Alfred Oaks Solar Project

Town of Alfred, Allegany County, New York

Site Restoration and Decommissioning Plan

March 29, 2023
Revised October 3, 2023

PRESENTED TO

Alfred Oaks Solar, LLC
30 Saint Clair Avenue
Suite 1200
Toronto, Ontario, Canada M4V 3A1

PRESENTED BY

Tetra Tech, Inc.
661 Andersen Drive
Pittsburgh, PA 15220

P +1-412-921-7090
F +1-412-921-4040
tetratech.com

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1

2.0 EROSION CONTROL AND STORMWATER MANAGEMENT 1

3.0 PROJECT FACILITY DECOMMISSIONING 2

3.1 Notifications and Approvals 2

3.2 Decommissioning Activities and Timeline 2

3.3 Solar Panels & Racking 3

3.4 Electrical Collection System 3

3.5 Inverters & Transformers 3

3.6 Substation 3

3.7 Battery Energy Storage System 4

3.8 Operation & Maintenance Building 4

3.9 Facility Fencing 4

3.10 Foundations 4

3.11 Access Roads 4

3.12 Temporary Decommissioning Facilities 4

3.13 Debris, Waste Management, and Cleanup 5

4.0 SITE RESTORATION 5

4.1 Site Restoration Activities and Timeline 5

4.2 Reseeding, Revegetation, Backfilling, and Grading 5

4.3 Restoration Monitoring 5

5.0 SUMMARY OF DECOMMISSIONING AND SITE RESTORATION COSTS 6

6.0 REFERENCES 7

ATTACHMENTS

ATTACHMENT 1 – COST ESTIMATE SUMMARY 8

ATTACHMENT 2 – DECOMMISSIONING & RESTORATION COST ESTIMATE 9

ATTACHMENT 3 – ESCALATION CALCULATIONS 13

ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
Applicant	Alfred Oaks Solar, LLC
BESS	Battery Energy Storage System
BMP	Best Management Practice
Engineer	Tetra Tech, Inc.
E&SC	Erosion and Sediment Control
NYSDEC	New York State Department of Environmental Conservation
NYSAGM 2019	New York State Department of Agriculture and Markets Guidelines for Solar Energy Projects - Construction Mitigation for Agricultural Lands (Revision 10/18/2019)
NYSEG	New York State Electric and Gas Company
ORES	New York State Office of Renewable Energy Siting
Plan	The Site Restoration and Decommissioning Plan
Project	Alfred Oaks Solar Project
PV	Photovoltaic
SWPPP	Stormwater Pollution Prevention Plan
Town	The Town of Alfred, Allegany County, New York

1.0 EXECUTIVE SUMMARY

Tetra Tech, Inc. (the Engineer) on behalf of Alfred Oaks Solar, LLC (the Applicant) has prepared this Site Restoration and Decommissioning Plan (the Plan) to outline the methods and means to decommission the Alfred Oaks Solar Project (the Project) facility located within the Town of Alfred, Allegany County, New York. This Plan details the safe and efficient removal of all Project facility components as well as the subsequent restoration of the Project site to conditions as close to the pre-development characteristics as possible. All decommissioning and restoration activities shall adhere to the requirements of appropriate governing authorities, and shall be in accordance with all applicable federal, state, county, and local permits, and decommissioning agreements. The Applicant and/or contractor shall obtain any required permits prior to the commencement of decommissioning.

Decommissioning of the Project facility shall occur at the end of its useful life. Decommissioning may occur before the Project facility reaches the end of its useful life if the facility has not generated electricity for a period of twelve (12) continuous months, per the Town of Alfred's (the Town) Local Law #1 of the Year 2020, Solar Energy Systems and Facilities Local Law. The Applicant anticipates a Project facility lifespan of more than thirty (30) years.

Once decommissioning becomes necessary, this Plan assumes the majority of the Project facility will be decommissioned and restored to pre-developed conditions. Decommissioning includes the removal of all solar arrays, racking and supports, electrical wiring and conduit, inverters, transformers, the battery energy storage system (BESS), the substation, the operation and maintenance building, fencing, foundations, and access roads, except as specified herein. New York State Electric and Gas (NYSEG) owns several of the Project facility components (e.g., the point of interconnection (POI) switchyard and the generation tie line) and is responsible for such components.

Prior to commencement of decommissioning, the Project facility shall be shut down, de-energized and disconnected from the transmission line tie-in at the Project collection substation. No disruptions shall occur to the overall electrical system. Decommissioning activities shall generally proceed as follows:

1. Removal of the solar arrays including the PV modules, racking, and support structures.
2. Removal of electrical components including cables and conduit, inverters, transformers, the substation, the BESS, and other miscellaneous electrical equipment.
3. Removal of the operation and maintenance building.
4. Removal of all gates and fencing.
5. Removal of all pads and foundations.
6. Removal of project components above a depth of 48-inches in agricultural and 36-inches in non-agricultural lands, unless otherwise agreed upon with the landowner(s) as may be allowed by federal, state, and local laws at the time of decommissioning.
7. Removal of any required temporary laydown areas or stockpiles followed by the removal of all access roads, unless otherwise agreed upon with the landowner(s) as may be allowed by federal, state, and local laws at the time of decommissioning.
8. Site reclamation including reseeding & revegetation.

