

Attachment K. Decommissioning Plan

DECOMMISSIONING & SITE RESTORATION PLAN

**Mitchell Avenue Agrivoltaic Project
Towns of Stuyvesant & Stockport,
Columbia County, New York**

December 2024

Prepared for:



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1.0 Introduction

On behalf of RPNY Solar 12, LLC (Applicant), TRC has prepared this Decommissioning Plan (the Plan) for the proposed Mitchell Avenue Agrivoltaic Project (the Facility or Project) located in the Towns of Stuyvesant & Stockport, Columbia County, New York. The Mitchell Avenue Agrivoltaic Project (Project) is an up-to 3.25 megawatt alternating current (MWAc) agrivoltaic project; “agrivoltaic” being the colocation and dual-use of solar photovoltaic generation and agriculture. The proposed Project area is approximately 16.69 acres, located across three parcels, totaling approximately 38.82 acres, south of County Route 46 and west of US Route 9. Although subject to change, Project construction is expected to begin in 2025 with commercial operation commencing in 2026.

The requirements for decommissioning of the Facility is the safe and efficient removal of Facility components while restoring occupied land to its pre-construction condition to the greatest extent practicable. Restoration activities may include, but are not limited to, revegetation with native species and re-establishing current land use. The safety measures and protocols utilized during construction and operation of the Facility will be applied during the decommissioning and restoration process to ensure the safety of onsite personnel and the public.

The purpose of this Plan is to provide a general scope of decommissioning activity, standards for decommissioning, and provide a cost estimate to act as a mechanism for decommissioning assurance. This Plan outlines the decommissioning activities required to remove Facility components and associated electrical and interconnection equipment, restore disturbed soil and vegetation, and return the site to a condition consistent with pre-development conditions, to the maximum extent practicable.

The decommissioning cost estimate included as **Attachment A**, was prepared under the supervision of a professional engineer licensed in the State of New York. The cost estimate is based on experience in the design and construction of solar energy facilities and is subject to revision based on the final engineering design. Costs assume the work will be performed by a contractor experienced in the decommissioning and deconstruction of solar facilities.

1.1 Facility Description

The proposed Facility will be constructed primarily on agricultural land (hay fields) in areas with existing topography suitable for solar development. The Facility will be approximately 16.69 acres, surrounded by agricultural-styled security fencing, located across three parcels, totaling approximately 38.82 acres. The Facility will be located on land leased from private landowners.

Project components are planned to consist of the following site features:

- 3,679-linear feet of perimeter security fence encompassing approximately 16.69 acres,
- 2,109-linear feet gravel access roads and associated drainage conveyances,
- 7,436 PV solar modules (i.e., “panels”),
- 97 single axis racking frames,

- One (1) concrete equipment pad for the step-up transformer with associated equipment and controls
- 1,741-linear feet of underground medium voltage wiring, additional underground low voltage wiring, and conductors.
- Five (5) overhead utility poles at the utility point of interconnection (POI)

2.0 Decommissioning and Restoration

For decommissioning the Applicant shall:

- Be responsible for decommissioning costs,
- Commence decommissioning, removal, and legal disposal or recycling of Facility components,
- Remove and dispose of or recycle all aboveground infrastructure, such as solar panels, racking, inverters, etc.,
- Remove and dispose of qualifying underground infrastructure, such as underground medium voltage AC cables,
- Acquire all necessary permits,
- Develop a Stormwater Pollution Prevention Plan (SWPPP) for construction activities related to the removal of access roads, equipment skids, fencing, and other soil disturbing activities,
- Perform grading and completion of ground stabilization by revegetating or other means, in accordance with permits and in compliance with all applicable rules and regulations then in effect governing, and
- Recycle and/or salvage materials to the extent practicable and manage all waste streams in accordance with Federal, State, and local requirements.

2.1 Anticipated Operational Life of the Facility

The Applicant anticipates that the Facility will be operational for up-to 35 years.

Should the Facility cease electric generation activities for a period of 12 consecutive months, decommissioning shall commence, unless the following occurs during the 12-month period:

- Repair, restoration, or improvement of a Facility component that affects electricity generation and that the repair, restoration, or improvement activity is diligently being pursued by the Applicant, or
- A Force Majeure event occurs. Force Majeure events include but are not limited to: causes or events beyond the reasonable control of, and without the fault or negligence of the party claiming Force Majeure, including acts of God; sudden actions of the elements such as floods, earthquakes, hurricanes, or tornadoes; sabotage; terrorism; war; riots; explosion; blockades; and insurrection.

2.2 Site Decommissioning Activities

At least two weeks prior to commencing decommissioning, the Applicant will provide notice by mail to landowners and the Towns of Stuyvesant & Stockport. The Applicant will coordinate with the local utility company to determine the schedule and procedure for disconnecting Facility infrastructure from the point of interconnection (POI). Once disconnection is completed, all Facility electrical connections will be disconnected and tested to confirm the system is de-energized prior to starting removal. The contractor will establish erosion and sedimentation controls before onsite decommissioning activity commences.

As part of the decommissioning process, the Facility site will be restored to as close to pre-construction conditions as possible. Solar modules and associated aboveground infrastructure will be removed. Underground collection lines deeper than four (4) feet below grade will be abandoned in place in accordance with the New York State Department of Agriculture and Markets (NYSAGM) guidelines, as included in **Attachment B**. Most underground collection lines will be buried less than four (4) feet below ground and will be fully removed at decommissioning.

Decommissioning activities will include the following:

- Mobilization and Erosion and Sediment Control Best Management Practice (BMP) installation,
- Disassembly and removal of aboveground structures,
- Removal of subsurface structures to a minimum depth of 48 inches (with exceptions noted above),
- Disposal and/or recycling of removed project components,
- Abandonment of underground collection lines greater than 48 inches below ground surface (BGS), and
- Re-grading and revegetating disturbed areas.

A majority of the PV system components are recyclable or re-saleable, including copper, aluminum, galvanized steel, concrete, and PV modules. Due to their resale value, components will be dismantled and disassembled rather than being demolished and disposed of.

