



Samsung Renewable Energy Inc. and
Pattern Energy

4 Decommissioning Plan Report
For
South Kent Wind Project



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Report Revisions

Section	Report Date: July 19, 2011	Report Date: February 23, 2012 – Revised Content	Report Date: April 25, 2012 – Revised Content
1.1	Construction of the Project will commence once the Renewable Energy Approval (“REA”) has been obtained. The construction period is estimated to be approximately fifteen to eighteen months in duration, with Project commissioning anticipated in the first quarter of 2013.		Construction of the Project will commence once the Renewable Energy Approval (“REA”) has been obtained. The construction period is estimated to be approximately fifteen to eighteen months in duration, with Project commissioning anticipated in the first quarter of 2014.

Project Report

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Decommissioning Plan Report

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1. Introduction

1.1 Background

Samsung Renewable Energy and Pattern Energy (hereinafter referred to as the “Proponent”) are jointly proposing to develop the South Kent Wind Project, a 270 MW wind energy project (the “Project”), which will be located within the Municipality of Chatham-Kent in southwestern Ontario. The Project is located south of Highway 401 between the towns of Tilbury and Ridgetown to the west and east, respectively.

The Project is proposed to be up to 270 MW in size, using Siemens wind turbine technology supporting infrastructure, including access roads, buried cables, overhead collector lines including 230 kV transmission lines and two (2) substations are required to enable step-up of the voltage from 34.5 kV to 230 kV to enable connection to the Chatham Switching Station (SS).

Construction of the Project will commence once the Renewable Energy Approval (“REA”) has been obtained. The construction period is estimated to be approximately fifteen to eighteen months in duration, with Project commissioning anticipated in the first quarter of 2014. It is anticipated that the Project will be operational for at least 20 years, after which it may be decommissioned if no arrangement for further use is determined.

1.2 Objective and Scope

The Decommissioning Plan Report (the “Report”) is required as a part of an application for all renewable energy projects that must submit in order to obtain a REA permit under Ontario Regulation (O. Reg.) 359/09, as amended under O. Reg. 521/10 (January 2011) – *Renewable Energy Approvals Under Part V.0.1 of the Act*. This Report explains how the Proponent proposes to restore the Project location to a clean and safe condition at the end of the Project. This includes retiring the elements of the renewable energy generation facility, restoring the land, and managing the excess materials and waste.

The Report needs to clearly define the following:

As per the Guidance for Preparing the Decommissioning Plan Report (MOE, 2010), the Report provides information under the following three scenarios:

- decommissioning activities upon completion of operations
- decommissioning activities should the project be cancelled during construction
- restoring land negatively affected by the facility.

The Report also functions as a communication tool for Aboriginal, public, agency and municipal consultation. A draft of the Decommissioning Plan Report must be made public 60 days prior to the second public consultation meeting in accordance with Section 16 of O. Reg. 359/09 and provided to the Aboriginal communities more than 60 days prior to the second public consultation meeting.

The Report is structured as follows:

- Section 2 of the report describes the plan upon the completion of the operations of the facility.
- Section 3 describes the decommissioning plan if the Project is cancelled during construction.
- Section 4 provides the activities to be completed in order to restore the land following decommissioning.

2. Decommissioning After Ceasing Operation

It is anticipated that the Project will have a useful lifetime of at least 20 years, which can be extended for many more years with proper maintenance, component replacement and repowering. For this section of the Report, it is assumed that the Project will be decommissioned after the 20 year power purchase agreement with the Ontario Power Authority concludes. The Proponent will make sure that the entire site be restored to its pre-construction baseline condition, or as desired by the land owners, and meet the requirements of applicable local, provincial and federal legislation.

The cost of decommissioning will be borne by the owner of the wind farm and may be partially recovered through the sale and reuse of project components such as recycled material.

Generally, decommissioning involves the following actions:

- removal of the wind turbines and all electrical appurtenances for salvage
- removal of foundations and any access roads not wanted for future farming purposes to a depth suitable for ploughing (approximately 1.0 m)
- replacement of topsoil to a depth of surrounding undisturbed lands and plant with suitable ground cover dependant on time of year and in consultation with property owner
- ensuring that there are no environmental impacts related to decommissioning activities.

