

# Mississippi Mills Solar Park Project

## DECOMMISSIONING PLAN REPORT



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## 1. Introduction

Canadian Solar Solutions Inc., in partnership with Saturn Power Inc. (“Proponent”), proposes to develop a solar facility with a maximum name plate capacity of 10 MW, located in the Town of Mississippi Mills, County of Lanark, Ontario. The renewable energy facility will be known as the Mississippi Mills Solar Park Project (“Project”) and will be rated as a Class 3 solar facility. Canadian Solar has received a contract from the Ontario Power Authority (OPA) for the sale of electricity generated by this renewable facility through the Province’s Feed-in-Tariff (FIT) program (enabled by the *Green Energy and Green Economy Act*). The Project will require approval under *Ontario Regulation 359/09 – Renewable Energy Approval (REA or O. Reg. 359/09)* under Part V.0.1 of the *Ontario Environmental Protection Act*.

Canadian Solar is an experienced developer, owner and operator of power generation and energy delivery assets. Company activities include developing, building, owning and operating renewable energy facilities. Saturn Power Inc. will partner with Canadian Solar to develop the Mississippi Mills Solar Park Project. In the course of developing renewable energy projects, these proponents strive to satisfy various environmental approval requirements and obtain regulatory approvals that vary depending on the jurisdiction, project capacity and site location. In addition, they build long-term relationships with the communities that host the projects and are committed to the health and welfare of the community of Pakenham and Town of Mississippi Mills.

This draft *Decommissioning Plan Report* is being made available for public review and comment prior to final submission to the MOE as outlined in *O. Reg. 359/09*. The draft *Decommissioning Plan Report* provides an overview of all activities during the decommissioning phase of the Project, as well as all activities related to the restoration of land and water and managing excess materials and waste. Other reports included in the draft REA submission package include:

- *Project Description Report*
- *Construction Plan Report*
- *Design and Operations Plan Report*
- *Noise Study Report*

- *Natural Heritage Assessment (Records Review Report, Site Investigation Report, Evaluation of Significance Report and Environmental Impact Study)*
- *Water Assessment Report*
- *Archaeological Assessments (Stage 1 and Stage 2)*
- *Self Assessment of Protected Properties, Archaeological and Cultural Heritage Resources*
- *Other Supporting Documents*

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Dillon Consulting Limited is the prime consultant for the preparation of the required reports for the REA approval process. The contact at Dillon is:

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## 1.1 Project Location

The proposed Class 3 solar facility is located on the south of Concession Road 12 S and east of Needham Sideroad near the community of Pakenham, in the Town of Mississippi Mills. The outer boundary of the project location covers parts of Concession 11, Lots 3 and 4, and consists of approximately 40.5 hectares of land. The proposed site is located on privately owned lands, with geographic coordinates (centroids) as follows:

Latitude: 45° 18' 20.908" N

Longitude: 82° 14' 45.600" W

**Figure 1** shows the general location of the project in Ontario. The project location is defined in *Ontario Regulation 359/09* to be “when used in relation to a renewable energy project, a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project and any air space in which the a person is engaging in or proposes”.



Figure 1: General Location of the Mississippi Mills Solar Park Project in Ontario

## 2. Decommissioning Plan Overview

Properly maintained solar panels have an expected life span of thirty (30) years, with an opportunity for a lifetime of fifty (50) years or more with equipment replacement and repowering. The Proponent will evaluate the value of the Project at the end of the 20-year contract. This will be done in the context of maintenance requirement considerations for the Project and the available power wholesale rate at that time. A decision will then be made to determine if it is appropriate to extend the life of the Project or whether to decommission the facility. This report assumes that the decommissioning process will initiate upon the termination of the lease with the landowner for the site, at the end of the current 20 year FIT contact.

The decommissioning involves removing the perimeter fences, any concrete foundations, the cutting of any steel piles at bedrock, removal of all metal structures (mounting racks), removing all PV modules, above-ground and underground cables, transformers, inverters, fans, switch boxes, fixtures, communication tower and otherwise restoring the sites to their original condition. If it is agreed upon with the landowner, access roads may be left in place for their continued use. Otherwise, the granular road base will be stripped and all materials removed off site. The areas will be restored with native or imported topsoil to match the original grade.

The Proponent agrees to meet with the landowner prior to the decommissioning to ensure that the Proponent performs its obligations to remove their property and restore the premises. Within twelve (12) months of initiating the decommissioning, the Proponent will have removed the relevant components from the leased land. The decommissioning of the Project components will follow the *Ontario Health and Safety Act* along with any applicable municipal, provincial and federal regulations and standards. As with the construction, a manager responsible for safety will be present on site while decommissioning activities are being undertaken.