Prior to any earth disturbance, perimeter erosion and sedimentation controls shall be installed in accordance with the current version of *New York State Standards and Specifications for Erosion and Sediment Control*.

Decommissioning activities shall be performed by qualified individuals in accordance with the final approved Decommissioning Plan. Electrical connections to PV modules will be disconnected and modules will be removed from the framework by dismantling the bolted connections to the supports. Modules will then be removed. The internal materials of the selected PV modules are silicon-based and are not considered hazardous material. The decommissioning contractor will be responsible for assessing the condition of PV modules and managing proper disposal or recycling throughout the removal procedure.

The PV module frame, racking system, and all other metal project components, including driven support posts, perimeter fencing, and gates, will be removed from the site for recycling or disposal. Concrete slabs on-grade will be broken onsite and removed for disposal.

Any aboveground utility poles and overhead conductors owned by the Applicant will be removed and disposed of off-site in accordance with utility best practices, and as required by the local utility. Underground utilities and conduits below grade at a depth of 48 inches or less will be located and removed. Components deeper than 48 inches will be abandoned in place, as detailed further above and in **Attachment B**. Once equipment is removed from the site, access roads will be excavated to a depth that matches adjacent site grades. Removed aggregate will be hauled offsite and may be sold as clean fill, unless a landowner requests that an access road be left in place. Geotextile fabric, geogrid, and geoweb will be removed for disposal.

A final site walkthrough will be conducted to remove debris and/or trash generated during the decommissioning process and will include removal and proper disposal of debris that may have been wind-blown to areas outside of the immediate footprint of the Facility.

2.3 Proposed Restoration Activities

Solar facilities are largely pervious vegetated surfaces. Decommissioning and removal of equipment will not result in excessive earth disturbance; however, some restoration and site stabilization will be required upon completion of decommissioning. Restoration activities will include back-filling of pile/foundation sites, grading of surfaces to approximate pre-construction land contours and revegetation of disturbed areas. If required, site soils will be de-compacted by disking, tilling, or chisel-plowing to restore land to pre-construction characteristics. Access roads will be removed, unless requested by the landowner to remain in place. During road removal activities, culverts and drainage infrastructure will also be removed; streams or drainage channels will be restored to preexisting elevations and stabilized in accordance with *New York State Standards and Specifications for Erosion and Sediment Control*. Native topsoil stockpiled and preserved during construction of the Facility per the NYSAGM guidelines will be re-used for site restoration and stabilization post construction. Areas with access road and equipment skid, will have topsoil redistributed post decommissioning. Disturbed areas will be seeded with a native grass seed mix to prevent topsoil erosion unless seeding is planned by the landowner. In the event the land is intended to return to agricultural production, the re-seeding of land will be coordinated with the landowner or agriculture producer. Effective site drainage will be maintained throughout the course of restoration activities and will follow any SWPPP or SPDES requirements.

Agricultural restoration will be completed in accordance with NYSAGM *Guidelines for Solar Energy Projects – Construction Mitigation for Agricultural Lands* (Revision 10/18/2019), as included in **Attachment B**. An Environmental Monitor will be present onsite throughout the decommissioning and restoration process on agricultural land, as required by the NYSAGM Guidelines. Areas used for agricultural production prior to the construction and operation of the Facility will be identified by the landowner, the Columbia County Soil and Water Conservation District, and the NYSAGM.

3.0 Safety and Environmental Impacts

As stated above, the goal of decommissioning is to ensure the safe and efficient removal of Facility components while restoring occupied land to its pre-construction conditions to the greatest extent practicable. This reclamation effort may include, but is not limited to, restoration of native vegetation, habitat, and/or land use. Erosion and sediment controls and stormwater management measures will be utilized to maintain downstream water quality and prevent soil erosion and sedimentation and/or adverse impacts that may result from stormwater runoff. A SPDES permit will be obtained if necessary with the associated SWPPP. Any hazardous fluids or materials will be removed in accordance with the Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), and/or State standards. Additionally, the safety protocols used during construction and operation of the Facility will be applied for the decommissioning and restoration efforts. Following the removal of all applicable aboveground and underground facilities, revegetation of the Facility Site will take place.

3.1 Aesthetics

Aboveground Facility components will be removed, and the site will be restored according to the Plan. Access roads will be removed unless the landowner requests the road(s) remain. Disturbed areas will be revegetated using a native seed mix. Project landscaping will remain in place.

3.2 Recycling

Facility materials will be recycled and/or salvaged to the maximum extent practicable by approved facilities, with preference given to local recycling/salvage facilities, if available. Facility components may be relocated or reused if possible. Metal components (steel, copper, and aluminum), including solar array racking, will be salvaged and sold for scrap metal if not reused. Gravel removed from the haul roads may be removed or reused.

Components with no resale value will be salvaged and sold as scrap for recycling or disposed of at an approved offsite licensed solid waste disposal facility. Most of the materials to be removed have salvage value, although there are some components that will likely have none at the time of decommissioning. All recyclable materials with no salvage value will be recycled to the extent possible. All other nonrecyclable waste materials will be disposed of in accordance with state and federal law in an approved licensed solid waste facility. See **Attachment A** for details related to salvage price of Facility components.

3.3 Potential Future Uses for the Site

The Facility Site has multiple potential future uses, including continued solar generation. At operating solar facilities with access to transmission facilities, solar resources, and interested landowners, the Applicant may desire to redevelop or repower the facility, as opposed to decommissioning. If repowering were to be considered, new permits and approvals would be sought from the Towns of Stockport and Stuyvesant.

The Facility Site is currently primarily active hay fields and woodland. If decommissioning is determined to be the most optimal option for the site, as opposed to repowering as previously

discussed, lands previously used for hay production may resume hay production upon decommissioning; or, the livestock grazing collocated with the Facility during its operational life may also continue post-decommissioning. The Applicant is not aware of any limitations on future land uses that landowners may consider at that time. Operation of the Facility and subsequent decommissioning of the Facility will not restrict future uses of the land for agricultural or alternate uses.

