

Pike County Solar Project Decommissioning Plan

PREPARED FOR
Pike County Solar Project, LLC

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CONTENTS

1.	INTRODUCTION	4
2.	PROJECT COMPONENTS AND DECOMMISSIONING ACTIVITIES	4
2.1	SOLAR PROJECT COMPONENTS	4
2.2	DECOMMISSIONING SEQUENCE	5
2.3	SOLAR MODULES	6
2.4	TRACKING SYSTEM AND SUPPORT	6
2.5	INVERTERS	7
2.6	ELECTRICAL CABLING AND CONDUITS	7
2.7	PROJECT SUBSTATION AND ABOVE GROUND TRANSMISSION TIE-IN LINE	7
2.8	PERIMETER FENCING AND ACCESS ROADS	7
2.9	RESTORATION AND REVEGETATION	8
2.10	WATER PROTECTION	8
3.	OPINION OF PROBABLE DECOMMISSIONING COST	8
3.1	DECOMMISSIONING EXPENSES	8
3.2	OPINION OF PROBABLE SALVAGE VALUE	10
3.3	DECOMMISSIONING COST SUMMARY AND FINANCIAL ASSURANCE	10
LIST OF TABLES		
	TABLE 1 PRIMARY PROJECT COMPONENTS TO BE DECOMMISSIONED	5
	TABLE 2 PROJECTED DECOMMISSIONING EXPENSES	9
	TABLE 3 PROJECTED DECOMMISSIONING SALVAGE VALUES	10
	TABLE 4 NET DECOMMISSIONING COST SUMMARY	10

1. INTRODUCTION

Pike County Solar Project, LLC (Applicant) is proposing to construct the Pike County Solar Project ("Project") in the eastern portion of Pike County, Kentucky. The Project is situated on approximately 1,543 acres of partially reclaimed surface mine land and will generate up to 100 megawatts (MW) alternating current (AC) of electricity with photovoltaic solar panels (Project Site). Arrays of photovoltaic modules will be mounted on single access trackers arranged in rows. Power conversion systems will be distributed throughout the Project area, comprised of 25 power inverters. The equipment will connect via underground electrical wiring to a Project substation. An approximate 1-mile gen-tie line will connect the Project substation to a utility substation that will connect with an existing transmission line east of the Project.

This Decommissioning Plan (Plan) describes the decommissioning and restoration phase of the Project. The projected Commercial Operation Date (COD) is the first quarter of 2027; however, this is subject to change. The anticipated operating life of the Project is 35 years. Properly maintained utility-scale solar panels have an operating life of approximately 30 to 35 years with an opportunity for a project lifetime of more than 40 years with equipment replacement and repowering. Depending on market conditions and project viability, solar arrays may be retrofitted with updated components (e.g., modules, tracking system, etc.) to extend the life of a project.

This Plan includes an overview of the primary decommissioning Project activities, including the dismantling and removal of facilities and restoration of land. A summary of projected costs and salvage values associated with decommissioning the Project are included in Section 3.

This Plan complies with Kentucky Revised Statutes (KRS) 278.706(2)(m). Pursuant to KRS 278.706(2)(m)(7), the Project's lease agreements shall be amended to incorporate the requirements of KRS 278.706(2)(m)(1)-(6). To the extent applicable laws and regulations in the future conflict with this Decommissioning Plan, such laws and regulations may apply in lieu of the applicable portion of this Plan.

Project decommissioning may be triggered by events such as the end of a power purchase agreement or when the Project reaches the end of its operational life. (KRS) 278.706(2)(m) requires that decommissioning activities be completed within 18 months of the Project ceasing to produce electricity for sale unless the deadline has been extended by the Secretary of the Kentucky Energy and Environment Cabinet ("EEC"). Monitoring and site restoration may extend beyond this period to ensure successful revegetation and rehabilitation.

During the Project's useful life solar panels that are replaced or discarded will be removed from the site within 90 days unless an extension has been granted by the EEC.

2. PROJECT COMPONENTS AND DECOMMISSIONING ACTIVITIES

Pursuant to KRS 278.706(2)(m)(7), the Applicant plans to approach landowners following issuance of all necessary Kentucky Siting Board approvals for the purpose of amending their leases to incorporate the requirements found in KRS 278.706(2)(m)(1)-(6).