Due to the size of the overall Project facility, the estimated timeframe to complete the decommissioning and site restoration process is approximately 17.5 months (76 weeks). During the Project facility decommissioning and site restoration, those safety protocols used during initial construction shall be employed to ensure the continued health and safety of the workers and nearby residents.

2.0 EROSION CONTROL AND STORMWATER MANAGEMENT

Erosion and sediment control and stormwater management is required during the decommissioning and site restoration process. Erosion and sediment control (E&SC) best management practices (BMPs) are the primary

method for preventing impacts to stormwater runoff quality and preserving the quality of downstream surface waters. The contractor shall install similar measures as those outlined in the Project's stormwater pollution prevention plan (SWPPP), and all E&SC BMPs shall be installed and maintained in accordance with New York State Standards and Specifications for Erosion and Sediment Control.

In addition to those BMPs listed in the Project's SWPPP, common E&SC BMPs include:

- Minimize disturbed areas and protect natural features of the site (native soil, topsoil, vegetation, topography, and drainage areas);
- Control stormwater runoff and flow to and from disturbed areas;
- Stabilize soils as quickly as possible following disturbance of work areas, including temporary stockpiles;
- Protect slopes and exposed soil;
- Protect culvert inlets, drainage structures, and nearby surface water features;
- Establish perimeter controls, such as silt fence or compost filter sock, around disturbed areas;
- Retain and stockpile soils onsite to prevent unnecessary transport and additional truck traffic;
- Maintain erosion controls, including maintenance, during decommissioning and site restoration activities; and
- Use native soils and local seed mixtures for revegetation activities.

E&SC BMPs shall be routinely inspected to ensure they remain effective. Any identified deficiencies shall be immediately repaired. E&SC BMPs shall remain in place until restoration activities in their tributary drainage area is complete and final stabilization has been achieved, at which point they shall be removed. Any areas disturbed during the removal process shall be immediately stabilized.

3.0 PROJECT FACILITY DECOMMISSIONING

The Applicant is responsible for the removal of the various major components of the Project facility outlined in the following sections. NYSEG owns several of the Project facility components (e.g., the point of interconnection switchyard and the generation tie line) and is responsible for such components. Support structures connecting the substation to the POI switchyard will be removed, except for the gravel access road and the stormwater management BMPs that manage runoff from the POI switchyard. All vegetative buffers may be left in place at the discretion of the landowner(s) as may be allowed by federal, state, and local laws at the time of decommissioning.

The Applicant has the option to recycle certain components and materials removed during the decommissioning process. The closest solar recycling facility is the WeRecycleSolar facility in Hackensack, New Jersey. Components and materials which may be recycled are outlined in the following subsections.

3.1 NOTIFICATIONS AND APPROVALS

Prior to the commencement of decommissioning activities, the Applicant shall notify all federal, state, county, and local authorities, as needed. The Applicant shall also notify the landowner(s) and stakeholders providing the nature of the proposed decommissioning work at the Project facility.

Decommissioning of the Project facility is not anticipated to pose environment risks. The decommissioning shall follow the applicable standards and practices at the time, and the Applicant is responsible for ensuring all necessary permits and agreements are obtained to perform the work. This Plan will be revised and updated as necessary to ensure changes in regulations, methods, and technology are taken into consideration.

3.2 DECOMMISSIONING ACTIVITIES AND TIMELINE

Prior to the commencement of decommissioning activities, the contractor shall develop a safe job procedure and a specific deconstruction sequence for the removal of electrical equipment, including the PV modules. This includes notification of the local utility company of the change in use and to determine an appropriate schedule and procedure

to safely de-energize and disconnect the facility's components from the local interconnection site. Once the system has been disconnected from the grid, connections shall be tested and discharged as necessary to minimize potential hazards prior to removal. This process is expected to take approximately four weeks.

Upon commencement of decommissioning, the contractor shall first install all necessary E&SC BMPs. The contractor shall then proceed with specific decommissioning of the Project facility components, including removal of the solar arrays including the PV modules, racking, and support structures; removal of electrical components including cables and conduit, inverters, transformers, the substation, the BESS, and other miscellaneous electrical equipment; removal of the operation and maintenance building; removal of all gates and fencing; removal of all pads and foundations; removal of project components above a depth of 48-inches in agricultural and 36-inches in non-agricultural lands, unless otherwise agreed upon with the landowner(s), including access roads; and removal of any required temporary laydown areas or stockpiles followed by the removal of all access roads, unless otherwise agreed upon with the landowner(s) as may be allowed by federal, state, and local laws at the time of decommissioning. This process is expected to take approximately 62 weeks.

The entire decommissioning process is expected to take approximately 15 months (66 weeks). Once decommissioning of the Project facility is complete, the contractor shall begin the site restoration process outlined in Section 4.0.

