



- **Canadian Solar Developers Ltd.**

## **Draft Decommissioning Plan Report**

### **Type of Document**

Draft Report

### **Project Name**

Draft Decommissioning Plan Report  
Proposed Ground Mount Solar Facility L.P #5  
8338 Scotchmere Drive, Strathroy, ON  
OPA FIT Program: FIT-FL67GB5

### **Project Number**

V00002250-00

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**Canadian Solar Developers Ltd.**  
**Draft Decommissioning Plan Report**

**Prepared for:**

**Canadian Solar Developers Ltd.**  
**Ground Mount Solar PV Power Project – L.P #5**

**August 21, 2012**

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## Revision History

Issue	Issue Date	Summary
1.0	August 10, 2012	Municipality of Strathroy-Caradoc
2.0	September 28, 2012	Middlesex County Library

## Legal Notification

This report was prepared by **exp** Services Inc. for the account of **Canadian Solar Developers Ltd.**

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## Executive Summary

Canadian Solar Developers Ltd. is the proponent for the development of a 100 kilowatt solar power project in the Municipality of Strathroy-Caradoc at 9307 Union Drive. An application has been made for the site L.P#5 and a file opened under the OPA FIT Program (FIT-FL67GB5). **Exp** Services Inc is completing all REA-related reports and will be representing Canadian Solar Developers Ltd during the application and approval process.

The Decommissioning Plan Report (DPR) has been prepared as part of an application for a Class 3 Solar Facility under O.Reg.359/09 Renewable Energy Approval (REA) under Part V.0.1 of the Ontario Environmental Protection Act as amended by O.Reg. 521/10 and O.Reg. 231/11.

This report follows the protocols and procedures set out for REA projects. Details of construction for the decommissioning activities have been set out. Negative environmental effects as a result of construction activities have been identified and mitigation measures presented. The environmental impacts during the decommissioning phase have been determined to be fully mitigable.

The DPR is supported by several background studies that have also identified and assessed the potential impacts of the proposed works on the environment / natural heritage, as well as other social and cultural aspects of the site. L.P #5 is immediately to the west of another 100 kW solar facility described as L.P #6.

Measures to return the site to its original agricultural usage have been described. In addition, the site will be left in a safe and clean condition.

Public, municipal and aboriginal notification has been identified as part of the REA requirements for the decommissioning of the solar array field. The Emergency Response Plan (ERP) along with an Emergency Communications Plan as set out in the Design and Operations report will be followed for this project. An ERP will be prepared and formalized with the local authorities.

## Table of Contents

<b>1.</b>	<b>Introduction.....</b>	<b>7</b>
<b>2.</b>	<b>General Information .....</b>	<b>7</b>
2.1	Project Name, Applicant and Location .....	7
2.2	Energy Source, Nameplate Capacity and Class of Facility .....	9
2.3	Supporting Documentation .....	9
2.4	Land Ownership .....	9
<b>3.</b>	<b>Decommissioning Activities.....</b>	<b>10</b>
3.1	Project Abandonment (During Construction or Operations).....	10
3.2	Project Decommissioning at End-of-Agreement .....	11
3.3	Waste Materials .....	11
3.4	Site Restoration .....	11
<b>4.</b>	<b>Potential Negative Environmental Effects and Mitigation.....</b>	<b>11</b>
<b>5.</b>	<b>Emergency Response Plan and Communications Plan .....</b>	<b>12</b>
<b>6.</b>	<b>Stakeholder and Public Communications - Decommissioning Phase .....</b>	<b>12</b>
<b>7.</b>	<b>Conclusions .....</b>	<b>12</b>

### APPENDICES

Appendix 1 Project Site Plan

## List of Figures

Figure 1: Aerial Photo of the Project Location .....	8
Figure 2: Project Location Road Map .....	8

# 1. Introduction

As part of an application for a Renewable Energy Approval (REA) from the Ontario Ministry of Environment (MOE), any renewal energy projects are required to submit a Decommissioning Plan Report (DPR). The DPR is prepared in accordance with the March 1, 2010 draft of Technical Bulletin Four: Chapter 7, Guidance for preparing the Decommissioning Plan Report as part of an application under O.Reg.359/09 Renewable Energy Approval (REA) under Part V.0.1 of the Ontario Environmental Protection Act as amended by O.Reg. 521/10 and O.Reg. 231/11. The MOE Director may request an updated and comprehensive decommissioning plan six months in advance of the start of any decommissioning. This DPR is to be consistent with information presented in other related reports, and will address and describe the following in relation to the proposed solar power project:

- Procedures for dismantling or demolishing the components of the facility.
- Identification of potential negative environmental effects, and mitigation measures
- Activities related to the restoration of any land and water to bring the site into a condition consistent with the probable future land use.
- Procedures for managing excess material and waste.