3.4 Funding

3.4.1 *Estimated Cost of Decommissioning*

A decommissioning cost estimate was prepared under the direction of a Professional Engineer licensed in the State of New York and is included as **Attachment A**. Assumptions and references applicable to each line item are listed as they are used.

RPNY Solar 12, LLC will provide financial assurance in an amount equal to the Decommissioning Bond Amount presented in the cost estimate included as **Attachment A**. The amount of the initial assurance to cover Facility decommissioning shall be the value estimated in **Attachment A**. The initial amount of the financial assurance also includes estimated costs, expenses, and disbursements likely to be incurred by the Town in connection with the enforcement, oversight, and administration of the decommissioning of the Facility should the Applicant fail to decommission the Facility. This includes reasonable engineering fees, attorney's fees, and other costs related to decommissioning the Facility in accordance with this Decommissioning & Site Restoration Plan.

The estimated bond amount for decommissioning the Facility is approximately \$757,205. A detailed cost analysis for the decommissioning efforts is provided as **Attachment A**. The financial assurance will be reevaluated after five (5) years of operation and every fifth year thereafter and adjusted for inflation and updated cost assumptions. The evaluation will be performed by a professional engineer licensed in the State of New York and reviewed by the Towns of Stockport and Stuyvesant.

The unit rates used in preparing the decommissioning estimate are based on published RS Means values. According to this reference, the labor rates used in developing unit prices are based on the average rates from 30 major U.S. Cities according to union labor agreements and prevailing wages for construction trades. There is inherent uncertainty regarding variations in wages over the life of the Facility. However, because prevailing wage rates are used in developing the national average, estimated future wages are accounted for in the decommissioning estimate. The decommissioning estimate also includes a 15% contingency to allow for soft costs (engineering, permitting, construction oversight, legal fees, etc.) in the event the Town needs to act on the financial assurance and oversee the decommissioning of the Facility. The following assumptions were made to estimate the cost of decommissioning the Facility:

- Costs derived from 2023 RS Means Online version Q2 and 2018 RS Means Site Work & Landscaping Costs estimating manual.
- Post removal includes backfilling holes.
- Native soils from excavation of roads will be side-cast then graded during construction and

will be available as backfill when the roads are removed.

- Medium voltage AC collection lines installed via HDD will be abandoned in-place.
- Salvage costs obtained from <http://rockawayrecycling.com/> using 30-Day Average price (10/2024).

3.4.2 Financial Assurance

Financial assurance will be provided by the Applicant in the form of a surety bond covering the estimated decommissioning and restoration activities (plus a 15 percent contingency cost) less the total projected salvage value of Facility components. See below for additional information regarding each type of potential financial assurance and justification.

Surety Bond: A Surety Bond is a form of collateral/credit support backed by a three-party agreement whereby a surety company assures the obligee (recipient of an obligation) that the principal (in this case, the Applicant) will perform a contract obligation or responsibility. Surety Bonds are typically used when a customer requires support for decommissioning and restoration, performance of a task to a certain requirement, and other requirements.

3.5 Schedule

Decommissioning shall begin after the Facility has ceased operating as a solar energy facility, for a period of 12 consecutive months, at the end of the 35-year operational life, or at the discretion of the Facility Owner and Operator, whichever comes first. Periods during which the Facility is not operational for maintenance, repair, or due to catastrophic events beyond the Applicant's control, during which the Applicant will work to return the Facility to full operating status, shall not trigger the decommissioning requirement herein. Prior to the commencement of decommissioning activities, the Facility will be shut down, de-energized, and disconnected from the generation tie line at the collection substation. The Applicant will coordinate with the Utility for de-energization efforts to ensure disruption to the overall electric utility system does not occur.

Written notice will be provided to the Town and landowners no less than 14 days prior to commencement of decommissioning activity.

Decommissioning, dismantling, and demolition of the Facility is anticipated to occur within 12 months as outlined in Article IX, Section 2(C)(4) of the Town of Stockport Solar Law and in Article IX, Section 7(H)(1) of the Town of Stuyvesant Solar Law. Soil disturbance will not take place during months when the soil is typically frozen, but removal of above ground equipment may occur during winter months.

References

Local Law A, Year 2022 Town of Stockport: A Local Law Amending the Zoning Law of the Town of Stockport in relation to solar energy uses

Available At: <https://www.stockportny.gov/public-notice-local-laws>York - Public Notices & Local Laws (stockportny.gov)

Solar Energy Local Law, Year 2022 Town of Stuyvesant

Available At: <https://stuyvesantny.us/wp-content/uploads/2022/03/Stuyvesant-Solar-law-2022-revised.pdf>

