

Appendix D

Decommissioning Plan



Wild Springs Decommissioning Plan

Wild Springs Solar, LLC (Wild Springs), is committed to ensuring the Wild Springs Solar Project (Project) is properly decommissioned at the end of its useful life in compliance with the decommissioning requirements set forth in Section 317-A-15 of the Pennington County Zoning Ordinance (July 10, 2019). Therefore, Wild Springs commits to the following with respect to decommissioning restoration and financial assurance for the Project.

Project Decommissioning and Site Restoration:

Decommissioning of the Project would begin within eight (8) months after the Project reaches the end of its useful life and would be completed within eighteen (18) months after the Project reaches the end of its useful life, unless the Planning Commission approves a different schedule. Project decommissioning will include:

- Dismantling and removing all Project-related equipment, foundations, and ancillary equipment to a depth of forty-two (42) inches below grade. Any soil disturbance associated with decommissioning would include topsoil segregation.
- Removing the operation and maintenance facility and access roads, unless the landowners request in writing that all or any portion of the facility and/or access roads remain in place. Access road restoration will include removal of surface road material and restoration of the roads to substantially the same physical condition that existed immediately before construction of the Project.
- Restoration of the Project site, including: decompaction; revegetation; and to the extent possible, reclamation to the approximate original topography and original or better topsoil quality that existed immediately prior to construction of the Project.
- Executing agreements, as needed addressing the Project's use, improvement, and post-decommissioning restoration and repair of existing, maintained roads, including any associated road restoration and repair costs.

Following decommissioning, the site will be restored so as to be able to return to the agricultural production that existed prior to construction of the solar facilities.

Decommissioning Financial Assurance:

A decommissioning cost estimate for the Project provided by Westwood Engineering (a South Dakota-licensed engineering firm) is attached as **Exhibit A**.

Based on current recycling costs and salvage values, the cost of decommissioning the Project is estimated to be approximately \$2,323,000.00. Wild Springs plans to provide a certificate of insurance and financial assurance to Pennington County prior to the start of construction.



Wild Springs also proposes that an updated decommissioning cost estimate be provided at year 10 of operation, which would be used to update, as needed, the decommissioning cost financial security.

Project Name: Wild Springs Solar Project
Date: 03/19/2020
WPS Project Number: 0007627.00
By: JLB

Project Size	166.00	MW-DC	128.00	MW-AC
	Quantity	Unit	Unit Cost	Total Cost
Mobilization/Demobilization	1	Lump Sum	\$1,354,000.00	\$1,354,000

Mobilization was estimated to be approximately 7% of total cost of other items. This number was developed from speaking with contractors.

Permitting				
State Permits	1	Lump Sum	\$10,000.00	\$10,000
Subtotal Permitting				\$10,000

Decommissioning will require a SWPPP and SPCC plan, cost is an estimate of the permit preparation cost.

Civil Infrastructure				
Removal Gravel Surfacing from Road	53,742	Cubic Yards (BV)	\$4.48	\$240,941
Haul Gravel Removed from Road	67,178	Cubic Yards (LV)	\$14.71	\$988,200
Disposal of Gravel Removal from Road	87,062	Tons	\$0.00	\$0
Grade Road Corridor (Re-spread Topsoil)	136,035	Linear Feet	\$1.14	\$154,995
Erosion and Sediment Control for Road Restoration	102,026	Linear Feet	\$1.91	\$194,870
Turf Establishment on Removed Road Area	74.95	Acres	\$3,850.00	\$288,559
Removal of Security Fence	88,000	Linear Feet	\$6.58	\$579,040
Subtotal Civil Infrastructure				\$2,446,606

Civil removal costs are a combination of SDDOT unit costs where applicable, RS Means cost for project zip area and industry standards provided to Westwood. Based on the Landfill, many landfills do not charge for "inert" materials, the gravel can be used for daily cover and other uses at a landfill.

Structural Infrastructure				
Removal Tracker Steel Foundation Posts	107,448	Each	\$13.18	\$1,416,268
Haul Tracker Steel Post	8,596	Tons	\$7.54	\$64,813
Removal Drive Motor Posts	9,688	Each	\$115.03	\$1,114,411
Haul Drive Motor Posts	18,419	Ton	\$7.54	\$138,882
Remove and Load Metstation Foundation	5	EA	\$743.60	\$3,718
Haul Concrete	73	Tons	\$14.22	\$1,031
Disposal of Concrete from Foundation	73	Tons	\$40.25	\$2,918
Subtotal Structural Infrastructure				\$2,742,040

Steel removal costs were calculated by using information from array manufacturers for installation rates and using the same rates to calculate total days to remove equipment. Hauling calculations are based on the locations of metals recyclers in Rapid City, 26 miles away. Assuming a \$0.29/ton mile rate and \$40.25/ton for tipping fees.