The objective for the decommissioning of the solar array field is to ensure that there are no significant environmental or social effects during the construction activities and to restore the site to its original agricultural usage.

A Project Description Report for the Ground Mount Solar PV Power Project – L.P #5 was prepared on November 16th, 2011, and is available for viewing at the proponent's website ([www.futuresolardevelopments.com](http://www.futuresolardevelopments.com)). An application has been made for the site L.P#5 and a file opened under the OPA FIT Program (FIT-FL67GB5).

## 2. General Information

### 2.1 Project Name, Applicant and Location

The proposed solar power project is named Ground Mount Solar PV Power Project – L.P #5 (the Project). It is being initiated by Canadian Solar Developers Ltd., based in Barrie, Ontario. **Exp** Services Inc is completing all REA related reports and will be representing Canadian Solar Developers Ltd. during the application and approval process.

The Project is located in the Municipality of Strathroy-Caradoc, and is approximately 25 km west of the City of London. The project address is L.P #5 8338 Scotchmere Drive, Strathroy-Caradoc, Ontario, N7G 3H3. The Project area and local road maps are illustrated in Figures 1 and 2. L.P #5 is immediately to the west of another solar facility described as L.P #6 that is being developed by Canadian Solar Developers Ltd. A common service trench for each electrical cable from the respective solar array field to the Ontario Power Authority on Scotchmere Drive is situated on the L.P #5 site.

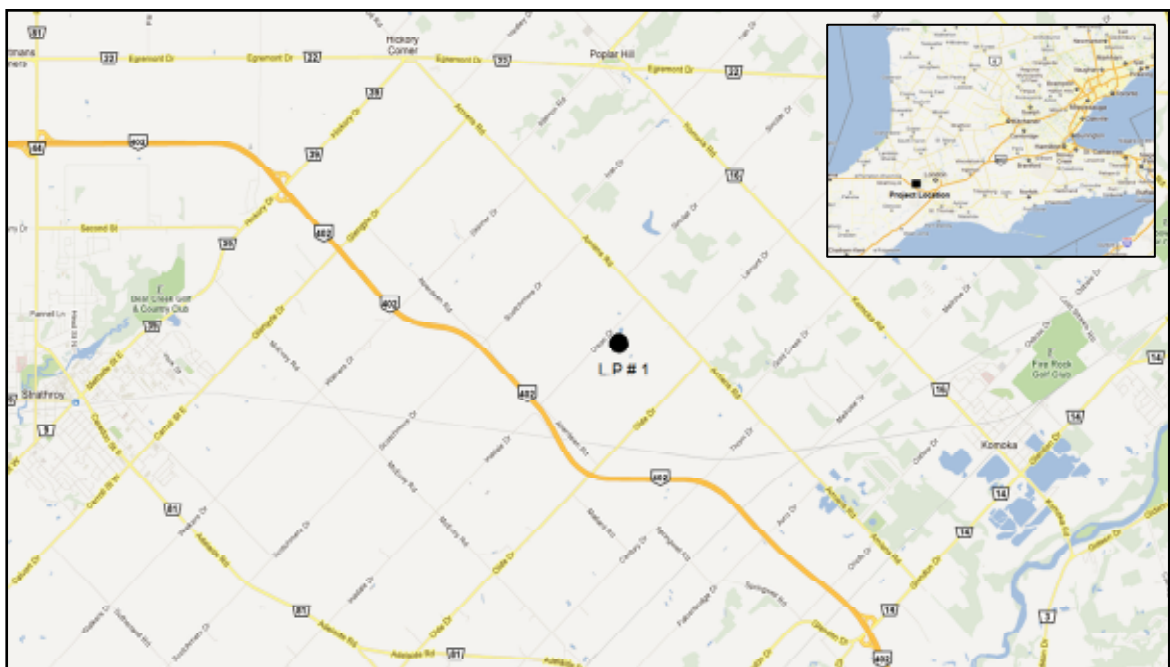
The solar array is located in a cultivated field and is situated 90 metres to the west of the farmyard. Access can be gained to the site through the farmyard. The land is gently sloping in a south- south-westerly direction.



