Goshen Solar Site Decommissioning Plan

Decommissioning of the solar array facility may occur if the Project is abandoned during construction, or during operations, or at its component end-of-life of power which are typically the end of this supply agreement is assumed to be its lifecycle. The exact procedures for the restoration of the project site will be related to the future land usage of the project location. Presently, the land is classified as rural agriculture and currently used for recreational activities.

The decommissioning will be undertaken by qualified contractors using the same methodology as for the solar array field construction. Equipment would be the same as that identified in the Construction Plan report. The work entails setting up a construction camp as required, installing measures to address potential negative environmental impacts, and undertaking the removal and disposal of the solar array components, both above-ground and below-ground. Much of the material in a solar array facility is reusable or recyclable. In some instances, the purchase agreement with the manufacturer may have a return and/or recycling requirement. Full site decommissioning and restoration is expected to take 1.5 months. This duration is dependent on whether materials are being reused or recycled. It is anticipated that the work would be undertaken in the summer months and to any regulatory and municipal requirements.

The facility is located at: 18 Milburn Rd. Goshen, NY 10924

I.Project Abandonment (During Construction or Operations)

In the event that the project is abandoned during construction, orders for materials not delivered to site will be cancelled. Materials that are packaged will be returned to the manufacturer un-opened. Other stockpiled, assembled and installed materials will be dealt with similar to end-of-agreement decommissioning for above-ground and below-ground works. Decommissioning during the operational stage will be the same as at the end-of-agreement. Greater care in handling may be required if materials are to be reused.
Dismantling activities would include:

· Notification to relevant agencies that the Project has been discontinued and that the decommissioning plan is being implemented;
· Taking the system off-line and ensuring all distribution switches are in the disconnect position;
· Dismantling of PV panels with support frames, and mounting frames and bases using construction equipment similar to that identified in the Construction Plan Report, and trucking off-site to the receiving destination either for reuse or recycling;
· Removal of any above-ground structures within the Project site (transformers, inverters, combiners, disconnect switches and splitters, revenue meter, high voltage interrupter and isolation switch, cabinetry, foundation pads, and fencing);
· Removal of any buried structures to a minimum of depth of 1 metre;
· After disconnecting electrical cables leading to underground ducts, excavating and burying cable ends a minimum of 1 meter below grade;
· Excavating and removal of site access materials and disposal off-site;
· Site preparation of disturbed areas and spreading of stockpiled topsoil; and · Removal of any off-site electrical works (overhead distribution system and any disconnect switching) owned by Solar Energy Partners
· Removal of all concrete and residual waste from site.

II.Project Decommissioning at End-of-Agreement Responsibility of Solar Energy Partners

Project decommissioning at the end-of-agreement would be the same as during the operational phase. Structural materials (steel frames) and most electrical components would have reached their life expectancy and would not be considered for reuse. A detailed inspection and testing of the PV panels, PV Inverters, and Electrical conductors would be undertaken to determine if they were salvageable. This being the case,
the Owner may choose to stockpile the panels and Ancillary Equipment at a warehouse for their own further use, sell to
other users, or possibly return to the manufacturer.
Dismantling activities would include:

· Notification to relevant agencies that the Project has been discontinued and that the decommissioning plan is being implemented;
· Taking the system off-line and ensuring all distribution switches are in the disconnect position;
· Dismantling of PV panels with support frames, and mounting frames and bases using construction equipment similar to that identified in the Construction Plan Report, and trucking off-site to the receiving destination either for reuse or recycling;
· Removal of any above-ground structures within the Project site (transformers, inverters, combiners, disconnect switches and splitters, revenue meter, high voltage interrupter and isolation switch, cabinetry, foundation pads, and fencing);
· Removal of any buried structures to a minimum of depth of 1 metre;
· After disconnecting electrical cables leading to underground ducts, excavating and burying cable ends a minimum of 1 meter below grade;
· Excavating and removal of site access materials and disposal off-site;
· Site preparation of disturbed areas and spreading of stockpiled topsoil; and · Removal of any off-site electrical works (overhead distribution system and any
disconnect switching) owned by Solar Energy Partners
· Removal of all concrete and residual waste from site.

III.Waste Materials

Waste materials, whether solid or environmental, will be sorted per type for recycling and taken to the nearest approved facility in accordance with provincial waste management regulations. Licensed haulers will be used where required. Tickets from the receiving facility will be collected.

IV.Site Restoration

Construction activities for the decommissioning will be contained within the original working area. The solar array field was vegetated (grassed) to control erosion and encourage infiltration. The original construction footprint relates to the granular access road and the aboveground electrical equipment, and foundation supports. Decommissioning may result in further mixing of the soil profiles (topsoil and subsoil), compaction, erosion and potential loss of soil fertility (stockpiling).
Arrangements will be made with the landowner (farmer) to scarify to a depth of 150mm the area where topsoil had been removed. The stockpiled topsoil will be placed in this area to meet the original grade. To regain its nutrient value, organics (manure) will be tilled into the topsoil. The bare spots within the grassed area will be top-dressed and reseeded with similar grass.
Discussions with the landowner will be held to determine if the field is being returned to active cultivation. This being the case, the existing grass will be ploughed and disced to break up the sod. At other disturbed areas where works were installed, a similar approach of backfilling and compacting at excavations having a depth of 0.3 metres or more, scarifying and adding topsoil with organics will be undertaken prior to seeding as required. Any vegetive screening to be removed as the last phase of Decommissioning.

