

APPENDIX L

DECOMMISSIONING PLAN



DECOMMISSIONING PLAN

SOUTH BRANCH SOLAR
WASHINGTON TOWNSHIP
HANCOCK COUNTY, OH

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Prepared on: July 19, 2021



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A. South Branch Solar – C.101 Overall Site Plan

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1.0 INTRODUCTION

Background

South Branch Solar, LLC (Project Company) is developing the South Branch Solar Project (Project) on approximately 1000 acres of leased land. The Project will be located in Washington Township, Hancock County, Ohio. The project will have several access points. The central project area will be accessed along the east and west sides of Township Rd. 254 and 243. The northeastern project area will be accessed at two points along Township Rd. 257, approximately 0.5 and 0.3 miles north of the intersection of Township Rd. 254 and Township Rd. 218. The southeastern project site can be accessed along Township Rd. 109, approximately 0.3 miles east of the intersection of Township Rd. 243 and Township Rd. 109. The geographical coordinates are 41°8'13.64"N, 83°31'20.89"W and the Solar Project is anticipated to remain operational for 35-40 years. Refer to **Appendix A: C.101 Overall Site Plan** for general location and project layout.

The Project is planned to occupy approximately 1000-acres of agricultural land for the solar field. The site is bound to the east and west by agricultural fields, to the south by residential properties and agricultural fields, and to the north by woodland and agricultural fields. Site topography is moderately sloped and slopes from the southeast to the northwest with drainage towards the South Branch of the Portage River. The Federal Emergency Management Agency (FEMA) has designated the project areas as Zone X, outside the 0.2% chance annual flood plain.

This Decommissioning Plan (Plan) is developed in compliance with Ohio Power Siting Board and industry standards.

This Plan covers the following elements of the Solar Photovoltaic (PV) portion of the development:

- Removal off-site for disposal of all Project Components as defined, including any underground structures to at least 3 feet below-grade;

- Revegetation, restoration and road repair activities;

- Decommissioning escrow account.

If the Project ceases to perform its intended function for more than twelve (12) months, the Project will be completely removed within twelve (12) months, and the site restored in accordance with this Decommissioning Plan and Ohio Power Siting Board rules and regulations.

2.0 PROJECT COMPONENTS

The Project Components that are subject to decommissioning include the Solar PV equipment summarized below. The decommissioning activities associated with these components are discussed in Section 3.0 of this Plan.

PV Equipment

The Project will use Solar Photovoltaic (PV) modules mounted on single axis trackers installed on steel pile foundations.

Internal Power Collection System

The PV-generated DC power will be collected from each of the multiple rows of PV modules through one or more combiner boxes and conveyed to inverters. The inverters will convert the DC power to AC power. A project substation will be constructed to convert the electricity voltage, as necessary. The project will be interconnected into the existing Overhead Power Lines running northeast through the site between Township Rd. 254 and Township Rd. 256.

Inverters, transformers, and PV combining switchgear will be mounted on concrete or pile foundations.

Earthwork

It is anticipated the site will require minimal grading for the Project. Site grading and drainage will be conducted in accordance with Final Engineering plans approved by Washington Township, Hancock County, and the Ohio Power Siting Board.

Roads

Access to the Project areas will be via Township Rd. 109, Township Rd. 243, and Township Rd. 257. The site access roads will be constructed in accordance with Hancock County requirements. The on-site access roads will be compacted dirt or gravel in accordance with the Final Geotechnical Report.

Fencing

The Project site will be fenced with an approximately seven-foot-high fence for security purposes. Entry gates will be provided at the site access points on Township Rd. 109, Township Rd. 243, and Township Rd. 257.

3.0 PROJECT DECOMMISSIONING AND RECYCLING

Decommissioning includes removal of above-ground and below-ground structures relating to the Solar PV portion of the Project. Only minor grading is anticipated during construction; and therefore, will require limited to no grading following decommissioning. Temporary erosion and sedimentation control Best Management Practices will be implemented during the decommissioning phase of the Project.

Decommissioning Preparation

The first step in the decommissioning process will be to assess existing site conditions and prepare the site for demolition. Onsite storage area(s) will be established, for collection and temporary storage of demolition debris, pending final transportation and disposal and/or recycling according to the procedures listed below.

Permits and Approvals Required for Decommissioning

It is anticipated that an NPDES Permit from the Ohio Environmental Protection Agency Division of Surface Water (DSW) will be required. The site is not anticipated to impact waters of the United States or Threatened or Endangered species; thus, no federal approvals are expected. Appropriate applications for permits will be submitted and approved prior to decommissioning activities, including any permits required through the Soil and Water Conservation District, Washington Township, and/or Hancock County.

