

DECOMMISSIONING PLAN

Boutilier Rd Solar Project Parcel 35-B3-0 5.0 MWac

500 Boutilier Road
Leicester, MA

November 26th, 2018

ZPD-PT Solar Project 2017-020, LLC
6 Park Ave, Worcester, MA 01605

BACKGROUND

ZPD-PT Solar Project 2017-020, LLC (“ZPT”) has prepared this Decommissioning Plan (the “Plan”) for the Boutilier Rd Solar Photovoltaic Facility (the “Facility”) located at 500 Boutilier Rd, Leicester, Massachusetts 01524. The facility will consist of a 7.0 MW (DC) Ground Mounted Array installed on approximately 23.13 acres of land owned by Nicholas A. Casello.

The proposed facility has been brought before the Leicester Planning Board for Site Plan Approval and pursuant to the Town’s Zoning Bylaws. Regulations for solar facilities in the bylaws require that the owner or operator provide a plan for removal of the system (Decommissioning Plan).

The purpose of this Decommissioning Plan is to provide the general scope of decommissioning work as well as for a decommissioning assurance mechanism designed to satisfy the decommissioning assurance requirements in the bylaws.

Facility Description:

The Facility will consist of a total of a 7.0 MW (DC) capacity solar power-generating operation secured within a chain-link fence surrounding the solar panels and equipment and accessed via Boutilier Road. The Facility will include the following site features:

- An approximate 23.13-acre array of photovoltaic (PV) modules (panels) and mounting system
- Screw piles supporting the photovoltaic modules
- Two (2) transformers (filled with biodegradable mineral oil) and four (4) inverters
- Eight (8)-foot chain-link security fence
- Underground conduit and wires
- Drainage basins with drainage berms and pipe
- Utility poles

DECOMMISSIONING ACTIVITIES

The Facility will be decommissioned by completing the following major steps:

- Dismantlement and Demolition
- Disposal or Recycle
- Site Stabilization

Dismantlement, Demolition, and Disposal or Recycle:

A significant amount of the components of the photovoltaic system at the Facility will include recyclable or re-saleable components, including copper, aluminum, galvanized steel, and modules. Due to their resale monetary value, these components will be dismantled and disassembled rather than being demolished and disposed of.

Following coordination with the local utility company regarding timing and required procedures for disconnecting the Facility from the private utility, all electrical connections to the system will be disconnected and all connections will be tested locally to confirm that no electric current is running through them before proceeding. All electrical connections to the panels will be cut at the panel and then removed from their framework by cutting or dismantling the connections to the supports. Modules will be removed. However, in the event of a total fracture, the interior materials are silicon-based and are not considered hazardous materials. Disposal of these materials at a landfill will be permissible. The PV mounting system framework will be dismantled and recycled. The metal screw piles will be removed from their approximated depth of four +/- feet and recycled.

Finally, all associated structures will be demolished and removed from the site for recycling or disposal as required in the bylaws for Leicester. This will include the site fence and gates, which will likely be reclaimed or recycled. Grade slabs will be broken and removed to a depth of one foot below grade, and clean concrete will be crushed and disposed of off-site or recycled (reused either on- or off-site). Sanitary facilities will be provided on-site for the workers conducting the decommissioning of the Facility.

Aboveground utility poles owned by the Facility will be completely removed and disposed of off-site in accordance with utility best practices. Overhead wires will be removed from the area of the solar modules and terminated at the utility-owned (Utility company) utility.

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

Site Stabilization:

The areas of the Facility that are disturbed (during decommissioning) will be re-graded to establish a uniform slope and stabilized via hydro seeding with the ground treatment approved by the Building Inspector/Planning Board, including application of a drought-tolerant grass seed mix to surfaces disturbed during the decommissioning process. The gravel access driveway from Boutillier Road, including the portion within the perimeter fence, will remain intact and shall not be removed until site is fully stabilized.

Current Permitting Requirements for Decommissioning

Given the size and location of the Facility, several approvals are required prior to initiation of ground-disturbing activity. ZPT has provided a summary of the expected approvals if the decommissioning were to take place in December of 2018. Noting, however, that because the decommissioning is expected to occur at a later date, the permitting requirements listed below will be reviewed and updated based on current local, state, and federal regulations at the time.

National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Construction Activity

- U.S. Environmental Protection Agency - Ground disturbance of greater than 1 acre with discharge to wetlands or water bodies. Requires preparation of a storm Water Pollution Prevention Plan, including erosion and sedimentation controls.

Site Plan Approval

- Town of Leicester Planning Board - Anticipated decommissioning requirements listed in the Site Plan Approval conditions of approval.

Building Permit

- A building permit is required to construct the facility. A building permit must also be obtained for any construction, alteration, repair, demolition, or change to the use or occupancy of a building.

Permitting Requirement Assumptions:

1. The access driveway will remain in place throughout the Facility until site is fully stabilized.
2. No ground disturbance, including temporary laydown areas, is required within areas subject to the Massachusetts Wetlands Protection Act.

Schedule

The decommissioning process is estimated to take approximately eight to ten (8-10) weeks (but no longer than six (6) months) and is intended to occur outside of the winter season.

Decommissioning Cost

ZPT has estimated the decommissioning and land remediation costs, inclusive of cost inflation and escalation over the project's 25-year lease period. **Exhibit A** hereto shows the detail of ZPT's estimates of the foregoing costs.

DECOMMISSIONING ASSURANCE

Form of Decommissioning Assurance

During each year from the period of commencement of construction of the Facility through completion of decommissioning activities at the Facility, ZPT shall provide a performance guarantee in a form reasonably accepted by the Town of Leicester.