2.1 SOLAR PROJECT COMPONENTS

The main components of the Project Site include:

- solar modules and associated above ground cabling,
- tracking system and steel piles,
- inverters,
- site access roads,
- perimeter fencing,
- medium voltage (MV) collection system (below ground electrical cabling and conduits),
- project substation and collection stations, and
- associated overhead transmission line.

The Applicant anticipates utilizing approximately 191,436 solar modules, with a generating capacity of up to 100 MW AC. Statistics and cost projections provided in this Plan are based on a typical bifacial module. The final panel selection will be determined prior to construction. A specific panel selection is not anticipated to materially alter the conclusions of this Plan. Approximate quantities of solar project components are based on data provided by Pike County Solar, LLC in the form of KMZ and ArcGIS SHP files.

Unless otherwise requested by a landowner, all above ground Project facilities and foundations, steel piles, and electrical cabling and conduit below the surface to a depth of 36 inches will be removed.

Estimated quantities of materials to be removed and salvaged or disposed of are included in this section. Table 1 presents a summary of the primary components of the Project included in this Plan.

TABLE 1 PRIMARY PROJECT COMPONENTS TO BE DECOMMISSIONED

Component	Approximate Quantity
Solar Modules	191,436 modules
Steel Piles	38,953 piles
Inverters	25
MV (medium voltage) collection system	75,000 linear feet
DC (direct current) cabling	809 miles
Perimeter Fencing	79,500 linear feet
Access Roads	34,282 linear feet
Overhead Transmission Line	6,790 linear feet (approximate 1 mile)
Substation	1

2.2 DECOMMISSIONING SEQUENCE

The anticipated sequence of decommissioning and removal is described below; however, overlap of activities is expected.

- De-energize solar arrays.

- Install temporary erosion perimeter controls and best management practices (BMPs) to protect sensitive resources.
- Reinforce access roads, if needed, and prepare the Site for component removal.
- Dismantle panels and above ground wiring.
- Remove trackers and piles.
- Remove inverter stations with associated foundation components,
- Remove above and below-ground electrical cables and conduits to a depth of 36 inches or as otherwise agreed with the landowner.
- Remove perimeter fencing.
- Remove access and internal roads not required by the landowner and grade site to restore original contours, as necessary.
- Remove Project substation and above ground transmission line if decommissioned per request by landowner; otherwise leave in place for future use in accordance with KRS 278.706(2).

De-compact subsoils (if required), restore and revegetate disturbed land to a similar state as before Project construction, and remove temporary erosion control measures.

Equipment required for the decommissioning activities will be similar to construction of the solar facility and may include small cranes, low ground pressure (LGP) track mounted excavators, backhoes, LGP track bulldozers and dump trucks, front-end loaders, deep rippers, water trucks, disc plows and tractors to restore subgrade conditions, and ancillary equipment. Standard dump trucks may be used to transport material removed from the Project to disposal facilities.

2.3 SOLAR MODULES

The Applicant is considering bifacial modules for the Project. Bifacial modules allow for power to be generated on both sides of the panel, from direct and reflected light, increasing total energy generation. A typical module is mainly comprised of non-metallic materials such as silicon, tempered glass, plastic, and epoxies, with an anodized aluminum alloy frame.

At the time of decommissioning, module components in working condition may be refurbished and sold on a secondary market yielding greater salvage value than selling as salvage material. If the sale and reuse of solar modules is not an option at the time of decommissioning, the solar modules will be transported to a material recycling facility for processing and salvage or disposed of at an approved solid waste management facility.

2.4 TRACKING SYSTEM AND SUPPORT

The solar modules will be mounted on a single axis, one-in-portrait tracking system. The tracking systems are typically comprised of galvanized steel with some aluminum structural members.

The solar arrays will be deactivated from the surrounding electrical system and made safe for disassembly. Tracker lubricants will be removed and properly disposed of or recycled according to regulations current at the time of decommissioning. Electronic components, and internal electrical wiring will be removed and salvaged. The piles will be completely removed.

The supports, tracking system, and piles contain salvageable materials which will be sold to provide additional salvage value to offset decommissioning costs.

2.5 INVERTERS

Inverters located within the array will be deactivated, disassembled, and removed. Depending on its condition, the equipment may be sold for refurbishment and re-use. If not re-used, they will be salvaged or disposed of at an approved solid waste management facility. Oils and lubricants will be collected and disposed of at a licensed facility.

