

# BRUINING 1 SOLAR

## SunE Bruining 1 Solar Farm

### Decommissioning Plan Report



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# 1. Decommissioning Plan

There is a 20-year feed in tariff (FIT) contract with the Ontario Power Authority (OPA). The anticipated life of the project is a minimum of 25 years, given the modules and other equipment will still function and have useful life left. If the economics of solar power remain viable at the end of the OPA FIT contract, or beyond, the facility could continue to operate. If, after 20-years, another power production contract cannot be secured the facility owner would decommission the facility. It may also be possible to “repower” the site with new, more efficient solar PV technology, after 20-years or later.

## 1.1 Decommissioning During Construction

It is extremely unlikely that the project would be dismantled during construction. Should this occur the procedures used would depend on the state of construction at the time of project termination. The procedures used would be the same as those used after ceasing operation. All equipment, foundations and imported material (including roads) would be removed from the site in accordance with applicable municipal, provincial and federal requirements. The process of decommissioning the Project is assumed to take approximately 6 months, but could be less depending upon what stage of completion the Project is at prior to decommissioning. Any exposed soils would be re-seeded with native grasses or trees, depending on the preference of the landowner.

## 1.2 Decommissioning After Ceasing Operations

If the project is not repowered, the equipment will be dismantled and the lands restored to their pre-construction state (agricultural land use or as may be appropriate at that time).

If the facility is to be decommissioned and the solar array is to be removed at the end of its Feed-in-Tariff contract, the impacts will be similar to the construction phase, but in reverse sequence. All decommissioning of electrical devices, equipment, and wiring/cabling will be conducted in accordance with local, municipal, provincial and federal standards and guidelines. Any electrical decommissioning will include obtaining the required permits and following procedures before de-energizing, isolating, and disconnecting electrical devices, equipment and wiring/cabling. The procedures will include:

- The creation of temporary work areas. In order to provide sufficient area for the lay-down of the disassembled panels and racking and loading onto trucks, an area must be cleared, levelled and made accessible. The topsoil will be removed and some material may need to be added;
- Equipment will include, at a minimum: The use of cranes to remove the panels, racking, inverters and transformers and the use of trucks for the removal of panels, racking, inverters and transformers;
- Driveways and culverts (if installed) will be removed unless the landowner requests that they be left in place. Driveway bedding material will be removed and replaced with clean sub- and top-soil for reuse by the landowner for agricultural or other purposes. If requested by the landowner, and subject to approval by the Rideau Valley Conservation Authority and the Ministry of Natural Resources, the culverts (if installed) will be removed and the land will be contoured to maintain the pre-construction drainage patterns; and
- Decommissioning of on site electrical lines and foundations.

During decommissioning, mitigation measures similar to those used for a construction site (e.g., sediment and erosion controls) will be implemented and maintained by the Contractor and inspected by the Contractor’s Environmental Site Inspector. The Contractor will be responsible for preparing and submitting environmental monitoring reports to SunEdison’s Project Manager to ensure conformance with applicable regulatory requirements.

Overall, no significant adverse impacts to the environment are expected as a result of decommissioning the Project.

### 1.2.1 Dismantling PV Modules, Racks and Supports

All modules will be disconnected, removed from the racks, packaged and transported to a designated location for resale, recycling or disposal. If the modules are not to be reused in a different location, the glass and silicon will be reclaimed and the aluminum frames will be recycled. Any disposal or recycling will be done in accordance with local by-laws and requirements. The connecting underground cables and the junction boxes will be de-energized, disconnected and removed.

The steel lattice racks supporting the modules will be unbolted and disassembled using standard hand tools, possibly assisted by a small portable crane. The vertical steel posts supporting the racks and all steel support piles (driven or screwed) will be completely removed by mechanical equipment and transported off-site for salvage (driven piles) or reuse (screw piles). Any demolition debris that is not salvageable will be transported by truck to an approved disposal area. Other salvageable equipment and/or material will be removed from the site for resale, scrap value or disposal depending on market conditions.

### 1.2.2 Dismantling Electrical Equipment, Buildings and Foundations

All decommissioning of electrical devices, equipment, and wiring/cabling will be in accordance with local, municipal, provincial and federal agency standards and guidelines. Any electrical decommissioning will include obtaining the required permits, and following before de-energizing, isolating, and disconnecting electrical devices, equipment and wiring/cabling.

Decommissioning will require dismantling and removal of the electrical equipment, including inverters, transformers, underground cables and overhead lines, the prefabricated inverter enclosures and substation electrical building. The equipment will be disconnected and transported off-site by truck. The larger slab-on-grade concrete foundations and support pads will be broken up by mechanical equipment (backhoe-hydraulic hammer/shovel, jackhammer), loaded onto dump trucks and removed from the site. Smaller pre-cast concrete support pads will be removed intact by cranes and loaded onto trucks for reuse or be broken up and hauled away by dump trucks.