PV Equipment Removal and Recycling

During decommissioning, Project components owned by the Project Company that are no longer needed will be removed from the site and recycled or disposed of at an appropriately licensed disposal facility. Above ground portions of the PV module supports will be removed. Below ground portions of the PV module supports will be removed entirely where practical. Those supports that are more firmly anchored may be cut off to a safe depth of at least three (3) feet below grade (except for parcel 510000130930 which shall be to a depth of four (4) feet) or to the depth of bedrock, and the remaining support may be left in place. This depth will avoid impact of underground equipment on future farming or other construction activities. The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried with the onsite equipment being used. The debris and equipment will be processed for transportation and delivery to an appropriately licensed disposal facility or recycling center. Modules will be disposed of or recycled in accordance with local, state, and federal regulations.

Internal Power Collection System

The combiner boxes, cables, inverters, and transformers will be dismantled. The concrete foundations will be broken up, removed and recycled. If ground-screw or steel foundations are used, they will be removed and recycled. The underground cable and conduit will be removed where less than three (3) feet below grade (except for parcel 510000130930 which shall be to a depth of four (4) feet). Overhead conductors will be removed from the poles, and the poles and pole foundations will be removed. Aluminum from the conductors will be recycled or removed from the site to an appropriately licensed disposal facility. All components of the project substation including, but not limited to, foundations, buildings, machinery, equipment, cabling, and connections to transmission lines will be removed.

Roads

Unless requested in writing by the landowner, gravel from on-site access roads will be removed and recycled. Once the gravel is removed, the soil below the gravel along compacted dirt access roads will be scarified a depth of 18-inches and blended, as noted in the Site Restoration section below.

Fencing

Unless requested in writing by the landowner, project site perimeter fence will be removed at the end of the decommissioning project. Since the Project site is not currently fenced, this includes removal of all posts, footings, fencing material, gates, etc. to return the site to pre-Project condition.

Landscaping

Unless requested in writing by the landowner to be removed, all vegetative landscaping and screening installed as part of the Project will be left in place. Landscape areas in which landscaping is removed will be restored as noted in the Site Restoration section below.

Site Restoration

Once removal of all Project equipment and landscaping is complete, all areas of the Project site that were traversed by vehicles and construction and/or decommission equipment that exhibit compaction and rutting, will be restored by the Project Company. All prior agricultural land will be ripped at least 18 inches deep or to the extent practicable and all pasture will be ripped at least 12 inches deep or to the extent practicable. The existence of drain tile lines or underground utilities may necessitate less ripping depth. Once this is complete, seed will be distributed for the establishment of vegetative land cover.

4.0 FUTURE LAND USE

The Project site is currently agricultural land. All solar panels will be removed from the property and the land will be restored so that it can be returned to agricultural use at the end of the Project life cycle. This Decommissioning Plan is consistent with Ohio Power Siting Board (OPSB) requirements to return the land to its pre-Project conditions, suitable for agricultural use.

5.0 PROJECT DECOMMISSION COSTS AND FINANCIAL ASSURANCE

This Decommissioning Plan will be updated prior to Construction and will consider salvage value of the Solar PV components of the Project. All solar components will be repurposed, salvaged, recycled, or hauled offsite for disposal. Solar components that are anticipated to have resale or salvage value that may be used to offset the cost of decommissioning include solar modules, racking system, steel piles, inverters, and transformers. Materials that have no value at the time of decommissioning will be recycled when possible or hauled offsite to a licensed solid waste disposal facility. A Project decommissioning cost estimate was created based on the South Branch Ridge Solar – Overall Site Plan included in **Appendix A**. See Table 1 below for a current decommissioning cost estimate, including salvage value. Industry standard prices in 2021 for removal costs were determined using RS Means cost data. Removal costs includes materials, contractor installation/demolition, mobilization and demobilization, overhead and profit, and performance bonding.

In the event that the Total Decommission Cost (decommission costs minus salvage value) is a net positive number, the Project Company will post decommissioning funds in the form of a surety bond, letter of credit, guaranty, including affiliate guaranty or other financial assurance consistent with the Final Decommissioning Cost Estimate. This Decommissioning Plan and financial assurance will be reviewed every 5 years to assess the value of the financial assurance versus the Total Decommission Cost.