It is expected that decommissioning procedures will take up to 6 months to complete and during the decommissioning a sign will be erected which will include a toll free phone number for public questions, inquiries or complaints to be raised with the owner. Such communications will be logged. Should the general public require notification, this will be through newspaper and direct/general mail out, if required. All decommissioning communications with the public and agencies will be documented and kept on file.

Should the project be decommissioned following the expected normal operational phase of 20 years or more, then decommissioning will be conducted in general accordance with the approach described herein, but under consideration of regulations and technology at the time.

2.1 Equipment Dismantling and Removal

Table 2.1 provides the procedures for the disassembling of the South Kent Wind Project infrastructure.

Table 2.1 Decommissioning Procedures

Physical Works/Activities	Description of Activity
Blade, Generator and Tower Disassembly	The blade, generator and towers will be disassembled using a crane and removed from the site using a flatbed truck. Generators and towers will be sold for their recyclable resource value. Blades will be recycled if possible and if not they will be disposed of at a licensed waste facility.
Removal of Electrical Appurtenances	Electrical decommissioning will include obtaining the required permits and following lockout/tag out procedures before de-energizing, isolating, and disconnecting electrical devices, equipment and wiring/cabling. Electrical equipment will be removed from the site on flatbed trucks for salvage based on value as a recyclable resource.
Removal of Access Roads	All permanent access roads will be maintained for farming purposes if so desired by the owners of the land. The reason for not removing access roads is that it allows the farmer of the land continued, and possibly improved, access to fields. This decision will be left to the landowner at the time of decommissioning. All unwanted access roads will be restored as per method used for decommissioning concrete foundations described below. Any aggregate removed from on-site will be disposed of at a recycling facility or, if unavailable or impractical, at a licensed landfill in the Province of Ontario.
Removal of Concrete Foundation	The foundations will be broken up by heavy machinery and removed by dump truck to a depth of approximately 1.0 m and filled with soil to rebuild the grade. Clean topsoil will be imported on-site by dump truck and replaced over the area of removal and to an approximate depth of adjacent horizontal topsoil depths. The areas will be left for cultivation or seeded for erosion control, depending on the preference of the landowner and timing during the calendar year.
Removal of Distribution Lines	The distribution lines and any underground conduit will be terminated and removed from the ground. Trenches and areas where conduit has been removed will be backfilled with subsoil and other suitable substrates to rebuild the grade and stabilize the subsurface conditions for continued use for drainage and/or access purposes. Clean topsoil would be replaced over the area of a soil type and to an approximate depth of adjacent horizontal topsoil depths. Conduit will be disposed of at a licensed landfill in the Province of Ontario, and distributions lines will be sold as scrap metal to a local recycler.
Removal of Transformers	After disconnection, the oil in the transformer will be removed by pumping the oil into an industry approved disposal container by an approved hauler to an approved waste management facility. The container will be sealed to prevent spill during transportation and/or storage. The empty transformer will be removed and transported off-site by truck. The transformer will be recycled if possible and if not it will be disposed of in a licensed waste facility.

2.2 Site Restoration

The proposed Project area will be restored to its pre-development state, subject to environmental requirements and the wishes of the landowner.

The following actions are anticipated to be completed:

- All equipment, foundations and imported material (including roads) will be removed from site in accordance with applicable local, municipal, provincial and federal guidelines and regulations.
- Any damage to existing tile drainage system caused by the Project will be repaired/restored.
- Any excavation and/or trench, not related to the pre-construction drainage, will be backfilled with the appropriate material and graded to original contours, including natural drainage.
- Any compacted ground will be tilled, mixed with suitable sub-grade materials and leveled.
- All areas impacted by surface infrastructure will be replaced with suitable soil types and to an approximate depth of 1.0 m.
- Should the subsoil be negatively affected and compromise the future productive use of the land, the following will be implemented: first the topsoil will be removed and stockpiled; then the subsoil may be ripped and tilled prior to grading it; topsoil will then be replaced to its original condition and, subject to landowner consent, re-vegetated.
- Should the soil be negatively affected and compromise the future productive use of the land, nutrients may be added or fertilizers deployed.
- Topsoil and compost will be blended where required, spread and replaced to original depth.

