DAVID BROWN SOLAR PARK
DECOMMISSIONING PLAN REPORT

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Prepared for:

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Record of Revisions

Revision	Date	Description
0	September 2012	Draft Submission to Municipalities
1	November 2012	Draft Submission to Public
2	February 2013	Final Submission to MOE

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1.0 Introduction

1.1 PROJECT OVERVIEW

Saturn Power Inc. ("Saturn") is proposing to develop, construct and operate the 10 Megawatt (MW) David Brown Solar Park ("the Project") within the Township of South Stormont, United Counties of Stormont, Dundas and Glengarry, Ontario, in response to the Government of Ontario's initiative to promote the development of renewable electricity in the province.

For the purposes of this report, the Project Location represents the proposed physical footprint of the Project including the proposed facility components and temporary areas used during construction. The Zone of Investigation includes the Project Location in addition to a 120 metre (m) radius around the Project Location used to conduct environmental investigations. Figure 1 in Appendix A shows the Project Location and Zone of Investigation.

Please reference the Project Description Report for more information.

1.2 REPORT REQUIREMENTS

The Decommissioning Plan Report has been prepared in accordance with Item 3, Table 1 of O.Reg.359/09 and the Ministry of the Environment's (MOE's) guidance document "Technical Guide to Renewable Energy Approvals" (MOE, 2011). O.Reg.359/09 sets out specific content requirements for the Decommissioning Plan Report as provided in the following table (Table 1.1).

Table 1.1: Decommissioning Plan Report Requirements (as per O. Reg. 359/09 – Table 1)

Requirements	Completed	Section Reference
Set out a description of plans for the decommissioning of the renewable energy generation facility, including the following:		
1. Procedures for dismantling or demolishing the facility.	✓	2.1 & 2.2
2. Activities related to the restoration of any land and water negatively affected by the facility.	✓	2.3
3. Procedures for managing excess materials and waste.	✓	2.4

2.0 Decommissioning During Construction (Abandonment of Project)

In the event that Saturn Power cannot successfully complete the construction of the Project, the rights to the Project (and any associated liabilities and obligations) would be sold and the Project would be successfully constructed by the purchasing developer.

In the event that a delay occurs in the purchasing of the Project by another developer, Saturn Power would be responsible for interim environmental protection. In the event that the site has been cleared and/or excavated in preparation for installation of Project infrastructure, appropriate environmental protection measures will have been implemented to prevent topsoil erosion and/or watercourse sedimentation (see the Construction Plan Report). The extent of environmental protection measures required would be dependent on the progress made at the time of Project abandonment, and would be determined through site inspections by qualified specialists. Possible measures would include, as appropriate, erosion and sediment control fencing, filling excavated areas, replacement of topsoil and/or reseeding and re-vegetation. Saturn Power would ensure mitigation measures were appropriately put in place prior to any extended periods of inactivity on the site.

In the event that the Project is not purchased by another developer, Saturn Power would be responsible for decommissioning of the Project. The probable end use for the site if abandoned during construction would be a return to agricultural use. In such a case, the decommissioning process to be followed and the mitigation measures to be implemented would be the same as those detailed in Section 2.2 for decommissioning after ceasing operation of the Project.

3.0 Decommissioning After Ceasing Operation

Project components and facilities are expected to be in operation for the term of the 20 year Ontario Power Authority Feed-In Tariff contract. Following the term of the contract, a decision would be made regarding whether to extend the life of the facility or to decommission. With good maintenance and refurbishment as necessary, the Project could be expected to operate for a longer period of time.

In the event that operation of the facility is to cease, decommissioning will entail the removal of facility components and restoring the land to an acceptable condition for its probable future use, which is expected to be agricultural. The remainder of this section describes the measures that would be undertaken at cessation of Project operation.

3.1 GENERAL ENVIRONMENTAL PROTECTION DURING DECOMMISSIONING

During all decommissioning and restoration activities, general environmental protection and mitigation measures would be implemented. Many activities during decommissioning would be comparable to the construction phase such as movement of workers and materials, the use of heavy equipment on site, and soil moving activities. As such, general mitigation measures and best management practices as appropriate, including erosion and sediment control, air quality and noise mitigation, and contingency plans for spills are provided in the Construction Plan Report.

All decommissioning and restoration activities will be performed according to the requirements of relevant government agencies, and will be in accordance with all relevant statutes in place at the time of decommissioning.

3.2 PRE-DISMANTLING ACTIVITIES

Prior to engaging in any decommissioning works, Saturn Power will develop a decommissioning plan in accordance with MOE requirements at the time of decommissioning. The remainder of this report addresses general decommissioning activities as they are envisioned at this time. At the end of the Project's useful life, it will first be de-energized and isolated from all external electrical lines.

Prior to any dismantling or removal of equipment, a construction laydown area will be delineated and may be of similar dimensions as during the construction phase. This would require expansion of any parking/laydown area that was retained for the operation phase. All decommissioning activities would be conducted within the designated Project Location; this includes ensuring that vehicles and personnel stay within the demarcated areas.

