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June 14, 2022

Town of Yorktown Planning Board
1974 Commerce Street
Yorktown Heights, NY 10598

Re: Preliminary Decommissioning Cost Estimate, Dell Avenue Solar Farm
Dell Ave., Yorktown, NY 10514

Dear Planning Board Members:

TRC Engineers Inc., on behalf of Sol Systems, LLC (Applicant), is pleased to present the enclosed preliminary decommissioning cost estimate as part of the SCS Dell 014136 Yorktown, LLC site plan and special use permit applications. The Dell Avenue Solar Farm is planned as a 3,625 kWac fixed-tilt ground mount solar energy system and associated facilities on the 62.33-acre site located off of Dell Ave in Yorktown, NY (the Project). The arrays are divided into two (2) sectors and located within fenced areas with access gates. The attached decommissioning cost was prepared by a Professional Engineer licensed in New York.

This opinion of probable cost is based on the engineer's experience in the design and construction of energy facilities and is subject to final engineering, if applicable. Costs have been split between plant disassembly, site restoration, and salvage, which reflect the overall decommissioning process. This opinion assumes a third-party contractor experienced in the construction and decommissioning of PV facilities will lead the effort. The reported costs include labor, materials, taxes, insurance, transport costs, equipment rental, contractor's overhead, and contractor's profit. Labor costs have been estimated using regional labor rates and labor efficiencies from the Bureau of Labor Statistics, along with previous decommission plan estimates completed for similar projects.

The PV plant will first be disassembled, removing the above- and below-grade components. This removal includes, but not limited to, complete removal of gravel surfaces and site concrete, along with removal of above ground and any buried cables and all underground conduit. These costs include the regarding of all disturbed removal areas, as well as the backfilling and stabilization of all trenches.

The disturbed site is expected to be re-seeded with native or naturalized grasses and vegetation. Planting trees, shrubs, and other woody vegetation (re-forestation) or other beautification is not included in the costs. The decommissioning estimate is prepared with an assumption that re-grading of the entire site is not required. The earth-moving equipment required to regrade the site would likely trigger additional permits. Salvage values have been estimated using publicly available data from https://www.scrapmonster.com, industry-provided actual salvage values, and previous experience with similar solar projects.

Finally, all associated structures will be demolished and removed from the site within 90 days for recycling or disposal after the end of energy production or proposed date of decommissioning.

The decommission estimate includes labor costs and credits for salvaging project materials in 2022 and at the end of a 25-year lifespan. Inflation, if included in this estimate, a 2.5 percent annual increase in labor costs, and a 1 percent annual increase in salvage value was assumed. Based on the attached decommissioning estimate, the demolition costs minus salvage value will cost at minimum $62,600 at the end of the 25-year span for the solar project, more, or more depending on the salvageable value of the material at site. As a conservative approach accounting for fluctuations in future salvage value, factoring-in 50% of the projected salvage value would yield a preliminary decommissioning cost estimate of $154,900. Both of these values are shown on the attached estimate.

TRC Engineers, Inc.

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Steve Meersma, P.E. Date
Principal

TRC Engineers, Inc.