Two (2) water crossings are proposed. Depending on wishes of the landowner and regulatory approvals, these may not be removed. If they are to be removed they will be removed to ensure that environmental protection measures are in place to prevent any harm to the watercourse.

All lands that will be occupied by project infrastructure are currently used for the growing of common field crops. These all had footprint impact which resulted in a cessation of its usage for agriculture. Generally, other potential impacts from operations to land and water include soil compaction, surface water run-off changes to the immediate environment around the Project component, groundwater flows and levels, dust emissions and sedimentation caused by erosion at the two water crossings. The above noted restoration activities will restore the land and result in removing all potential negative environmental impacts as a result of operations.

Following decommissioning of the Project, if any lands or water features are negatively affected by the Project, the Proponent is committed to restoring the site as close to its pre-construction state as feasible.

2.3 Management of Excess Materials and Waste

All waste and excess materials will be disposed of in accordance with municipal, provincial and federal regulations. All excess materials and waste will be transported off-site by flatbed trailer or dump truck by a licensed hauler. The materials and waste and how they will be managed include:

- Generator, Tower, Electrical Appurtenances and Wiring – sold for scrap value to a licensed scrap metal facility within the Province of Ontario
- Blades – disposed of at an appropriately licensed waste facility within Ontario. If financially and technically feasible at a future date, the blades may be recycled
- Concrete and Aggregate – send to recycling facility approved to receive construction building components within the Province of Ontario.

Any hazardous wastes that are used and/or stored on site such as used lubricating oils will be removed in accordance with Ontario Regulation 347 and disposed of at a licensed facility. All wastes will be transported by a licensed hauler.

Any excess soil will be locally relocated on the site and used for final landscaping, in accordance with the owner's requirements.

2.4 Emergency Response and Communications Plan

2.4.1 Emergency Response

The Project Emergency Response Plan will be implemented through all phases of the Project. This report focuses on the implementation of the plan during the decommissioning phase of the Project. The purpose of the plan is to establish and maintain emergency procedures required for effectively responding to accidents and other emergency situations, and for minimizing associated losses.

Potential emergency scenarios which could occur during the decommissioning phase include fire, personal injury and spills. The following provides the emergency response and communications procedures to be used in response to these three potential emergency scenarios.

All operating staff will be trained in the following emergency response and communications procedures.

2.4.1.1 Fire

Fire extinguishers will be located in strategic locations, such as Project vehicles and the substations electrical building and in compliance with applicable guidelines and regulations. If a fire occurs, Project personnel will attempt to extinguish it, only if it is safe to do so. If there is any risk of personal injury, extinguishing the fire will not be attempted. If a fire cannot be extinguished using the hand held extinguishers, the Project area will be evacuated and Project personnel will immediately call 911 to summons the local fire department (and ambulance if required). Project personnel will notify inhabitants at all adjacent properties if the fire appears able to move off of the Project site. All staff on site during the life of the Project will be trained in the procedure to deal with a fire and the use of an extinguisher.

During decommissioning, a clearly visible signs will be erected. The sign will include instructions to call 911 and to call a Project phone number should a passerby notice an emergency. In the event of an emergency, Project personnel at site will contact 911 and the Project Manager.

All incidents will be documented and kept on file. Documentation will include date of incident, date of reporting, name of reporter, description of the incident, cause of the incident, actions taken, communications to outside groups and internal personnel and follow-up required.

2.4.1.2 *Personal Injury*

The work during the decommissioning phase will be completed by contractors, who will establish their own Health and Safety (H&S) program in accordance with the Ontario Occupational H&S Act. Should a personal injury occur on site that does not require an ambulance, the injured worker will be taken to the local hospital. First aid supplies and maps to the local hospitals will be kept in the Project trailer. A listing of the Project personnel trained in first aid/CPR will also be posted.

Should a personal injury occur on site that does require an ambulance, Project personnel will call 911 and assist the injured worker as required until emergency personnel arrive.

In all cases of personal injury, the decommissioning Project Manager will be notified immediately.

