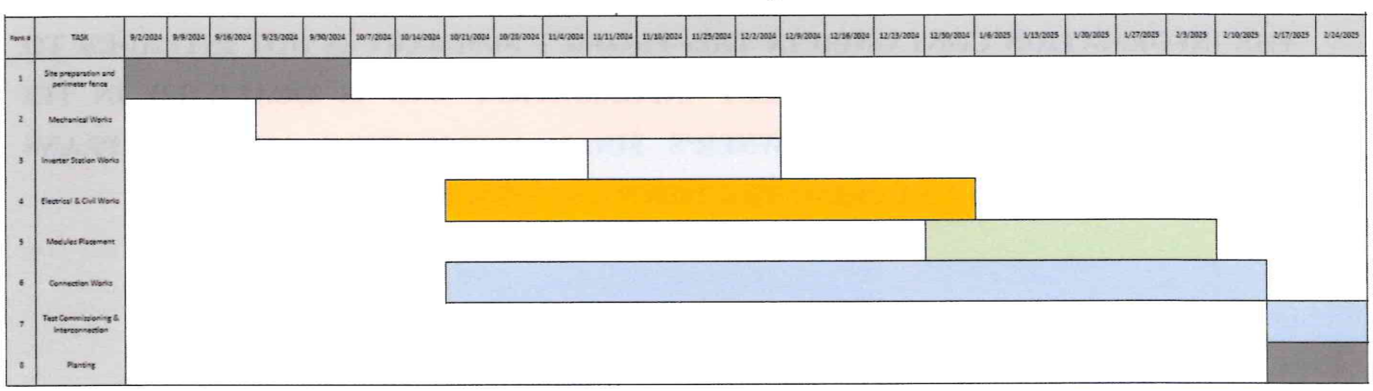
- Develop a solar generation facility that is feasible, quick to construct and easy to operate while providing the Utility and its customers with a cost-effective, cleaner energy alternative.
- Establish emission-free solar electricity and reduce greenhouse gas emissions while avoiding, minimizing, and mitigating the impacts to the environment.
- Generate electricity without local utility needs.
- Provide other important economic and environmental benefits to the Utility and the Town, including improving local air quality and public health, developing local energy sources, promoting local jobs, and diversifying the energy supply.
- Contribute to the State of New York renewable energy goals.

Based on historical information, the average energy usage for a standard home is 10,000 kWh/year. The proposed Solar Facility for Project #1 would generate approximately 7,700,000 kWh/year, equivalent to the electricity consumption of 700 homes. The proposed Solar Facility for Project #2 would generate approximately 4,900,000 kWh/year, equivalent to the electricity consumption of 490 homes. The Project Owner's goal is to provide residents and businesses in the Town the opportunity to enroll in a Community Solar Program.

1.2. Estimated Construction Schedule

Construction of the Project is estimated to take approximately 6 months to complete. An example timeline is below:

Table 1. Gantt's Diagram



2.0. PROJECT DESCRIPTION

2.1. Project Site and Control

Selection of the Project Site over other locations is based on several site criteria including:

- Contiguous site with suitable topography of adequate size to host the Solar Facility.
- Proximity to existing Utility electrical grid.
- Availability, lease agreement with current or future landowner.
- Avoiding sensitive areas, such as rivers, lakes, etc.
- Minimizing visual impact by utilizing the topography and existing vegetation on the property.
- Good highway access for construction, operation, and maintenance activities.

The Project Site will be leased from the Property Owner and/or purchased.

The proposed Project Sites are located on the Property (See Figure 1a and the Property parcel with purple marker). Project Site access will be from the Access Point (see Figure 1b). There will need to be a proposed lot line improvement for this project, which will be sent to the Town in a future submission and the Project summary will be updated in a future draft.

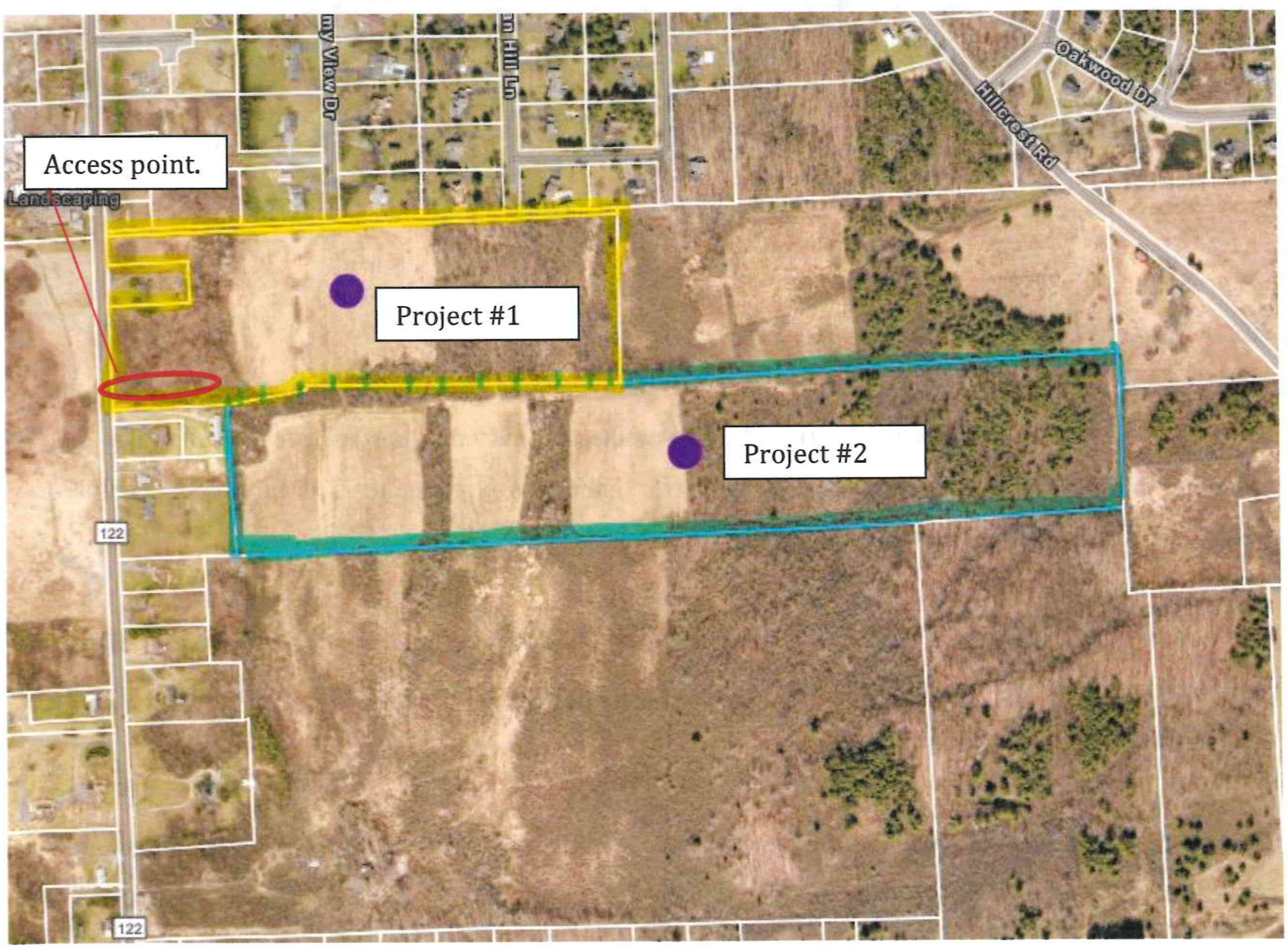


Figure 1a. Property Location

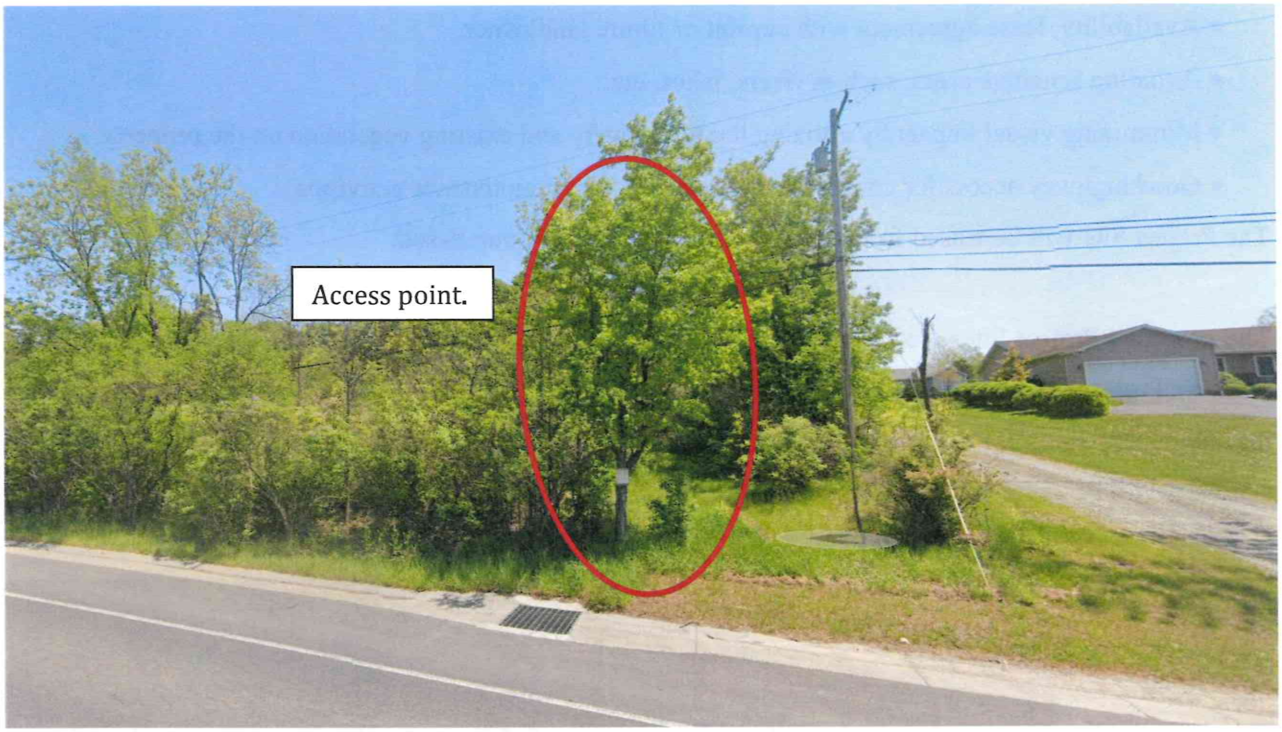


Figure 1b. Access Point

2.2. General Overview of Solar Facility

A grid-connected photovoltaic ("PV") power system is an electricity generating solar system that is connected to the Utility electrical grid. A grid-connected system consists of solar modules one or more inverters, a power conditioning unit and grid connection equipment. The proposed installation is composed of a field of photovoltaic generators (See Figure 2).