Electrical Collection/Transmission System				
Removal of PV Panels	755,664	Each	\$12.07	\$9,122,281
Removal of Combiner Boxes	1,211	Each	\$60.00	\$72,660
Removal of PCU Station (Inverters/Panelboard/Transformer)	88	Each	\$2,029.56	\$178,601
Haul Inverters and Transformers to Recycler	88	Each	\$150.80	\$13,270
Removal of Scada Equipment	1	Each	\$5,000.00	\$5,000
Removal of DC Collector System Cables (copper)	9,600.0	LF	\$0.43	\$4,155
Removal of Underground (AC) Medium Voltage System Cables	258,167	Linear Foot	\$0.48	\$124,643
Load and Haul Cables for Recycling	343.3	Ton	\$7.54	\$2,589
Removal of Fiber Optic Cable	86,055.7	LF	\$0.13	\$11,359
Removal of Grounding Wire	95,655.7	LF	\$0.16	\$14,970
Subtotal Electrical Collection/Transmission System				\$9,549,529

Electrical removal costs of PV Panels and Combiner Boxes were based industry standards on installation rates of a three man work crew. PCU

Station, MV Equipment and Scada Equipment removal cost are based on removal of equipment, concrete pads, and conduits using a truck mounted crane and contractor provided information on installation rates. Cable to be left in the ground, stub up removal at combiner boxes and inverters assumed, standard industry production rates from RS Means. Metal and cable salvage value is based on 75 percent of current scrap metal prices for steel copper, and aluminum. Hauling calculations are based on the locations of metals recyclers in Rapid City, 26 miles away. Resale of PV Panels is based on 85 percent of the price quoted by We Recycle Solar on a recent similar project.

Site Restoration

Stabilized Construction Entrance	11	Each	\$2,000.00	\$22,000
Permanent Seeding on area within Removed Array	1,080	Acres	\$3,484.80	\$3,761,892
Subtotal Site Restoration				\$3,783,892

Site restoration costs are based on past solar project experience.

Substation

Drain and Dispose of Transformer Oil	1	LS	\$11,000.00	\$11,000.00
Disassembly and Removal of Transformer(s)	1	LS	\$4,500.00	\$4,500.00
Freight Transformer(s) Offsite	1	LS	\$2,500.00	\$2,500.00
Excavate Around Transformer Foundation(s)	1	LS	\$40,000.00	\$40,000.00
Remove Complete Transformer Foundation(s)	1	LS	\$4,900.00	\$4,900.00
Backfill Excavation Area from Transformer Foundation Removal	1	LS	\$55,000.00	\$55,000.00
Haul scrap reinforcing steel (Transformer Foundation)	6	Tons	\$10.00	\$60.00
Haul Concrete (Transformer Foundation)	140	CY	\$18.00	\$2,520.00
<i>subtotal - substation transformer removal</i>				\$120,480.00

Demolish Substation Site Improvements (fences, etc)	1	LS	\$3,500.00	\$3,500.00
Demolish Control Building and Foundation	1	LS	\$12,000.00	\$12,000.00
Remove Medium/High Voltage Equipment	1	LS	\$3,500.00	\$3,500.00
Remove Structural Steel Substation Frame	1	LS	\$3,500.00	\$3,500.00
Freight - Demolition Materials, Removed Equipment & Structural Steel Offsite	1	LS	\$1,250.00	\$1,250.00
Disposal of Demolition Materials, Removed Equipment and Structural Steel	1	LS	\$0.00	
<i>subtotal - demolition/disposal of imp materials</i>				\$23,750.00

Remove Gravel Surfacing from Substation Site	6,200	CY	\$8.00	\$49,600.00
Disposal of Gravel from Substation Site	6,200	CY	\$6.00	\$37,200.00
Grade Substation Site	1	LS	\$25,000.00	\$25,000.00
Erosion and Sediment Control at Substation Site	1	LS	\$12,000.00	\$12,000.00
Topsoil and Revegetation at Substation Site	1	LS	\$16,000.00	\$16,000.00
<i>subtotal - substation site gravel removal & restoration</i>				\$139,800.00

Project Management	Quantity	Unit	Unit Cost	Total Cost
Project Manager	25	weeks	\$3,800.00	\$95,000.00
Superintendent	50	weeks	\$3,525.00	\$176,250.00
Field Engineer	100	weeks	\$2,325.00	\$232,500.00
Clerk	50	weeks	\$750.00	\$37,500.00
<i>subtotal -Project Management</i>				\$541,250.00

Salvage

Fencing	440	Tons	\$165.00	\$72,600
Steel Posts	8,596	Tons	\$165.00	\$1,418,340
Module Racking	18,419	Tons	\$165.00	\$3,039,135
PV Modules	717,881	Each	\$23.87	\$17,135,819
Inverters and Transformers	264	Each	\$0.37	\$98
Scada Equipment	1	Each	\$1,000.00	\$1,000
DC Collection Lines	18,240	Pounds	\$0.48	\$8,755
AC Collection Lines	613,147	Pounds	\$0.20	\$122,629
Grounding Wire	20,901	Pounds	\$1.79	\$37,308

Substation Transformer Oil	1	LS	\$3,500.00	\$3,500
Substation Transformers	1	LS	\$33,300.00	\$33,300
Scrap reinforcing steel from Substation Transformer Foundation	6	Tons	\$80.00	\$480.00
Substation Demolition Materials, Removed Equipment and Structural Steel	1	LS	\$1,750.00	\$1,750.00

Salvage values are a combination of the following factors; current market metal salvage prices, current secondary market for solar panel module recycling, discussions with national companies that specialize in recycling and reselling electrical transformers and inverters, and the assumption that care is taken to prevent any damage or breakage of equipment.

Construction Subtotal				\$20,711,347
Contingency				\$2,902,102
15% of construction total (minus Mobilization/Demobilization/Permitting) based on previous project estimations.				
County Administration Costs (2.5%)				\$590,336.22
		Construction Total		\$24,203,784.88
Subtotal Salvage				\$21,874,715
Total Demolition Minus Salvage				\$2,329,070

Notes:

1. Prices used in analysis are estimated based on research of current average costs and salvage values.
2. Prices provided are estimates and may fluctuate over the life of the project.
3. Contractor means and methods may vary and price will be affected by these.