Prior to removal of the transformers, the oil will be pumped into a separate industry approved disposal container and sealed to prevent any spill during storage and/or transportation. Equipment and material may be salvaged for resale or scrap value depending on the market conditions.

### 1.2.3 Dismantling Roads, Parking Area and Substation Yard

Unless retained for other purposes, the access roads, the parking area and switch house yard will be removed to allow for the complete restoration of these areas. Typically, the granular base covering these areas would be removed using a wheel loader to strip off the material and dump trucks to haul the aggregate to a recycling facility or approved disposal facility. The underlying subsoil, if exhibiting significant compaction (more likely for the site entrance road than the interior access roads) will then be disced using a tractor and disc attachment to restore the soil structure and aerate the soil. Clean topsoil would be imported on-site by dump truck, replaced over the area and leveled to match the existing grade. Depending upon the time of year and the planned use of the land, the area will be returned to its pre-construction condition.

### 1.2.4 Other Components

Unless retained for other purposes, removal of all other facility components from the site will be completed, including but not limited to surface drains, culverts, and fencing. Anything deemed usable shall be recovered and reused. All other remaining components will be considered as waste and managed according to federal, provincial and municipal requirements. For safety and security, the security fence will be the final component dismantled and removed from the site.

## 1.3 Restoration of Land

Abandonment of the solar farm will not result in any impacts to surface or groundwater quality. The Project doesn't include any permanent changes to the original use of the land. Therefore, it will be

possible to restore the site to its pre-construction land use (e.g., agricultural crops, successional vegetation, etc.) by ensuring:

- Site cleanup followed by general surface grading and, if necessary, restoration of surface drainage swales and ditches.
- Any excavation and/or trench caused by the removal of building or equipment foundations, rack supports and underground electrical cables will be backfilled with the appropriate material and leveled to match the ground surface.
- The roads, parking areas and substation yard will be removed completely, filled with suitable sub-grade material and leveled.
- Any compacted ground will be tilled, mixed with suitable sub-grade materials and leveled.
- Soil will be spread as necessary.
- After the abandonment process is completed the land will be re-vegetated with native grasses, shrubs and trees.

### 1.3.1 Pre-Construction Conditions

The facility is located on unused agricultural land which is overgrown with grasses, shrubs and trees. The property is zoned as rural.

### 1.3.2 Land Restoration Activities

Once the equipment has been removed the land will be restored to its previous use – in this case, an agricultural field. This will be accomplished by removing the foundations (or part of foundation), and granular material from roadways and culverts (if installed), depending on the landowner preference. Land use will be restored using stockpiled subsoils and topsoil. If there is insufficient material onsite, topsoil and/or subsoil will be imported from a source acceptable to the landowner.

Although strict spill prevention procedures will be in place, there is the potential through the decommissioning process for small spills of solvents or fuels. The soil conditions of the site will be surveyed to the standards of the day to determine if any impacts have occurred. Should soil impacts be noted, the impacted soils will be delineated, excavated and removed, to the standards of the day, from the site for disposal at an approved and appropriate facility. The removed soils will be replaced with stockpiled sub- and top-soil, if available. If none are available, clean fill and topsoil will be imported. Where possible, native plant species will be used for the re-vegetation of disturbed areas.

## 1.4 Waste Disposal

As discussed above, the waste generated by the installation, operation and decommissioning of the solar farm is minimal, and there are no toxic residues. Any wastes generated will be disposed of according to standards of the day with the emphasis of recycling materials whenever possible.

## 1.5 Other Approvals

It is anticipated that the decommissioning will require a Building or Demolition permit obtained from the Township of Rideau Lakes.

## 1.6 Emergency Response and Communications Plans

The Emergency Response and Communications Plan as it pertains to the decommissioning phase of the Project is the same as described in the Design and Operations Report. Prior to initiating any decommissioning activities, SunEdison will notify the local authorities, the public, and relevant government agencies of their intent to decommission the Project. Copies of a detailed emergency response plan, developed in conjunction with the local emergency services, will be distributed to the local municipality prior to the commencement of operations. A plan specific to the SunE Bruining 1 Solar Farm will be developed during the construction phase of this project and will be applicable to both the operations and decommissioning phases of the Project.

During decommissioning, SunEdison will coordinate with the local authority, the public and others as required to provide them with information about the ongoing activities. Besides regular direct/indirect communication, a sign will be posted at the gate of the facility which will include the Proponent's contact information (telephone number, e-mail and mailing address) should the public have any questions, inquiries or complaints. All inquiries will be directed to the SunEdison's Project Manager who will respond to the inquiry accordingly. All inquiries will be logged electronically with the following information: date of question, inquiry or complaint, name, phone number, email address of the individual, response, date of response, and any follow-up issues.