Figure 1: Aerial Photo of the Project Location



Figure 2: Project Location Road Map



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The project website and electronic copies of this Decommissioning Plan Report (DPR) and supporting documents are available at: [www.futuresolardevelopments.com/projects](http://www.futuresolardevelopments.com/projects).

## 2.2 Energy Source, Nameplate Capacity and Class of Facility

The project consists of a ground mounted, solar panel array used to convert solar energy into electricity using photovoltaic panels (PV). The maximum name plate capacity is 100 kW. The facility is classified as a Class 3 solar facility. The electricity generated is connected to the electrical distribution system of the Ontario Power Authority (Hydro One Networks Inc.).

## 2.3 Supporting Documentation

Supporting documentation of the draft Decommissioning Plan Report includes:

- Project Description Report (PDR);
- Design and Operations Report (DOR);
- Construction Plan Report (CPR);
- Acoustic Assessment Report (Noise);
- Natural Heritage Assessment Record Review Report;
- Natural Heritage Site Investigation Report;
- Water Assessment Records Review Report;
- Water Assessment Site Investigation Report; and
- Archaeological Assessment Reports (Stages 1 and 2).

## 2.4 Land Ownership

Canadian Solar Developers Ltd. has entered into a long term lease agreement with the landowner.

## 3. Decommissioning Activities

Decommissioning of the solar array facility may occur if the Project is abandoned during construction, or during operations, or at its component end-of-life (typically 30 or more years). Most undertakings for the supply of power with the Ontario Power Authority (OPA) are typically 20 years. For the L.P #5 Project, the end of this supply agreement is assumed to be its life-cycle. The exact procedures for the restoration of the project site will be related to the future land usage of the project location. Presently, the land is classified as rural agriculture and restoration activities will be presented for this usage.

The decommissioning will be undertaken by qualified contractors using the same methodology as for the solar array field construction. Equipment would be the same as that identified in the Construction Plan report. The work entails setting up a construction camp as required, installing measures to address potential negative environmental impacts, and undertaking the removal and disposal of the solar array components, both above-ground and below-ground. Much of the material in a solar array facility is reusable or recyclable. In some instances, the purchase agreement with the manufacturer may have a return and/or recycling requirement. Full site decommissioning and restoration is expected to take 1.5 months. This duration is dependent on whether materials are being reused or recycled. It is anticipated that the work would be undertaken in the summer months and to any regulatory and municipal requirements.

The facility is located at 8338 Scotchmere Drive in the Municipality of Strathroy-Caradoc, Ontario, east of Adelaide Road and north of Scotchmere Drive. The solar equipment is to be located to the west of the existing property buildings (see Site Plan, Appendix 1). A second 100 kW solar facility is being developed by Canadian Solar Developers Ltd. to the east of L.P #5.

### 3.1 Project Abandonment (During Construction or Operations)

In the event that the project is abandoned during construction, orders for materials not delivered to site will be cancelled. Materials that are packaged will be returned to the manufacturer un-opened. Other stockpiled, assembled and installed materials will be dealt with similar to end-of-agreement decommissioning for above-ground and below-ground works. Decommissioning during the operational stage will be the same as at the end-of-agreement. Greater care in handling may be required if materials are to be reused.

Dismantling activities would include:

- Notification to relevant agencies that the Project has been discontinued and that the decommissioning plan is being implemented;
- Taking the system off-line and ensuring all distribution switches are in the disconnect position;
- Dismantling of PV panels with support frames, and mounting frames and bases using construction equipment similar to that identified in the Construction Plan Report, and trucking off-site to the receiving destination either for reuse or recycling;
- Removal of any above-ground structures within the Project site (transformers, inverters, combiners, disconnect switches and splitters, revenue meter, high voltage interrupter and isolation switch, cabinetry, foundation pads, and fencing);
- Removal of any buried structures to a minimum of depth of 1 metre;
- After disconnecting electrical cables leading to underground ducts, excavating and burying cable ends a minimum of 1 metre below grade;
- Excavating and removal of site access materials and disposal off-site;
- Site preparation of disturbed areas and spreading of stockpiled topsoil; and

- Removal of any off-site electrical works (overhead distribution system and any disconnect switching) owned by Canadian Solar Developers Ltd.

