



Decommissioning Plan

**Centaurus Solar Photovoltaic Project
175 Butterfield Drive, Ashland MA**

**Lodestar Energy
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1.0 Facility Description

Centaurus Solar Photovoltaic Facility is an approximately 3MW DC solar farm proposed at 175 Butterfield Drive, Ashland MA. The Solar array is to be constructed on approximately 15 acres of a former golf driving range. The purpose of the facility is the generation of electricity. The facility will be interconnected to the existing 13.8kV overhead distribution circuit (274-H1) of the utility distribution network, at the facility entrance off of Butterfield Drive.

The project is a ground mounted solar array. The solar panels are mounted on simple fixed tilt steel structures consisting posts, beams, rails and bracing. Vertical steel posts will be driven in the ground to a depth of approximately 8 feet to anchor the structures. The solar panels will be connected to the inverters mounted on the racking structure via copper wire. The inverters will connect to electric panels, transformers, and then switchgear at the array location via underground wire. Output from the switchgear will be connected overhead, along the facility access road to the utility owned poles and metering structure at the entrance of the facility access road.

The estimated useful project life time is 20 year or more. The following list is a summary of the site features:

- 3MW Solar array consisting of silicon based solar panels (modules)
- Driven post steel and aluminum racking system
- Chain link security fence surrounding the array perimeter.
- Up to 104 string inverters
- Up to 4 transformers
- Copper and aluminum wire
- Underground conduit at the array location
- Overhead poles and wires from the array location to utility poles off of North Street.
- Two concrete equipment pad areas
- Gravel access road
- Metal security gates at array location.

2.0 Decommissioning Plan

The project consists of numerous materials that can be recycled, including steel, aluminum, glass, copper and plastics. At the end of operational life of the project that system will be dismantled using conventional construction equipment. The project material will be removed from the site and recycled or disposed of safely.



2.1 Temporary Erosion Control

Temporary erosion and sedimentation control best management practices will be used during the decommissioning phase of the project. Control features will be regularly inspected during the decommissioning phase and removed at the end of the process.

2.2 Material Removal Process

The decommission process will consist of the following general steps:

- 2.2.1 Facility shall be disconnected safely from the power grid and all equipment shall be switched to off position.
- 2.2.2 PV modules shall be disconnected, packaged and returned to manufacturer or appropriate facility for recycling
- 2.2.3 Above and underground cabling shall be removed and sent to appropriate recycling facility.
- 2.2.4 Inverters will be disconnected from racking and shipped intact to an approved electrical equipment recycler.
- 2.2.5 Racking materials shall be dismantled, removed, and recycled off-site at an approved recycler.
- 2.2.6 Fencing will be dismantled, removed, and recycled off-site and an approved recycler.
- 2.2.7 Grade slabs will be broken and removed.
- 2.2.8 All remaining electrical and support equipment will be dismantled, decontaminated (if appropriate) and recycled or disposed of.

2.3 PV Module Removal

Solar photovoltaic modules used in the project are manufactured within regulatory requirements for toxicity based on Toxicity Characteristic Leaching Procedure (TCLP). The solar panels are not considered hazardous waste. The panels used in the project will contain silicon, glass, and aluminum which have value for recycling. Modules will be dismantled and packaged per manufacturer or approved recyclers specifications and shipped to an approved off-site approved recycler.

2.4 Electric Wire Removal

Electric wire made from copper or aluminum has value for recycling. DC wiring can be removed manually from the panels to the inverter. Underground wire in the array of the array will be pulled and removed from the



ground. Overhead cabling for the interconnection will be removed from poles. All wire will be sent to an approved recycling facility.

2.5 Electrical Equipment Removal

Inverters, panels, transformers, switchgear and other electrical equipment will be dismantled, packaged, and removed from the site per manufactures specifications for removal, decontamination, disposal or recycling. Any dielectric fluids present in transformer, or other electric equipment will be removed, packaged and set to an approved waste facility.

2.6 Racking and Fencing removal

All Racking and fencing material will be broken down into manageable units and removed from facility and sent to an approved recycler. All racking posts driven into the ground will be pulled and removed.

2.7 Concrete Slab Removal

Concrete slabs used as equipment pads will be broken and removed to a depth of one foot below grade. Clean concrete will be crushed and disposed of off-site and or recycled and reused either on or off-site.

3.0 Decommissioning Terms

Project shall be decommissioned within 180 days of the end of the project's operational life. Areas disturbed during the decommissioning phase will be with seeded with a drought tolerant grass seed mix appropriate for the area. The gravel access road will remain intact. At completion of decommissioning phase as described in this document, and expiration of site lease, the land will be returned to the owner in its existing condition.