3.3 SOLAR PANELS & RACKING

PV modules shall be disconnected from the electrical cables then removed, followed by the mounting racks, then support post sections. The racking and support structure may need to be cut into smaller sections to ease transport. The components would then be loaded either directly onto trucks for removal from the Project or placed onto the ground for eventual loading onto trucks. Some of the solar panels may be reused or resold on the market. If the solar panel components cannot be reused on another project, they would be disassembled and sold for scrap. Any hazardous material, such as lubricants, shall be removed and disposed of in accordance with all applicable federal, state, county, and local standards.

3.4 ELECTRICAL COLLECTION SYSTEM

Buried electric conduits and direct buried conductors at a depth of 48-inches or more shall 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. Otherwise, electric conduits and direct buried conductors shall be removed by means causing the least amount of disturbance possible. In limited circumstances, the Applicant may seek to leave certain limited buried components in place where removal of those components would cause significant adverse environmental impacts, such as HDD conduits used to cross under wetlands or streams. However, those occurrences would be addressed with ORES and the Town at the time of decommissioning. Removed conduit material may be sold, reused, or properly disposed of off-site.

3.5 INVERTERS & TRANSFORMERS

Prior to removal, the transformer(s) shall be drained of any oils or lubricants and properly disposed of in accordance with applicable federal, state, county, and local requirements. All inverters shall be disconnected from all wiring and removed entirely. Removed inverters and transformers may be sold, reused, or properly disposed of off-site.

3.6 SUBSTATION

Ensure the substation is shut down and disconnected from the electrical system/transmission line. The transmission line shall be grounded via portable grounds at multiple points, disconnected and then removed. Disassembly of the remainder of the substation includes the removal of the steel, transformers, panel board/switches, conductors, and

other materials that could be reconditioned and reused or sold as scrap material. All underground electrical collector cables coming to the substation from the surrounding inverters are to be cut at the perimeter of the substation and removed (see Section 3.4 above). Any hazardous material such as oil or lubricants shall be removed in accordance with applicable federal, state, county, and local requirements.

3.7 BATTERY ENERGY STORAGE SYSTEM

Ensure the BESS is shut down and disconnected from the electrical system. Once disconnected, disassembly of the battery units (housing and batteries), electrical wiring, and other components can begin. The batteries should be handled with care and safely disposed of in accordance with applicable federal, state, county, and local requirements. Other materials may be sold, reused, or properly disposed of off-site.

3.8 OPERATION & MAINTENANCE BUILDING

Ensure the operation and maintenance building is disconnected from the electrical system and is otherwise prepared for demolition. Materials such as steel, glass, wood, concrete, etc. may be sold, reused, or properly disposed of off-site.

3.9 FACILITY FENCING

The seven-foot chain link perimeter fence which surrounds the Project facility, as well as all interior fencing associated with ancillary structures, shall be broken down and removed. Removed fencing material may be sold, reused, or properly disposed of off-site.

3.10 FOUNDATIONS

All concrete and aggregate pads and foundations for the Project facility components (inverters and transformers, BESS, substation, operation & maintenance building, etc.) shall be removed to a minimum depth of 36-inches (48-inches in agricultural areas), and the excavation shall be backfilled with suitable material in controlled, compacted lifts, (see section X for details). Removed material shall be disposed of in accordance with applicable federal, state, county, and local requirements.

3.11 ACCESS ROADS

All access roads, including crossing infrastructure (e.g., culverts, armoring, etc.), shall be removed, de-compacted, and graded to reflect pre-development conditions to the maximum extent practicable. Where appropriate, the Applicant shall leave in place any access roads and appurtenances which underlying landowners have sought to retain as improvements following decommissioning of the Project facility, as may be allowed by federal, state, and local laws at the time of decommissioning. Removed material shall be disposed of in accordance with applicable federal, state, county, and local requirements.

3.12 TEMPORARY DECOMMISSIONING FACILITIES

It may be necessary to establish temporary facilities to accomplish the Project facility decommissioning. Temporary office spaces, parking areas, and/or equipment or material storage areas may be required. A trailer complex and/or laydown yard may also need to be established. Other temporary facilities may include portable restrooms, air conditioning or heating equipment, and drinking water. All temporary facilities shall be removed and restored in accordance with this Plan upon completion of all Project facility decommissioning activities.

3.13 DEBRIS, WASTE MANAGEMENT, AND CLEANUP

Regular cleanup shall occur during the decommissioning process. Trash, debris, and any other solid waste generated during the Project facility decommissioning shall be minimized and managed in accordance with applicable regulations. Waste containers and receptacles shall be provided on-site in designated collection areas for proper the disposal of solid waste. Trash and debris shall be collected and deposited into such containers as quickly as possible during the workday. Materials and debris to be recycled shall be collected in their own designated areas. Any hazardous fluids or other waste requiring disposal shall be collected and stored in appropriate containers and transported to an approved facility for reclamation or disposal.