Potential Negative Environmental Effects and Mitigation

Activities for decommissioning are anticipated to be the same as that undertaken for construction. Excavation operations could produce dust and noise as well as sediment transport. Equipment maintenance and operation could result in the potential for environmental spills. Local traffic will be increased. There should be no impact to vegetation, water resources, and cultural heritage. Construction best management practices will be employed. Mitigation measures will follow the requirements set out in the Construction Plan Report including designating areas for equipment service and refueling, installing and maintaining sediment and erosion control measures, as defined by SWPPP, and carrying out the work to the hours set out in any local bylaws.

Goshen Site

Solar Liberty Decommissioning Estimate

System Size 9.25 MW (AC)

	Unit	Est. Qty	Hours	Material/ Labor Cost	Salvage Labor	Material Recycle Value	Net Salvage	Net Cost	Notes
Contractor Fees									
Mobilization	LS	1	0	$0.00	$0.00	$0.00	$0.00	$0.00	
Supervisory/ Management	LS	1	305.25	$38,156.25	$0.00	$0.00	$0.00	$38,156.25	Labor Hours 305.25 Cost Per Hour $125.00
Electrical Disconnection	EA	1	92.5	$7,400.00	$0.00	$0.00	$0.00	$7,400.00	Labor Hours 92.5 Cost Per Hour $80.00
Silt Fence	LF	10986	0	$27,465.00	$0.00	$0.00	$0.00	$27,465.00	Cost Per LF $2.50
Permitting Fees	LS	1	0	$0.00	$0.00	$0.00	$0.00	$0.00	No Permit Assumed
Subtotal			**398**	**$73,021.25**	**$0.00**	**$0.00**	**$0.00**	**$73,021.25**	
Site Work									
Access Roads	SF	1	34	$3,800.00	$0.00	$0.00	$0.00	$3,800.00	Labor Hours 34 Cost Per hour $53.50
Restoration Seeding (Acres)	AC	60.125	12	$75,156.25	$0.00	$0.00	$0.00	$75,156.25	Damage Areas Only $1,250.00 per acre
Fence Removal and Recycling	LF	10906	109	$5,834.71	$0.00	$0.00	$0.00	$5,834.71	LF/hr 100 Cost Per Hour $53.50
Site Cleanup	LS	1	640.1	$34,245.35	$0.00	$0.00	$0.00	$34,245.35	Labor 640.1 Cost Per Hour $53.50
Subtotal			**795.1**	**$119,036.31**	**$0.00**	**$0.00**	**$0.00**	**$119,036.31**	
Racking Removed									
Remove Recycle Piles	LB	6695.15	112	$5,969.84	$0.00	$0.00	$0.00	$5,969.84	Piles per hour 60 Cost Per Hour $53.50
Remove and recycle racking	EA	1572.5	131	$7,010.73	$0.00	($117,937.50)	($117,937.50)	($110,926.77)	Tables per Hour 12 Cost Per Hour $53.50
Subtotal			**243**	**$12,980.57**	**$0.00**	**($117,937.50)**	**($117,937.50)**	**($104,956.93)**	
Solar Modules Removed									
Remove Modules	EA	24864	414	$22,170.40	$0.00	$0.00	$0.00	$22,170.40	Modules per hour 60 Cost per hour $53.50
Subtotal			**414**	**$22,170.40**	**$0.00**	**$0.00**	**$0.00**	**$22,170.40**	
AC & DC Wire Renewal									
DC/ AC Direct Burial Wire Removal	LF	42984.75	72	$5,731.30	$0.00	($8,596.95)	($8,596.95)	($2,865.65)	Linear Feet per hour 600 Cost per hour $80.00
AC Overhead Wire Removal	EA	250	3	$200.00	$600.00	($50.00)	$550.00	$750.00	Linear Feet per hour 100 Cost per hour $80.00
DC Wire Removal	LF	693796.25	463	$37,002.47	$0.00	($69,379.63)	($69,379.63)	($32,377.16)	Linear Feet per hour 1500 Cost per hour $80.00
Interconnection Pole Removal	EA	6	2	$160.00	$0.00	$0.00	$0.00	$160.00	Poles per hour 3 Cost per hour $80.00
Inverter Removal	EA	74	19	$1,480.00	$0.00	$0.00	$0.00	$1,480.00	Inverters per hour 4 Cost per hour $80.00
Transformer Removal	EA	4	8	$640.00	$0.00	($36,080.00)	($36,080.00)	($35,440.00)	Transformers per hour 0.5 Cost per hour $80.00
Subtotal			**567**	**$45,213.77**	**$600.00**	**($114,106.58)**	**($113,506.58)**	**($68,292.81)**	
Equipment Pad Removal									
Remove Equipment Pads	EA	4	20	$12,000.00	$0.00	$0.00	$0.00	$12,000.00	Cost per pad $3,000.00
Subtotal			**20**	**$12,000.00**	**$0.00**	**$0.00**	**$0.00**	**$12,000.00**	
Decommissioning Subtotal			**2,437**	**$284,422.30**	**$600.00**	**($232,044.08)**	**($231,444.08)**	**$52,978.22**	
Subcontractor Markup	10%			$28,442.23	$0.00	$0.00	$0.00	$28,442.23	
Total Decommission				**$312,864.53**	**$600.00**	**($232,044.08)**	**($231,444.08)**	**$81,420.45**	

Decommissioning without Value of Recycling	
Estimated Cost based on 2% Escalation	Year
$513,287.42	25
$566,710.79	30
$625,694.50	35

Decommissioning with Value of Recycling	
Estimated Cost based on 2% Escalation	Year
$133,578.88	25
$147,481.88	30
$162,831.91	35