The Solar Facility is composed of monocrystalline photovoltaic modules. Modules are electrically interconnected in series of strings and can be mounted on racking that can either 1) track the path of the sun or 2) is fixed at orientation and tilt angle.

To collect all DC output, an inverter station and step-up power transformer will be interconnected, conditioning the electric parameters for feeding energy to the Utility electric distribution network. Power generated from the modules will be transferred via shielded cables within underground conduits to switch gear which forms part of the main power generation facility.

The modules are electrically protected, and above-grade wires are both shielded and secured to avoid exposure or accidental contact. All necessary protections for this type of facility and supporting structures for photovoltaic modules are included.

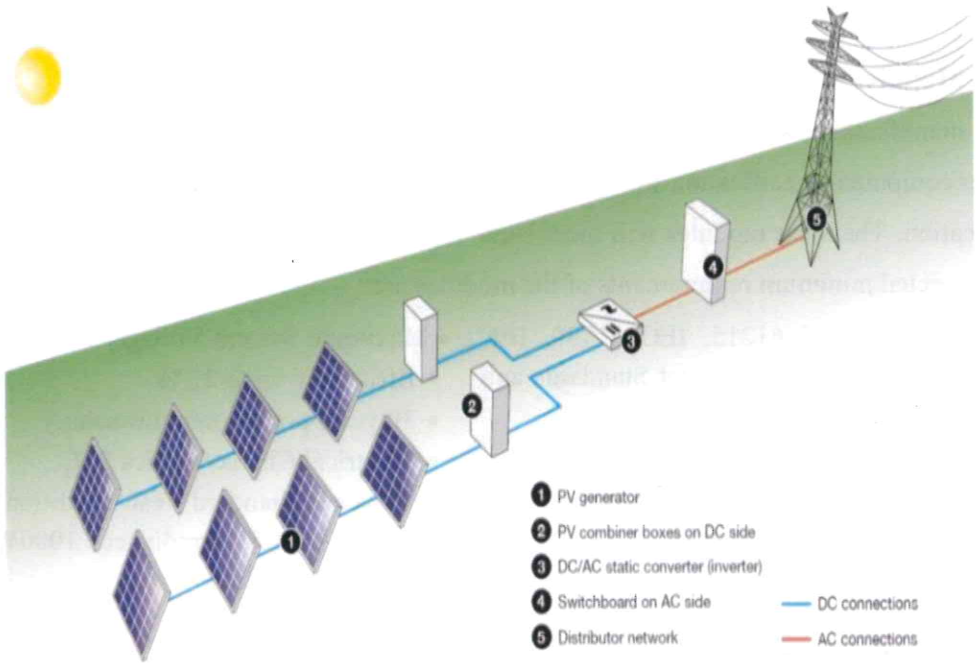


Figure 2. Diagram of a Grid-Connected Photovoltaic Facility

2.3. Acreage and General Dimensions of the Project Site

The Property is owned by the Property Owner, and the Project Site is a part of the Property. Surface Coverage is based on total impervious surface area including the flat panel area, access road, rain gardens occupying the land as a percentage of the Project Site. The Interconnection Line assumes a maximum of 20 ft of temporary, and 2 ft. permanent wide trench.

2.4. Solar Facility

The following sections describe the major components of the Solar Facility. ***Selected manufacturers are not indicated as equipment selection may change during the design and permitting process due to market and economic conditions.*** The final selected equipment is expected to be substantially similar to those proposed.

2.4.1. Summary of Project Components

Supporting structures are set considering economic, technical and land conditions for the modules to capture the most amount of solar radiation and obtain the best solar yield possible. The arrays are distributed into rows and consider surrounding shadings in the array design. There are open corridors between the rows of modules to perform construction and allow maintenance. The inverter station, which contains the transformer, will connect the Solar Facility to the existing Utility distribution network.

2.4.2. Solar Modules

The module manufacturer will depend on the availability of the modules during the procurement period. Manufacturer equipment specification sheets will be provided to the Town along with the Project's building permit application. The solar modules will meet New York's Uniform Fire Prevention and Building Code Standards. Expected minimum requirements of the modules are:

- Conform with IEC 61215, IEC 61730, IEC 61701, UL 61730 Solar Project Standards and other certificates.
- Project Standards and other certificates.
- High Module Conversion Efficiencies
- Dimensions 2384x1096x35mm
- Cell type: Monocrystalline
- Maximum System Voltage: 1500 Vdc (UL)
- Efficiency up to 21 %
- 30 years power output warranty
- Electrical Characteristics STC
- Values at Standard Test Conditions STC (Air Mass AM1.5, Irradiance 1000W/m^2, Cell Temperature 25°)

2.4.3. Supporting Structures

Evaluation of the structural design of support for the modules shall account for permanent loads, snow and wind loads, seismic conditions, structural calculation and foundations, module sizing, control of connections, geotechnical analysis and effects of temperature changes in accordance with applicable law and Building Code.

The metal supporting bases for modules shall be hot dip galvanized steel components with a minimum average thickness of 70μm as ISO/EN 1461 or equivalent or by an appropriate anodized aluminum of heavy-duty type and alloy for the better anti-corrosion protection of the construction. All connections including bolts/nuts, shall be of A2 stainless steel or compliant with other industry standard practices appropriate for the application defined.

To minimize ground disturbance, the supporting bases will be pile driven into the ground, considering the results of a geotechnical study. Following are several examples of the potential support structure considered for the Project.

Tracker Racking in Stowed Position:

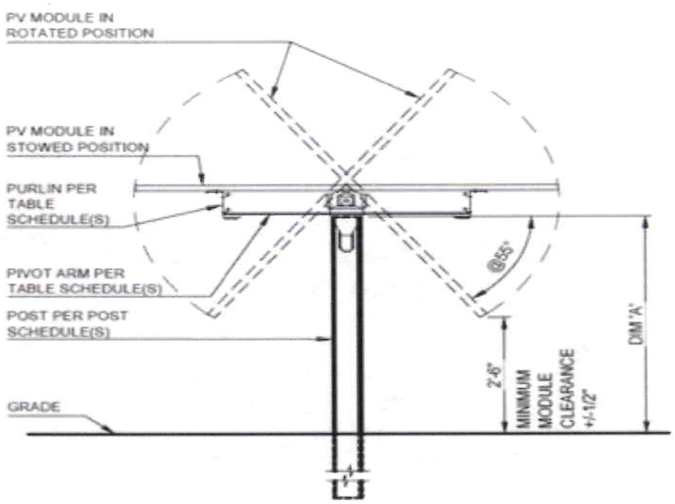


Figure 3a. Supporting Structure Overview (Tracker)

Key points of the Supporting Structure:

- Portrait mounting
- Mono-post anchored to the ground
- All connections bolted without welding.
- One tie bar and a crossbar in which the straps are supported

The module height above ground once attached to the tracker racking, is expected to be approximately 3 feet at the low-end with minimal visual effects at the Maximum Array Height.

Fixed-Tilt Racking:

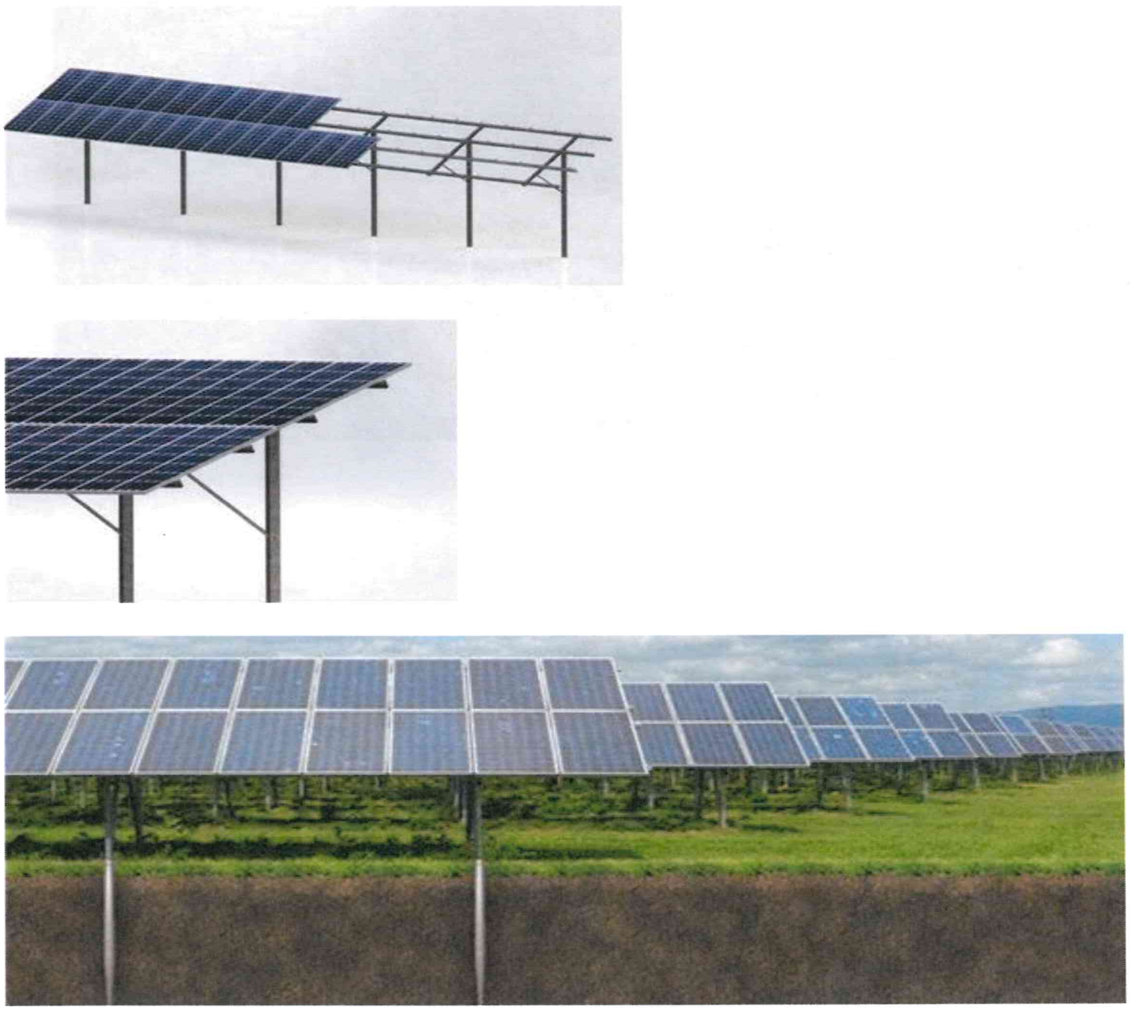


Figure 3b. Supporting Structure Overview

In the case of fixed-tilt racking, the module height above ground once attached to the racking, is expected to be approximately 3 feet at the low-end and have visual effects at the Maximum Array Height.

