

24 Middle Solar
Decommissioning Plan
Preparation Date: October 4th, 2022



Prepared For:
The Connecticut Siting Council





1. Executive summary

The 24 Middle Solar Farm is proposed to be a 4 Megawatt (MW) solar energy conversion system located at 24 Middle Road, Ellington, CT 06029. The facility will use solar photovoltaic technology and a single axis tracking racking system. The project will cover approximately 20 acres. As noted in this report, the estimated cost of decommissioning the system is \$307,885, and the amount that will be established with the initial financial surety is determined to be \$170,222 at year 3, including a 2% escalator on the estimated cost. These amounts do not include the salvage value of the components, which has been provided in a separate document.

2. Project information

Solar Project Address:	24 Middle Road, Ellington CT 06029
Parcel ID:	M: 053, B:47, L:0000
Solar Project Size:	up to 4 MWs AC (less than 20 acre facility)
Solar Project Type:	Community Solar
Land Agreement:	Solar Lease Agreement with PHRUMB Properties LLC

As the current project owner and operator, Community Power Group is identified as the party responsible for all decommissioning activities. A schedule showing the timeframe over which decommissioning will occur and the completion of site restoration work to be included upon application for building permit.

3. Decommissioning of the Solar Facility

At the time of decommissioning, the installed components will be removed, reused, disposed of, and recycled, where possible. The Facility Site will be restored to a state similar to its pre-construction condition. All removal of equipment will be done in accordance with any applicable regulations and manufacturer recommendations. All applicable permits will be acquired.

3.1 Equipment Dismantling and Removal

Generally, the decommissioning of a Solar Facility proceeds in the reverse order of the installation.

1. The Solar Facility shall be disconnected from the utility power grid.
2. PV modules shall be disconnected, collected, and disposed at an approved solar module recycler or reused / resold on the market. Although the PV modules will not be cutting edge technology at the time of decommissioning, they are estimated to still produce 80% of the original electricity output at year 25 and add value for many years.
3. All aboveground and underground electrical interconnection and distribution cables shall be removed and disposed off-site by an approved facility.

4. Galvanized steel PV module support and racking system support posts shall be removed and disposed off-site by an approved facility.
5. Electrical and electronic devices, including transformers and inverters shall be removed and disposed off-site by an approved facility.
6. Concrete foundations shall be removed and disposed off-site by an approved facility.
7. Fencing shall be removed and will be disposed off-site by an approved facility.

3.2 Environmental Effects

Decommissioning activities, particularly the removal of project components could result in environmental effects similar to those of the construction phase. Mitigation measures similar to those employed during the construction phase of the Solar Facility will be implemented. These will remain in place until the site is stabilized in order to mitigate erosion and silt/sediment runoff and any impacts on the significant natural features or water bodies located adjacent to the Facility Site.

Road traffic will temporarily increase due to the movement of decommissioning crews and equipment. There may be an increase in particulate matter (dust) in adjacent areas during the decommissioning phase. Decommissioning activities may lead to temporary elevated noise levels from heavy machinery and an increase in trips to the project location. Work will be undertaken during daylight hours and conform to any applicable restrictions.

3.3 Site Restoration

Through the decommissioning phase, the Facility Site will be restored to a state similar to its pre-construction condition. All project components will be removed. Rehabilitated lands may be seeded with a low-growing species such as clover to help stabilize soil conditions, enhance soil structure, and increase soil fertility.

3.4 Managing Materials and Waste

During the decommissioning phase a variety of excess materials and wastes will be generated. Most of the materials used in a Solar Facility are reusable or recyclable and some equipment may have manufacturer take-back and recycling requirements. Any remaining materials will be removed and disposed of off-site at an appropriate facility. CPG will establish policies and procedures to maximize recycling and reuse and will work with manufacturers, local subcontractors, and waste firms to segregate material to be disposed of, recycled, or reused. CPG will be responsible for the logistics of collecting and recycling the PV modules and to minimize the potential for modules to be discarded in the municipal waste stream.

