

Appendix E – Decommissioning Plan



Decommissioning and Restoration Plan
Ground Mount PV Array
North Franklin Solar One

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Decommissioning and Restoration Plan

1. Overview

After the proposed Photovoltaic Facility has reached the end of its operational lifetime, North Franklin Solar One, LLC and/or the future owners (“Owner”) of the proposed Photovoltaic (PV) facility will be responsible to decommission the project. The Project is designed for an operational life of at least 35 years. It is anticipated that advances in technology and efficiency over that timeframe will create an economic advantage in replacing the project.

Decommissioning of a PV facility is the removal of all system components associated with the generating system and restoring the site to as close to pre-construction conditions as possible. Decommissioning procedures are developed to ensure environmental protection, public safety, and health, and that the work being performed is in compliance with all applicable regulations.

The Project Owner will be responsible for:

- All decommissioning costs
- Obtaining all permits required for the decommissioning, removal and legal disposal of system components prior to the start of decommissioning activities
- The complete decommissioning of the facility, including the removal and disposal of all equipment and restoration of the site in accordance with applicable permits and in compliance with all applicable rules and regulations in effect governing material disposal
- Any other measures that the Siting Council may require in its approval of this Project.

2. Estimated Costs

The industry generally recognizes that a PV facility is constructed of components that will remain valuable at the time of decommissioning. We expect that the value of the components of the array at the end of the project’s useful life in either a salvage or re-sale scenario will be greater than the expected cost of decommissioning the facility.

3. Materials

3.1. PV Modules

PV Modules are constructed of glass, aluminum, plastic, semiconductor rigid silicon cells, internal electrical conductors, silver solder, plus a variety of micro materials. Glass typically makes up 80% of the weight of a module.





3.2. Metals

Steel from foundations, racking, conduits, electrical enclosures, fencing, equipment buildings, and storage containers; aluminum from racking, module frames, electrical wire, and transformers; stainless steel from fasteners, electrical enclosures, and racking; copper from electrical wire, transformers, and inverters.

3.3. Plastics

A limited amount of plastic materials are used in PV systems due to a system's continuous exposure to the elements and long operational lifetime. Plastics typically are found in PV facilities as wire insulation, electrical enclosures, control and monitoring equipment, and inverter components. Plastic laminate films are also used in most PV module assemblies.

3.4. Concrete

Equipment pads and footings. Includes both reinforced and non-reinforced concrete.

4. Decommissioning & Restoration Plan

4.1. Preparation & Mobilization

Prior to decommissioning the system, the Owner of the facility and the decommissioning contractors will begin the preparation and planning phase of the project. The decommissioning process shall be completed no later than 2 years following the discontinuation of operations of the facility. The onsite deconstruction and restoration effort may take up to six months to complete. Prior to decommissioning activity taking place a site assessment will take place to evaluate site conditions and put a protection plan together to protect surrounding natural resources. Upon site mobilization and prior to the start of the removal of any system components, proper erosion and sediment controls will be installed. The access roads and fencing will remain in place for use by the decommissioning and site restoration workers until decommissioning activities are completed unless the site owner requests that they remain in place. Debris will be placed in dumpsters on-site until transportation to proper disposal facilities is arranged.

4.2. Photovoltaic Equipment Removal

- The system will be de-energized from the utility power grid. The infrastructure connecting the facility to the utility power grid will be removed unless the landowner determines that the electrical service line will be beneficial for future use of the site, in which case the line may remain after decommissioning.
- All wirings, cables, conduits, panelboards, inverters, transformers and associated equipment will be uninstalled and recycled as applicable.
- PV modules will be uninstalled and recycled as applicable.
- The steel racking system will be disassembled and recycled as applicable





- Steel pilings which supported the module racking will be mechanically removed and recycled as applicable.
- The demolition debris and removed equipment may be cut or dismantled into smaller pieces that can be safely lifted or carried by the deconstruction equipment being used. Most of the glass and steel and aluminum will be processed for transportation and delivery to an off-site recycling center. Minimal non-recyclable materials are anticipated; these will be properly disposed of at a qualified disposal facility.

4.3 Civil Restoration

- Any resulting holes from the removal of the steel piles will be backfilled with locally imported soil to match existing site soil conditions.
- The concrete transformer and interconnection equipment pads will be broken up and removed.
- The on-site access roads servicing the Project and the security fencing around the Project will remain in place during decommissioning activities to support the removal of equipment. Once removal activities are completed, discussion with the landowners will occur to determine if the roads or security fencing will be beneficial for future use of site. If the access roads or security fencing is determined to be beneficial for future use of site, these facilities may remain in place.
- Access roads that will not be utilized to support future use of the site will be restored to preconstruction conditions. Aggregate base material of the roads will be removed, and the compacted base section will be filled with locally imported soil to match existing onsite soils. The areas will then be seeded to match existing onsite groundcover.
- If the security fencing is not to be used, it will be removed and transported to the nearest recycling facility.
- Once all Project equipment has been removed, additional activities will occur to return the property back to conditions similar to pre-construction. Reclamation will restore vegetative cover and hydrological function after the closure of the facility.
- As previously discussed, any excavated areas remaining after the removal of equipment pads, access road base materials, or fence posts will be backfilled with locally imported soil to match existing onsite soils.
- Storm Water Basins, if applicable, may remain if there is a benefit to the owner. If not, they will be removed and restored in a manner to minimize disturbance.
- Once landform features and soils are restored, a seed mix will be applied to disturbed areas to match the existing onsite groundcover.

5. Health and Safety Concerns

Site decommissioning will entail the use of heavy equipment, the handling of heavy and sharp objects and limited exposure to potentially live electrical components. A Health and Safety Plan will be created based on the individual characteristics of the site to minimize and eliminate all possible risks and hazards. The Health and Safety Plan will include a Job Hazard Analysis that will analyze each step of construction for hazards, along with any climate conditions or hazardous materials that may be seen or used throughout the duration of the job. The plan will outline





steps to take if a hazard is identified and how to proceed with each hazard. Along with this, all workers will have training and personal protective equipment (PPE) in compliance with OSHA standards. A daily toolbox talk will be held where the foreman or supervisor will go over daily hazards and activities to be completed.

