DIXON RUN SOLAR
243,300 KW DC – 140,000 KW AC
PHOTOVOLTAIC
GENERATION FACILITY

Ohio Road 327

Jackson, Ohio 45640

SITE DECOMMISSIONING REPORT

PROVIDED BY:

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PHOTOVOLTAIC GENERATION FACILITY

SITE DECOMMISSIONING REPORT

DIXON RUN SOLAR

243,300 KW DC – 140,000 KW AC

PHOTOVOLTAIC GENERATION PLANT

OHIO ROAD 327

JACKSON, OHIO 45640

I hereby certify this Facility Site Decommissioning Report was prepared by me or under my direct supervision.

I also certify I am a duly registered professional engineer under the laws of Ohio; Registration Number E-80109.

Keith Hardt, PE
9 September 2021

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Revision Log

0.	Issued for Client Comments	31 August 2021
1.	Revised for Client Comments	9 September 2021
2.		
3.		
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5.		
6.		

Owner: Dixon Run Solar, LLC

Client: SunEnergy1, LLC

Project: Dixon Run Photovoltaic Generation Facility

Site Decommissioning Report

Revision: 1

Prepared by: Pungo Engineering Services, PLLC

Project Number: 105.16119

Date: 31 August 2021

1. SCOPE

Dixon Run Solar, LLC (Project) is developing a photovoltaic generation plant in Jackson County, Ohio located along Ohio Road 327 in Jackson, Ohio. The project will be constructed on land purchased by the project. This Site Decommissioning Report (Report) has been developed at the request of the developer and/or owner.

A facility decommissioning plan has been developed to be submitted to the Ohio Power Siting Board.

The decommissioning plan includes the following elements:

A. Removal of all photovoltaic plant structures and appurtenant above ground equipment (includes GSU transformers, combiner enclosures, PV inverters, PV modules, racking and posts);
B. Removal of overhead medium voltage distribution facilities (includes poles, conductors and materials);
C. Removal of all fencing materials not to be utilized by the property owners;
D. Restoration of all disturbed soil on the site to conditions consistent with the land conditions and use at the time on the project construction; and
E. Restoration or reclamation of the project roads to their pre-constructoin condition unless the property owners elect to retain the improved roads.

Documentation of the pre-construction conditions of the project site are available in various documents prepared for the Project.

2. PLAN PURPOSE

The purpose of this Report is to establish the approach to determine the value of the reclaimed asset associated with the permanent closure of the Project or a portion of the Project. The facility is designed and is intended to operate for 40 years or more. This Report describes the approach for removal and/or proper abandonment of facilities and equipment associated with the Project and describe the anticipated land restoration activities to take place.

3. PROJECT COMPONENTS

The Project components that are subject to decommissioning include the equipment summarized below.

3.1 Site Construction Preparation

Construction will include stabilizing the construction entrances, exits and roadways and establishing the parking and staging areas for vehicle and equipment storage, laydown and maintenance. The laydown areas will be used for pre-assembly of components and materials and storage and staging. These areas will also provide construction worker parking. The site access roads will remain in place for the operational phase of the Project.

The Project site will be perimeter fenced with 6-foot high chain link fencing topped with 1-foot of barbed wire to secure the facility. Entry gates will be provided at several locations.

3.2 Photovoltaic Modules and Equipment

Facility construction is designed for minimal site grading. Site grading and drainage will be conducted in accordance with the approved grading and drainage plan.

The Project will be constructed using direct current (DC) photovoltaic (PV) modules mounted on fixed tilt tracking mounted on embedded post foundations. The mounting system for the modules includes steel posts supported on aluminum and steel racking.

3.3 Internal Power Collection System

The PV modules will convert sunlight into DC electricity. The PV-generated DC power will be collected from each of the multiple rows of PV modules through one or more combiner enclosures and conveyed to an inverter. The inverter will convert the DC power to AC power which will then flow to a medium voltage generator step up transformer that converts the output of the inverter to medium voltage levels. Multiple medium voltage transformers will be connected in parallel in a daisy-chain configuration and power will be delivered to a utility regional electrical distribution feeder.

Inverters, GSU transformers and PV combining switchgear will be mounted on concrete or steel foundations that will be trucked to the site and placed via crane.

3.4 Roads

Access to the project will be from Luther Jones Road in Jackson County, Ohio and private roadways adjacent to the Project site. Project access will be constructed from public roadways in accordance with Ohio Department of Transportation requirements.