3.5 Decommissioning During Construction or Abandonment Before Maturity

In case of abandonment of the Solar Facility during construction or before its 25-year maturity, the same decommissioning procedures as for decommissioning after ceasing operation will be undertaken and the same decommissioning and restoration program will be honored, in as far as construction proceeded before abandonment. The Solar Facility will be dismantled, materials removed and disposed, the soil that was removed will be graded and the site restored to a state similar to its pre-construction condition.

3.6 Decommissioning Notification

Decommissioning activities may require the notification of stakeholders given the nature of the works at the Facility Site. The local municipality in particular will be notified prior to commencement of any decommissioning activities. Six months prior to decommissioning, CPG will update their list of stakeholders and notify appropriate municipalities of decommissioning activities.

4. Management of Excess Materials and Waste

Material / Waste	Means of Managing Excess Materials and Waste
PV panels	If there is no possibility for reuse, the panels will either be returned to the manufacturer for appropriate disposal or will be transported to a recycling facility where the glass, metal and semiconductor materials will be separated and recycled.
Metal array mounting racks and steel supports	These materials will be disposed off-site at an approved facility.
Transformers and substation components	The small amount of oil from the transformers will be removed on-site to reduce the potential for spills and will be transported to an approved facility for disposal. The substation transformer and step-up transformers in the inverter units will be transported off-site to be sent back to the manufacturer, recycled, reused, or safely disposed off-site in accordance with current standards and best practices.
Inverters, fans, fixtures	The metal components of the inverters, fans and fixtures will be disposed of or recycled, where possible. Remaining components will be disposed of in accordance with the standards of the day.
Gravel (or other granular)	It is possible that the municipality may accept uncontaminated material without processing for use on local roads, however, for the

	purpose of this report it is assumed that the material will be removed from the project location by truck to a location where the aggregate can be processed for salvage. It will then be reused as fill for construction. It is not expected that any such material will be contaminated.
Geotextile fabric	It is assumed that during excavation of the aggregate, a large portion of the geotextile will be “picked up” and sorted out of the aggregate at the aggregate reprocessing site. Geotextile fabric that is remaining or large pieces that can be readily removed from the excavated aggregate will be disposed of off-site at an approved disposal facility.
Concrete inverter/transformer Foundations	Concrete foundations will be broken down and transported by certified and licensed contractors to a recycling or approved disposal facility.
Cables and wiring	The electrical line that connects the substation to the point of common coupling will be disconnected and disposed of at an approved facility. Support poles, if made of untreated wood, will be chipped for reuse. Associated electronic equipment (isolation switches, fuses, metering) will be transported off-site to be sent back to the manufacturer, recycled, reused, or safely disposed off-site in accordance with current standards and best practices.
Fencing	Fencing will be removed and recycled at a metal recycling facility.
Debris	Any remaining debris on the site will be separated into recyclables/residual wastes and will be transported from the site and managed as appropriate.

5. Costs of decommissioning

The costs below are the current estimated costs to decommission a 4 MWac Solar Facility, based on guidance from industry research and estimates from the Connecticut solar market. The salvage values of valuable recyclable materials (aluminum, steel, copper, etc) are not factored into the below costs. The scrap value will be determined on current market rates at the time of salvage.

Tasks	Estimated Cost (\$)
Remove Panels	\$13,723
Dismantle Racks	\$42,752
Remove and Load Electrical Equipment	\$5,320
Break up Concrete Pads	\$4,315
Remove Racks	\$15,000
Remove Cable	\$18,690
Remove Ground Screws and Power Poles	\$39,831
Remove Fence	\$14,246
Grading	\$5,500
Seed Disturbed Areas	\$1,500
Truck to Recycling Center	\$6,470
Total	\$170,222
Year 3 Total with 2% Escalation	\$280,754