2.5. Inverter and Transformer Station ("MV Station")

The MV Station is inside a standard-sized outdoor container protected with weather-proof material to NEMA 4X protection degree and houses an inverter, transformer, power distribution and monitoring unit. The MV Station converts DC current generated from the PV array into grid-compatible AC current, which can be directly fed into the medium voltage grid.

2.5.1. Inverter

The inverter, part of a MV Station, shall meet at least the following requirements, international standards and tested by:

- UL 1741, UL 1741 SA
- IEEE 1547
- Rule 21
- NEC Code

DC load break switches and AC circuit breakers are provided on the inverter.

The DC cabinet of the inverter is shown in the following figure:

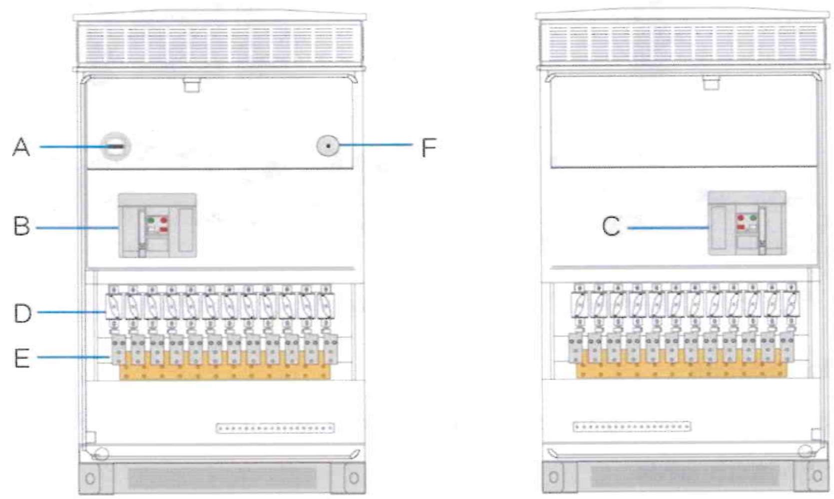


Figure 4. Inverter (Example)

No.	Name	Description
A	AC maintenance switch	Disconnect the switch before maintaining AC cabinet components.
B	QS1, DC load break switch 1	Disconnect the switch before maintaining AC cabinet components.
C	QS2, DC load break switch 2	Connect/disconnect the DC side of the unit 2.
D	Fuse	---
E	DC connection area	The upper part of the copper bar is for positive cable connection area while the lower part is for negative cable connection.
F	DC maintenance switch	Disconnect the switch before maintaining DC cabinet components.

2.5.2. Transformer

The transformer, part of a MV Station, is designed for installation at medium and large-scale utility solar facilities. Critical power connections are completed and tested in a factory environment and the pre-tested unit is shipped to the field ready for the final field connections. Factory manufactured MV Stations reduce installation and commissioning time. The all-in-one solution simplifies the installation, saves space and the visual impact is lower than other configuration options.

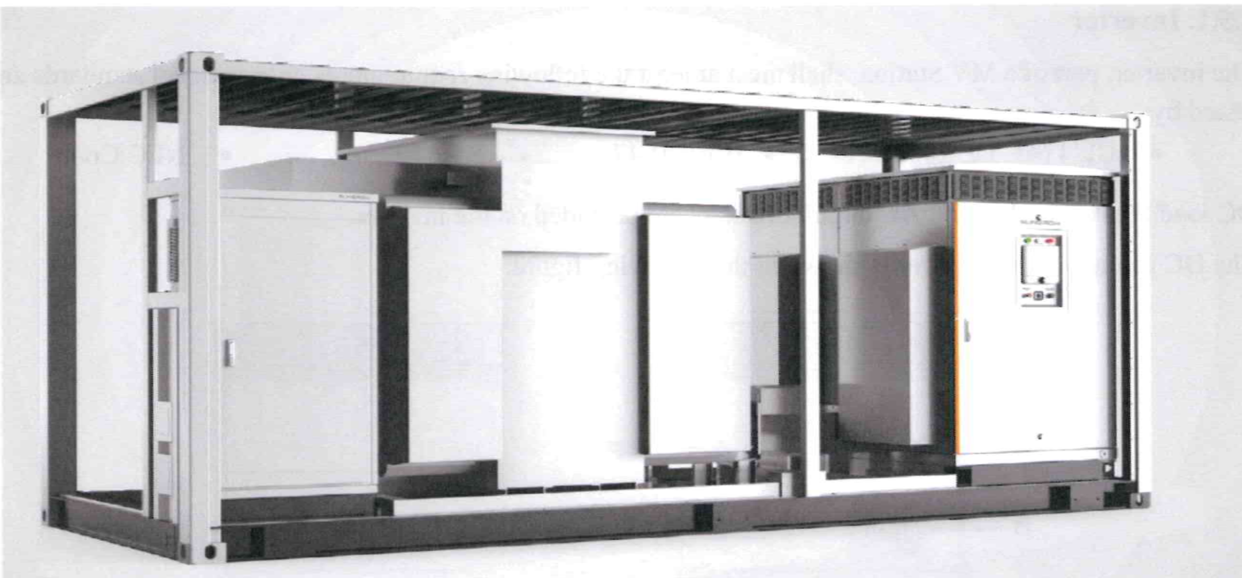


Figure 5. "All-in-one" LV Cabinet, Inverter, & Transformer Station

2.6. Electrical Installation

This section contains the remainder of the electrical devices required in the Solar Facility.

2.6.1. DC Electric Switchboards

Within each array, strings of modules are to be combined in parallel in a combiner box with a protection rating of NEMA 3R or above. The combiner boxes will have at least the following characteristics:

- Suitable for outdoor installation
- Designed for UV resistance
- Protection isolation
- Grounding copper tape
- Anti-condensation filter
- Mounting lugs and required nuts and bolts for installation
- Self-extinguishing and halogen-free materials
- Cable glands for output DC cable (up to 4x1x300mm² Al XLPE cable; defined per project) and signaling cable input & output
- Cable glands for communication cable and grounding cable
- DC fuse in negative pole per string
- Coverage of electrical items with methacrylate plate
- Disconnecting isolators 1500VDC must comply with applicable standards
- Fitted with surge protection Device, 3pole, 1500Vdc, 40kA
- Fully labeled and color-coded wiring (as per project all strings)
- Appropriate number of string inputs and associated fuse sizing
- In case of armored cable, glands have to be able to earth the aluminum armor

Operational ambient conditions are to be as follows:

- Temperature:77.0°F to + 10.0 °F
- Relative humidity: 15 to 95 %

2.6.2. Wiring

Two types of wiring will be required in the Project, from modules to DC Box, and from DC Box to the general DC Disconnect Switch. Cables will meet the requirements of UL standard 4703, appropriate for solar photovoltaic applications.

Wiring will consist of single conductor, sunlight-resistant, direct burial photovoltaic wire, 2000 V for interconnection wiring of grounded and ungrounded photovoltaic power systems with the following features:

- Rated 90°C wet and dry
- Rated for direct burial
- Deformation-resistant at high temperatures
- Excellent moisture resistance, exceeds UL 44
- Stable electrical properties over a broad temperature range
- Increased flexibility
- Excellent resistance to crush and compression cuts
- Resistant to most oils and chemicals
- UV/sunlight-resistant
- Meets cold bend and cold impact tests at -40°C

2.6.3. Grounding

Metal enclosures containing electrical conductors or other electrical components may become energized as a result of insulation or mechanical failures. Energized metal surfaces, including the metal frames of modules, can present electrical shock and fire hazards.

By properly bonding exposed metal surfaces together and to the earth, the potential difference between earth and the conductive surface during a fault condition is reduced to near zero, reducing electric shock potential. The proper bonding to earth by the equipment grounding system is essential, because most of the environment (including most conductive surfaces and the earth itself) is at earth potential. The conductors used to bond the various exposed metal surfaces together are known as equipment grounding conductors ("EGC").

The metallic device used to make contact with the earth is the *grounding electrode*. The conductor that connects the central grounding point (where the equipment grounding system is connected to the grounded circuit conductor on grounded systems) and a grounding electrode that is in contact with the earth is known as the *grounding electrode conductor* ("GEC").

Combined Direct-Current Grounding-Electrode Conductor and Alternating-Current Equipment Grounding Conductor: An unspliced, or irreversibly spliced, combined grounding conductor shall be run from the marked DC grounding electrode conductor connection point along with the AC circuit conductors to the grounding busbar in the associated ac equipment. See Figure 6.

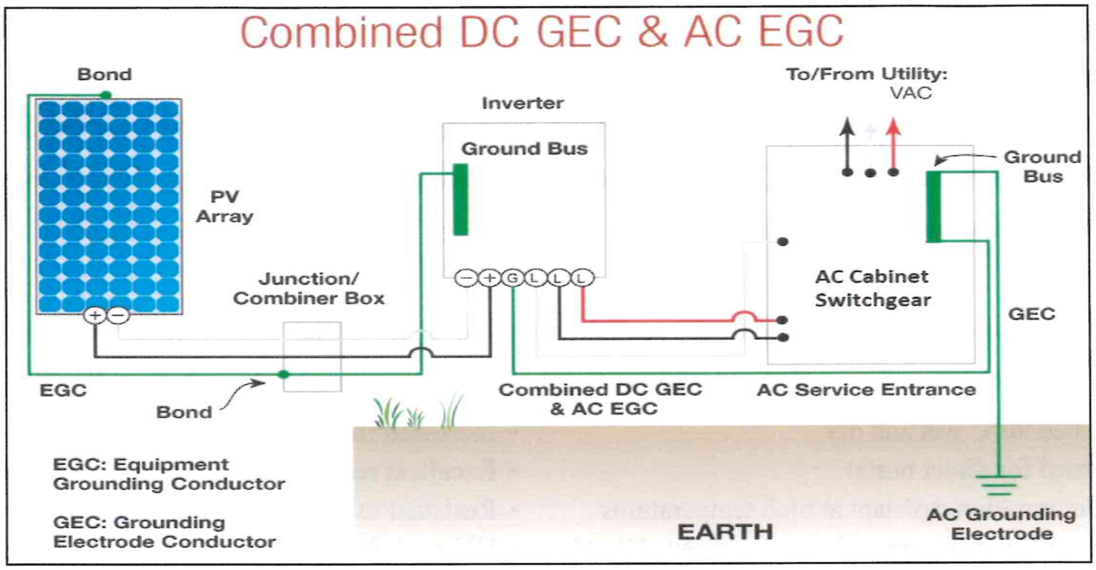


Figure 6. Combined EGC/GEC grounding routing ***Solar Facility***

2.7. Monitoring

Sensors include:

- Combiner Box temperature
- Solar irradiation
- Panel temperature
- Ambient temperature
- Wind speed

All sensors such as the weather station and pyranometers must use dedicated MODBUS Channels for the collection of measurements. The MODBUS channels cannot exceed a maximum of 16 devices (pyranometers, temperature sensors, wind sensors, weather stations) with no other devices such as string monitors, inverters or relays are to be connected to the dedicated MODBUS channel for the weather sensors and pyrometer. All data sent to the Industrial PC (Supervisor software) must be received using MODBUS TCP protocol.