4.0 SITE RESTORATION

Site restoration activities shall begin as soon as the decommissioning activities are completed in a certain area and shall be ongoing until the entire Project site is stabilized. Restoration practices shall follow the guidelines of the New York State Department of Agriculture and Markets Guidelines for Solar Energy Projects - Construction Mitigation for Agricultural Lands, last revised October 18, 2019 (NYSAGM 2019), or newer.

4.1 SITE RESTORATION ACTIVITIES AND TIMELINE

Site restoration activities include grading and leveling disturbed areas to match the pre-development elevations and drainage patterns; reseeding and revegetating; formal walkthroughs with regulatory agencies and the landowner(s); removing E&SC BMPs; and closing all permits and commercial obligations. The entire site restoration process is expected to take approximately 2.5 months (10 weeks).

4.2 RESEEDING, REVEGETATION, BACKFILLING, AND GRADING

Reseeding and/or planting shall occur across all disturbed surfaces. In non-agricultural areas, site restoration shall include reseeding and revegetation using native seed mixes, and mulch as necessary. In agricultural areas, site restoration shall be coordinated with the landowner(s) to plant desired crops in these locations. In either case, the Project site shall be graded and leveled to match the pre-development elevations and drainage patterns as much as practicable. Grading activities shall be kept to the minimum extent possible to restore disturbed areas.

Topsoil shall be removed and stockpiled separately from other materials near the area it was taken from and shall temporarily stabilized, as necessary. Stockpiled topsoil shall be replaced to original depths, if possible, or to a minimum depth of four inches. In areas where topsoil has been compacted, the soil shall be de-compacted to match the density and consistency of the surrounding undisturbed soil. The topsoil within agricultural fields shall be de-compacted to a minimum depth of 18-inches and restored to a density and depth consistent with the surrounding fields.

4.3 RESTORATION MONITORING

Routine monitoring shall occur to ensure the reestablishment of native vegetation and/or agricultural plantings, and to otherwise verify final stabilization is achieved. The inspection frequency shall be in accordance with the most current NYSDEC guidelines. Any areas of concentrated erosion shall be immediately repaired and reseeded. Vegetated areas shall be maintained until final stabilization is achieved. Such maintenance may include (but is not limited to) activities such as weeding, mowing, and watering. Vegetation control may include manual, mechanical, biological, or chemical treatment methods. If herbicides are deemed necessary, the application and use will comply with applicable federal, state, county, and local guidelines.

5.0 SUMMARY OF DECOMMISSIONING AND SITE RESTORATION COSTS

The estimated decommissioning and site restoration cost for the Project is based on the Engineer's experience and regional construction and salvage pricing at the time of this Plan. Sources include RS Means (Commercial New Construction, 2023, based at Rochester, New York), Davis-Bacon Wage Determinations (for Electricians in New York), and other average estimated costs and rates in New York. The estimated cost assumes that the work will be completed by a competent contractor who possess expertise in solar decommissioning and site restoration work, and accounts for escalation and contingency requirements by ORES and the Town. A summary of the estimated cost is provided as Attachment 1.

Certain materials and equipment removed during the decommissioning process have the potential to be salvaged or sold for reuse. The estimated salvage or sale value for various copper and steel components from the Project facility is also included with the estimate. Salvage rates were taken from https://rockawayrecycling.com/, using 30-day average pricing, accessed March 29, 2023. The cost estimate assumes that solar panels will not be salvaged for reuse or recycled for scrap at this time. However, the Applicant notes that the market for reuse or recycling of panels may evolve over the life of the Facility which may warrant an adjustment to the waste material estimates associated with disposal of panels. Thus, the Applicant reserves the right to include in its five-year review of the estimate evidence showing that the solar panels can be salvaged for reuse or recycled for scrap.

6.0 REFERENCES

1. New York State Department of Agriculture and Markets. 2019. Guidelines for Solar Energy Projects - Construction Mitigation for Agricultural Lands (Revision 10/18/2019). Accessible at: https://agriculture.ny.gov/system/files/documents/2019/10/solar_energy_guidelines.pdf (Accessed March 2023).

2. New York State Department of Environmental Conservation. 2007. Construction Stormwater Inspection Manual. Accessible at: https://www.dec.ny.gov/docs/water_pdf/inspectman.pdf (Accessed March 2023).

ATTACHMENT 1 – COST ESTIMATE SUMMARY

Task	Subtotal ($)
1.0 Supplies, Mob/Demobilization	$181,099.67
2.0 Facility/Equipment Removal	$1,847,540.68
3.0 Trucking (Max. Distance to WeRecycleSolar Facility, Hackensack, NJ, 300 Miles, 5 Hour Haul)	$316,792.56
4.0 Disposal (Tipping Fees)	$424,005.00
5.0 Hazardous Waste Disposal Fees	$63,741.00
6.0 Site Restoration	$786,131.09
7.0 Decommissioning Design and Permitting	$250,000.00
8.0 Salvage Credit	*$304,571.24*
Totals	**Cost ($)**
Cost Estimate (Excluding Salvage Credits)	$3,869,310.00
Section 94-c Gross Decommissioning Cost Estimate (Total +15%)	$4,449,706.50
Section 94-c Net Decommissioning Cost Estimate (Gross - Salvage Value)	$4,145,135.26
Town of Alfred Decommissioning Cost Estimate (Total +25%)	$4,836,637.50
Town of Alfred Decommissioning Cost Estimate with 2% escalation over 30 years	$8,760,899.36