Temporary erosion and sedimentation control measures will be implemented during the decommissioning phase of the Project. These measures will be enacted with consideration of

industry best management practices, and will be determined by an environmental specialist prior to decommissioning.

3.3 EQUIPMENT DISMANTLING AND REMOVAL

The following sections describe the process that will be undertaken to remove the various Project components.

3.3.1 Solar Panels

The system will be brought off-line with each of the recombiners at the inverter stations being electrically opened prior to disconnecting any panels. After a voltage and current check to ensure that the equipment is no longer generating electricity, each panel within the checked block will be disconnected from the electrical system and unfastened from the racking system. The panels will be removed in such a way as to not break any continuous ground that may be necessary to maintain a safe work environment. After removal of the panel from the rack, it will be packaged for transportation off-site.

3.3.2 Racking Systems

The fixed racks that support the solar panels will be disassembled using standard hand tools, possibly assisted by a small portable crane. Underground support structures (piles or screws), if used, would be removed using mechanical equipment. Racking systems and support structures will be transported off-site.

3.3.3 Electrical Equipment and Collector System

Electrical equipment, including inverter stations (with inverters and step-up transformers), equipment at the transformer substation and the communication tower, will be disconnected, dismantled, and removed from the site. Inspection of the equipment will be conducted throughout the decommissioning process to ensure no oil leaks are caused. In the case of an accidental oil leak, appropriate spill response protocol would be undertaken as described in the Construction Plan Report.

Electrical collection cabling (AC and DC) and data cabling throughout the site may be removed and transported off-site, depending on landowner preference at the time.

The overhead distribution line and interconnection infrastructure including all Saturn Power owned and controlled infrastructure on site and in the municipal road allowance will be removed. Infrastructure installed by HONI within the ROW will be the responsibility of HONI and will be at their discretion for removal.

3.3.4 Foundations

The concrete foundation for the transformer substation and inverter stations would be broken up mechanically using equipment such as a backhoe-hydraulic hammer/shovel, jackhammer, or similar. Concrete debris, granular and geotextile materials would be removed from the site by dump truck.

3.3.5 Access Roads, Transformer Substation Yard, and Construction Laydown Area

The graveled access roads, transformer substation yard, and parking/staging areas would be removed, including any geotextile material beneath the gravelled areas. All granular and geotextile materials would be removed from the site by dump truck. The exception to removal would be upon specific written request from the landowner to leave all or a portion of these facilities in place for future use by the landowner.

3.3.6 Other Components

Removal of all other facility components from the site will be completed unless retained by request of the landowner, including communications tower and fencing. The perimeter fence will be dismantled and removed after all major components including PV modules, racking structures and foundations have been removed. The site access road will be the final component of the facility removed.

3.4 SITE REHABILITATION/RESTORATION

The Project Location is anticipated to be restored to agricultural use.

Agricultural lands that have become compacted due to facility operation or decommissioning activities, such as access roads, would be decompacted using chisel ploughing and/or subsoiling, as determined by an environmental advisor or landowner.

Topsoil would be re-graded or added to similar depth as surrounding areas, where necessary. If necessary and approved by the land owner, imported topsoil may be added and would be of the same or similar soil type and texture as pre-construction conditions and/or adjacent lands and would be inspected and/or tested prior to importation to prevent transmission of agricultural pests to the property.

The site would be re-graded to original contours and surface drainage patterns, if requested by the landowner. Areas of exposed soil would be seeded with an appropriate seed mixture in consultation with the landowner, to prevent soil erosion until the landowner returns the site to active agricultural use.

3.5 POTENTIAL CONTAMINATION

Although strict spill prevention procedures will be in place during operation, there is the potential through the routine operation, maintenance, and decommissioning process for small spills to occur. Should soil contaminants be identified, the impacted soils will be delineated, excavated, and removed, to the standards of the day. The contaminated material will be disposed of at an MOE-approved facility. The removed soils will be replaced with appropriately compatible material.

No hazardous materials or wastes such as used lubricating oils will be stored on-site during operation and maintenance of the Project. Provided the Project is operated and maintained in-line with industry best practices there should be no significant environmental liabilities associated with cleanup or remediation. The costs for removal of Project infrastructure will be the responsibility of the owner of the Project or the purchaser of the reusable materials.

3.6 MANAGING EXCESS MATERIALS & WASTE

During dismantling and demolition of the Project, Saturn Power will follow the principles outlined in "A Guide to Waste Audits and Waste Reduction Work Plans For Construction & Demolition Projects", as specified under Ontario Regulation 102/94 (O.Reg.102/94), as amended or other applicable regulation that is in place at the time. These principles follow the 3Rs hierarchy and include the reduction of the amount of waste generated, reuse of materials, and recycling of any materials that cannot be reused. All wastes would be managed in accordance with Ontario Regulation 347, General – Waste Management (O.Reg.347) and with reference to Ontario Provincial Standard Specification 180 - General Specification For The Management of Excess Materials (OPSS 180), or relevant regulations and specifications in effect at that time.