The monitoring system considered is centralized. This becomes possible by using the Inverter Station as a core data collection through a basic set of equipment. It is first necessary to obtain the values of the different variables to monitor. The monitoring system can monitor the AC installation and the DC installation (panels). For monitoring smaller parts of the DC installation at the inverter level there are more Combiner Boxes of lesser strings.

The best way to capture inverter information is using a system to provide communication with a PC. The inverter's own hardware is used for measurement, (hardware that is already included with the central inverter). The price of a centralized monitoring system is usually lower than other solutions. Measuring switchboards have the advantage that they can monitor multiple system parameters, such as level of harmonics, phase equilibrium, etc.

The inverter station is a central monitoring system of the Solar Facility with these features:

- Grid visualization
- Generator visualization
- Inverter visualization
- Clearly visible external warning signals concerning voltage at the base of pad-mounted transformer and substation
- Registers
- Fault history visualization
- Warning history visualization
- Status visualization
- Internal debug
- * SI visualization menu

2.8. Mid Voltage Connection

The Solar Facility will satisfy the Utility technical interconnection requirements in order to work in parallel with the Utility distribution system. The Project will meet the following requirements:

- Voltage response range
- Frequency response range
- Inverters certified
- Protective function requirements
- Metering
- Operating requirements
- Dedicated transformer
- Disconnect switch
- Power quality
- Power factor
- Islanding
- Equipment certification
- Verification testing
- Interconnection inventory

2.8.1. Mid Voltage Interconnection Line

The proposed Interconnection Lines would be designed for 12.5 kV three-phase Wye-grounded (three conductors) circuits. The Interconnection Line will connect the transformer to the existing electrical grid on the Substation Circuit connecting to the Utility substation bank. The Interconnection Line will be underground until required by the Utility to interconnect to the Utility electrical grid.

The Interconnection Line will be installed in underground conduit. The conductor will be rated at 15 kV, backfilled with select and native backfill, and compacted. The main characteristics of the wire are:

- EPR/Copper Tape Shield with overall LSZH
- Conductor 1350 Aluminum Compact Class B strand
- Three conductor and grounding wire in contact with metallic shielding cape
- Medium-Voltage Power
- Shielded 15 kV
- For use in aerial, conduit, open tray and underground duct installations
- Electrical stability under stress
- Chemical-resistant
- Meets cold bend test at -35˚C
- 105°C rating for continuous operation

- UL Type MV-105, 133%
- Ins. Level, 220 Mils
- Rated at 105°C
- Excellent heat and moisture resistance
- Excellent flame resistance
- Flexibility for easy handling
- Low friction for easy pulling
- 140°C rating for emergency overload conditions
- 250°C rating for short circuit conditions
- RoHS Compliant
- According to National Electrical Code (NEC), UL 1072 and more compliances

2.8.2. Point of Common Coupling ("PCC")

The PCC is the point where the Project interconnects with the electric Utility grid.

Table 3. PCC Configuration Summary

Line Voltage at PCC (kV)	34.5
PCC Line Type	3 phase
PCC Line Configuration	Wye-Wye

2.8.3. AC Generator Disconnect Switch

In order to isolate and protect the Solar Facility from the Utility electrical grid, a load break disconnecting switch is necessary. The 3-phase disconnect switch located between the generating equipment and interconnection at the PCC, must be manual, visible, lockable and gang-operated. The Project Owner will have 24-hour/7-day unlimited access and control of this isolation switch.

The disconnect switch must be rated for the voltage and current requirements of the installation. Disconnecting means shall be rated to interrupt the maximum generator output; meet applicable Underwriters Laboratories (UL), American National Standards Institute (ANSI), and Institute of Electrical and Electronic Engineering (IEEE) standards; and shall be installed to meet the NEC and all applicable local, state, and federal codes. It will be clearly marked with permanent larger letters: "Generator Disconnect Switch".

In accordance with the Project Owner's safety rules and practices, this isolation device must be used to establish a visually open, working clearance boundary when performing maintenance and repair work. The designated generator disconnect also must be accessible and lockable in the open position and have provisions for both Project Owner and Utility padlocks and be capable of being tagged and grounded on the Project Owner side by Project Owner personnel.

The visible generator disconnect switch shall be a gang-operated, blade-type switch (knife switch) meeting the requirements of the NEC and nationally recognized product standards. Installation will also require a recloser with remote control and data access to be installed to:

- Monitor voltage current
- Provide for remote disconnect
- Act as a Utility controlled redundant protection system

2.9. Operation and Maintenance

The Property operation and maintenance plan requirement for a Solar System set forth in the Solar Law reads as follows:

Local Law #3 of 2020 Section 802.18.1 (ix)

ix. An operation and maintenance plan, including description of continuing Solar Energy Facility maintenance and property upkeep, such as mowing and trimming, safe access to the installation, as well as general procedures for operational inspections and maintenance of the installation.

x. An operation and maintenance plan, including description of continuing Solar Energy Facility maintenance and property upkeep, such as mowing and trimming, safe access to the installation, as well as general procedures for operational inspections and maintenance of the installation.

A separate "stand alone" Operations and Maintenance Plan ("O&M Plan") has been submitted to the Town as part of the application for a special use permit and site plan approval. The O&M Plan is submitted separately for ease of tracking the Solar Law requirements.

The following is a summary of general operation and maintenance activities:

During operation, maintenance activities will focus on the scheduled preventive maintenance and repairs of the solar generating equipment. The maintenance and repair of Project components is expected to be coordinated through monitoring, on-site inspections, and technical support from the various warranty services provided by the equipment manufacturers. Unsafe, inoperable, and/or abandoned equipment, shall be removed by the Project Owner.

The Solar Facility will operate 7 days per week, generating electricity during daylight hours. Preventive maintenance activities will occur during normal working hours, generally twice per year, with the occasional need to conduct corrective maintenance to certain equipment or facilities during non-scheduled or weekend hours.

The solar generating equipment will be continuously monitored and controlled from a central control room during normal working hours with 24-hour monitoring from a remote source. The generation units, auxiliary systems and balance of the Solar Facility will be connected to a Supervisory Control and Data Acquisition system ("SCADA").

Standard maintenance for the Solar Facility will include:

- Modules Cleaning: Module cleaning will be performed during preventive maintenance visits on an as-needed basis following extraordinary snowstorms. Module cleaning does not involve use of chemicals.
- Scheduled Project Maintenance: There will be the need to periodically inspect the modules (snow, ice, grass, vegetation) and make necessary alignment adjustments (i.e. tighten fasteners) or replace damaged modules to prevent breakdowns and production losses. Project components will go through maintenance checklist once or twice per year.

  The checklist shall include such items as:
    - Checking wire connections
    - Testing voltage/current
    - Inspecting components for moisture
    - Confirming settings on the inverter
    - Transformer maintenance
    - Resealing of system components

- Corrective Maintenance: Corrective maintenance will occasionally be required due to uncontrollable circumstances such as severe weather or premature failure of components. These unscheduled repairs will be undertaken in a manner to minimize impacts to the continued operation of the **Solar Facility**.
- Monitoring Management**:** uses real-time data to oversee Project parameters.

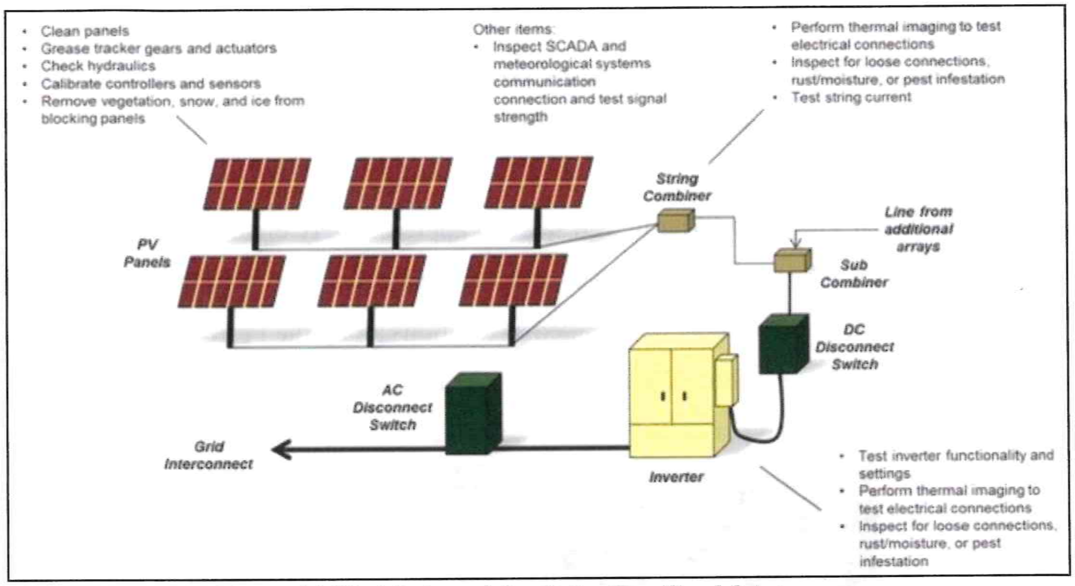


*Figure 7. Highlights of the **Solar Facility** Maintenance*

Typical equipment required to support operation and maintenance of the Solar Facility includes:

- Cleaning systems
- Standard electrical tools
- Building support systems
- Transport vehicles (pick-up truck, ATV, etc.)
- Standard mechanists tools

Project Site Maintenance: Frequency of site visits shall be determined based on season (more in summer, less in winter), but no less than quarterly to monitor vegetation. Any required corrective actions will be taken as soon as practical or warranted by the circumstances. Typical activities include:

- Visually inspect and report on all fencing for signs of damage, intrusion, and overgrowth of vegetation.
- Inspect signage to ensure all originally installed signs are present and legible.
- Maintenance of access road, including snow removal as needed.
- Vegetation may need to be trimmed or cut back to avoid shading of the solar modules. Shading inspections will be done semi-annually, and trimming will occur as needed. This would include ground cover, existing vegetation, and screening vegetation. Ground cover will be either mowed, as needed, or sheep may be utilized to graze the array area.
- Adherence to any Storm Water Pollution Prevention Plan practices, if any

2.10. Site Security

Limiting access to the Project Site to non-authorized personnel is necessary both to ensure the safety of the public and to protect equipment from potential theft and vandalism.

