Kimley»Horn

10/28/2020

Augusta County
Community Development Department
18 Government Center Lane
P.O. Box 590
Verona, VA 24482

RE: ***Round Hill Solar – Decommissioning Cost Estimate***
Kimley-Horn #116766007

Dear Members of the Community Development Department:

This letter was written to provide a brief summary of Kimley-Horn's experience with solar farms and with the preparation of decommissioning cost estimates related to solar farms.

Kimley-Horn has been involved with the development of more than 30 GW of solar development across the country, ranging in size from <1 MW to over 500 MW. Many of these solar farms are in North Carolina and Virginia.

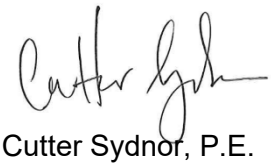
There is little data available regarding the actual costs to decommission a solar farm because there have been few (if any) solar farms decommissioned yet since the average expected life span of a solar farm is approximately 30 years. However, we have combined our extensive experience in estimating sitework construction costs with the extensive experience of our solar clients in the construction of all aspects of solar farms to develop unit costs that make sense. To help ensure the unit costs we have estimated are reasonable, we have cross-checked them using data previously provided by the client.

Quantities for the racking system, solar modules, inverters, and transformers were provided to us by Strata Solar for this decommissioning cost estimate. Quantities for site-related items listed were estimated using the SUP Concept Site Plan for Round Hill Solar.

At the time of decommissioning, the owner of the solar farm will issue RFP's (Request for Proposals) to Recycling/Restoration companies to provide their bid to restore the site to its original conditions and sell the items of value to recyclers and dispose of items with no value in a landfill. The cost estimate shows that the Decommissioning Cost with 25% Contingency is $2,800,750. Please see the attached Decommissioning Cost Estimate.

Please contact me at (804) 673-3882 or cutter.sydnor@kimley-horn.com should you have any questions or concerns.

Sincerely,
KIMLEY-HORN



Cutter Sydnor, P.E.

Round Hill Solar
Augusta County, VA
Decommissioning Estimate Pro Forma without Salvage

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs. LB = Pounds, LS = Lump Sum, HR = Hours, EA = Each, LF = Linear Feet, kVA = kilo-volt-amphere.

Item	Quantity	Unit	Unit Price (Salvage)	Unit Price (Remove/Restore)	Total Price	See Note:
Inverters	47	EA	$ -	$ 2,250.00	$ 105,750.00	4
Transformers	47	EA	$ -	$ 5,000.00	$ 235,000.00	5
Conrete Pad	29	EA	$ -	$ 1,500.00	$43,500	6
7' Chain Link Fencing	84,648	LF	$ -	$ 3.50	$296,268	7
Substation	1	EA	$ -	$ 85,000.00	$85,000	8
Battery Storage System	-	EA	$ -	$ 15,000.00	$0	9
Land Restoration	590	AC	$ -	$ 500.00	$295,000	10
Erosion Control	590	AC	$ -	$ 2,000.00	$1,180,000	11
				Remove/Restore Subtotal:	$ 2,240,600.00	
				Contingency (25%)*:	$560,150	
				Total Cost:	$ 2,800,750.00	

Notes: ***Contingency applied to remove/restore subtotal per §25-70.9A**

1. Wire

Excavate to cable depth at one end of trench. Use tractor or other equipment to remove all wiring and conduits in common trench.

	Length	LBs/1000 FT	Total LBs
MV - 1/0 AWG (Copper)	40,000	363.013	14520.5
MV - 1/3 (AL)	40,000	409	16360
AC output (Copper)	100,350	99.181	9953
DC output (Copper)	8,625,000	66.155	570586
Total Copper			595059.5
Total Aluminum			16360
Cost to Remove:	$0.20 per pound		

2. Racking System

Racking frame: Cut legs and cross beams to appropriate size and transport to staging area. Racking Posts: Remove via post-puller and transport to staging area.

Racks:	2,960
Posts (10' W6x9) per rack:	12
Total Posts:	35,520
Total post weight (LBS):	3,196,800
Total Racking Weight (LBS):	6,267,478
Total Structure Weight:	9,464,278

Round Hill Solar
Augusta County, VA
Decommissioning Estimate Pro Forma without Salvage

Cost to Remove Racking System: $0.10 per pound

3. Solar Modules — Hand remove modules and place on pallets.

Cost to Remove Modules: $ 2.00 Per Module

4. Inverters — Removal by crane onto flatbed with no dissassembly. Haul to recycle center.

		Total LBS
Number of Inverters:	29	63,800
Weight Per Inverter (LBS):	2200	
%Steel	0.2	12,760
%Aluminum:	0.2	12,760
%Copper:	0.1	6,380
Total:		**63,800**
Cost to Remove Inverters:	$2250 Each	

5. Transformers — Removal by crane onto flatbed with no dissassembly.

Total Transformers:	47
Transformer:	1,500 kVA
Total kVA:	35,250
Cost to Remove Transofrmer:	$5,000

6. Concrete Pad — Assumed (1) 100 SF precast pad per transformer and battery system. Remove precast concrete pad via excavator onto flatbed. Haul to recycle center.

Cost to Remove Pad: $1,500

7. Chain Link Fencing — Assumed 1 post per 10 LF. Assumed post weight of 3 lbs. Machine roll fence fabric, remove posts via post-puller.

Fencing:		Post weight =	25394.4 lbs
Total LF on Project:	84,648	Fence weight =	396564 lbs
Total Weight:	421,958 lbs		
Cost to Remove fencing:	$3.50 LF		

8. Substation & Substation Equipment — Remove equipment via crane onto flatbed. Remove substation fencing via fence-roller and remove posts via post-puller.

Cost to Remove: $85,000

9. Land Restoration — Includes: removal of gravel access drives via skid-steer and haul off site; Re-seeding of disturbed areas via atv drill-

Cost to Restore: $500 Acre

10. Erosion Control — Install perimeter erosion control measures (assumes sediment basins will not be required) before decommissioning

Cost: $2,000 Acre