### 2.1 Decommissioning During Construction (Abandonment of Project)

While not expected and considered to be extremely unlikely, in the event that construction or operation activities cease prior to facility completion, and there is no expectation of construction re-start, the installed components will be removed and recycled and the sites restored in accordance with Equipment Dismantling and Removal, and Site Restoration

procedure described in Section 3.0 and in accordance with all applicable regulations. Decommissioning activities such as removal of cables and access roads will be conducted in consultation with landowners. Further, applicable mitigation measures as described in the *Environmental Effects Monitoring Plan* (Section 4.0 of the *Construction Plan Report*) would be implemented.

## **2.2 Decommissioning After Ceasing Operation**

In the event that the operation of the Project closes down, the installed components will be removed and recycled and the site restored in accordance with Equipment Dismantling and Removal, and Site Restoration procedure described in Section 3.0 and in accordance with all applicable regulations. Further, applicable mitigation measures as described in the *Environmental Effects Monitoring Plan* (Section 4.0 of the *Construction Plan Report*) would be implemented.

## **2.3 Restoration of Lands Negatively Affected by the Facility**

As with the Project's construction, noise levels during the decommissioning work will be higher than during operations. Proper steps will be followed to minimize this disturbance, such as working only during the hours specified by the municipal noise by-law. Also, as with the Project's construction, road traffic in the area may increase temporarily due to crews and equipment movements. Further details on site restoration are included in Subsection 3.2.

### **3. Decommissioning of the Renewable Energy Generation Facility**

#### **3.1 Equipment Dismantling and Removal**

The Project components consist of numerous recyclable materials, including glass, semiconductor material, steel, and wiring. When the project reaches the end of its operational life, the parts can be dismantled and recycled. All waste resulting from the decommissioning of the facility will be transported by a certified and licensed contractor and taken to a landfill/recycling facility in accordance with all Ministry regulations.

##### **3.1.1 Above-Ground Structure Decommissioning**

In the event that the project requires decommissioning, the following sequence for the removal of the components will be used:

###### PV Sites:

- Disconnect PV facility from the utility power grid;
- Disconnect all aboveground wirings, cables and electrical interconnections and recycle off-site by an approved recycling facility;
- Remove concrete foundations (if required). “E-House” structures, switchgear, electric rooms, and their foundations will be removed and recycled off-site by a concrete recycler;
- Remove PV modules and ship to recycling facilities for recycling and material reuse;
- Remove all waste; and,
- Remove the perimeter fence and recycle off-site by an approved metal recycler.

###### Inverters/Transformer:

- Disconnect all electrical equipment including the communication tower;
- Remove inverters, transformers, switchgear, meters, fans, lighting fixture and other electrical components and recycle off-site by an approved recycler; and,
- Remove of all waste.

### Access Roads:

- Consult with landowner to determine if access roads should be left in place for their continued use; and,
- If access roads are deemed unnecessary by the landowner, remove access road materials (i.e. granular and geotextile fabric) and restore access road locations as near as practical to its original condition with native and/or imported topsoil and seeding.

### **3.1.2 Below-Ground Structure Decommissioning**

- Disconnect all underground cables, grounding materials and transmission lines and recycle off-site by an approved recycling facility; and,
- Dig up and remove steel rack foundations and cut any steel piles at bedrock.

This decommissioning plan is based on current procedures and experience. These procedures may be subject to revision based on new experiences and requirements over time.

### **3.2 Site Restoration**

Within the project location there are no water bodies (i.e., permanent watercourses, intermittent watercourses, seepage areas or lakes), as defined by *Ontario Regulation 359/09*. As no water bodies are present 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.

Based on the Stage 1 and Stage 2 Archaeological Assessments, no archaeological resources were identified within the project location. In addition, a *Self-Assessment of Protected Properties, Archaeological and Cultural Heritage Resources* for the proposed project location was completed and it has been determined that a Heritage Assessment for the Project is not required as no negative effects to built heritage or cultural heritage landscapes are anticipated since none of these features were identified within the project location.

Once the on-site solar equipment is removed, it is expected that the site will be returned to its former agricultural use as pasture for livestock grazing. Some minor site grading may be required. Site restoration activities will be undertaken with the input from the landowner.

Similar to the construction phase, soil erosion and sedimentation control measures will be re-implemented during the decommissioning period and 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 located adjacent to the project location (see Table 1).

The access roads will be left at the landowner's request or graded to restore terrain profiles (as much as possible) and vegetated. If removed, granular and geotextile fabric will need to be disposed of in accordance with all applicable regulations. The former road areas will also be backfilled and restored to meet existing grade. This material may come from existing long-term berms, stockpile, or nearby imported soils.

The decommissioning of the site will include returning the site to allow the total runoff from the site to be similar to pre-construction conditions. If necessary, a sub-soiler may be used to remove compaction in order to appropriately restore the soil conditions for agricultural pasture activities.