**TABLE 1
SOUTH BRANCH SOLAR DECOMMISSIONING COST
ESTIMATE¹**

NO.	ITEMS	QUANTITY	UNITS	PRICE	COST
1	Mobilization	1	LS	\$436,858	\$436,858
2	SWPPP, Erosion Control Measures	1	LS	\$593,000	\$593,000
3	Seeding	871	AC	\$208	\$181,168
4	Ripping 12"-18" topsoil/scarifying access road and rough grading existing soil	871	AC	\$99	\$86,229
5	Remove and Recycle Chainlink Fence, 7' High	93,668	LF	\$4.34	\$406,520
6	Disconnection and Demolition of Switchyard/Substation Equipment	3	EA	\$66,754	\$200,262
7	Removal and Recycle AC Cables	127,512	LF	\$0.19	\$24,228
8	Remove and Recycle DC Cables	1,054,065	LF	\$0.18	\$189,732
9	Backfill AC and DC trenches	218,454	LF	\$0.18	\$39,322
10	Remove and Recycle Inverters	60	EA	\$242	\$14,520
11	Removed and Recycle Photovoltaic Modules	500,688	EA	\$9.00	\$4,506,192
12	Remove and Recycle Piles (10'W6x7 piles @ 25' OC assumed)	42,657	EA	\$13	\$554,541
13	Remove and Recycle Support Assemblies	6,925	EA	\$204	\$1,412,700
14	Contaminated Soils Testing	1	LS	\$2,000	\$2,000
15	Reclamation Monitoring and Maintenance	1	LS	\$5,000	\$5,000
16	Transportation ²	1	LS	\$521,738	\$521,738
SUB-TOTAL OF DECOMMISSION COSTS					\$9,174,010
17	Remove and Recycle Chainlink Fence, 12' High ³	93,668	LF	\$0.19	\$17,797
18	Remove and Recycle Switchyard/Substation Equipment ⁴	3	EA	\$13,351	\$40,053
19	Removal and Recycle AC Cables ³	127,512	LF	\$0.08	\$10,201
20	Remove and Recycle DC Cables ³	1,054,065	LF	\$0.08	\$84,325
21	Removed and Recycle Photovoltaic Modules ⁵	500,688	EA	\$4.96	\$2,483,413
22	Remove and Recycle Piles ³ (10'W6x7 piles @ 25' OC assumed)	42,657	EA	\$3.70	\$157,831
23	Remove and Recycle Support Assemblies ³	6,925	EA	\$16.17	\$111,978
SUB-TOTAL OF SALVAGE VALUES					\$2,905,598
TOTAL (DECOMMISSION COSTS – SALVAGE VALUE)					\$6,268,412

¹ This Engineer's Opinion of Probable Construction Cost is based upon the Overall Site Plan prepared Westwood Professional Services, Inc. dated 07/14/2021. 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. These quantities and costs are subject to change pending Final Engineering and should be updated as necessary.

² This assumes that approximately 753 trips of a 40,000 lb. capacity demolition roll-off truck will travel 100 miles round trip to a recycling and disposal facility.