The perimeter of the Solar Facility will be fenced with an approximately eight-foot-high fence to facilitate Project and equipment security (see Figure 8 for proposed fencing type). Surveillance methods such as security cameras or motion detectors may be installed at locations along the Project Site boundary. There is no lighting proposed on the Project Site. Warning signs with the Project Owner's phone number will appear on signs placed at the entrance and perimeter of the of the Solar Facility.

Figure 8. Fencing

2.11. Temporary Construction

Temporary construction staging areas are required for temporary construction offices, construction parking, material laydown and storage areas, an equipment assembly area, and portable toilet facilities. These areas will be located on the Project Site and used throughout the Project construction period and then decommissioned. The exact location of the temporary construction staging areas will be defined in the drawings.

Graded all-weather roads may be required in selected locations on the Project Site during construction to bring equipment and materials from the staging areas to the construction work areas. These roads may not be decommissioned after construction and may be utilized for long-term Project operation and maintenance.

2.12. Water Uses and Sources

The Project will not use any utility water for electrical power generation.

2.13. Erosion Control and Storm Water Drainage

A Storm Water Pollution Prevention Plan (SWPPP) study has been prepared, submitted and reviewed by the Town's review engineer.

2.14. Vegetation Treatment and Management

The Project Site consists of low volume forest land with dense undergrowth. The project site will be cleared for the construction of the project. Native vegetation (low growing grasses) will be planted after construction to grow amongst the solar panels.

2.15. Waste Materials Management

The Project will generate a variety of non-hazardous wastes during construction and operation. These waste items may include the materials listed in Table 4:

Table 4: Waste and Hazardous Materials Management

Item	Description
PVC Cement	Adhesive used for underground PVC conduit and ground sleeve
Cardboard	General packaging
Plastic	General packaging, wiring coating
Cold Galv	Anti-rust galvanizing spray used when cutting material to prevent rust.
Copper & Aluminum	Wiring systems trims

Material Safety Data Sheets ("MSDS") will be maintained at the Project Site during construction. All waste shall be disposed of according to what is specified in the MSDS.

2.15.1. Construction Waste Management

During construction, inert solid wastes may include recyclable items such as paper, cardboard, solid concrete, metals and wire, Type 1 to 4 plastics, drywall, and wood. Non-recyclable items include insulation, other plastics, food waste, packing materials, and other construction wastes. Management of wastes will be the responsibility of the Project Owner. Typical management practices required for contractor waste include recycling, when possible, proper storage of waste and debris to prevent wind periodic transport and disposal of waste by an authorized trash hauler. A waste management plan will be implemented during construction.

It is expected that a 40-cubic-yard container will be staged at the Project Site and emptied (exchanged) on an "as needed" basis. Construction waste is not expected to have an impact on public health. No hazardous wastes are expected.

2.15.2. Operations Waste Management

During operations, inert solid wastes generated would be predominantly routine maintenance wastes, such as scrap metal, wood, and plastic from surplus and deactivated equipment. Scrap materials such as paper, packing materials, glass, metals, and plastics will be segregated for recycling. Non-recyclable inert wastes would be stored in covered trash bins in accordance with local ordinances and picked up by an authorized local trash hauler for transport and disposal.

2.16. Fire Protection

Fire protection at the Project Site will include safety measures to ensure the safeguarding of human life, prevent personnel injury, and preserving property. The Project Owner will offer to meet with the local fire department(s) to provide them with information related to the Project.

2.17. Health and Safety

A "Health and Safety" plan will be in effect during construction with regular inspections. Workers will be required to use personal protective equipment ("PPE") during construction activities. Required PPE will be approved for use, distinctly marked to facilitate identification, and be used in accordance with the manufacturer's instructions. The PPE will be of such design, fit, and durability as to provide adequate protection against the hazards for which it is designed. The use of PPE for site activities includes but is not limited to safety glasses or goggles, hardhat, earplugs, dust mask, leather and/or insulated gloves, safety-toe and/or metatarsal shoes, apron, and safety belt.

During construction, a first aid station, complete with all emergency medical supplies, will be located on the Project Site.

3.0. CONSTRUCTION OF THE SOLAR FACILITY

The following section generally describes the activities that are anticipated to occur before and during Project construction and throughout operation and maintenance of the Project.

3.1. Solar Field Design, Layout, Installation and Construction Processes

The site plan for the Solar Facility is shown in Figure 9a and Figure 9b. The Solar Facility consists of arrays anchored to the ground. Arrays may be reconfigured as required by site characteristics such as parcel boundaries, roads, topography or similar constraints.

The arrays are installed in a block configuration. Modules are attached to horizontal steel shafts supported by vertical steel posts. All panels will have minimal visual effect and the minimum height in relation to the ground will be approximately 3 ft. All mechanical equipment will be completely enclosed by an approximately 8' high fence.

Figure 9a. Project Site Layout Project #1

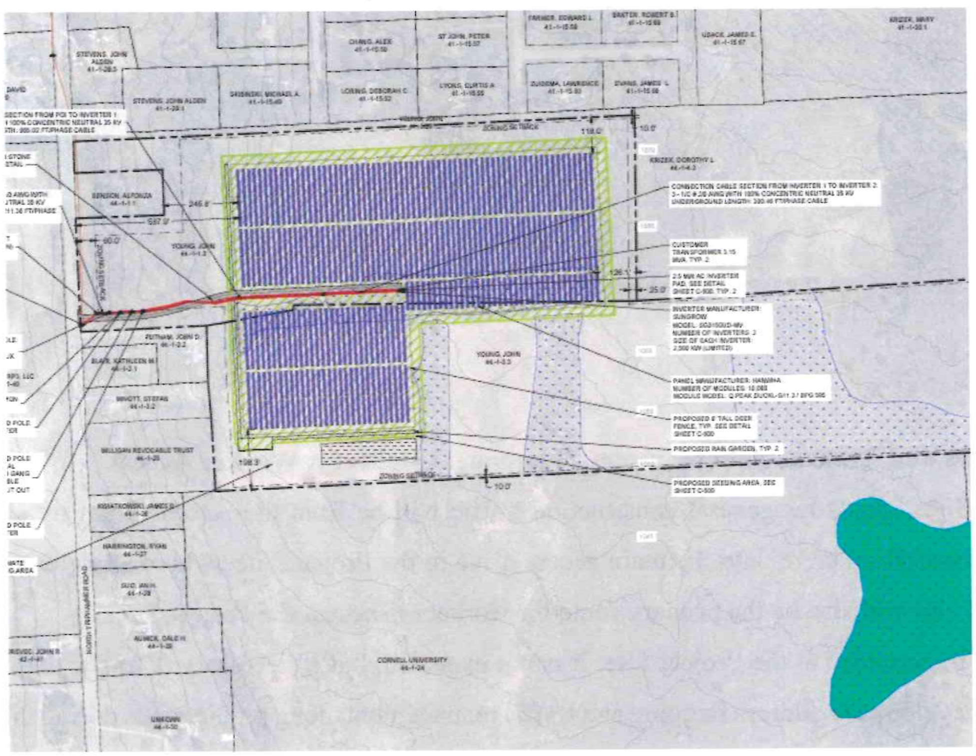
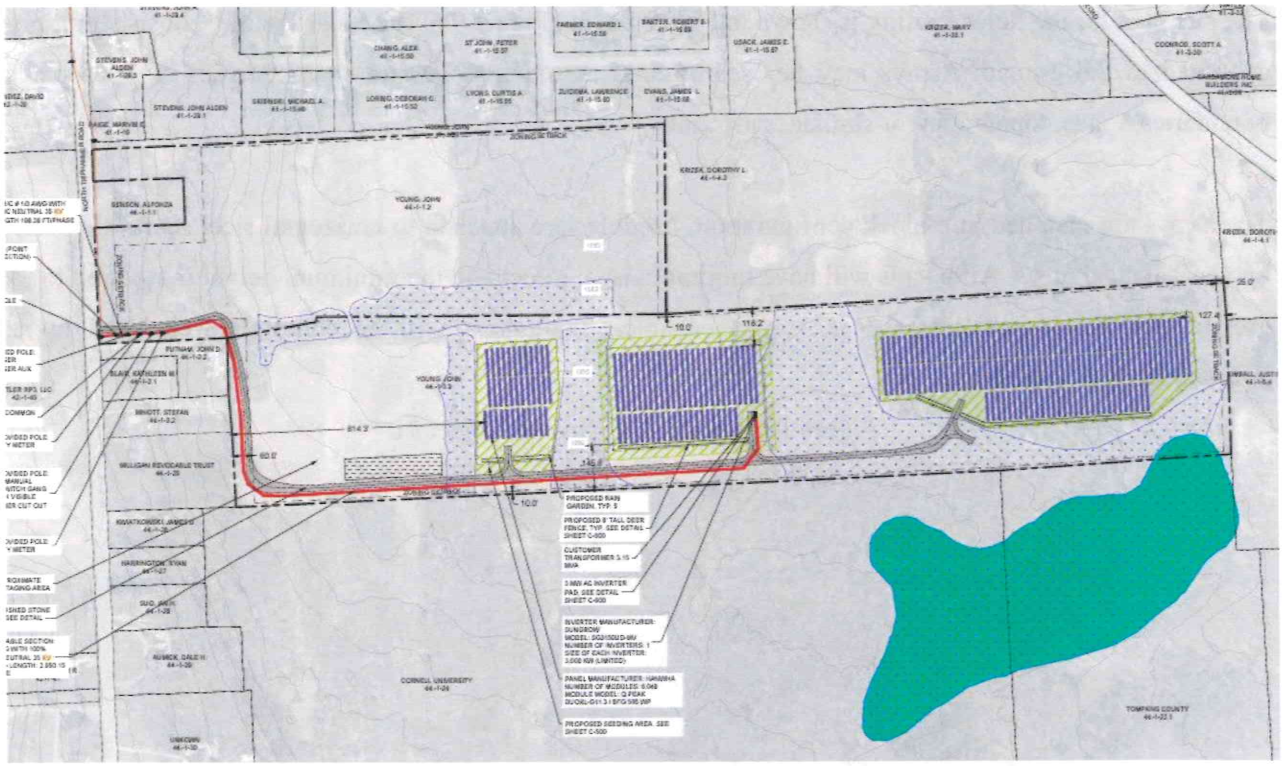


Figure 9b. Project Site Layout Project #2



3.2. Access and Transportation System, Component Delivery, Worker Access

The Project Sites access for general construction traffic will be from the Access Point by an access road. Traffic will come from there onto the main access drive to the Project Sites where all deliveries will occur. The Access Point will also be the primary route for workers to access the Project Site.