ATTACHMENT 2 – DECOMMISSIONING & RESTORATION COST ESTIMATE

Alfred Oaks Solar Facility (Assumes 30 years of Operation)					
Acres:	590.25 (Project area, within fence)				
Total MW (DC):	133.53				
Total panels:	232,225				
Total Number of Racks:	2,383 (100-module and 75-module racks)				
Modules per rack:	97.45 (average modules per rack out of all 100-module racks and 75-module racks)				
Number of inverters/transformers:	32				
Number of Inverter/Transformer Pads (20' X 30' total, with stone, and 12.5' X 27.5' concrete):	32				
Linear feet of low voltage (AC/DC underground) wiring:	2,250				
Linear feet of high voltage (MV underground) wiring:	34,050				
Linear feet of high voltage (MV overhead) wiring:	9,600				
Cubic yards of gravel (12" access roads, pads, etc.):	27,609				
Linear feet of fence:	79,216				
Decommissioning Tasks[d]					
1.0 Supplies, Mob/Demobilization	**Cost ($)**	**Unit**	**# Units**	**Total ($)**	**Notes**
1.1 Equipment Mobilization/Setup					
1.1.1 Rental Equipment Transportation (Large)	$3,623.00	$ per unit	6	$21,738.00	Assumes 3 major mobilizations and demobilizations.
1.1.2 Rental Equipment Transportation (Small)	$234.10	$ per unit	6	$1,404.60	Assumes 3 minor mobilizations and demobilizations.
				$23,142.60	**Subtotal 1.1.1 ~ 1.1.2**
1.2 Site Facilities & Field Management					
1.2.1 Office Trailer (12'x50', Furnished, Rented, with AC)	$11,193.47	$ per unit	1	$11,193.47	
1.2.2 Field Management (Superintendent)	$88.13	$ per hour	760	$66,975.00	Assumes on-site for 25% of project duration.
1.2.3 Field Management (Engineering Technician)	$81.73	$ per hour	760	$62,111.00	Assumes on-site for 25% of project duration.
1.2.4 Field Equipment (Pickup Truck)	$11.63	$ per hour	1,520	$17,677.60	Assumes on-site for 50% of project duration.
				$157,957.07	**Subtotal 1.2.1 ~ 1.2.4**
				$181,099.67	**Subtotal 1.0**
2.0 Facility/Equipment Removal	**Cost ($)**	**Unit**	**# Units**	**Total ($)**	**Notes**
2.1 Fence Removal					
2.1.1 Excavator (1' to 4' deep, 3/8 C.Y., with Operator)	$102.43	$ per hour	1,980	$202,852.19	Assumes posts every 10 feet; 4 posts removed per hour.
2.1.2 General laborer	$47.17	$ per hour	2,263	$106,745.71	Assumes 35 linear feet of fencing removed per hour.
				$309,597.90	**Subtotal 2.1.1 ~ 2.1.2**
2.2 Inverter/Transformer Removal					
2.2.1 Disconnect Electrical Equipment (Electrician, General Laborer, Pickup)	$97.80	$ per hour	32	$3,129.60	Assumes one hour per inverter/transformer.
2.2.2 Crane, Truck-Mounted, 25-Ton Capacity, with Operator	$99.49	$ per hour	32	$3,183.68	Assumes one hour per inverter/transformer.
2.2.3 General laborer	$47.17	$ per hour	64	$3,018.88	
				$9,332.16	**Subtotal 2.2.1 ~ 2.2.3**
2.3 Inverter/Transformer Pad Foundation Removal to Subgrade					
2.3.1 Excavate/Remove Foundation: General Laborer, Excavator w/Hammer, Excavator w/Bucket & Grapple, w/ Operators	$443.20	$ per hour	32	$14,182.40	Assumes one hour per inverter/transformer.
2.3.2 Concrete Hauling: Dump Truck, 25-Ton Capacity, with Operator	$124.05	$ per hour	32	$3,969.60	Assumes one hour per inverter/transformer.
				$18,152.00	**Subtotal 2.3.1 ~ 2.3.2**
2.4 Solar Array Removal					
2.4.1 Forklift, 8,000 lb, 12' Lift, with Operator	$74.99	$ per hour	1,935	$145,105.65	Assumes operating for 25% of the panel removal duration.
2.4.2 General Laborer	$47.17	$ per hour	7,741	$365,142.97	Assumes 30 panels per laborer per hour.
				$510,248.62	**Subtotal 2.4.1 ~ 2.4.2**
2.5. Solar Rack and Post Removal					
2.5.1 Excavator w/ Bucket & Grapple, Excavator w/ Shear, with Operators	$396.03	$ per hour	1,192	$472,067.65	Assumes 0.5 hours per post and rack.
2.5.2 General Laborer	$47.17	$ per hour	1,192	$56,226.64	
				$528,294.29	**Subtotal 2.5.1 ~ 2.5.2**
2.6. Underground Cable Removal					
2.6.1 Excavator, 1' to 4' deep, 3/8 C.Y., with Operator	$102.43	$ per hour	472	$48,346.92	Assumes 77 linear feet of conduit removed per hour.
2.6.2 General Laborer	$47.17	$ per hour	472	$22,264.24	Assumes 77 linear feet of conduit removed per hour.