2.6 ELECTRICAL CABLING AND CONDUITS

The Project's underground electrical collection system will be installed at a depth of approximately 30 inches for direct current cables and approximately 48 inches for MV collection system cables and conduits. Approximately 75,000 feet of MV cabling and 809 miles of DC cabling will be used in construction of the Project. Underground cabling that is located three feet or less will be removed and salvaged in compliance with (KRS) 278.706(2)(m), while cable located greater than three feet in depth may be abandoned in place. For the purpose of this Plan, the removal of the MV collection system cables and conduits is assumed. Removed cabling will be collected and sold for salvage or brought to a recycling facility.

2.7 PROJECT SUBSTATION AND ABOVE GROUND TRANSMISSION TIE-IN LINE

The Project will include a Project substation. The substation footprint will contain within its perimeter a gravel pad, power transformer and footings, electrical control house and concrete foundations. An approximate 1-mile-long dedicated overhead transmission tie-in line will be constructed for the Project. The Project substation and transmission line are considered "interconnection and other facilities" as described in (KRS) 278.706(2)(m) and will remain in place unless otherwise requested by the landowner. If the landowner requests that the facilities be removed, the land will be restored to a substantially similar state as it was prior to commencement of construction of the Project.

If decommissioned, the substation transformer may be sold for re-use or salvage. Components of the substation that cannot be salvaged will be transported off-site for disposal at an approved waste management facility. Foundations and footings will be demolished and removed. Although the Project substation and transmission tie-in line may be retained at the end of the Project life, an estimated decommissioning cost has been included in this Plan. The anticipated operating life of a substation is 35 years and likely be decommissioned and removed along with the other Project components.

2.8 PERIMETER FENCING AND ACCESS ROADS

The Project Site will include a chain link fence surrounding the perimeter of each array section. The fencing will be removed and sold for salvage, recycled, or disposed of at an approved solid waste facility at the end of the decommissioning phase.

A network of access roads will allow access to solar facility equipment. The access roads will be composed of an aggregate layer and will be approximately 34,282 (6.5 miles) in length with turnaround areas as needed for access. The access road lengths may change with the final Project Site design. Access roads may be left in place if requested and/or agreed to by the landowner. To

be conservative, the decommissioning cost projection assumes that all access roads will be removed.

Decommissioning activities include the removal and stockpiling of aggregate Project materials for salvage preparation. It is conservatively assumed that all aggregate materials will be removed from the Project and hauled from the Project area. Following removal of aggregate, the access road areas will be graded, de-compacted with deep ripper or chisel plow (ripped to 18 inches), backfilled with native subsoil and topsoil, as needed, and land contours restored to a substantially similar state as it was prior to the commencement of construction of the Project.

2.9 RESTORATION AND REVEGETATION

Final decommissioning tasks will include back-filling of pile and foundation sites; de-compaction of subsoils; grading of surfaces to pre-construction land contours; and revegetation of the disturbed areas. For purposes of developing the opinion of probable decommissioning cost, it is assumed that limited site grading will occur as part of Project decommissioning.

2.10 WATER PROTECTION

Surface water conditions at the Project Site will be reassessed prior to the decommissioning phase. The Applicant will obtain the required water quality permits from the EEC and the U.S. Army Corps of Engineers (USACE), as needed, prior to decommissioning the Project. Required construction stormwater permits will also be obtained, and a Stormwater Pollution Prevention Plan (SWPPP) prepared describing the protection needed to reflect conditions present at the time of decommissioning. BMPs may include enhancement of construction entrances, temporary seeding, permanent seeding, mulching (in non-agricultural areas), erosion control matting, silt fence, filter berms, and filter socks.

3. OPINION OF PROBABLE DECOMMISSIONING COST

Expenses associated with decommissioning the Project will be dependent on labor costs at the time of decommissioning. For the purposes of this report, 2024 average market values and similar project experience were used to project labor expenses. Fluctuation and inflation of the labor costs were not factored into the projections.

3.1 DECOMMISSIONING EXPENSES

Decommissioning costs include costs associated with disposal of components not sold for salvage, including materials which will be disposed of at a licensed facility, as required. Decommissioning costs also include backfilling, grading, and restoration of the proposed Project site as described in Section 2. Table 2 summarizes the projections for decommissioning activities associated with the major components of the Project.

