

# Project Liskeard 1, 3 and 4

## DRAFT DECOMMISSIONING PLAN REPORT



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## 1. Introduction

Canadian Solar Solutions Inc. (Canadian Solar) is a wholly owned subsidiary of Canadian Solar Inc. dedicated to the Canadian solar market and is an experienced developer, owner and operator of solar power generation in Canada and abroad. The company offers skills and has expertise across all aspects of solar power generation, including management, business development, marketing, sales, engineering, project management, manufacturing, and research and development. In the course of developing renewable energy projects, Canadian Solar always satisfies and obtains the various environmental approvals that apply to the applicable jurisdiction. In addition, Canadian Solar works with local municipalities and stakeholders to build long-term relationships with the communities that host its projects. Canadian Solar is committed to the health and welfare of the City of Temiskaming Shores to ensure that Project Liskeard 1, Liskeard 3 and Liskeard 4 is successful for all stakeholders.

Canadian Solar proposes to develop a solar project on three (3) separate properties each with a maximum name plate capacity of 10 MW (AC), for a total of 30 MW, located near New Liskeard, in the City of Temiskaming Shores, Ontario. The renewable energy facility will be known as Project Liskeard 1, 3 and 4 (L1, L3 and L4) and is rated as a Class 3 solar facility. Canadian Solar has received three separate contracts from the Ontario Power Authority (OPA) for the sale of electricity generated by this renewable energy 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)* under Part V.0.1 of the *Ontario Environmental Protection Act*.

In addition, Section 4(3) of the Regulation states that two or more facilities shall be considered a single facility if they are "*to function as an integrated or aggregated system for generating electricity.*" For instance, if two or more facilities are electrically interconnected prior to connection to the distribution or transmission system, they may be considered integrated or aggregated and a single project for the purpose of applying for an REA. In this case, the three sites will be electrically interconnected and there will be a common connection point to the existing 115kV transmission network. Therefore, Liskeard 1, 3 and 4 are considered to be integrated and aggregated as a single Class 3 Solar Facility and one Project for the purpose of the REA process, which means that one set of REA reports, will be prepared to address all three

sites in aggregate. This benefits the approval process by minimizing duplication of effort, considers the combined assessment of environmental effects and will facilitate a clearer and streamlined consultation process.

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* 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 and Evaluation of Significance Report)*
- *Water Assessment and Water Body Reports*
- *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 three separate properties within the City of Temiskaming Shores on the west side of Highway 11, just west of New Liskeard (Figure 1). The proposed sites are located on municipal and privately owned lands with geographic coordinates as follows:

### Liskeard 1

Location:	Latitude: 47° 30' 46.04" N, Longitude: 79° 42' 33.08" W
Legal Description:	E ½ of S ½, Lot 5, Concession 2, Geographic Township of Dymond, City of Temiskaming Shores
Municipal Address:	704137 Rockley Road Temiskaming Shores, ON P0J1P0
Size:	10MW AC (12.01 MW DC)

## Liskeard 3

Location:	Latitude: 47° 29' 30.57" N, Longitude: 79° 42' 23.88" W
Legal Description:	Lots 5 and 6, Concession 6, Geographic Township of Bucke, City of Temiskaming Shores
Municipal Address:	Radley Hill Road and Highway 11 Temiskaming Shores, ON P0J1P0
Size:	10MW AC (12.01 MW DC)

## Liskeard 4

Location:	Latitude: 47° 30' 14.34" N, Longitude: 79° 42' 44.70" W
Legal Description:	N ½, Lot 5, Concession 1, Geographic Township of Dymond, City of Temiskaming Shores
Municipal Address:	704130 Rockley Road Temiskaming Shores, ON P0J1P0
Size:	10MW AC (12.01 MW DC)

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 Project Liskeard 1, 3 and 4 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. Canadian Solar 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 towers and otherwise restoring the sites to their original condition. If it is agreed upon with the landowners, 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.

Canadian agrees to meet with the landowners prior to the decommissioning to ensure that it performs its obligations to remove their property and restore the premises. Within twelve (12) months of initiating the decommissioning, Canadian Solar 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 towers;
- 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 of 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

There are no Provincial Parks or Conservation Reserves within 120 m of the project location. In addition, no Provincially Significant Wetlands, Significant Valleylands, Significant Wildlife Habitat or Areas of Natural and Scientific Interest will be affected during decommissioning as none of these features are located within 120 m of the Project's infrastructure. Appropriate mitigation measures, as outlined in the *Construction Plan Report*, will be implemented.

Within 120 m of the project location, there are seven (7) water bodies (intermittent streams), as defined by Ontario Regulation 359/09. No decommissioning activities will occur within 30 m of these water bodies; therefore, all potential negative environmental effects of the project are considered to be indirect effects associated with the drainage area for each water body. None of the decommissioning activities are expected to have any physical or functional effect on a water body provided the appropriate mitigation measures, as outlined in the *Construction Plan Report* are implemented.

As noted in the *Construction Plan Report*, 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 has been completed. The Self-Assessment concluded that there are no protected properties, as defined in the Table in Section 19(1) of *O.Reg. 359/09*, that exist within or in the vicinity of the project location. Therefore, no adverse effects on protected properties will occur. There are no other identified areas of cultural heritage concern, as determined by the checklist system of the MTC (2011a).

Once the on-site solar equipment is removed, it is expected that the majority of sites will be returned to their 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 landowners.

The access roads will be left at the landowners' requests 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.

### 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 Canadian Solar 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.

Canadian Solar 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 Canadian Solar 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 proposed Project Liskeard 1, 3 and 4.

## 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 Project.

## 6. Other Approvals

Canadian Solar 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.

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

## 7. Conditions of Approvals

Canadian Solar 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. Canadian Solar also acknowledges that available construction technology will most likely change in the next 20 years; therefore, this decommissioning plan could be subject to change. Canadian Solar 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

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