Parking will be provided at the Project Site. It is not expected, but if necessary, a traffic and transportation plan will be developed to address flagging and traffic management along public roads during the construction phase. Construction traffic would continue for approximately six months from the start of construction.

3.3. Construction Work Force Numbers, Vehicles, Equipment, Timeframes

Construction activities would include road and access construction, solar installation, operation and maintenance facility construction, Interconnection Line trenching, installation of a direct buried rated Interconnection Line, cleanup, and site reclamation. The anticipated number of workers and type of equipment to construct the Project are provided in Table 5.

Table 5: Typical construction estimated personnel and equipment required		
Item:	# of Personnel	Equipment
Survey	3	2 pickup trucks
Solar Installation	12	1 piling and drilling machine 1 fork lift 2 trucks
Temporary Road Construction	6	1 excavator 1 road grader 2 trucks
Trench and backfill	4	1 excavator 1 compactor 2 trucks
Interconnection Line	4	1 spool truck 1 trencher 1 truck
Clean-up	4	1 truck
Rehabilitation	2	1 truck
Estimated personnel	35	

3.4. Site Preparation, Surveying and Staking

A detailed land survey will be performed to establish local benchmarks and Project Site boundaries. A topographic survey will be performed to establish the Project Site's grading and drainage plans for the arrays, roadways, and other Project features. A lot line improvement may be needed for the projects and will be submitted at a later date. Detailed maps with GPS coordinates will be supplied to proper authorities having jurisdiction as required for permitting.

A licensed survey team, prior to commencement of construction, will properly stake the Project Site physical boundaries and construction footprints. The survey team will additionally stake the path through any right of ways ("ROW"s) for the Interconnection Lines or provide a detailed map using GPS coordinates.

3.5. Site Preparation and Vegetation Removal

Vegetation will only be removed in disturbed areas as required for placement of modules, electrical equipment, access road and drainage swales. Vegetation removal will be minimized as much as possible.

The Project Site is expected to require minimal grading. To the extent possible, the racking system will be adapted to the existing topography. Minimal grading may be required for the inverter and transformer pad.

3.6. Solar Facility Construction

Prior to installation of the modules, the supporting steel posts would be installed, generally pile driven to minimize ground disturbance. The modules would be mounted by hand to the steel posts and all necessary electrical, communications, and other connections will be made. All significant assembly and erection will be conducted on site.

3.7. Project Construction

The anticipated Construction Schedule may change based on time of year/product availability.

3.8. Gravel Needs and Sources

Gravel needs would be moderate. The main access road, if needed, would use compacted, crushed gravel imported from offsite. Materials will be locally sourced to the extent possible.

3.9. Electrical Construction Activities

Power generated by the modules will be collected through a power collection system. The collection system will direct the output from the modules to the on-site transformer to be transmitted through the Interconnection Line to the Utility grid.

3.10. Interconnection Line Construction Sequence

The Interconnection Line from the Project Site to poles required the Utility will be underground. The construction of the Interconnection Line is a several step process. The initial step will be clearly surveying the ROW boundaries and marking any existing underground utilities. After the ROW has been staked, excavation equipment can be used to dig the trench. The excavated soil will be used for backfilling or disposed of on-site. When the trench is prepared, the conduit installation process can begin, utilizing the proper backfill around the conduit, if required. Above the conduit placement, the previously excavated native soil can be used to fill in the remaining trench depth.

The Engineering, Procurement and Construction contractor (EPC Contractor) shall provide a compilation of all user manuals, guarantees and warranties to the Project Owner and O&M Contractor including a data sheet for each item of equipment.

4.0. ENVIRONMENTAL CONSIDERATIONS

4.1. Description of Project Site and Potential Environmental Issues

4.1.1. Special or Sensitive Species and Habitats

General locations where rare animals, rare plants, and significant natural communities (such as forests, wetlands, and other habitat types) are already documented in New York State. The Project Site is not located within an area designated as having the potential for habitat for rare plants and/or endangered animals via the NYSDEC Environmental Resource Mapper Rare Plants and Animals Overlay Map ("DEC Mapper"). The Project Site does not fall within lands known or expected to be near critical habitat protected under the U.S. Fish and Wildlife Service ("USFWS").

4.1.2. Visual

There will be a landscaping plan provided to mitigate the view of the solar field.

The Project Site consists of mostly vacant areas. The Property is bounded as follows:

North: residential area

East: heavily wooded areas

South: heavily wooded areas

West: densely wooded areas at project #1, as well as residential homes on project #2

See Figure 10 on the following page for the location of nearby residences and structures.

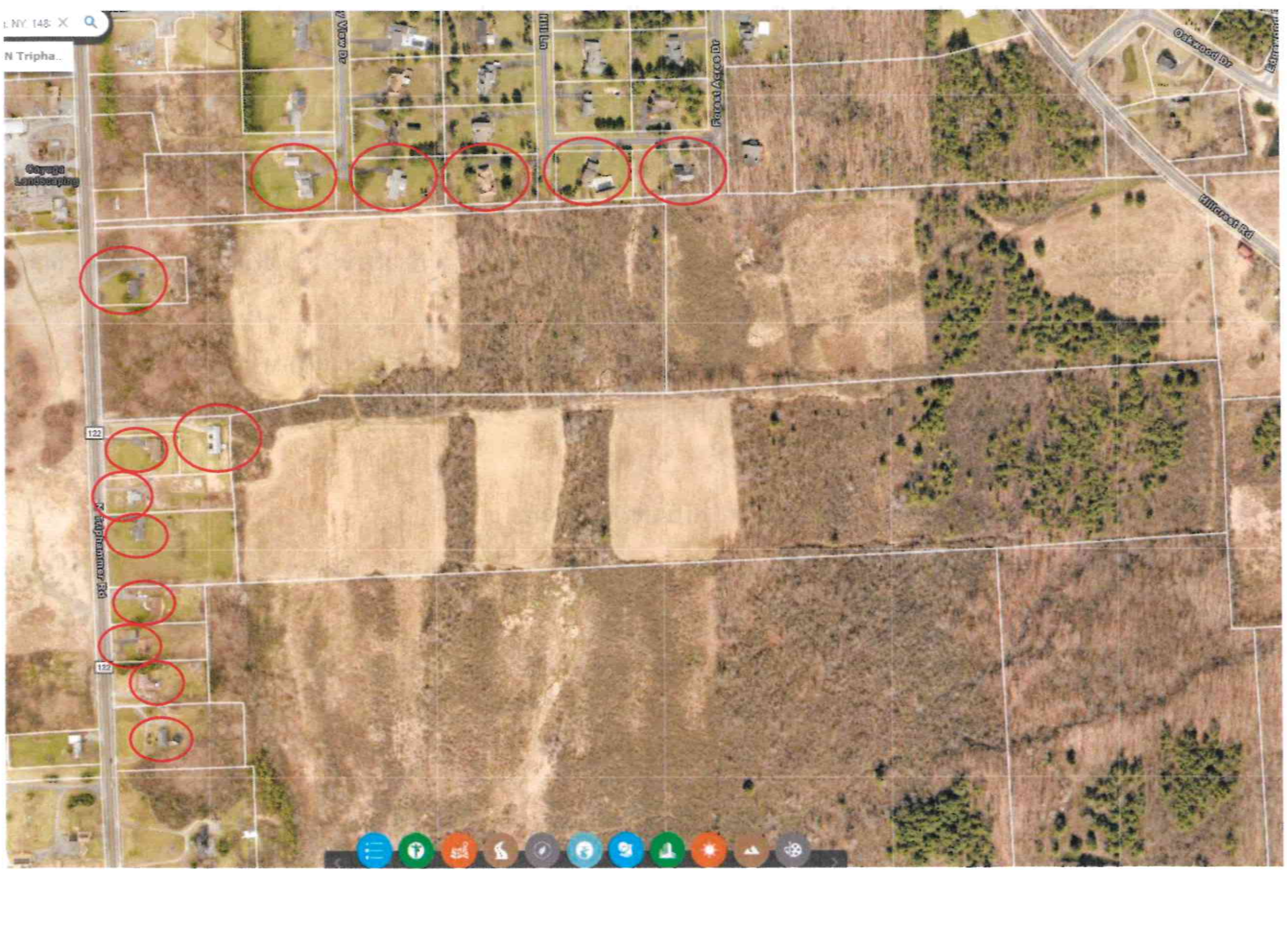


Figure 10. Nearby Residences / Buildings

4.1.3. Glare and Glint

Solar panels are designed to not reflect sunlight. In general, solar panels absorb as much sunlight as possible while reflecting as little light as possible. Solar panels produce less glare and reflectance than standard home window glass. Solar panels use "high-transmission, low-iron" glass, which absorbs more light, producing smaller amounts of glare and reflectance than window glass. Research has shown that they reflect less light than snow, white concrete, and energy-efficient white rooftops.

Glint is typically defined as a momentary flash of bright light, often caused by a reflection off a moving source. A typical example of glint is a momentary solar reflection from a moving car, or "catching" something bright out of the corner of your eye.

Glare is defined as a continuous source of bright light. Glare is generally associated with stationary objects, which, due to the slow relative movement of the sun, reflect sunlight for a longer duration. The difference between glint and glare is duration. Industry-standard glare analysis tools evaluate the occurrence of glare on a minute-by-minute basis; accordingly, they generally refer to solar hazards as "glare".

The ocular impact of solar glare is quantified into three categories (Ho, 2011):

1. Green – Unproblematic shine. Low potential to cause after-image. This type of glare can be compared to noticing something shiny in the distance.

2. Yellow - Potential to cause temporary afterimage (flash blindness). This type of glare is much like sunrise and sunset glare for drivers who struggle to find the perfect angle for car visors so they can continue to operate their vehicle safely while traveling through areas of such glare.

a. Standard levels of yellow glare can, for the most part, be handled with relative ease utilizing slatted fencing or local foliage landscape mitigation measures.

b. Only extremely high levels of this type of glare (in the area of the chart labeled as "direct viewing of the sun" which is uncommon to find with PV installations) would be considered an insurmountable hurdle to a PV installation of any size.

c. High levels/intensities and long durations are different factors.

3. Red - Potential to cause retinal burn (permanent eye damage). PV modules do not focus reflected sunlight and therefore retinal burn (RED glare) is typically not possible.

d. This is the ONLY type of glare that would be considered an insurmountable hurdle to a PV installation of any size.

These categories assume a typical blink response in the observer.