DECOMMISSIONING COST ANALYSIS
SOL SYSTEMS, DELL AVE SOLAR

	DESCRIPTION OF ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST (2022)	TOTAL COST (After 25 Years)**	LOGIC
	I. DISASSEMBLY & DISPOSAL						
	Photovoltaic Modules	9,536	EA	$3.73	$35,521.60	$65,855.06	* Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = $1,192/day. Assume 20 modules/hr/laborer. 8 hr shift.
	Inverter(s)	2	EA	$298.00	$596.00	$1,104.95	* Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = $1,192/day. Assume crews can remove 4/day.
	Transformer(s)	2	EA	$298.00	$596.00	$1,104.95	* Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = $1,192/day. Assume crews can remove 4/day.
	Racking Frame	177	EA	$26.49	$4,677.74	$8,672.27	* Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = $1,192/day. Assume crews can remove 45/day. Each frame contains 54 modules.
	Racking Posts	1,413	EA	$19.87	$28,066.45	$52,033.63	* Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = $1,192/day. Assume crews can remove 60/day. Each frame consists of 8 posts.
	Low Voltage Wiring	24,311	LF	$0.12	$2,897.81	$5,372.38	* Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = $1,192/day. Assume crews can remove 10,000 LF/day.
	Gravel (Access Drive)	973	CY	$6.90	$6,709.81	$12,439.61	* Use Crew B-3B (2 Laborers; 1 Equip Oper; 1 Truck Driver; 1 Backhoe; 1 Dump Trk) = $3,448/day. Assume crews can remove 500 CY/day.
	Medium Voltage Wiring	1,925	LF	$0.24	$458.80	$850.59	* Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = $1,192/day. Assume crews can remove 5000 LF/day.
	Fence	4,861	LF	$1.19	$5,794.31	$10,742.33	* Use Crew A-5 (2 Laborers; .25 Truck Driver; .25 Flatbed Truck) = $1,192/day. Assume crews can remove 1000 LF/day.
	General Demolition	0.2	WK	$3,000.00	$600.00	$1,112.37	* Use Crew B-3B (2 Laborers); Assumes can complete in one day
	Landscaping Removal	All		$5,000.00	$5,000.00	$9,269.72	* Estimate includes one crew (2 Laborers); 2 days with required equipment for removal
	Stormwater Management Feature	392	CY	$18.80	$7,370.91	$13,665.25	* Use Crew B-17 +4 trucks (2 Laborers; 1 Equip Oper; 4 Truck Driver; 1 Backhoe; 4 Dump Truck) = $5,641/day. Assume 300 CY/day, 1hr cycle
	Foundation Removal	2	EA	$2,860.50	$5,721.00	$10,606.41	*Use Crew B-17 (2 Laborers; 1 Equip Oper; 1 Truck Driver; 1 Backhoe; 1 Dump Truck) = $2860.50/day. Assume 1/day
				SUBTOTAL	**$104,010.43**	**$192,829.52**	
	II. SITE RESTORATION						
	Re-Seeding	10.8	AC	$2,400.00	$25,920.00	$48,054.23	* Cost includes: Seed species (native types) and labor: Spraying; Disking; Planting; Mulch; One man & machine
	Re-Grading	992	CY	$3.45	$3,420.42	$6,341.26	* Cost includes 2 Laborers; 1 Equip Oper; 1 Truck Driver; 1 Backhoe; 1 Dump Trk) = $3,448/day. Assume crews can grade 2000 CY/day.
				SUBTOTAL	**$29,340.42**	**$54,395.49**	
	III. SALVAGE						
	Photovoltaic Modules	9059	EA	$8.58	$77,726.22	$99,678.59	We Recycle Solar
	Inverter(s)	2	EA	$16.00	$32.00	$41.04	Scrapmonster
	Transformer(s)	2	EA	$1,700.00	$3,400.00	$4,360.27	Scrapmonster
	Racking Frame (Steel)	246,030	LBS	$0.12	$29,523.60	$37,862.01	Scrapmonster
	Racking Posts (Steel)	107049.6	LBS	$0.12	$12,845.95	$16,474.06	Scrapmonster
	Low Voltage Wiring (Insulated cable)	15802	LBS	$0.95	$15,011.90	$19,251.74	Scrapmonster
	Medium Voltage Wiring (Insulated cable)	3,734	LBS	$0.95	$3,547.30	$4,549.17	Scrapmonster
	Chain Link Fence (Steel)	15555	LBS	$0.12	$1,866.60	$2,393.79	Scrapmonster
				SUBTOTAL	**$143,953.57**	**$184,610.67**	
							Legend:
		TOTAL DEMOLITION COST			**$133,350.85**	**$247,225.01**	* = Costs derived from RS Means Heavy Site estimating manual
		SALVAGE VALUE CREDIT			**$143,953.57**	**$184,610.67**	** = Assumes 2.5% annual increase in labor costs and 1% annual increase in salvage value
	TOTAL DECOMMISSIONING AMOUNT =					**$62,614.35**	