All incidents will be documented and kept on file. Documentation will include date of incident, date of reporting, name of reporter, name of injured, description of the incident, cause of the incident, actions taken, communications to outside groups and internal personnel and follow-up required, as required by the H&S Regulations.

2.4.1.3 *Spills*

The following spills procedures are as outlined in the Ministry of Environment's (MOE) "Spills Reporting – A Guide to Reporting Spills and Discharges", dated May 2007. Spills and the types of spills that require reporting are defined in the Ontario Environmental Protection Act and Ontario Regulation 675/98 Classification and Exemption of Spills and Reporting of Discharges. At time of decommissioning, the latest update of the procedures will be used.

Spills are the unintended release/discharge of material to air, land or water. The most likely decommissioning spill scenarios include: the release of sediments to water bodies, sewage from portable washrooms and hazardous materials (e.g. compressed gases and petroleum hydrocarbons) from containers or vehicles.

Spills prevention measures are documented in the Environmental Impact Studies report completed for the Project. Should a spill occur, the following will be implemented:

- Evaluate the scene for risks to human health and safety.
- Stop the spill, if it is safe to do so.
- If there is immediate danger to human health, contact 911 for assistance, and notify anyone who may be directly impacted or is in harm's way.
- During the construction and decommissioning phases, notify the Project Manager of the incident, and notify the "Project Representative" during the operations phase.
- Contain and clean-up the spill, using on-site spill kit.
- If required, contact outside spill response contractor for assistance.
- Document and report the spill to outside agencies, as required.

A spill kit will be available on-site during the decommissioning phase and will contain equipment necessary for spills response. This will include absorbent pads, absorbent broom, polyethylene bags, neoprene gloves, protective goggles, plastic bin or metal drum, and multi-purpose granular sorbents.

Spills that could potentially occur during the life of the Project, and may need to be reported to the MOE include:

- non-approved releases/discharges (including those to land, air and water)
- discharge of fluids greater than 100 L from a vehicle
- mineral oil releases greater than 100 L from an electrical transformer or gearbox
- discharges (including sediment) to water bodies.

The Ministry of the Environment Spills Action Centre phone number (1-800-268-6060) will be posted at the Project trailer.

Documentation for all spill incidents will be kept on file and sent to the Ministry of the Environment, as required. Documentation will include date of incident, date of reporting, name of reporter, description of the incident, cause of the incident, type and amount spilled, actions taken, disposal of contaminated material, communications to outside groups and internal personnel and follow-up required.

2.4.2 Communications Plan for Non-Emergencies

During all phases of the Project, including decommissioning, a sign will be erected which will include a Project phone number (toll free) and website should the public have any questions, inquiries or complaints. All inquiries will be directed to the Proponent's Project Representative who will respond to the inquiry accordingly. All questions, inquiries and complaints 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.

During all phases of the Project, including decommissioning, should such conditions arise that the general public requires notification (such as Project changes requiring notifications) the public will be notified through newspaper and direct/general mailout, if required. Should agencies such as the local municipality or the Ministry of the Environment require notification, they will be sent the information directly by email, mail or telephone conversation. All communications will be documented and kept on file by the Proponent.

2.5 Other Approvals

Based on uncertainty regarding the regulatory timeframe under which the Project will be decommissioned, the only known approvals required for decommissioning the Project at this time could include demolition permits from the Municipality of Chatham-Kent, and a permit (Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses) by the Lower Thames Valley Conservation Authority should a watercourse crossing be removed.

3. Decommissioning During Construction (Abandonment)

In the event that construction and associated work is not completed and the Project is to be abandoned, all equipment, foundations and imported material (including roads) will be removed from site in accordance with applicable municipal, provincial and federal requirements. The specific decommissioning activities, site restoration and management of waste and excess materials will depend on the construction activities completed and components installed at the point in time of abandonment. The decommissioning activities and requirements as outlined above in Section 2 (for decommissioning after ceasing operations) will apply to all potential states of construction if decommissioning is required at some stage during construction. The emergency response and communications plan and information related to other approvals as outlined in Section 2 will also apply to decommissioning during construction.



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