Typical waste materials and modes of disposal, recycling or reuse are presented in Table 3.1 below:

Table 3.1: Typical Facility Decommissioning Waste Materials and Modes of Disposal

Component	Mode of Disposal
Concrete foundations	Reuse/resale of inverter station concrete pads, or crush and recycle as granular material
Solar Panels	Reuse/resale for use at a different location, or recycle glass, silicon, and aluminum frames
Cabling	Recycle
Transformers, inverters, and other equipment	Reuse/salvage/resale for use at a different location, or recycle
Prefabricated housing	Reuse/resale for use at a different location
Granular materials	Reuse/resale for use at a different location, or dispose in landfill
Oils/lubricants	Recycle through reprocessing
Hazardous materials	Dispose through licensed hauler
Geotextile material	Dispose in landfill
Miscellaneous non-recyclable materials	Dispose in landfill

Major pieces of equipment may be recyclable or reusable. The galvanized steel or aluminum racks may be recycled. Electrical equipment could either be salvaged for reuse or recycled. Components such as the cabling would have a high resale value due to copper and aluminum content. Concrete from foundations and pads could be crushed and recycled as granular fill material. Spent oils if any could be recovered for recycling through existing oil reprocessing companies.

As much of the facility would consist of reusable or recyclable materials, there would be minimal residual waste for disposal as a result of decommissioning the facility. Small amounts of registerable waste materials would be managed in accordance with O. Reg. 347 or subsequent applicable legislation. Residual non-hazardous wastes would be disposed at a licensed landfill in operation at the time of decommissioning.

3.7 MONITORING

For potential soil problem areas including trench subsidence, soil erosion, and/or stoniness would be noted. Additional monitoring activities may also be conducted, depending upon the site conditions at the time of decommissioning. If negative impacts are noted during monitoring activities, appropriate remediation measures would be implemented as necessary, and additional follow-up monitoring would be conducted, as determined by an environmental advisor.

4.0 Other Considerations

4.1 EMERGENCY RESPONSE AND COMMUNICATIONS PLAN

The Project's Emergency Response and Communications Plan is provided in the Design and Operations Report. The plan would be in effect for all phases of the Project including decommissioning.

4.2 DECOMMISSIONING NOTIFICATION

Prior to decommissioning, Saturn Power will consult with interested parties regarding the details of decommissioning and would prepare an updated and comprehensive Decommissioning Plan to meet regulatory requirements in effect at that time.

The Emergency Response and Communications Plan provided in the Design and Operations Report includes a description of non-emergency communications with Project stakeholders, which would include notification of decommissioning. Notification will be provided to the MOE, Township of South Stormont, the United Counties of Stormont, Dundas, and Glengarry, interested Aboriginal communities, interested stakeholders, and other interested agencies prior to undertaking decommissioning activities. Notification may be in the form of letters, newspaper notices, updates on the Project website, and/or direct communications.

4.2.1 Other Approvals

Following preparation of the updated and comprehensive Decommissioning Plan as noted above, Saturn Power or the Project owner would obtain all necessary approvals in effect at the time from appropriate government and regulatory bodies. Permits and approvals which may be required at the time of decommissioning are provided in the following table (Table 4.1).

Table 4.1: Potential Decommissioning Permits and Approvals

Permit / Approval	Administering Agency	Rationale
Municipal		
Municipal Consent, Work within the Right of Way	Municipality	Required for works in municipal road allowances
Occupancy Permit	Municipality	Use of county roads
Road Cut Permit	Municipality	May be required for works to municipal roads
Provincial		
Development, Interference with Wetlands, and Alterations to Shorelines and Watercourses Permit	Raisin Region Conservation Authority	Work within floodplains, water crossings, river or stream valleys, hazardous lands and within or adjacent to wetlands. Projects requiring review, *Fisheries Act* authorization and/or assessment under the *Canadian Environmental Assessment Act* are forwarded to the Department of Fisheries and Oceans
Record of Site Condition	MOE	For change of property use and/or ownership

Table 4.1: Potential Decommissioning Permits and Approvals

Permit / Approval	Administering Agency	Rationale
Notice of Project	Ministry of Labour	Notify the Ministry of Labour before decommissioning begins.
Special vehicle configuration permit	Ministry of Transportation (MTO)	Use of non-standard vehicles to transport large components
Change of Access and Heavy/Oversize Load Transportation Permit	MTO	Compliance with provincial highway traffic and road safety regulations
Wide or excess load permit	MTO	Transportation of large or heavy items on provincial highways

5.0 Closure

This report has been prepared by Stantec Consulting Ltd. for the sole benefit of Saturn Power Inc., and may not be used by any third party without the express written consent of Saturn Power Inc. The data presented in this report is in accordance with Stantec's understanding of the Project as it was presented at the time of report preparation.

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6.0 References

MOE, 2011. Technical Guide to Renewable Energy Approvals.

O.Reg.102/94 - A Guide to Waste Audits and Waste Reduction Work Plans For Construction & Demolition Projects, as required under Ontario Regulation 102/94.

O.Reg.347 - Ontario Regulation 347, General – Waste Management.

O.Reg.359/09 - Ontario Regulation 359/09 - Renewable Energy Approvals Under Part V.0.1 of the Act under the Environmental Protection Act.