



Decommissioning Estimate/Plan

Date: 10/22/2020

381 N Highland Ave
Ossining, NY

This Decommissioning Estimate has been prepared by Borrego Solar in an attempt to predict the cost associated with the removal of the proposed battery energy storage facility. The primary cost of decommissioning is the labor to dismantle and load equipment, as well as the cost of trucking materials off-site. All material will be removed from the site, including the concrete equipment pads and strip footings, which will be broken up at the site and hauled to the nearest transfer station.

No salvage values have been assumed in this calculation.

The following values were used in this Decommissioning Estimate:

System Specifications		Equipment & Material Removal Rates	
Total Batteries	936	Large Equipment Removal Rate (hr/unit)	0.5
Total Battery Weight (lbs)	268,632	Electric Wiring Removal Rate (min/LF)	3
Number of Containers	26	Fence Removal Rate (min/LF)	0.5
Number of Transformers	2	Days req. to break up concrete pads	4
Number of Power Conversion Systems	2	Days req. with Rough Grader	1
Number of Neutral Grounding Reactors	1	Days req. with Fine Grader	1
Number of Meters	1	Total Truckloads to Transfer Station	24
Electrical Wiring Length (ft)	870	Round-Trip Dist. to Transfer Station (miles)	28
Length of Perimeter Fence (ft)	339	Round-Trip Time to Transfer Station (hr)	1.25
Number of Power Poles	1	Total Truckloads to Battery Recycling	10
Total Disturbed Area (SF)	6,519	Round-Trip Dist. to Battery Rec. (miles)	120
Total Fence Weight (lbs)	383	Round-Trip Time to Battery Rec. (hr)	2.5

Labor and Equipment Costs	
Labor Rate (\$/hr)	\$ 67.45
Operator Rate (\$/hr)	\$ 85.45
Bobcat Cost (\$/hr)	\$ 125.00
Front End Loader Cost (\$/Day)	\$ 1,000.00
Excavator Cost (\$/Day)	\$ 1,000.00
Trucking Cost (\$/hr)	\$ 130.00
Backhoe Cost (\$/hr)	\$ 245.00
Power Pole Removal Cost (\$/pole)	\$ 1,500.00
Grader Cost (\$/day)	\$ 1,800.00
Seeding Cost (\$/SF)	\$ 0.10
Fuel Cost (\$/mile)	\$ 0.50
Battery Disposal Fee (\$/battery)	\$ 0.50



BORREGO SOLAR

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Labor, Material, and Equipment Costs

1. Load Electrical Equipment

Electrical equipment includes transformers and inverters. We assume that companies removing electrical equipment will provide trucking services and will reclaim valuable materials

$$(Number\ of\ Inverters \cdot Inverter\ Removal\ Rate + Number\ of\ Transformers \cdot Transformer\ Removal\ Rate) \cdot (Operator\ Rate + Bobcat\ Cost) = Electrical\ Equipment\ Removal\ Cost$$

Total = \$ 3,261.98

2. Break Up Concrete Pads

Concrete pads are broken up using an excavator and jackhammer.

$$Number\ of\ Demolition\ Days \cdot (Excavator\ Cost + Labor\ Cost) = Total\ Concrete\ Pad\ Removal$$

Total = \$ 6,734.40

3. Remove Electrical Wiring

Electrical wiring will be removed from all underground conduits.

$$Cable\ Length \cdot Cable\ Removal\ Rate \cdot (Operator\ Cost + Backhoe\ Cost) = Total\ Cable\ Removal\ Cost$$

Total = \$ 14,374.58

4. Remove Fencing

Fencing posts, boards, and foundations will be loaded onto a truck and removed from site. Trucking costs included in this line item are for the removal process. Trucking to a recycling facility are included in item #8.

$$(Total\ Length\ of\ Fence \cdot Fence\ Removal\ Rate) \cdot (Operator\ Rate + Bobcat\ Cost + Trucking\ Cost) = Total\ Fence\ Removal\ Cost$$

Total = \$ 961.77

5. Remove Power Poles

Power poles will be removed and shipped off site.

$$Number\ of\ Power\ Poles \cdot Pole\ Removal\ cost = Total\ Power\ Pole\ Removal\ Cost$$

Total = \$ 1,500.00

6. Seed Disturbed Areas

Seeding cost includes labor and materials for reseeding all disturbed areas including the reclaimed gravel road area, former electrical areas, and areas disturbed by racking foundation

$$\frac{\text{Seeding Cost} \cdot \text{Disturbed Area}}{\text{Total Seeding Cost}} =$$

Total = \$ 651.90

7. Truck to CCDD

All material will be trucked to the nearest CCDD station that accepts construction material (i.e. fence, concrete pads and gravel).

The nearest transfer station is Railroad Transfer Group Inc.

$$\frac{(\text{Total Trucks to CCDD} \cdot \text{Roundtrip Time} \cdot \text{Trucking Cost})}{\text{Total Trucking Cost to CCDD}} =$$

Total = \$ 3,900.00

8. Truck to Recycling Facility Plus Disposal Fee

All batteries will be transported to the nearest recycling facility. We anticipate that there will be a facility within 60 miles of this system at the time of decommissioning.

$$(\text{Total Trucks to Recycling Facility} \cdot \text{Roundtrip Distance} \cdot \text{Trucking Cost}) + (\text{Number Batteries} \cdot \text{Battery Disposal Fee}) =$$

Total Battery Trucking and Battery Disposal Fee

Total = \$ 3,718.00

Salvage Values

Salvage Value Not Included

Summary of Decommissioning Costs and Salvage Values

Line Item	Task	Cost
1	Electrical Equipment Loading and Removal	\$ 3,261.98
2	Break Up Concrete Pads	\$ 6,734.40
3	Electrical Wiring Removal	\$ 14,374.58
4	Fence Removal	\$ 961.77
5	Power Pole Removal	\$ 1,500.00
6	Seed Disturbed Areas	\$ 651.90
7	Trucking to CCDD	\$ 3,900.00
8	Trucking to Recycling Facility Plus Disposal Fee	\$ 3,718.00

Subtotal = \$ 35,102.62

Present Value Total = \$ 35,102.62

Total after 20 years @ 2% Inflation

Present Value • (1+ Inflation Rate)^{Number of Years} =

Grand Total = \$52,160.65