				$70,611.16	**Subtotal 2.6.1 ~ 2.6.2**
2.7 Battery Energy Storage System (BESS) Removal					
2.7.1 Disconnect Electrical Equipment (Electrician, General Laborer, Pickup)	$97.80	$ per hour	20	$1,956.00	
2.7.2 Battery Unit Removal	$1,661.40	$ per each	148	$245,887.20	
2.7.3 General Electrical Equipment Removal	$10.14	$ per sf	1,150	$11,661.00	
2.7.4 Concrete Pad/Foundation Removal	$18.87	$ per sy	840	$15,850.80	
2.7.5 General Laborer	$47.17	$ per hour	80	$3,773.60	
				$279,128.60	**Subtotal 2.7.1 ~ 2.7.5**
2.8 Substation Removal					
2.8.1 Disconnect Electrical Equipment (Electrician, General Laborer, Pickup)	$97.80	$ per hour	8	$782.40	
2.8.2 Transformer Removal	$2,784.86	$ per each	1	$2,784.86	
2.8.3 General Electrical Equipment Removal (Support Structures, Wiring, Electrical Features, etc.).	$10.14	$ per sf	8,225	$83,401.50	
2.8.4 Concrete Pad/Foundation Removal	$18.87	$ per sy	300	$5,661.00	
2.8.5 General Laborer	$47.17	$ per hour	80	$3,773.60	
				$96,403.36	**Subtotal 2.8.1 ~ 2.8.5**
2.9 Operation & Maintenance Building Removal					
2.9.1 Demolish Building, Rigid Frame, Clear Span & Multi Post	$5.07	$ per sf	3,055	$15,488.85	
2.9.2 Concrete Pad/Foundation Removal	$18.87	$ per sy	345	$6,510.15	
2.9.3 General Laborer	$47.17	$ per hour	80	$3,773.60	
				$25,772.60	**Subtotal 2.9.1 ~ 2.9.3**
				$1,847,540.68	**Subtotal 2.0**
3.0 Trucking (Maximum Distance to WeRecycleSolar Facility, Hackensack, NJ, 300 Miles, 5 Hour Haul)	**Cost ($)**	**Unit**	**# Units**	**Total ($)**	**Notes**
3.1 Fence Trucking	$541.65	$ per load	8	$4,333.20	Assumes 5 lbs per foot of fence & posts; total weight is 397,500 lbs.
3.2 Solar Panel (PV modules) Trucking (to Disposal Facility - 1 Hour Maximum Trip)	$108.33	$ per load	279	$30,224.07	Assumes 60 lbs per solar panel; total weight is 13,933,500 lbs.
3.3 Solar Rack and Post (incl. Motors) trucking	$541.65	$ per load	24	$12,999.60	Assumes 500 lbs per solar rack and post; total weight is 1,191,500 lbs.
3.4 Tracker Motors	$541.65	$ per load	2	$1,083.30	Assumes 30 lbs per motor; total weight is 71,490 lbs.
3.5 Inverter/Transformer Trucking	$541.65	$ per load	26	$14,082.90	Assumes 216 lbs per inverter; assumes 40,000 lbs per transformer; total weight is 1,286,912 lbs.
3.6 Transformer Oil Trucking (to Disposal Facility - 1 Hour Maximum Trip)	$108.33	$ per load	35	$3,791.55	Assumes 7,000 gal per transformer; assumes 7.5 lbs per gallon; total weight is 1,732,500 lbs.
3.7 Battery (from BESS) Trucking (to Disposal Facility - 1 Hour Maximum Trip)	$541.65	$ per load	14	$7,583.10	Assumes 4,650 lbs per battery cabinet; total weight is 688,200 lbs.
3.8 Aggregate/Stone (to Disposal Facility - 1 Hour Maximum Trip)	$108.33	$ per load	2,236	$242,261.52	Assumes 150 lbs per cubic foot; total weight is 111,816,450 lbs.
3.9 Miscellaneous Material Trucking (to Disposal Facility - 1 Hour Maximum Trip)	$108.33	$ per load	4	$433.32	
				$316,792.56	**Subtotal 3.0**
4.0 Disposal (Tipping Fees)	**Cost ($)**	**Unit**	**# Units**	**Total ($)**	**Notes**
4.1 Solar Panel (PV Modules) Disposal Cost	$60.00	$ per ton	6,966.75	$418,005.00	Total weight is 13,933,500 lbs.
4.2 Miscellaneous Disposal Costs (Concrete, Steel, Etc.)	$60.00	$ per ton	100.00	$6,000.00	Assumed.
				$424,005.00	**Subtotal 4.0**
5.0 Hazardous Waste Disposal Fees	**Cost ($)**	**Unit**	**# Units**	**Total ($)**	**Notes**
4.1 Batteries (from BESS)	$60.00	$ per ton	196.10	$11,766.00	Assumes 2,650 lbs per battery rack; total weight is 392,200 lbs.
4.2 Transformer Oil	$60.00	$ per ton	866.25	$51,975.00	Assumes 7,000 gal per transformer; assumes 7.5 lbs per gallon; total weight is 1,732,500 lbs.
				$63,741.00	**Subtotal 5.0**
6.0 Site Restoration	**Cost ($)**	**Unit**	**# Units**	**Total ($)**	**Notes**
6.1 Road/Pad Restoration, Base Removal & Surface Course					
6.1.1 Gravel Removal (12" Thick): Dozer, 200 HP, Short Haul, with Operator	$216.67	$ per hour	249	$53,950.83	27,609 total C.Y. of gravel; 111 C.Y. per hour.