Amount of Decommissioning Assurance

The initial amount of the decommissioning assurance shall be \$93,721.00. Please note that this amount is derived from estimates of the cost set forth on **Exhibit A**.

As of each five-year anniversary of the commercial operation date of the Facility, the decommission assurance shall be updated to reflect 110% of an updated reasonable estimate of decommissioning costs (net of salvage value), taking into account inflation and other relevant factors. At least three (3) months prior to the five-year anniversary, ZPT shall provide an updated estimate of decommissioning costs to the Town of Leicester for its review and approval, not to be unreasonably withheld. (For avoidance of doubt, in disapproving an updated estimate of decommissioning costs, the Town of Leicester may reasonably require that an updated estimate be increased.) In connection with an update of the decommissioning assurance amount, ZPT shall provide the Town of Leicester with such supporting information as it reasonably requests.

USE OF DECOMMISSIONING ASSURANCE

In the event that ZPT fails to undertake decommissioning activities within one year of discontinued operations, the Town of Leicester shall have the right to undertake decommissioning activities and make a claim against the decommissioning assurance. ZPT agrees that in such circumstances that the Town of Leicester shall have such access to the site as may be necessary to allow its qualified contractors to conduct decommissioning activities. For purposes hereof, ZPT and the Town of Leicester agree that the "date of discontinued operations" shall be (i) the date of discontinued operations designed by ZPT in its notice to the Town of Leicester or (ii) in absence of such notice, the last day of a continuous period of nine (9) months in which the Facility has not operated and where such inactivity is not the result of a casualty, equipment problem, permitting matter, financial matter or other issue that ZPT or the owner/operator is in good faith attempting to remedy.

ZPT agrees to indemnify and hold the Town of Leicester harmless from and against all net loss, cost and expenses, including court costs and reasonable attorney's fees, related to and arising out of the Town of Leicester's decommissioning activities, except to the extent such loss, cost or expenses relate to or arise

out of the negligence, willful misconduct or violation of the law by the Town of Leicester, its officials, employees, contractors or agents.

Submitted by:

ZPD-PT Solar Project 2017-020, LLC

By: _____

Name:

Title:

ACKNOWLEDGEMENT AND APPROVAL

The Town of Leicester Planning Board hereby acknowledges receipt of this Decommissioning Plan and affirms that the Decommissioning Plan (assuming establishment of the escrow fund in the amount provided for above) satisfies the conditions of the Site Plan Approval relevant thereto.

Town of Leicester Planning Board

By: _____

Date: _____, 2018

Name:

Name:

Name:

Name:

Name:

Name:

Name:

EXHIBIT A – DECOMMISSIONING COST ESTIMATE

Decommissioning Estimate

ZP-230 - Casello - 7.016MW DC / 5.0MW AC

	Unit	Est. Qty.	Material/ Labor Cost	Salvage Labor	Material Recycle Val.	Net Salvage	Net Cost	Notes
Contractor Fees								
Mobilization	LS	1	-			-	-	
Supervisory/Management	LS	1	20,625			-	20,625	165 man hours @ \$125/hour
Electrical Disconnection	EA	1	4,000			-	4,000	50 hours of electrical labor @ \$80/hour to de-energize
Silt Fence	LF	7,187	17,967			-	17,967	\$2.50/LF
Permitting Fees	LS	1	-			-	-	No permit assumed
Subtotal			42,592	-	-	-	42,592	
Sitework								
Access Roads	SF		16,705			-	16,705	
Restoration Seeding	AC	38.5	48,125			-	48,125	Damaged areas only at \$1,250/AC
Fence Removal and Recycling	LF	7,873	4,212		-	-	4,212	100 LF/hr @ \$53.5/hr
Site Cleanup	LS	1	20,171			-	20,171	Labor and dumpster
Subtotal			89,213	-	-	-	89,213	
Racking Removed								
Remove and recycle piles	LB	3,619	3,227		-	-	3,227	60 piles per hour per crewmember @ \$53.5/hr
Remove and recycle racking tables	EA	904	4,030		(68,218)	(68,218)	(64,188)	12 tables per hour per crewmember @ \$53.5/hr
Subtotal			7,257	-	(68,218)	(68,218)	(60,961)	
Solar Modules Removed								
Remove modules	EA	19,924	17,766			-	17,766	Assume 60 modules per hour per crewmember @ \$53.5/hour
Subtotal			17,766	-	-	-	17,766	
AC & DC Wire Renewal								
DC/AC direct burial wire removal	LF	23,236	3,098		(4,647)	(4,647)	(1,549)	LF - Assume 600'/hour removed/crewmember @ \$80/hr
AC overhead wire removal	EA	250	27	600	(50)	550	577	LF - Assume 100'/hour removed/crewmember @ \$80/hr 3 phase
DC wire removal	LF	375,025	20,001		(37,502)	(37,502)	(17,501)	Assume 1500'/hour removed @ \$80/hour
Interconnection pole removal	EA	5	133			-	133	Assume 3 hours per pole @ \$80/hour
Central inverter removal	EA	2	1,280			-	1,280	Crew of 4 removes 4/day @ \$80/hour
Transformer removal	EA	2	1,707			-	1,707	Crew of 4 removes 3/day @ \$80/hour
Subtotal			26,246	600	(42,200)	(41,600)	(15,354)	
Equipment Pad Removal								
Remove equipment pads	EA	4	12,000			-	12,000	\$3,000/pad
Subtotal			12,000	-	-	-	12,000	
Decommissioning subtotal			195,073	600	(110,418)	(109,818)	85,255	
Subcontractor markup	10%		19,507	-	(11,042)	-	8,466	
Total Decommissioning			214,580	600	(121,460)	(109,818)	93,721	
Cost/kW AC			\$ 85.83				\$ 37.49	