**Table 1: Summary of Potential Negative Effects and Mitigation Measures for Significant/Provincially Significant Natural Features**

Significant or Provincially Significant Natural Feature Affected by Activity	Decommissioning Phase & Activity within 120 m of Natural Feature	Distance to Nearest Project Component and Components within 120m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
<b>Woodland A</b>  <b>Amphibian Breeding Habitat (ABH2), including Habitat for the Western Chorus Frog</b>  <b>Open Country Breeding Bird Habitat (OCBB1)</b>	Decommissioning – Removal Project Components	<ul style="list-style-type: none"> <li>Revised edge of Woodland A will be within 120 m of all project components. The closest component (i.e., fence) may be within 5 m of the revised woodland edge</li> <li>The wetland supporting the Amphibian Breeding Habitat is within 5 m to the closest component (i.e., fence)</li> </ul>	<ul style="list-style-type: none"> <li>Disturbance of woodland edge species</li> <li>Disturbance of wetland vegetation</li> <li>Disturbance of grassland species</li> </ul>	<ul style="list-style-type: none"> <li>Soil compaction</li> <li>Damage to root structure of woodland edge vegetation</li> <li>Re-establishment of species movement across project location after removal of fence</li> </ul>	<ul style="list-style-type: none"> <li>40.17 ha of land containing all Project components</li> </ul>	<ul style="list-style-type: none"> <li>Once during decommissioning phase</li> </ul>	<ul style="list-style-type: none"> <li>Until decommissioning activities are complete</li> </ul>	<ul style="list-style-type: none"> <li>Implement erosion and sediment control measures</li> <li>Avoid root zone for woodland edge species by undertaking decommissioning activities using heavy machinery outside of tree hoarding zone (i.e., dripline + 5 metre) and within disturbed area (i.e., project location)</li> <li>Re-establish vegetative cover once activities are complete</li> </ul>	<ul style="list-style-type: none"> <li>No residual effect</li> </ul>

### 3.3 Managing Excess Materials and Waste

During the decommissioning phase, waste materials will be removed in accordance with applicable local requirements, at a minimum. However, it is the goal of the Proponent to recycle all Project materials as much as possible and to work with local subcontractors and waste firms to segregate material to be recycled. As an example, since the mounting racks are made of manufactured metal, it is anticipated that nearly 100% of the above grade metal structures are salvageable.

The Proponent will be responsible for the logistics of collecting and recycling of PV modules and to minimize the potential for modules to be discarded as municipal waste. The module recycling program includes the glass and the encapsulated semiconductor material, which will be collected by the Proponent and recycled either into new PV modules or other products.

#### **4. Emergency Response Communications Plan**

The *Emergency Response and Communications Plans* are included in Section 6.0 of the *Design and Operations Report* prepared as part of the Renewable Energy Approval application for the proposed Mississippi Mills Solar Park Project.

## 5. Decommissioning Notification

The process for notification of decommissioning activities will be the same as the process for notification of construction activities and is detailed in Section 6.0 of the *Emergency Response and Communications Plan* which is in the *Design and Operations Report* prepared as part of the Renewable Energy Approval application for the proposed Mississippi Mills Solar Park Project.

## **6. Other Approvals**

The Proponent is aware that after the decommissioning of the proposed Project components, a Record of Site Condition under the MOE Records of Site Condition Regulation may be required.

The Proponent will ensure that all of the required approvals at the time of decommissioning of the proposed Project are adhered to.

## 7. Conditions of Approvals

The Proponent will ensure that the decommissioning stage of the proposed facility is carried out in accordance with REA requirements and the measures/practices as described in this report. The Proponent also acknowledges that available construction technology will most likely change in the next 20 years; therefore, this decommissioning plan could be subject to change. The Proponent understands that the MOE Director of Approvals could request specific decommissioning activities as a condition of REA approval that could include, for example:

- Providing notification regarding the plans to continue or cease the operation of the proposed facility by the end of power purchase agreement;
- Providing notification regarding the need for an application for amendment to the REA to keep the proposed facility in operation after the end of power purchase agreement;
- Providing timelines for the start and completion of the decommissioning activities;
- Keeping this report updated to ensure that proper decommissioning is outlined should a portion of the facility require removal due to technical failure;
- Providing restoration of the site as close to a pre-construction state as feasible; and,
- Providing a decommissioning cost estimate as well as the methods for ensuring that the funds will be available for decommissioning and site restoration.

## 8. References

Dillon Consulting Limited, 2012, Canadian Solar Solutions Inc., in Partnership with Saturn Power Inc., Mississippi Mills Solar Park Project, Construction Plan Report.

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The Archaeologist Inc., 2011, Stage 1 and 2 Archaeological Assessment, Mississippi Mills Solar Farm.

Town of Mississippi Mills Community Official Plan and Comprehensive Zoning By-law No. 01-70.