ATTACHMENT A

Cost Estimate



**DECOMMISSIONING COST ANALYSIS
MITCHELL AVENUE AGRIVOLTAIC PROJECT**

DESCRIPTION OF ITEM	QUANTITY	UNIT	UNIT RATE	TOTAL COST (2024)	TOTAL COST (AFTER 5 YEARS)**	LOGIC
I. DISASSEMBLY & DISPOSAL						
1 PV Modules	7,436	EA	\$ 4.60	\$ 34,206	\$ 37,766	*Use Crew A-5 (2 Electricians; .25 Truck Driver; .25 Flatbed Truck) = \$1,845/day. Assumes 25 modules/hr/electrician
2 Inverters	26	EA	\$ 115.40	\$ 3,000	\$ 3,313	*Use Crew A-5 (2 Electricians; .25 Truck Driver; .25 Flatbed Truck) = \$1,845/day. Assume crews can remove 16/day.
3 Transformers	1	EA	\$ 1,757.50	\$ 1,758	\$ 1,940	*Use Crew A-5 + A-3i (2 Electricians; .25 Truck Driver; .25 Flatbed Truck, 1 Crane, 1 Crane Operator) = \$3,515/day. Assume crews can remove 2/day.
4 Racking Frame (Single Axis Tracker)	286	EA	\$ 26.60	\$ 7,608	\$ 8,399	*Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = \$1,192/day. Assume crews can remove 45/day.
5 Racking Posts	572	EA	\$ 10.00	\$ 5,720	\$ 6,315	*Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = \$1,192/day. Assume crews can remove 60 post pairs/day.
6 Tracker Motors	286	EA	\$ 10.00	\$ 2,860	\$ 3,158	*Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = \$1,192/day. Assume crews can remove 120/day.
7 LVDC Wiring	43,525	LF	\$ 1.30	\$ 56,583	\$ 62,472	*Use Crew A-5 (2 Electricians; .25 Truck Driver; .25 Flatbed Truck) = \$1,845/day. Assume crews can remove 1500 LF/day.
8 MV AC Wiring	1,741	LF	\$ 14.00	\$ 24,374	\$ 26,911	*Use Crew A-5 (2 Electricians; .25 Truck Driver; .25 Flatbed Truck) = \$1,845/day and B11M (1 Operator, 1 Laborer, 1 Excavator) = \$1,720/day. Assume 250 LF/day
9 Fence	3,679	LF	\$ 2.40	\$ 8,830	\$ 9,749	*Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = \$1,192/day. Assume crews can remove 500 LF/day.
10 Equipment Pad Removal	1	EA	\$ 1,430.50	\$ 1,431	\$ 1,579	*Use Crew B-17 (2 Laborers; 1 Equip Oper; 1 Truck Driver; 1 Backhoe; 1 Dump Truck) = \$2860.50/day. Assume 2/day
11 Gravel Eq. Pad Area	24	CY	\$ 19.00	\$ 463	\$ 511	*Use Crew B-17 +4 trucks (2 Laborers; 1 Equip Oper; 4 Truck Driver; 1 Backhoe; 4 Dump Truck) = \$5,641/day. Assume 300 CY/day, 1hr cycle
12 Gravel Access Drive	1,343	CY	\$ 19.00	\$ 25,514	\$ 28,169	*Use Crew B-17 +4 trucks (2 Laborers; 1 Equip Oper; 4 Truck Driver; 1 Backhoe; 4 Dump Truck) = \$5,641/day. Assume 300 CY/day, 1hr cycle
13 Culvert	36	LF	\$ 24.34	\$ 876	\$ 967	*RSMMeans #024113400320. \$24.34/LF
14 General Demolition	0.9	WK	\$ 3,000	\$ 2,555	\$ 2,821	*Use Crew B-38 (2 Laborers) Assumes can complete in one day
15 Landscaping Removal	0.6	AC	\$ 8,692	\$ 4,986	\$ 5,504	Assume based on RSMMeans G10101201000
				\$ 180,761	\$ 199,575	
II. SITE RESTORATION						
16 Re-Seeding	5	AC	\$ 2,000	\$ 10,354	\$ 11,432	*Cost includes(Seed: Native species. Also with estimate is labor spraying; Disking; Planting; Mulch; One man & machine).
17 Re-Grading	1,367	CY	\$ 5.75	\$ 7,861	\$ 8,680	*Re-grading of roads, skids, and basin areas. Use Crew B-17 (2 Laborers; 1 Equip Oper; 1 Truck Driver; 1 Backhoe; 1 Dump Truck) = \$2860.50/day. Assume 500 CY/day.
				\$ 18,216	\$ 20,112	
III. INDIRECT COSTS						
18 Engineering Fees	1	LS	\$ 12,000	\$ 12,000	\$ 13,249	Estimate based on professional experience
19 Permitting Fees	1	LS	\$ 4,800	\$ 4,800	\$ 5,300	Estimate based on professional experience
20 Public Road Damage Repair	1	LS	\$ 7,500	\$ 7,500	\$ 8,281	Estimate based on professional experience
21 Temporary Office Trailer	6	MO	\$ 277	\$ 1,665	\$ 1,838	*RSMMeans #015213200350. \$277.48/Month
22 Toilet, Portable Chemical	6	MO	\$ 254	\$ 1,526	\$ 1,685	*RSMMeans #015433406410. \$254.38/Month
23 Field Management - Superintendent	13	WK	\$ 3,525	\$ 45,825	\$ 50,595	*RSMMeans #013113200260. \$3525/Week
24 Field Management - Foreman	26	WK	\$ 1,877	\$ 48,802	\$ 53,881	*RSMMeans #013113200100. Assumes similar cost as Junior Field Engineer \$1877/Week
25 Environmental Monitor	26	WK	\$ 6,000	\$ 156,000	\$ 172,237	Assume \$100/hour * 60 hours/week
				\$ 278,118	\$ 307,065	
IV. SALVAGE						
18 PV Modules	7,436	EA	\$ -	\$ -	\$ -	Conservatively assume salvage value offsets disposal costs
19 Inverter(s)	26	EA	\$ 39.00	\$ 1,014	\$ 1,065.72	Rockaway Recycling 10/2024 (Assumed based on average price of small electric motors \$0.26/lb)
20 Transformer(s)	1	EA	\$ 1,801.96	\$ 1,802	\$ 1,893.88	Assume 2.5% annual increase from 2020 pricing
21 Module Trim (Aluminum)	84,696	LBS	\$ 0.50	\$ 42,348	\$ 44,508.19	Rockaway Recycling 10/2024, Sheet aluminum \$0.50/lb
22 Frame Torque Tube (Steel)	152,667	LBS	\$ 0.04	\$ 6,107	\$ 6,418.17	Rockaway Recycling 10/2024, \$100/GT
23 Racking Posts (Steel)	137,280	LBS	\$ 0.04	\$ 5,491	\$ 5,771.31	Rockaway Recycling 10/2024, \$100/GT
24 Tracker Motors	14,300	LBS	\$ 0.26	\$ 3,718	\$ 3,907.66	Rockaway Recycling 10/2024, \$0.26/lb (Average of \$0.22-0.30/lb)
25 LV Wiring (Insulated Cable)	28,291	LBS	\$ 2.45	\$ 69,314	\$ 72,849.25	Rockaway Recycling 10/2024, \$2.45/lb
26 MV Wiring (Insulated Cable)	3,378	LBS	\$ 2.45	\$ 8,275	\$ 8,697.08	Rockaway Recycling 10/2024, \$2.45/lb
27 Perimeter Security Fence (Steel)	11,773	LBS	\$ 3.20	\$ 37,673	\$ 39,594.66	Rockaway Recycling 10/2024, \$100/GT
31 Trucking Costs	216	TON	\$ 10	\$ 2,162	\$ 2,272.20	Assume payload of 22T/truck with 80 mile round trip haul. 2x2019 ATRI Report Ops Cost of \$2.02/mile
				\$ 173,579	\$ 182,434	