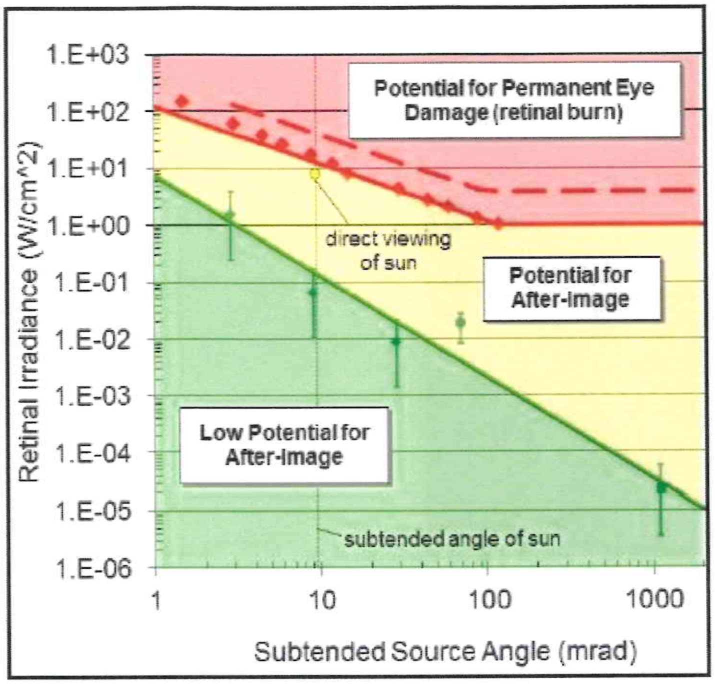


Figure 1 - From *ForgeSolar* website (sample glare hazard plot defining ocular impact as function of retinal irradiance and subtended source angle *(Ho, 2011)*)

To further put glare into perspective, the following is presented.

YELLOW glare such as in the graphic below could only be seen when standing directly next to project panels at the perfect angle when the sun is in a perfect place—indeed the point of a photographer standing directly by these panels and waiting for the perfect moment to capture this image. It is also possible that the panels in the picture shown do not have an anti-reflective coating.


Solar panel showing solar glare

GREEN glare, as illustrated below, is the more common occurrence with solar projects—a noticeable shiny area (in the northwest area) as compared to panels where the sun is not quite in perfect alignment yet.

The effect of this noticeable shine to certain areas of the project area is still seen from a relatively close up vantage point and at the optimal height this image was captured, possibly by a drone. A similarly sized project in the distance, closer to the horizon of the photo would be unlikely to show even the levels of green glare that the system in the foreground reflects.

US patent # 6359212 (method for testing solar cell assemblies and second surface mirrors by ultraviolet reflectometry for susceptibility to ultraviolet degradation) explains the differences in the refraction and reflection of solar panel glass versus standard window glass.

When a ray of light falls on a piece of glass, some of the light is reflected from the glass surface, some of the light passes through the glass (transmitted), and some (very little) is absorbed by the glass. Following are parameters to consider when considering glare from solar panels:

- The measure of the proportion of light reflected from surface is called reflectance (reflection): R
- The measure of the proportion transmitted is the transmittance (this is where the term high light transmission glass comes from because the glass is formulated to allow more sunlight to pass through its surface than would pass through a standard glass surface): T
- The measure of the proportion absorbed is absorptance (absorption) (this amount is very small for clear glass, much smaller proportionately, than the other two components): A

  Each quantity is expressed as a fraction of the total intensity (quantity) of a ray of light. Intensity may be expressed as follows: $R + A + T = 1$.

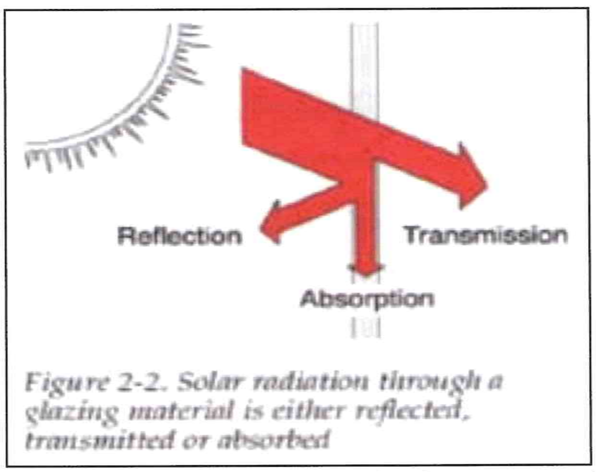


Table 6. Solar Radiation through Glazing Material

The reflection/refraction behavior of a medium is directly related to its index of refraction. Lower the index of refraction is suitable because the medium is allowing more of the incident ray to pass directly through.

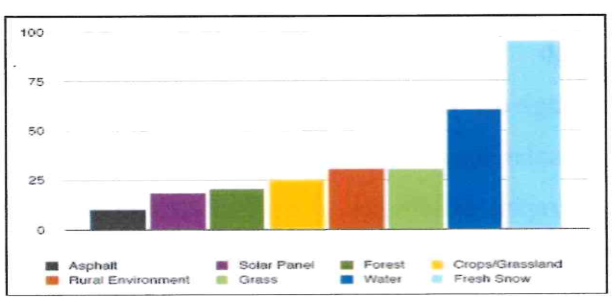


Table 7. Common Reflective Surfaces

It should be noted from the graph and the table above, that the reflected energy, in percentage, of solar glass is much lower than water and even below that of forest reflection.

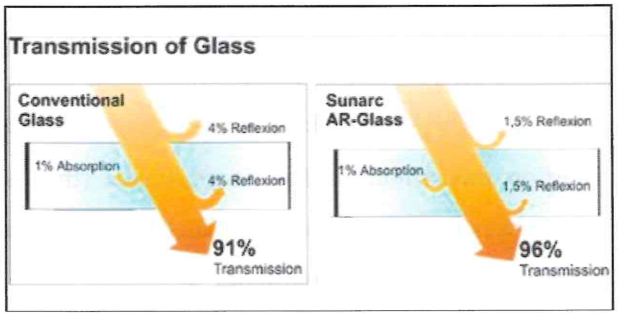


Table 8. Anti-Reflective Coating reflect a lower percentage of light than smooth water.

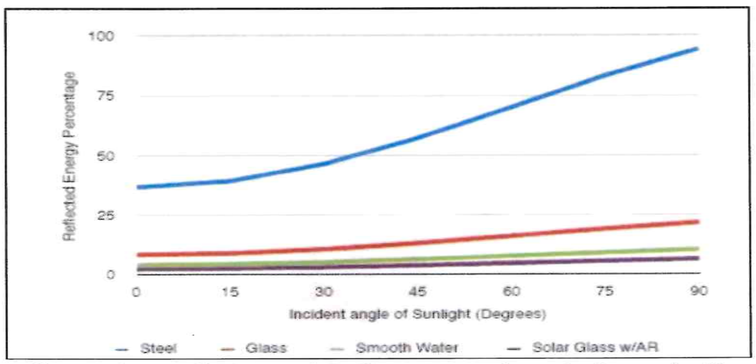


Table 9. Analysis of typical Material Reflectivity with sunlight angle (from normal).

Steel, a common building material, reflects far more incident sunlight than a solar panel.

The percentage of the incoming sunlight that is reflected is very low for high sun angles (most of the day) and increases for a very low sun angles (near sunrise and sunset when the intensity of the sun is already substantially lower than at mid-day.).

Taking into account existing vegetation and distance from the road as well as the aforementioned information regarding glare off the solar modules, roadways, buildings and flights paths will not be impacted by glare from the panels.

4.1.4. Storm Water Drainage

4.1.4.1 Storm Water Drainage off Modules

The storm water impacts of a solar installation will depend upon the project design, site conditions and characteristics, as well as topographic conditions. A SWPPP determines the impact, if any, of the existing runoff conditions and remediation actions, if needed, for the proposed runoff conditions. The Solar Facility is a fixed structure mounted and is installed with minimal impact to the current topography and groundcover conditions. Also, the Solar Facility is arranged with sufficient distance between the modules to allow rainfall to infiltrate between each module and flow between arrays, allowing any runoff to naturally infiltrate and drain over all ground surfaces.

The conceptual design of the Project has been arranged, to the maximum extent practicable, to mimic natural hydrology. Rainwater falling on the modules will not channel or accumulate in large volumes as it will run-off the modules using the gap between each module, about 1 inch. Rainwater will fall off each module within a few feet of where it would naturally fall. Additionally, the site has full grass ground cover, minimizing erosive actions.

Figure 11. Module Spacing Gaps

Elements of the Solar Facility that alter natural infiltration, such as steel poles driven into the ground and any other racking components are treated as impervious. Other impervious elements would include concrete pads or foundations for racks or inverter cabinets.

The following factors have been considered during the design process:

- Runoff to flow onto and across vegetated areas to maintain the disconnection
- Disconnecting impervious surfaces works best in undisturbed soils.
- Minimizing ground disturbance.

The rows of solar panels will be installed according to Figure 12 below. In this scenario, the disconnection length is the same as the distance between rows and is at least 80% of the width of each row. Therefore, each row of modules is adequately disconnected between modules and between rows.

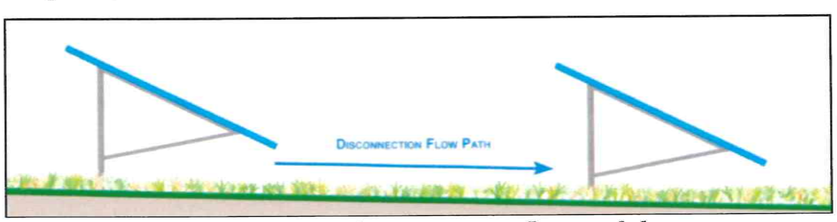


Figure 12. Array Spacing - disconnection flow path between arrays

4.1.4.2 Vegetation under Modules

The modules will reduce direct sunlight under each module in direct proportion to its total collection area; this may reduce plant coverage and density under the modules. In contrast, this shading will increase the moisture of the ground providing an extra water source for vegetation.

There will be shading underneath each module (varies based on sun position and type of array layout). Within this area there will be reduced sunlight intensity. Sunlight intensity is reduced but still enough intensity remains to allow grass to persist under the shaded area. The growing pattern will be slower than the conditions associated with full open environments but good enough to allow grass to endure. Generally, the measurements made in the various light regimes indicate native grasses grows best when light values exceed 600 Lx but the growing patterns will be reduced to a level where the grass will have a thinner cover and resulting a slower growing path for the grass. Other contiguous grasses may actually benefit from some shading providing a slightly moister substrate that could be utilized by the grasses. (Source: proposed solar panels vegetation impacts, prepared by Joseph Arsenault, July 2010)

4.1.5. Noise

Very minimal low-level noise is generated from the electrical inverter and distribution transformer. Inverters are tested and do not generate disturbing noise levels, and noise from equipment will not be audible at the Property boundary. Central inverters are usually surrounded by the solar panel arrays whose electricity they manage–further distancing them from anyone who might happen to be nearby. At a distance of 1m, central inverters have a sound pressure level of less than 70dB. Furthermore, because solar modules produce power only when the sun is shining, inverters will be completely silent at night.

