



**ADELAIDE WIND ENERGY CENTRE
RENEWABLE ENERGY APPROVAL APPLICATION
DECOMMISSIONING PLAN REPORT**

APRIL 2012



**RENEWABLE ENERGY APPROVAL
APPLICATION**

ADELAIDE WIND ENERGY CENTRE

DECOMMISSIONING PLAN REPORT

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1 PREAMBLE

Kerwood Wind, Inc. is proposing to develop the Adelaide Wind Energy Centre (the “Project”) which is subject to Ontario Regulation 359/09 (Renewable Energy Approvals (REA) [1] under Part V.0.1 of the Ontario Environmental Protection Act (EPA)) and Regulation 521/10 [2]. Kerwood Wind, Inc. was awarded a Feed-in-Tariff (FIT) Contract for this Project in July 2011 and is seeking a Renewable Energy Approval from the Ontario Ministry of the Environment (MOE). Kerwood Wind, Inc. is a wholly-owned subsidiary of NextEra Energy Canada ULC (NextEra). The parent company of NextEra Energy Canada ULC is NextEra Energy Resources, LLC, with a current portfolio of over 8,800 operating wind turbines across North America.

An ESR/EIS for the Project was previously submitted to the MOE in June 2009 by Air Energy TCI Inc. (AET), the North American subsidiary of TCI Renewables Ltd. The name of the Project at the time of the June 2009 submission was the Adelaide Wind Farm. The TCI project was subsequently purchased and transferred to Kerwood Wind, Inc., however TCI has remained engaged in the project development.

This Project is considered to be a Class 4 Wind Facility. The Project is located in the Township of Adelaide-Metcalf and North Middlesex and is proposed to consist of 37, 1.62 MW turbines with a total nameplate capacity of up to 59.9 MW, though 38 turbine positions will be permitted.

This Decommissioning Plan report has been prepared in accordance with section 54.1 of O. Reg. 359/09 and the MOE’s “Technical Guide to Renewable Energy Approvals”(2011) [3].

1.1 General Project Description

The proposed Project Study Area comprises two main sectors, the Wind Energy Centre Study Area, which contains the wind farm itself, and its associated infrastructure, and the Transmission Line Study Area. Within the transmission line study area, Kerwood wind Inc. is proposing a 115 kV transmission line to run from the Project’s substation on to a switchyard and then on to a second substation (Parkhill substation) where it will be transferred to a Hydro One-owned switchyard and on to Hydro One’s 500 kV transmission line at the east end of the Transmission Line Study Area. It is important to note that the 115 kV line running from the switchyard to the Parkhill substation then to the Hydro One-owned switchyard on to Hydro One’s existing 500 kV line is common to three of NextEra’s Projects, i.e. Adelaide, Bornish and Jericho Wind Energy Centres.

The Wind Energy Centre Study Area is located in south-western Ontario, in the Township of Adelaide-Metcalf, Middlesex County, Ontario. More specifically, the wind farm components are located south of Townsend Line, west of Centre Road, north of Napperton Drive and east of Sexton Road. The total Wind Energy Centre Study Area is approximately 6,515 ha. Project components will be installed on privately-owned agricultural lots within this area, though the Project’s collection system will be partially located on public rights-of-way. General geographic coordinates of the Wind Energy Centre Study Area are presented in Table 1-1.

Table 1-1: Geographic coordinates of the Wind Energy Centre Study Area

Site	Easting	Northing
Northwest corner	436378	4767049
Northeast corner	447998	4767049
Southwest corner	447998	4756197
Southeast corner	436378	4756197

The Project also comprises a proposed transmission route which is located to the north of the Wind Energy Centre Study Area and crosses into the Municipality of North Middlesex. The proposed transmission route is to travel north from the Project substation using the existing right-of-way along Kerwood Road to a switchyard located just south of Elginfield Road. From there the transmission route is proposed to run east along Elginfield and Nairn Roads within municipal rights-of-way to a second, Parkhill, substation then to a Hydro one-owned switchyard on to an existing Hydro One 500 kV transmission line. General natural heritage information in the vicinity of the transmission line route is provided in the Natural Heritage Assessment reports, which are submitted as part of the complete REA application package.

The location of the Wind Energy Centre Study Area was defined early in the planning process for the proposed wind energy facility, based on the wind resource, approximate area required for the proposed Project, and availability of existing infrastructure for connection to the electrical grid. The Project Study Area was used to facilitate information collection and Records Review.

2 DECOMMISSIONING

The anticipated life of the Project is estimated to be a minimum of 25 years. The following sections describe how the Project will be dismantled either during construction (although unlikely) or following the operations phase of the Project.