3.5 Fencing

The project site will be fenced with 6-foot high chain link fencing topped with 1-foot of barbed wire to secure the facility. Entry gates will be provided at several locations.

4. PROJECT DECOMMISSIONING AND RECLAMATION

The activities involved in the facility closure will depend on the expected future use of the site. Certain facility equipment and features may be left in place for future uses, such as electric distribution facilities, roads, and drainage features.

The key Project components affected by decommissioning activities are discussed below. In general decommissioning will attempt to maximize the recycled value of all facility components. Specific opportunities for recycling (e.g., PV solar modules) are discussed below in the context of various site components. The individual Project components to be decommissioned will be recycled to the maximum extent practicable or removed from the site and disposed at an appropriately licensed disposal facility. The general decommissioning approach will be the same whether a portion of the Project or the entire Project will be decommissioned.

4.1 Decommissioning Preparation

The first step in the decommissioning process will be to assess existing site conditions and prepare the site for demolition. Site decommissioning and equipment removal can take four to twelve months. Access roads, fencing, electrical power, and other facilities will temporarily remain in place for use by the decommissioning workers until no longer needed. Demolition debris will be placed in temporary onsite storage area(s) pending final transportation and disposal and/or recycling according to the procedures listed below.

Permits and Approvals - Depending on the regulatory requirements at the time of decommissioning permits or approvals may be required for the decommissioning activities. Permits and approvals may include storm water management and approvals from the Ohio Department of Transportation for vehicle access and related traffic impacts. The site does not contain waters of the United States or Threatened or Endangered species so no federal approvals are expected. Appropriate applications for approvals will be submitted to the appropriate governing agencies and departments and approvers issued prior to decommissioning activities.

Erosion Control - Prior to commencement of decommissioning activities, erosion control measures will be implemented. The type and extent of these measures will be dictated by the regulatory requirements at the time of decommissioning. A Health and Safety Plan will be developed prior to decommissioning activities. The plan will be designed to ensure worker and public safety during decommissioning. A Health and Safety Manager will be assigned to the decommissioning activities to provide worker training and health and safety monitoring.

4.2 Photovoltaic Equipment Removal and Recycling

During decommissioning Project components that are no longer needed will be removed from the site and recycled or disposed at an appropriately licensed disposal facility. The PV module supports and racking will be removed. 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. Debris, reclaimed material and equipment will be processed for transportation and delivery to an appropriately licensed disposal facility or recycling center. Copper and aluminum conductor will be removed. Photovoltaic modules will be recycled in accordance with an approved recycling program. No hazardous materials or waste will be used during operation of the solar facility and disposal of hazardous materials or waste will not be required during decommissioning.

4.3 Internal Power Collection System

The combiner enclosures that convey AC power generated from the solar arrays will be dismantled. The inverters that convert the DC power to AC power and the GSU transformers that convert the output of the inverter and convey the power will also be dismantled and removed. The inverter platform foundation will be dismantled and removed.

4.4 Overhead and Underground Distribution System

During decommissioning those portions of the overhead medium voltage distribution system not required for the decommission process will be removed from the site and recycled or disposed at an appropriately licensed facility. The pentachlorophenol (Penta) treated or chromated copper arsenate (CCA) treated (as installed) utility poles will be transported to an appropriate landfill or recycled at an approved recycling facility as available. Aluminum and copper conductor will be removed from the site and recycled. The underground medium voltage conductor collection lines will be removed as applicable. Pole line hardware will be removed from the site and recycled or disposed at an appropriately licensed disposal facility. Guy conductors and anchors will be removed and recycled.

4.5 Roads

Onsite roads will remain in place to accomplish decommissioning at the end of the Project's life. At the time of decommissioning if the property owners determine that some of the roads will be beneficial for future use of the site those roads may remain after decommissioning. Areas where roads that will not be used will be restored. If there are any gravel or paved roads

or parking areas the gravel and pavement would be removed and shipped to an appropriate disposal site. The area of the roads will be graded consistent with existing land contours.

4.6 Fencing

Project site perimeter not to be utilized by the property owners will be removed at the end of the decommissioning project. This includes removal of all posts, fencing material, gates, etc. to return the site to pre-project condition.