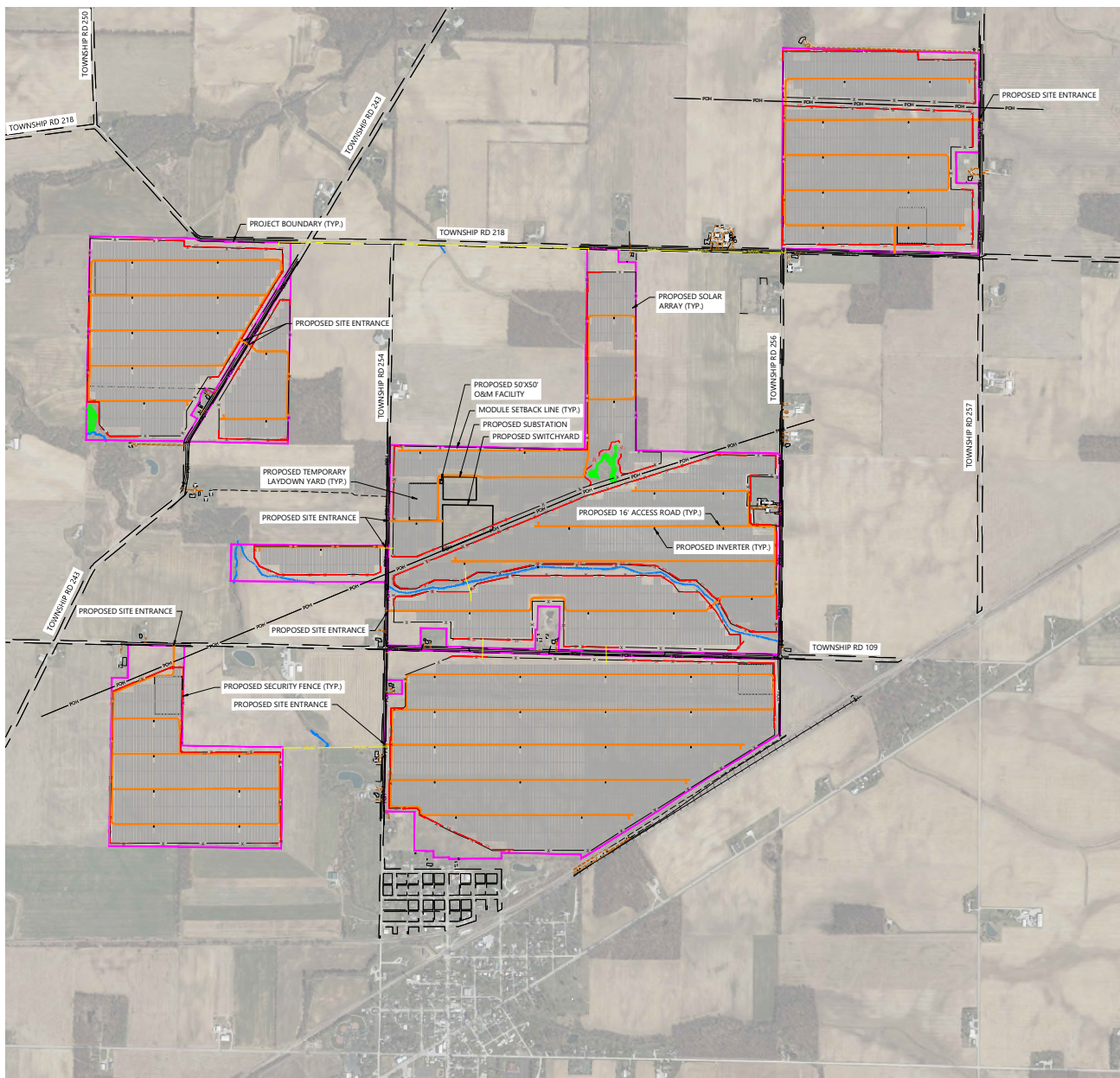
³ This Salvage Value Estimate is based off 2021 RS means raw material scrap prices. Material salvage values were based off of current US salvage exchange rates. Material salvage values was determined using the most prevalent salvageable metal in each component: Copper Wire @\$0.08/LF (AC and DC Cables) and Steel @ \$0.19/LF of fence, @ \$3.70/pile, and @ \$16.17/assembly.

⁴ Switchyard/Substation Equipment material salvage value was determined to be 20% of removal costs from past projects of similar size and scope.

⁵ Photovoltaic Module material salvage rate is based on straight-line depreciation of modules (-0.5%/year). For PV Module Removal/Recycle labor and equipment costs are computed at present values, while salvage value is computed at 35-year depreciated values.

APPENDIX A

South Branch Solar – C.101 Overall Site Plan



LEGEND:

- PROJECT BOUNDARY
- SECTION LINES
- RIGHT-OF-WAY LINES
- EASEMENT LINES
- TREELINE
- EX. PAVED ROAD
- EX. GRAVEL ROAD
- EX. DRIVEWAY
- EX. RAILROAD
- EX. FENCE LINE
- EX. OVERHEAD POWER
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
- PROPOSED SECURITY FENCE
- PROPOSED SILT FENCE
- PROPOSED ELECTRICAL EQUIPMENT
- PROPOSED COLLECTION
- PROPOSED LAYDOWN YARD
- PROPOSED SUBSTATION/SWITCHYARD
- PROPOSED O&M FACILITY
- DELINEATED WETLANDS
- DELINEATED STREAMS

SYSTEM SPECIFICATIONS

SYSTEM SIZE - MWDC	270.37
SYSTEM SIZE - MWAC	205
DC/AC (AT INVERTER)	1.32
MODULE MODEL	LONGI LR5 72HBD-540M
MODULE RATING (W)	540
MODULE QUANTITY	500,688
STRINGS (27 MODULES PER STRING)	18,544
INVERTER QUANTITY	60

Westwood

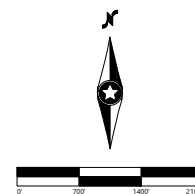
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REVISIONS	DATE	COMMENT
#		



South Branch Solar

Hancock County, OH

Overall Site Plan

NOT FOR CONSTRUCTION

DATE: 07/14/2021

SHEET: C.101

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

7/22/2021 12:48:42 PM

in

Case No(s). 21-0669-EL-BGN

Summary: Application Appendix L – Decommissioning Plan electronically filed by Ms. Megan Zemke on behalf of Borchers, Dylan F