GROSS DEMOLITION COST (Items I & II)	\$ 526,751
CONTINGENCY COST (15%)	\$ 79,013
TOTAL DECOMMISSIONING AMOUNT	\$ 605,764
TOTAL SALVAGE VALUE CREDIT (ITEM III)	\$ (182,434)
SUBTOTAL	\$ 423,330
DECOMMISSIONING BOND AMOUNT (125% OF TOTAL AMOUNT)	\$ 757,205

Per Town of Stuyvesant Solar Law; "The amount of the bond or security shall be 125% of the cost of removal of the Tier 3 Solar Energy System and restoration of the property with an escalator of 2% annually for the life of the Solar Energy System. The salvage value of the panels or other equipment on the site shall not be utilized in the calculation to determine the amount of the decommissioning security."

Legend:
 * Costs derived from RS Means manual Sitework & Landscapes Cost
 ** Assumes 2% annual cost increase for decommissioning and 1.0% annual cost increase for salvage value.

References:
 - The decommissioning cost estimate was prepared under the supervision of a professional engineer licensed in the State of New York. The opinion of probable costs is based on our experience in the design and construction of solar energy facilities and is subject to final engineering design. Costs assumes the work will be performed by a contractor experienced in the decommissioning and deconstruction of solar facilities.

ATRI = American Transportation Research Institute
 This estimate will be reevaluated and updated after every fifth year of operation.

ATTACHMENT B

NYSAGM Guidelines

NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS

Guidelines for Solar Energy Projects - Construction Mitigation for Agricultural Lands (Revision 10/18/2019)

The following are guidelines for mitigating construction impacts on agricultural land during the following stages of a solar energy project: Construction, Post-Construction Restoration, Monitoring and Remediation, and Decommissioning. These guidelines apply to project areas subject to ground disturbance¹ within agricultural lands including:

- Lands where agriculture use will continue or resume following the completion of construction (typically those lands outside of the developed project's security fence);
- Lands where the proposed solar development will be returning to agricultural use upon decommissioning, (typically those lands inside of the developed project's security fence);
- Applicable Area under review pursuant to Public Service Law Article 10 Siting of Major Electric Facilities.

The Project Company will incorporate these Guidelines into the development plans and applications for permitting and approval for solar projects that impact agricultural lands. If the Environmental Monitor, hereafter referred to as EM, determines that there is any conflict between these Guidelines and the requirements for project construction that arise out of the project permitting process, the Project Company and its EM, will notify the New York State Department of Agriculture and Markets (NYSDAM), Division of Land and Water Resources, and seek a reasonable alternative.

Environmental Monitor (EM)

The Project Company (or its contractor) shall hire or designate an EM to oversee the construction, restoration and follow-up monitoring in agricultural areas. The EM shall be an individual with a confident understanding of normal agriculture practices² (such as cultivation, crop rotation, nutrient management, drainage (subsurface and/or surface), chemical application, agricultural equipment operation, fencing, soils, plant identification, etc.) and able to identify how the project may affect the site and the applicable agricultural practices. The EM should also have experience with or understanding of the use of a soil penetrometer for compaction testing and record keeping. The EM may serve dual inspection roles associated with other Project permits and/or construction duties, if the agricultural workload allows. The EM should be available to provide site-specific agricultural information as necessary for project development through field review and direct contact with both the affected farm operators and NYSDAM. The EM should maintain regular contact with appropriate onsite project construction supervision and inspectors throughout the construction phase. The EM should maintain regular contact with the affected farm operator(s) concerning agricultural land impacted, management matters pertinent to the agricultural operations and the site-specific implementation of agricultural resource mitigation measures. The EM will serve as the agricultural point of contact.

¹Ground Disturbance is defined as an activity that contributes to measurable soil compaction, alters the soil profile or removes vegetative cover. Construction activities that utilize low ground pressure vehicles that do not result in a visible rut that alters soil compaction, is not considered a Ground Disturbance. Soil compaction should be tested using an appropriate soil penetrometer or other soil compaction measuring device. The soil compaction test results within the affected area will be compared with those of the adjacent unaffected portion of the agricultural area.

² An EM is not expected to have knowledge regarding all of the listed agricultural practices, but rather a general understanding such that the EM is able to perform the EM function.

1. For projects involving less than 50 acres of agricultural land within the limits of disturbance (LOD),³ the EM shall be available for consultation and/or on-site whenever construction or restoration work that causes Ground Disturbance is occurring on agricultural land.
2. For projects involving 50 acres or more of agricultural land within the (LOD) (including projects involving the same parent company whether phased or contiguous projects), the EM shall be on site whenever construction or restoration work requiring or involving Ground Disturbance is occurring on agricultural land and shall notify NYSDAM of Project activity. The purpose of the agency coordination would be to assure that the mitigation measures of these guidelines are being met to the fullest extent practicable. The Project Company and the NYSDAM will agree to schedule inspections in a manner that avoids delay in the work. NYSDAM requires the opportunity to review and will approve the proposed EM based on qualifications or capacities.

