



**Decommissioning costs are equal for all four sites listed below:**

- NSF Angelica Site 1, LLC
- NSF Angelica Site 2, LLC
- NSF Angelica Site 3, LLC
- NSF Angelica Site 4, LLC

**Synopsis**

- A. Cost of Decommissioning
- B. Solar System Decommissioning Description
  - B.1. Removal of Electrical Components, Racks & Rack Wiring
  - B.2. PV Module Dismantling & Panel Removal
  - B.3. Breakup and Remove Concrete Pads or Ballast
  - B.4. Remove Cables
  - B.5. Remove Fence
  - B.6. Grading and Road Removal
  - B.7. Seed Disturbed Area

***A. Cost of Decommissioning***

**Angelica Decommissioning Costs Per 5 MW System**

#	Task	Estimated Cost
B1	Remove Electrical Components, Racks & Rack Wiring	\$ 35,000
B2	PV Module Dismantling Removing Panels	\$ 45,000
B3	Breakup and Remove Concrete Pad or Ballast	\$ 25,000
B4	Remove Cable	\$ 30,000
B5	Remove Fence	\$ 37,500
B6	Grading/Roadway Removal	\$ 10,000
B7	Seed Disturbed Area	\$ 5,000
	<b>Cost: Labor and Equipment to Decommission</b>	<b>\$ 187,500</b>

**Four 5 MW systems, each with a decommission cost of \$187,500 per system, totaling \$750,000.**

***B. Solar System Decommissioning Description***

Decommissioning and restoration activities will adhere to the requirements of appropriate governing authorities, and will be in accordance with applicable federal, state, and local permits.

The decommissioning and restoration process is comprised of removal of above-ground structures; grading, to the extent necessary; restoration of topsoil (if needed) and seeding.

The above-ground structures and below-ground structures are collectively referred to herein as the “Project Components.”



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.

### ***B.1. Removal of Electrical Components, Racks & Rack Wiring***

Control cabinets, electronic components, and internal cables will be removed. The panels, racks and inverters will be lowered to the ground where they may be transported whole for reconditioning and reuse or disassembled/cut into more easily transportable sections for salvageable, recyclable, or disposable components.

### ***B.2. PV Module Dismantling & Panel 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.

### ***B.3. Breakup and Remove Concrete Pads or Ballast***

Pads will be excavated to a depth sufficient to remove all anchor bolts, rebar, conduits, cable, and concrete to a depth of 24 inches below grade. The remaining excavation will be filled with clear sub-grade material of quality comparable to the immediate surrounding area. The sub-grade material will be compacted to a density similar to surrounding subgrade material.

All unexcavated areas compacted by equipment used in decommissioning shall be de-compacted in a manner to adequately restore the topsoil and sub-grade material to the proper density consistent and compatible with the surrounding area.

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

### ***B.4. Electrical Cable 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.

### ***B.5. Fencing and Racking 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.

### ***B.6. Grading and Road Removal***

During decommissioning, the processed stone access roads will be stripped exposing the geotextile beneath. The geotextile will then be removed and disposed revealing the original soil surface.

The compacted soil beneath the road fill may require ripping with a subsoiler plow to loosen it before it can be returned to crop production.

### ***B.7. Seed Disturbed Areas***

Following decommissioning activities, the sub-grade material and topsoil from affected areas will be de-compacted and restored to a density and depth consistent with the surrounding areas. If the subsequent use for the Project site will involve agriculture, a deep till of the Project site will be undertaken.

The affected areas will be inspected, thoroughly cleaned, and all construction-related debris removed. Disturbed areas will be reseeded to promote re-vegetation of the area, unless the area is to be immediately redeveloped.

In all areas, restoration shall include, as reasonably required, leveling, terracing, mulching, and other necessary steps to prevent soil erosion, to ensure establishment of suitable grasses and forbs, and to control noxious weeds and pests.



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