If trackers are proposed for the Solar Facility, the tracking racking will move slowly following the sun. This tracker movement is slow and will not create any perceptible noise.

4.1.6. Dust and Waste

The inclination of the modules allows water to flow freely through them and clean the surface when it is raining. No dust will be generated during operations. Modules after use (20 or 30 years) are 95% recyclable. The equipment will be designed for a 30-year lifespan, and end-of-life site remediation and equipment replacement options will be discussed in the Decommissioning Plan.

4.1.7. Safety

A health and safety plan will be implemented during construction. All equipment installed will comply with safety rules. Warning signs (visible, in good condition and permanent) will be posted. Perimeter fencing and surveillance system will be considered. All the equipment will be tested and in warranty. Equipment must comply with Federal, State and local regulations and applicable laws.

The electrical safety for workers will be designed and evaluated in detail. The hot parts will be isolated, and general equipment or switching devices will be mechanically interlocked. The electrical installations are equipped with protection against abnormal operating conditions, providing compliance with safety rules.

4.1.8. Impacts During Construction

It is expected that some noise will be generated during construction activities. All actions involving risk will be considered: civil engineering, machinery, transportation, etc. Impacts due to construction will be investigated, and mitigation measures will be proposed. The contingency provision for the Solar Facility consists of a detailed analysis of the possible occurrence of an incident while under construction; the purpose is to have a response to maintain the safety of people, environment, and Property.

4.1.9. Cultural and Historic Resource Sites and Values

The historic and archeological map will be utilized to identify if any cultural or historical significance exist on site. Any cultural resource that would be directly or indirectly impacted, if any, would be subject to further evaluation.

4.1.10 Solar Facilities Classified as Non-Hazardous Materials

Photovoltaic panels are designed to last more than 30 years, and many manufacturers back their products with performance guarantees backed by warranties. Many Solar Energy Industry Association ("SEIA") members already operate take-back and recycling programs for their products. They are committed to guiding both state and federal regulations that support safe and effective collection and recycling of end-of-life modules.

End-of-life disposal of solar products in the US is governed by the Federal Resource Conservation and Recovery Act ("RCRA") (http://www.epa.gov/lawsregs/laws/rcra.html), and state policies that govern waste. To be governed by RCRA, panels must be classified as hazardous waste.

To be classified as hazardous, panels must fail the Toxicity Characteristics Leach Procedure test ("TCLP Test"). Most panels pass the TCLP test, and thus are classified as nonhazardous and are not regulated. Numerous companies make available to its customers modules that do not contain toxic heavy metals (no more lead or cadmium than allowed under RoHS).

Because panel materials are enclosed, and don't mix with water or vaporize into the air, there is little, if any, risk of chemical releases to the environment during normal use. The most common type of panel is made of tempered glass, which is quite strong. They pass hail tests.

All solar panel materials are contained in a solid matrix, insoluble and non-volatile at ambient conditions, and enclosed. Therefore, releases to the ground from leaching to the air from volatilization during use, or from panel breakage, are not a concern. Ground-mounted arrays are typically made up of panels of silicon solar cells covered by a thin layer of protective glass, which is attached to an inert solid underlying substance (or "substrate").

The main component of most modules is silicon, which isn't intrinsically harmful, but parts of the manufacturing process do involve hazardous chemicals and these need to be carefully controlled and regulated to prevent environmental damage. It is important to note that the same materials are in other electronic goods such as computers and TVs.

Generally, companies participate in a fully funded collection and recycling system for end-of-life modules produced globally; have written a letter to SEIA urging it to support Extended Producer Responsibility ("EPR") laws and regulations; support public EPR policies in the regions where the company manufactures and sells modules and takes responsibility for recycling by including the "crossed out garbage bin" symbol on module name plates, including a PV Cycle link on the company website; and clearly describe on the website how customers can responsibly return modules for recycling.

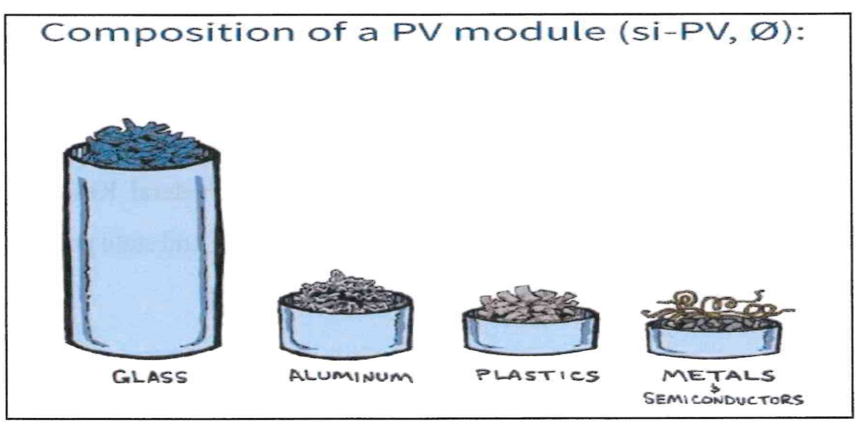


Figure 13. PV Module Composition - Source: PV Cycle

Transformers used at solar installations are similar to the ones used throughout the electricity distribution system in cities and towns. Modern transformers typically use non-toxic coolants, such as mineral oils. Potential releases from transformers using these coolants at solar installations are not expected to present a risk to human health. Release of any toxic materials from solid state inverters is also unlikely provided appropriate electrical and installation requirements are followed.

4.1.11 Decommissioning Plan

The decommissioning requirement for a Solar Facility set forth in §802.18.14 of the Solar Law read as follows:

Local Law #3 of 2020 Section 802.18.14

Abandonment and Decommissioning. A Decommissioning Plan shall be submitted with each Application in accordance with § 802.21 of this Chapter. Approval of the Decommissioning Plan by the Town Planning Board shall be required, including under Site Plan review. Removal of Solar Energy Facilities must be completed in accordance with the Decommissioning Plan. If the Solar Energy Facility is not decommissioned after being considered abandoned, the municipality may remove the system and restore the property and impose a lien on the property to cover these costs to the municipality.

Local Law #3 of 202 Section 802.21.1

A Decommissioning Plan shall, at a minimum, contain the following elements and meet the following requirements.

i. Specify when and what constitutes an event requiring decommissioning, including abandonment of the facility. In all cases the lack of production for 6 months (or for 12 of any 18 months) and the violation of any site plan conditions, the lack of a current permit or violation of permit conditions, including but not limited to maintenance of any required decommissioning bond or security, shall be an event requiring decommissioning.
ii. Specify the form and type of notice required to the Town in the event of any decommissioning, sale, transfer, partial transfer, assignment, or occurrence of any event which may result in an act or partial order requiring partial or complete decommissioning of the site.
iii. The means and methods by which utility interconnections will be removed and permitted by the utility provider, as well as all electrical and other safety precautions undertaken during removal.
iv. All decommissioning and restoration activities shall be completed within 150 days of the date decommissioning was ordered or required, including under the plan.
v. Demonstrate the removal of all Solar Panels, Battery Energy Storage Systems, wind turbines, electrical appurtenances, Towers, structures, equipment, security barriers and transmission lines.
vi. Demonstrate the minimization of disruption to field drains and soils, and the

remediation of drains and soils, including stabilization and revegetation of any sites or disturbances, including as minimize erosion. Decompaction of soils to 18 inches and removal of any installed materials to 4 feet is required. The Planning Board may allow the owner or operator to leave landscaping or designated belowgrade foundations in place to minimize erosion and disruption to vegetation in a proper case, but generally all of the New York Department of Agriculture and Markets' Guidelines for Agricultural Mitigation for Wind Power Projects or Solar Energy Projects, as applicable, shall be adhered to in any plan.
vii. Specify disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations, including the removal of any damaged or contaminated soils. No designation of any facilities by a 'beneficial use declaration' shall be permitted to vary this clean-up and remediation/ disposal rule.
viii. Include an expected timeline for execution, together with a cost estimate detailing the projected cost of executing the Decommissioning Plan, duly prepared and sealed by a Professional Engineer. Cost estimations must take inflation into account over the expected life of project, and have a mechanism to ensure the periodic updating and securitization of decommissioning costs."

A separate "stand alone" Decommissioning Plan has been submitted to the Town as part of the application for a special use permit and site plan approval. The Decommissioning Plan is submitted separately for ease of tracking the Solar Law requirements.

The following is a summary of general Decommissioning Plan activities:

Decommissioning of the Solar Facility will include the disconnection of the Solar Facility from the Utility electrical grid and the removal of all Solar Facility components, including:

- Photovoltaic (PV) modules, module racking and supports.
- Inverter units, substation, transformers, and other electrical equipment.
- Wiring cables, perimeter fence.
- Inverter pad concrete foundations.

Generally, decommissioning of a Solar Facility proceeds in the reverse order of the installation.

1. The Solar Facility shall be disconnected from the Utility power grid.
2. PV modules shall be disconnected, collected, and disposed of at an approved solar module recycler or reused / resold on the market.
3. All aboveground and underground electrical interconnection and distribution cables shall be removed and disposed off-site at an approved facility.
4. Galvanized steel PV module support and racking system support posts shall be removed and disposed off-site at an approved facility.
5. Electrical and electronic devices, including transformers and inverters shall be removed and disposed off-site by at approved facility.
6. Concrete foundations shall be removed and disposed off-site at an approved facility.
7. Fencing shall be removed and will be disposed off-site by at an approved facility.

Site decommissioning and equipment removal can take a month or more. Therefore, access roads, fencing, electrical power, and other facilities will temporarily remain in place for use by the decommissioning workers until no longer needed. Demolition debris will be placed in a temporary onsite storage area pending final transportation and disposal and/or recycling according to procedures. No hazardous materials or waste will be used during operation of the Solar Facility; disposal of hazardous materials or waste will not be required at decommissioning.

The piling for support structures is without concrete foundation, so removing piles will not be onerous. The diameter of the holes in the ground are small in terms of impacted area and will be refilled accordingly. Excavations will be backfilled and restored with native onsite material. No significant grading or rework of the site will be performed.

Most materials of the Solar Facility have value: steel, copper, aluminum, and others. The quantity and value of recycled and reusable materials could vary according to markets value, facility conditions and lifespan.

4.1.12. Other Environmental Considerations

Visual resources in the Project area have been affected by past and present actions, including the construction of highways and roads, Utility lines, sewerage, water utility lines, and limited commercial and residential development, but the existing vegetation allows direct view of the solar project from nearby buildings and highways to be avoided.