Construction Requirements

- Before any topsoil is stripped, representative soil samples should be obtained from the areas to be disturbed. The soil sampling should be consistent with Cornell University's soil testing guidelines, and samples should be submitted to a laboratory for testing PH, percent organic material, cation exchange capacity, Phosphorus/Phosphate (P), and Potassium/Potash (K). The results are to establish a benchmark that the soil's PH, Nitrogen (N), Phosphorus/Phosphate (P), and Potassium/Potash (K) are to be measured against upon restoration. If soil sampling is not performed, fertilizer and lime application recommendations for disturbed areas can be found at https://www.agriculture.ny.gov/ap/agsservices/Fertilizer_Lime_and_Seeding_Recommendations.pdf.
- Stripped topsoil should be stockpiled from work areas (e.g. parking areas, electric conductor trenches, along access roads, equipment pads) and kept separate from other excavated material (rock and/or sub-soil) until the completion of the facility for final restoration. For proper topsoil segregation, at least 25 feet of additional temporary workspace (ATWS) may be needed along "open-cut" underground utility trenches. All topsoil will be stockpiled as close as is reasonably practical to the area where stripped/removed and shall be used for restoration on that particular area. Any topsoil removed from permanently converted agricultural areas (e.g. permanent roads, etc.) should be temporarily stockpiled and eventually spread evenly in adjacent agricultural areas within the project Limits of Disturbance (LOD) ; however not to significantly alter the hydrology of the area. Clearly designate topsoil stockpile areas and topsoil disposal areas in the field and on construction drawings; changes or additions to the designated stockpile areas may be needed based on field conditions in consultation with the EM. Sufficient LOD (as designated on the site plan or by the EM) area should be allotted to allow adequate access to the stockpile for topsoil replacement during restoration.
 - Topsoil stockpiles on agricultural areas left in place prior to October 31st should be seeded with Aroostook Winter Rye or equivalent at an application rate of three bushels (168 lbs.) per acre and mulched with straw mulch at rate of two to three bales per 1000 Sq. Ft.
 - Topsoil stockpiles left in place between October 31st and May 31st should be mulched with straw at a rate of two to three bales per 1000 Sq. Ft. to prevent soil loss.
- The surface of access roads located outside of the generation facility's security fence and constructed through agricultural fields shall be level with the adjacent field surface. If a level road design is not

³ The Limits of Disturbance (LOD) includes all project related ground disturbances and all areas within the project's security fencing.

feasible, all access roads should be constructed to allow a farm crossing (for specific equipment and livestock) and to restore/ maintain original surface drainage patterns.

- Install culverts and/or waterbars to maintain or improve site specific natural drainage patterns.
- Do not allow vehicles or equipment outside the planned LOD without the EM seeking prior approval from the landowner (and/or agricultural producer), and associated permit amendments as necessary. Limit all vehicle and equipment traffic, parking, and material storage to the access road and/or designated work areas, such as laydown areas, with exception the use of low ground pressure equipment.⁴ Where repeated temporary access is necessary across portions of agricultural areas outside of the security fence, preparation for such access should consist of either stripping / stockpiling all topsoil linearly along the access road, or the use of timber matting.
- Proposed permanent access should be established as soon as possible by removing topsoil according to the depth of topsoil as directed by the EM. Any extra topsoil removed from permanently converted areas (e.g. permanent roads, equipment pads, etc.) should be temporarily stockpiled and eventually spread evenly in adjacent agricultural areas within the project Limits of Disturbance (LOD); however not to significantly alter the hydrology of the area.
- When open-cut trenching is proposed, topsoil stripping is required from the work area adjacent to the trench (including segregated stockpile areas and equipment access). Trencher or road saw like equipment are not allowed for trench excavation in agricultural areas, as the equipment does not segregate topsoil from subsoil. Horizontal Directional Drilling (HDD) or equivalent installation that does not disrupt the soil profile, may limit agricultural ground disturbances. Any HDD drilling fluid inadvertently discharged must be removed from agricultural areas. Narrow open trenches less than 25 feet long involving a single directly buried conductor or conduit (as required) to connect short rows within the array, are exempt from topsoil segregation.
- Electric collection, communication and transmission lines installed above ground can create long term interference with mechanized farming on agricultural land. Thus, interconnect conductors outside of the security fence must be buried in agricultural fields wherever practicable. Where overhead utility lines are required, (including Point(s) of Interconnection) installation must be located outside field boundaries or along permanent access road(s) wherever possible. When overhead utilities must cross farmland, minimize agricultural impacts by using taller structures that provide longer spanning distances and locate poles on field edges to the greatest extent practicable.
- All buried utilities located **within** the generation facility's security fence must have a minimum depth of 18-inches of cover if buried in a conduit and a minimum depth of twenty-four inches of cover if directly buried (e.g. not routed in conduit).⁵
- The following requirements apply to all buried utilities located **outside** of the generation facility security fence:
 - In cropland, hayland, and improved pasture buried electric conductors must have a minimum depth of 48-inches of cover. In areas where the depth of soil over bedrock is less than 48-inches, the

⁴ low ground pressure vehicles that do not result in a visible rut that alters soil compaction.

⁵ Burial of electrical conductors located within the energy generation facility may be superseded by more stringent updated electrical code or applicable governing code.

electric conductors must be buried below the surface of the bedrock if friable/rippable, or as near as possible to the surface of the bedrock.

- In unimproved grazing areas or on land permanently devoted to pasture the minimum depth of cover must be 36-inches.
- Where electrical conductors are buried directly below the generation facility's access road or immediately adjacent (at road edge) to the access road, the minimum depth of cover must be 24-inches. Conductors must be close enough to the road edge as to be not subject to agricultural cultivation / sub-soiling.
- When buried utilities alter the natural stratification of soil horizons and natural soil drainage patterns, rectify the effects with measures such as subsurface intercept drain lines. Consult the local Soil and Water Conservation District concerning the type of intercept drain lines to install to prevent surface seeps and the seasonally prolonged saturation of the conductor installation zone and adjacent areas. Install and/or repair all drain lines according to Natural Resources Conservation Service conservation practice standards and specifications. Drain tile must meet or exceed the AASHTO M-252 specifications. Repair of subsurface drains tiles should be consistent with the NYSDAM's details for "*Repair of Severed Tile Line*" found in the pipeline drawing A-5 (<http://www.agriculture.ny.gov/ap/agsservices/Pipeline-Drawings.pdf>).
- In pasture areas, it may be necessary to construct temporary fencing (in addition to the Project's permanent security fences) around work areas to prevent livestock access to active construction areas and areas undergoing restoration. For areas returning to pasture, temporary fencing will be required to delay the pasturing of livestock within the restored portion of the LOD until pasture areas are appropriately revegetated. Temporary fencing including the project's required temporary access for the associated fence installations should be included within the LOD as well as noted on the construction drawings. The Project Company will be responsible for maintaining the temporary fencing until the EM determines that the vegetation in the restored area is established and able to accommodate grazing. At such time, the Project Company should be responsible for removal of the temporary fences.