4.6 Site Restoration

Once removal of all Project equipment is complete, compacted portions of the site will be de-compacted and excavations backfilled to restore the site for the prior land use. The areas to be backfilled include excavations that were created during the demolition of foundations and removal of gravel areas as well as retention basins if they are constructed. Backfill will be with native onsite material. Because the initial project site grading results in a site with a slope and topography similar to the existing site, no significant grading or rework of the site other than de-compaction will be performed. De-compaction of the general site should be conducted by chisel-plowing, disking or similar method, to a depth of three (3) feet if the site is to be used for agricultural purposes. For heavily compacted areas such as roadway and building pad areas will be ripped and then disked. When removing onsite topsoil for backfill at least eight (8) inches of topsoil should be left at the onsite source. Over the course of a year following decommissioning the site should be evaluated for areas that have settled after backfilling. These areas should also be regraded to suit the topography and the top 8 inches composed of topsoil.

4.7 Water Bodies

There are no water bodies (i.e., permanent watercourses, intermittent watercourses, seepage areas or lakes) within the project construction areas. As no water bodies are to be impacted by the project construction and the renewable energy facility does not release emissions which could pollute the air and water bodies, no impact to aquatic environment is expected. As a result no restoration of water bodies either during construction or decommissioning is planned.

5. FUTURE LAND USE

While this report is based upon the site being returned to a condition consistent with preconstruction use the actual activities involved in the facility closure would depend on the actual future use of the site. Certain facility equipment may be utilized for future uses; such as the electric distribution facilities, roads, and drainage features. Therefore the actual extent of site closure activities would be determined at the time of the closure.

6. SITE DECOMMISSIONING COSTS

The estimated decommissioning cost of the project is $1,058,453.75 in 2021 dollars. The details of the component costs are outlined in Appendix A, Table A1.

7. RECLAIMED MATERIAL VALUE

The estimated value of the reclaimed material from the project is $2,406,278.59 in 2021 dollars. The details of the component values are outlined in Appendix A, Table A2.

Appendix A

Table A1: Decommissioning Cost

Item Number	Demolition Item	Estimated Major Material	Unit	Estimated Quantity	Unit Cost	Demolition Cost
1	Collector Substation	Steel, Aluminum	lot	1	$ 145,000.00	$ 145,000.00
2	Overhead Distribution	Aluminum	lot	1	$ 132,000.00	$ 132,000.00
3	GSU Transformers	95% Steel 5% Copper	each	40	$ 2,650.00	$ 106,000.00
4	PV Inverters	Steel, Copper	each	40	$ 2,650.00	$ 106,000.00
5	PV Combiners	Steel	each	650	$ 175.00	$ 113,750.00
6	Conductor (copper)	Copper	lbs.	64,600	$ 0.375	$ 24,225.00
7	Conductor (aluminum)	Aluminum	lbs.	95,000	$ 0.375	$ 35,625.00
8	Posts	Steel	lbs.	80,000	$ 0.1025	$ 8,200.00
9	Racking	Aluminum	lbs.	930,000	$ 0.0785	$ 73,005.00
10	PV Modules	Aluminum, Glass	each	379,310	$ 0.225	$ 85,344.75
11	Fencing	Steel, Aluminum	lin. ft.	66,280	$ 1.80	$ 119,304.00
12	Site Grading	TBD	acre	440	$ 250.00	$ 110,000.00
(Year 2021) Decommissioning Cost Total						$ 1,058,453.75

Appendix A

Table A2: Reclaimed Material Value

Item Number	Reclaimed Item	Unit	Estimated Quantity	Unit Value	Total Value
1	Collector Substation Components	kVA	140,000	$ 2.25	$ 315,000.00
2	Collector Station Steel	lbs.	437,850	$ 0.0575	$ 25,176.38
3	Overhead Distribution	lot	1	$ 85,625.00	$ 85,625.00
3	GSU Transformers	kVA	140,000	$ 2,650.00	$ 280,000.00
4	PV Inverters	kW	140,000	$ 2,650.00	$ 280,000.00
6	PV Combiners	each	650	$ 125.00	$ 81,250.00
7	Conductor (copper)	lbs.	64,600	$ 2.250	$ 146,025.00
8	Conductor (aluminum)	lbs.	95,000	$ 0.450	$ 42,750.00
9	Posts	lbs.	80,000	$ 0.035	$ 2,800.00
10	Racking	lbs.	930,000	$ 0.330	$ 306,900.00
11	PV Modules	each	379,310	$ 2.150	$ 815,516.50
12	Fencing	lbs.	438,882	$ 0.0575	$ 25,235.72
				(Year 2021) Reclaimed Material Value Total	$ 2,406,278.59