### 3.2 Project Decommissioning at End-of-Agreement

Project decommissioning at the end-of-agreement would be the same as during the operational phase. Structural materials (steel frames) and most electrical components would have reached their life expectancy and would not be considered for reuse. A detailed inspection and testing of the PV panels would be undertaken to determine if they were salvageable. This being the case, the Owner may choose to stockpile the panels at a warehouse for their own further use, sell to other users, or possibly return to the manufacturer.

### 3.3 Waste Materials

Waste materials, whether solid or environmental, will be sorted per type for recycling and taken to the nearest approved facility in accordance with provincial waste management regulations. Licensed haulers will be used where required. Tickets from the receiving facility will be collected.

### 3.4 Site Restoration

Construction activities for the decommissioning will be contained within the original working area. The solar array field was vegetated (grassed) to control erosion and encourage infiltration. The original construction footprint relates to the granular access road and the above-ground electrical equipment, and the concrete foundation supports. The former required removal of the topsoil, while the latter rests on grade. Decommissioning may result in further mixing of the soil profiles (topsoil and subsoil), compaction, erosion and potential loss of soil fertility (stockpiling).

Arrangements will be made with the landowner (farmer) to scarify to a depth of 150mm the area where topsoil had been removed. The stockpiled topsoil will be placed in this area to meet the original grade. To regain its nutrient value, organics (manure) will be tilled into the topsoil. The bare spots within the grassed area will be top-dressed and reseeded with similar grass. Discussions with the landowner will be held to determine if the field is being returned to active cultivation. This being the case, the existing grass will be ploughed and disced to break up the sod. At other disturbed areas where works were installed, a similar approach of backfilling and compacting at excavations having a depth of 0.3 metres or more, scarifying and adding topsoil with organics will be undertaken prior to seeding as required.

## 4. Potential Negative Environmental Effects and Mitigation

Activities for decommissioning are anticipated to be the same as that undertaken for construction. Excavation operations could produce dust and noise as well as sediment transport. Equipment maintenance and operation could result in the potential for environmental spills. Local traffic will be increased. There should be no impact to vegetation, water resources, and cultural heritage. Construction best management practices will be employed. Mitigation measures will follow the requirements set out in the Construction Plan Report including designating areas for equipment service and refueling, installing and maintaining sediment and erosion control measures, and carrying out the work to the hours set out in any local bylaws.

## 5. Emergency Response Plan and Communications Plan

The protocols and reporting procedures requiring emergency response including environmental spills outlined in the Emergency Response and Communications Plans in the Design and Operations Report (Section 7) will be followed.

## 6. Stakeholder and Public Communications - Decommissioning Phase

Stakeholder and public, municipal and aboriginal communications for the decommissioning phase will generally follow that presented in the Design and Operations Report. Six months before commencing the work, all stakeholders will be formally notified. The municipality and impacted utilities will be contacted regarding the planned construction activities including haul roads, and work schedule and timing. The contractor will undertake a precondition assessment of the haul road and notify the municipality of any areas of concern. Damage to infrastructure will be repaired by the contractor to the requirements of the municipality. Regulatory approvals as well as any licenses will be obtained as necessary. When the site has been fully decommissioned, further notification will be directed to the stakeholders including the MOE and local power authority.

Complaints related to the construction activities will be documented and addressed in a timely manner to the communications plan as identified in the Design and Operations report.

## 7. Conclusions

The Decommissioning Plan Report has been prepared as part of an application for a Class 3 Solar Facility under O.Reg.359/09 Renewable Energy Approval (REA) under Part V.0.1 of the Ontario Environmental Protection Act as amended by O.Reg. 521/10 and O.Reg. 231/11.

The site will be returned to a safe and clean condition. The objective of ensuring that there are no significant environmental or social effects during the construction activities and restoring the site to its original agricultural usage are achievable.

Public, municipal and aboriginal notification has been identified as part of the REA requirements for the decommissioning of the solar array field. An Emergency Response Plan and Emergency Communications Plan as set out in the Design and Operations report will be followed.

## Appendix 1 – Project Site Plan