Post-Construction restoration requirements applicable to continued use agricultural areas that suffered ground disturbance due to construction activities (typically lands outside of the developed project's security fence).

- All construction debris in active agriculture areas including pieces of wire, bolts, and other unused metal objects will need to be removed and properly disposed of as soon as practical to prevent mixing with any topsoil.
- Excess concrete will not be buried or left on the surface in active agricultural areas. Concrete trucks will be washed outside of active agricultural areas. Remove all excess subsoil and rock unearthed from construction related activities occurring in areas intended to return to agricultural use. On-site disposal of such material is not permissible in active agricultural lands. Designated spoil disposal locations should be specified in the associated construction plans. If landowner agreements, LOD boundary, or Project's land use approvals do not allow for on-site disposal, material must be removed from the site.⁶

⁶ Any permits necessary for disposal under local, State and/or federal laws and regulations must be obtained by the facility operator, with the cooperation of the landowner when required.

- Excess stripped topsoil shall not be utilized for fill within the project area. Any extra topsoil removed from permanently impacted areas (e.g. roads, equipment pads, etc.) should be evenly spread in adjacent agricultural project areas, however not to significantly alter the hydrology of the area.
- Regrade all access roads outside of the security fencing (as determined necessary by the EM), to allow for farm equipment crossing and restore original surface drainage patterns, or other drainage pattern incorporated into the design.
- Repair all surface or subsurface drainage structures damaged during construction as close to preconstruction conditions as possible, unless said structures are to be removed as part of the project design. Correct any surface or subsurface drainage problems resulting from construction of the solar energy project with the appropriate mitigation as determined by the Environmental Monitor, Soil and Water Conservation District and the Landowner.
- On agricultural land needing restoration because of ground disturbance, postpone any restoration practices until favorable (workable, relatively dry) topsoil/subsoil conditions exist. Restoration must not be conducted while soils are in a wet or plastic state of consistency. Stockpiled topsoil must not be regraded, and subsoil must not be decompacted until plasticity, as determined by the Atterberg field test, is adequately reduced. No permanent project restoration activities shall occur in agricultural areas between the months of October through May unless favorable soil moisture conditions exist.
- In all continued use agricultural land where the topsoil was stripped, subsoil decompaction shall be conducted prior to topsoil replacement. Following construction, all such areas will be decompacted to a depth of 18 inches with a tractor mounted deep ripper or heavy-duty chisel plow. Soil compaction results shall be no more than 250 pounds per square inch (PSI) throughout the decompacted 18 inches as measured with a soil penetrometer. Following decompaction, all rocks 4 inches and larger in size unearthed from decompaction will be removed from the surface of the subsoil prior to replacement of the topsoil. The topsoil will be replaced to original depth and the original contours will be reestablished where possible. All rocks 4 inches and larger from topsoil shall be removed from the surface of the topsoil. Subsoil decompaction and topsoil replacement must be avoided after October 1, unless approved on a site-specific basis by the landowner in consultation with NYSDAM. All parties involved must be cognizant that areas restored after October 1st may not obtain sufficient growth for stabilization⁷ to prevent erosion over the winter months. If areas are to be restored after October 1st, necessary provisions must be made to prevent potential springtime erosion, as well as restore any eroded areas in the springtime, to establish proper growth. Excess stripped topsoil shall be evenly spread in the adjacent project areas, or adjacent agricultural areas (within the LOD), however, not to significantly alter the hydrology of the area.
- In all continued use agricultural areas where the topsoil was not stripped, including timber matted areas, the EM shall determine appropriate activities to return the area to agricultural use. These activities may include decompaction, rock removal, and revegetation. Soil compaction should be tested in the affected areas and the affected area's adjacent undisturbed areas using an appropriate soil penetrometer or other soil compaction measuring device as soon as soils achieve moisture equilibrium with adjacent unaffected areas. Compaction tests will be made at regular intervals of distance throughout the affected areas, including each soil type identified within the affected areas. Soil compaction results shall be measured with a soil penetrometer not exceeding more than 250 pounds per square inch (PSI), by

⁷ Sufficient growth for stabilization should be determined by comparison with unaffected crop production. Annual crops restored after normal planting window (as determined by the landowner or associated producer) should be stabilized with Aroostook Winter Rye at the rate of 150/100 lbs. per acre (broad cast/drill seeder).

comparing probing depths of both the affected and unaffected areas. Where representative soil density of the affected area's collective depth measurements present compaction restrictions exceeding an acceptable deviation of no more than 20% from the adjacent undisturbed area's mean soil density, additional decompaction may be required to a depth of 18-inches with a tractor mounted deep ripper or heavy-duty chisel plow. Following decompaction, remove all rocks unearthed from decompaction activities 4 inches and larger in size from the surface. Revegetation shall be performed in accordance with the instructions below.

- Seed all agricultural areas from which the vegetation was removed or destroyed with the seed mix specified by the landowner/agriculture producer or as otherwise recommended in the Department's fertilizer, lime and seeding guideline: [https://www.agriculture.ny.gov/ap/agservices/Fertilizer_Lime_and_Seeding_Recommendations.pdf]. Soil amendments should be applied as necessary so that restored agricultural areas' soil properties, at minimum, reasonably reflect the pre-construction soil test results or as otherwise agreed to by the involved parties to ensure continued agricultural use. All parties must be cognizant that areas restored after October 1st may not obtain sufficient growth to prevent erosion over the winter months. If areas are to be restored after October 1st, necessary provisions must be made to restore and/or re-seed any eroded or poorly germinated areas in the springtime, to establish proper growth.

Monitoring and Remediation

Project Companies shall provide a monitoring and remediation period of one complete growing season following the date upon which the desired crop is planted. All projects subject to NYS Public Service Law Article 10 will provide a monitoring period of two complete growing seasons following the date upon which the project achieves the establishment of the desired crop.