TABLE 2 PROJECTED DECOMMISSIONING EXPENSES

Activity	Unit	Number	Cost per Unit	Total
Solar Removal				
Erosion Control	Acres	500	\$250.00	\$125,000
Reinforce Access Roads	Linear Feet	34,282	\$15.00	\$514,200
Module Disassembly and Removal	Each	191,436	\$7.75	\$1,483,600
Pile Removal	Each	38,953	\$37.60	\$1,464,600
Inverter Removal	Each	25	\$4,750.00	\$118,800
Below Grade Cable Removal, MV Collection Line	Linear Feet	75,000	\$3.20	\$240,000
Fencing Removal	Linear Feet	57,969	\$8.35	\$484,000
Access Road Removal	Linear Feet	34,282	\$28.50	\$977,000
Site Leveling and Seeding	Acres	382	\$4,000.00	\$1,312,000
Subtotal				\$6,719,000
Potential Substation and Transmission Line Removal				
Electrical Equipment Removal	LS	1	\$230,400	\$230,400
Fencing and Foundations Removal	LS	1	\$193,200	\$193,200
Aggregate Removal and Spread Topsoil	Square Yard	58,741	\$10.50	\$616,800
Transmission Line Removal	Linear Feet	7,920	\$25.50	\$202,000
Subtotal				\$1,242,400
Activities Subtotal				\$7,961,600
Indirect Costs	N/A	N/A	N/A	\$1,592,300
Owner's Costs	N/A	N/A	N/A	\$200,000
Total Estimated Decommissioning Costs	N/A	N/A	N/A	\$9,753,900

3.2 OPINION OF PROBABLE SALVAGE VALUE

An opportunity will be present to reclaim material scrap value from electrical equipment and other decommissioned components, such as piles, racking and fencing. Components are broken down into their main components of aluminum, steel, silicon, and glass to be salvaged and then sold. The salvage values were projected by a consultant with extensive knowledge in the removal of industrial facilities. If there is an opportunity to sell the components for a greater value, this may further reduce the net decommissioning cost. Projections are based on current 2024 costs. The projected salvage value of the project array is presented in Table 3.

TABLE 3 PROJECTED DECOMMISSIONING SALVAGE VALUES

Item	Unit	Quantity per Unit	Salvage Price per Unit	Total Salvage Value
Aluminum	Tons	814	\$800.00	\$651,500
Steel	Tons	5,164	\$190.00	\$981,400
Silicon	Tons	278	\$800.00	\$222,600
Glass	Tons	3,942	\$100.00	\$394,200
Total Potential Salvage Value	N/A	N/A	N/A	\$2,249,700

3.3 DECOMMISSIONING COST SUMMARY AND FINANCIAL ASSURANCE

The following is a summary of the projected net cost to decommission the Project, using the information detailed in Sections 3.1 and 3.2. Projections are based on 2024 prices, with no market fluctuations or inflation considered. Table 4 represents the total projected net decommissioning cost.

TABLE 4 NET DECOMMISSIONING COST SUMMARY

Projected Totals	Cost/Salvage Value
Decommissioning Expenses	\$9,753,900
Potential Salvage Value	\$2,249,700
Net Decommissioning Cost	\$7,496,400

The Applicant will be responsible for providing a bond or similar security to ensure financial performance of decommissioning in accordance with this plan. The bond or similar security will comply with (KRS) 278.706(2)(m)(5) requirements, including the following:

- The bond or other similar security will be provided by an insurance company or surety that shall at all times maintain at least an "Excellent" rating as measured by the AM Best rating agency or an investment grade credit rating by any national credit rating agency and, if available, shall be noncancelable by the provider or the customer until completion of the decommissioning plan or until a replacement bond is secured.

- The bond or similar security will name each landowner from whom the Applicant leases land and the Energy and Environment Cabinet as the primary co-beneficiaries and will name Pike County as secondary beneficiary once consent is secured.
- The bond or other similar security will provide that at least thirty (30) days prior to its cancellation or lapse, the surety shall notify the Applicant, its successor or assign, each landowner, the Energy and Environment Cabinet, and the county or city in which the facility is located of the impending cancellation or lapse. The notice shall specify the reason for the cancellation or lapse and provide any of the parties, either jointly or separately, the opportunity to cure the cancellation or lapse prior to it becoming effective. The Applicant, its successor, or its assign shall be responsible for all costs incurred by all parties to cure the cancellation or lapse of the bond. Each landowner, or the Energy and Environment Cabinet with the prior approval of each landowner, may make a demand on the bond and initiate and complete the decommissioning plan.

The Applicant will communicate with each affected landowner at the end of the electric generating facility's useful life so that any requests of the landowner for the decommissioning phase that are in addition to lease requirements and the requirements of this decommissioning plan may, in the sole discretion of the Applicant or its successor or assign, be accommodated.



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