6.1.2 General Laborer	$47.17	$ per hour	249	$11,745.33	
				$65,696.16	**Subtotal 6.1.1 ~ 6.1.2**
6.2 Re-Grade Disturbed Areas (Areas of Restoration)					
6.2.1 Re-Grade Site: Dozer, 200 HP, Short Haul, with Operator (Roads/Pads/Trenches)	$1,743.23	$ per 10,000 sf	70	$122,026.10	
6.2.2 Re-Seed Site	$1,350.81	$ per acre	443	$598,408.83	
				$720,434.93	**Subtotal 6.2.1 ~ 6.2.2**
				$786,131.09	**Subtotal 6.0**
7.0 Decommissioning Design and Permitting	**Cost ($)**	**Unit**	**# Units**	**Total ($)**	**Notes**
7.1 Engineering Design and Permitting for Decommissioning	$250,000.00	$ per LS	1	$250,00.00	
				$250,000.00	**Subtotal 7.0**
8.0 Salvage Credit	**Cost ($)**	**Unit**	**# Units**	**Total ($)**	**Notes**
8.1 Chain Link Fence	$151.42	$ per ton	198.75	$30,094.73	Assumes steel fencing; unit price based on the 30-day average salvage value for "Steel" from rockawayrecycling.com.
8.2 Racking Frames & Posts	$151.42	$ per ton	595.75	$90,208.47	Assumes steel frames and posts; unit price based on the 30-day average salvage value for "Steel" from rockawayrecycling.com.
8.3 Tracker Motors	$0.26	$ per lb	71,490	$18,587.40	Assumes 24 DC slew drive motor; 30.0 lbs per motor; unit price based on the 30-day average salvage value for "Small Electric Motors" from rockawayrecycling.com.
8.4 Inverters	$151.42	$ per ton	3.46	$523.31	Assumes primarily steel; unit price based on the 30-day average salvage value for "Steel" from rockawayrecycling.com.
8.5 Transformers (Salvaged Steel)	$151.42	$ per ton	576	$87,217.92	Assumes 90% of the weight as steel; unit price based on the 30-day average salvage value for "Steel" from rockawayrecycling.com.
8.6 Transformers (Salvaged Copper)	$0.32	$ per lb	128,000	$40,960.00	Assumes 10% of the weight as copper; unit price based on the 30-day average salvage value for "Copper Transformers" from rockawayrecycling.com.
8.7 LV Wiring	$0.98	$ per lb	787.50	$771.75	Assumes 600V, 58% Cu. Wire; 0.35 lbs per foot; unit price based on the 30-day average salvage value for "Insulated Copper Wire (45%-50% ICW)" from rockawayrecycling.com.
8.8 MV Wiring	$2.37	$ per lb	15,278	$36,207.68	Assumes 35kV Al./Cu. Wire; 0.35 lbs per foot; unit price based on the 30-day average salvage value for "Insulated Cable (84%-88% ICW)" from rockawayrecycling.com.
				$304,571.24	**Subtotal 8.0**
8.0 Totals				**Total ($)**	**Notes**
			Cost Estimate (Excluding Salvage Credits)	$3,869,310.00	Sum of Sections 1.0 through 7.0.
			Section 94-c Gross Decommissioning Cost Estimate (Total +15%)	**$4,449,706.50**	**Required by ORES. See note 4.**
			Section 94-c Net Decommissioning Cost Estimate (Gross - Salvage Value)	**$4,145,135.26**	**Required by ORES. See note 4.**
			Town of Alfred Decommissioning Cost Estimate (Total +25%)	$4,836,637.50	Required by the Town of Alfred. See note 5.
			Town of Alfred Decommissioning Cost Estimate with 2% escalation over 30 years	$8,760,899.36	Required by the Town of Alfred. See note 5.