On site monitoring shall be conducted seasonally at least three times during the growing season (Spring, Summer, Fall). Monitoring is required to identify any remaining impacts directly associated with the construction of the project on agricultural lands proposed to remain or resume agriculture production, including the effects of climatic cycles such as frost action, precipitation and growing seasons to occur, from which various monitoring observations can be made. NYSDAM expects the Project Company (or its contractor) to retain the EM for follow-up monitoring and remediation (as needed) in agricultural areas. Monitoring is limited to the restored agricultural area. Non-project related impacts affecting the restored project area will be discussed with NYSDAM staff and considered for omission from future monitoring and remediation. The EM is expected to record the following observations from onsite inspections:⁸

- **Topsoil Thickness and Trench Settling** – The EM observations may require small hand dug holes to observe the percentage of settled topsoil in areas where the topsoil was stripped, or trenching was performed without stripping topsoil. Observations concerning depth of topsoil deficiencies shall require further remediation by re-appropriating additional topsoil. Acceptable materials for remediation are: known areas of native excess topsoil (according to records of project specific excess topsoil disposal spread within the original LOD) or imported topsoil free of invasive species that is consistent with the quality of topsoil on the affected site.

⁸ The activities that follow are not necessary for restored agricultural lands on which the farmer or landowner has commenced activities, including agricultural activities or other use that tend to reverse restoration or create conditions that would otherwise trigger restoration. Should NYSDAM contend upon inspection that conditions indicate that post-construction restoration activities were improperly performed or insufficient, NYSDAM may inform the project company and NYSERDA for further investigation and remediation.

- **Excessive Rock (>4-inches)** - Determined by a visual inspection of disturbed areas as compared to unaffected portions of the same field located outside the construction area. Observations concerning excess stone material in comparison to off-site conditions shall require further remediation including removal and disposal of all excess rocks and large stones.
- **Soil Compaction** - Project affected agricultural soils should be tested using an appropriate soil penetrometer or other soil compaction measuring device. Compaction tests will be made at regular intervals of distance throughout the access or work areas, including each soil type identified on the affected agricultural areas. Where representative soil density of the affected area exceeds the representative soil density of the unaffected areas, additional decompaction may be required. Consultation with NYSDAM staff and the agricultural producer(s) should be conducted prior to scheduling additional decompaction. If warranted, decompaction to a depth of 18-inches with a tractor mounted deep ripper or heavy-duty chisel plow. Restoration of displaced topsoil to original depth and re-establish original contours where possible. Decompaction deep shattering will be applied during periods of relatively low soil moisture to ensure the desired mitigation and to prevent additional soil compaction. Oversized stone/rock (Four-inches) material that is uplifted/unearthed to the surface as a result of the deep shattering will be removed.
- **Drainage** – The EM shall visually inspect the restored agricultural areas in search of pervasive stunted crop growth due to seasonal saturation, not previously experienced at the site and not resulting from the agricultural producer’s irrigation management or due to excessive rainfall. Identified areas of stunted crop growth shall be compared to the nearest undisturbed adjacent areas under a substantially equivalent terrain and crop management plan. Drainage observations should be evaluated to determine if the project affected surface or sub-surface drainage during construction or restoration. Project caused drainage issues affecting or likely to reduce crop productivity of the adjacent areas will have to be remediated via a positive surface drainage, sub-surface drainage repair or an equivalent.
- **Agriculture Fencing and Gates** – The EM shall inspect Project associated fencing and gates (installed, altered or repaired) within the Project’s LOD associated with agricultural activities for function and longevity. The Project Company is responsible during the Monitoring and Remediation Phase for maintaining the integrity of Project associated fencing and gates.

The Project Company (or its contractor) shall consolidate each applicable growing season’s observations into an annual report during the monitoring period and shall be provided upon request to NYSDAM. Annual reports should include date stamped photographs illustrating crop growth in comparison with unaffected portions the agricultural areas.

The EM shall record observations of the establishment of the desired crop and subsequent crop productivity within restored agricultural areas and shall be evaluated by comparing its productivity to that of the nearest adjacent undisturbed agricultural land of similar crop type within the same field. If a decline in crop productivity is apparent the Project Company as well as other appropriate parties must determine whether the decline is due to project activities. If project activities are determined to be the primary detrimental factor, the project EM will notify NYSDAM concerning unsuccessful restoration and to potentially schedule a NYSDAM staff field visit. If project restoration is determined to be insufficient, the Project Company will develop a plan for appropriate rehabilitation measures to be implemented. NYSDAM staff will review and approve said plan prior to implementation. Additional monitoring may be required depending on additional restoration activities needed.

The Project Company is not responsible for site conditions and/or potential damages attributable to the agricultural producer's land use management or others' land use management.

Decommissioning

If the operation of the generation facility is permanently discontinued, remove all above ground structures (including panels, racking, signage, equipment pad, security fencing) and underground utilities if less than 48-inches deep. All concrete piers, footers, or other supports must be removed to a minimum depth of 48-inches below the soil surface. The following requirements apply to electric conductors located at the respective range of depth below the surface:

- 48-inches plus: All underground electric conduits and direct buried conductors may be abandoned in place. Applicable conduit risers must be removed, and abandoned conduit must be sealed or capped to avoid a potential to direct subsurface drainage onto neighboring land uses.
- Less than 48-inches: All underground direct buried electric conductors and conductors in conduit and associated conduit with less than 48-inches of cover must be removed, by means of causing the least amount of disturbance as possible.

Access roads in agricultural areas must be removed, unless otherwise specified by the landowner. If access is to be removed, topsoil will have to be returned from recorded project excess native topsoil disposal areas, if present, or imported topsoil free of invasive species that is consistent with the quality of topsoil on the affected site. Restore all areas intended for agricultural production, according to recommendations by the current landowner or leasing agricultural producer, and as required by any applicable permit, the Soil and Water Conservation District, and NYSDAM.

Monitoring and restoration requirements in accordance to the prior sections of these guidelines, will be required for the decommissioning restoration. NYSDAM requires notice before the Project Company undertakes decommissioning.