Notes:

1. Assumptions: 2000 lbs = 1 ton; 50,000 lbs per truckload.

2. The estimates provided herein are based upon general construction industry data, using a combination of sources including RS Means (Commercial New Construction, 2023, for Rochester, New York), DB Wage Determinations (for Electricians in New York), and other average estimated pricing costs and rates in New York. Production, crew and equipment make up also based on general construction estimates and experience. Salvage costs/rates based on 30-day average scrap value from https://rockawayrecycling.com/, accessed March 29, 2023.

3. Estimated cost totals will vary depending on if solar arrays (PV modules), stone aggregate, and other demolished materials are disposed of or salvaged.

4. From ORES §900-2.24 Exhibit 23: Site Restoration and Decommissioning: A gross and net decommissioning and site restoration estimate, the latter including projected salvage value (including reference to the salvage value data source), with line items (and associated dollar amounts) for decommissioning of all facility components removed four (4) feet below grade in agricultural land and three (3) feet below grade in non-agricultural land and removal and restoration of access road locations, where appropriate, based on the facility layout. The gross cost estimates shall include a fifteen (15) percent contingency cost based on the overall decommissioning and site restoration estimate. The net amount shall be allocated between Cities, Towns, or Villages based on the estimated cost associated with the removal and restoration of the facilities located in each City, Town, or Village.
5. From the Town of Alfred's Local Law #1 of the Year 2020, Solar Energy Systems and Facilities Local Law: "The deposit, executions, or filing with the Town Clerk of cash, bond, or other form of security reasonably acceptable to the Town attorney and/or engineer, shall be in an amount sufficient to ensure the good faith performance of the terms and conditions of the permit issued pursuant hereto and to provide for the removal and restorations of the site subsequent to removal. The amount of the bond or security shall be 125% of the cost of removal of the Tier 3 Solar Energy System/Facility and restoration of the property with an escalator of 2% annually for the life of the Solar Energy System/Facility. The decommissioning amount shall not be reduced by the amount of the estimated salvage value of the Solar Energy System/Facility, as the salvage value of the solar energy equipment is speculative."

ATTACHMENT 3 – ESCALATION CALCULATIONS

Escalation Calculations[1]				
Year	**ORES, Gross Cost ($, a)**	**Salvage Value ($, b)**	**ORES, Net Cost ($, a-b)**	**Town, Cost ($)**
0	$4,449,706.50	$304,571.24	$4,145,135.26	$4,836,637.50
1	$4,538,700.63	$310,662.67	$4,228,037.96	$4,933,370.25
2	$4,629,474.64	$316,875.92	$4,312,598.72	$5,032,037.65
3	$4,722,064.13	$323,213.44	$4,398,850.70	$5,132,678.41
4	$4,816,505.42	$329,677.71	$4,486,827.71	$5,235,331.97
5	$4,912,835.53	$336,271.26	$4,576,564.26	$5,340,038.61
6	$5,011,092.24	$342,996.69	$4,668,095.55	$5,446,839.39
7	$5,111,314.08	$349,856.62	$4,761,457.46	$5,555,776.17
8	$5,213,540.36	$356,853.75	$4,856,686.61	$5,666,891.70
9	$5,317,811.17	$363,990.83	$4,953,820.34	$5,780,229.53
10	$5,424,167.39	$371,270.65	$5,052,896.75	$5,895,834.12
11	$5,532,650.74	$378,696.06	$5,153,954.68	$6,013,750.80
12	$5,643,303.76	$386,269.98	$5,257,033.78	$6,134,025.82
13	$5,756,169.83	$393,995.38	$5,362,174.45	$6,256,706.34
14	$5,871,293.23	$401,875.29	$5,469,417.94	$6,381,840.46
15	$5,988,719.09	$409,912.79	$5,578,806.30	$6,509,477.27
16	$6,108,493.47	$418,111.05	$5,690,382.43	$6,639,666.82
17	$6,230,663.34	$426,473.27	$5,804,190.07	$6,772,460.16
18	$6,355,276.61	$435,002.73	$5,920,273.88	$6,907,909.36
19	$6,482,382.14	$443,702.79	$6,038,679.35	$7,046,067.55
20	$6,612,029.78	$452,576.84	$6,159,452.94	$7,186,988.90
21	$6,744,270.38	$461,628.38	$6,282,642.00	$7,330,728.67
22	$6,879,155.79	$470,860.95	$6,408,294.84	$7,477,343.25
23	$7,016,738.90	$480,278.17	$6,536,460.74	$7,626,890.11
24	$7,157,073.68	$489,883.73	$6,667,189.95	$7,779,427.92
25	$7,300,215.16	$499,681.41	$6,800,533.75	$7,935,016.47
26	$7,446,219.46	$509,675.03	$6,936,544.42	$8,093,716.80
27	$7,595,143.85	$519,868.54	$7,075,275.31	$8,255,591.14
28	$7,747,046.72	$530,265.91	$7,216,780.82	$8,420,702.96
29	$7,901,987.66	$540,871.22	$7,361,116.44	$8,589,117.02
30	$8,060,027.41	$551,688.65	$7,508,338.76	$8,760,899.36
Notes:				
1. Assumes 2% escalation each year over 30 years.				