2.1 Decommissioning During Construction

Although it is unlikely that the Project would be decommissioned prior to the operations phase, should this occur, the actual procedures for dismantling the Project would depend upon the state of construction activities. Dismantling would follow the steps outlined in Section 2.3 and any exposed soils would be re-vegetated in consultation with the landowner.

2.2 Decommissioning After Ceasing Operations

Should it be decided to not re-power the Project at the end of its service life, the steps outlined in Section 2.3 would be taken to dismantle the various Project components.

2.3 Procedures for Dismantling

If the facility is to be decommissioned and the turbines are to be removed at the end of its service life or during construction, the procedures will be similar to the construction phase, but in reverse sequence.

The procedures will include:

- 1 The creation of temporary work areas. In order to provide sufficient area for the lay-down of the disassembled wind turbine components and loading onto trucks, a 122 m x 122 m square must be cleared, leveled and made accessible. The topsoil will be removed and some material may need to be added.
- 2 The creation of crane pads. The crane pads will typically be 15 m x 35 m in size and will be located within the temporary work area around each wind turbine. The topsoil at the crane pad will be removed and approximately 600 mm of compacted crushed gravel will be added. Once the turbine disassembly is complete, the gravel area around each turbine will be removed and the area will be restored to prior use using stockpiled topsoil.
- 3 The use of cranes to remove the blades, hub and tower segments.
- 4 The use of trucks for the removal of turbines, towers and associated equipment.
- 5 The top 1 m of the turbine foundations will be removed and replaced with clean fill and stockpiled topsoil. This will be contoured to allow cultivation in the case of agricultural lands.
- 6 Roads and culverts will be removed unless the landowner requests that they be left in place. Road bedding material will be removed and replaced with clean subsoil and topsoil for reuse by the landowner for agricultural purposes. If requested by the landowner and subject to approval by the ABCA and the MNR, the culverts will be removed and the land will be contoured to maintain the current drainage patterns.

- 7 Underground electrical lines will be cut, the ends buried to 1 m below grade, and left in place. These lines are inert and will have no negative impacts on the environment, soil and cultivation practices. Above ground lines and poles that are not shared with Hydro One will be removed and the holes will be filled with clean fill.
- 8 The substation and operations building will be demolished. These will be decommissioned in a manner appropriate to and in accordance with the standards of the day. All materials will be recycled, where possible, or disposed offsite at an approved and appropriate facility.

2.4 Restoration of Land

Abandonment of the wind turbines will not result in any impacts to surface or groundwater quality. After the abandonment process is completed the land will be returned to previous agricultural conditions.

2.4.1 Land Restoration Activities

Once the equipment has been removed, the land will be restored to its previous agricultural capacity. This will be accomplished by removing the foundations (or part of foundation), granular material from roadways and culverts, depending on the landowner preference. Agricultural capacity will be restored and the land re-contoured to maintain proper drainage. Preferably, this will be accomplished using stockpiled subsoil and topsoil. If there is insufficient material onsite, topsoil and/or subsoil will be imported from a source acceptable to the landowner.

Although strict spill prevention procedures will be in place, there is the potential through the routine maintenance of the turbines, operation of the substation and/or decommissioning process for small spills of solvents or fuels. The soil conditions of the turbine areas will be surveyed per current standards to determine if any impacts have occurred. Should soil impacts be noted, the impacted soils will be delineated, excavated and removed, per applicable standards, from the site for disposal at an approved and appropriate facility. The removed soils will be replaced with stockpiled subsoil and topsoil, if available. If no subsoil or topsoil is available onsite, clean fill and topsoil will be imported.

2.5 Waste Generated

As discussed above, the waste generated by the installation, operation and decommissioning of the Project is minimal, and there are no toxic residues. Any waste generated will be disposed of according to standards of the day with an emphasis on recycling materials whenever possible. Throughout the lifecycle of the wind energy centre, the Proponent will work with the Canadian Food Inspection Agency and its Provincial and municipal partners to ensure that any woody waste is disposed of in such a way that it does not contribute to the spread of the Emerald Ash Borer.

3 EMERGENCY RESPONSE AND COMMUNICATIONS PLANS

The Emergency Response and Communications Plans for Decommissioning are the same as the procedures found in more detail in the Design and Operations Report.

4 PUBLIC, MUNICIPAL AND ABORIGINAL COMMUNITY NOTIFICATION

Decommissioning activities may require notification to stakeholders given their potential to increase traffic, noise, and general disturbance. In the eventuality of the decommissioning of the Project, Kerwood Wind Inc. will update the list of stakeholders from the area to ensure that all new stakeholders are considered and are notified of the decommissioning activities. Local and provincial agencies will also be advised to discuss potential approvals required to engage in such activities. In accordance with the requirements of REA, the stakeholder update would occur approximately six months prior to the start of the decommissioning activities.

5 OTHER APPROVALS

It is expected that decommissioning activities will require certain permits, similar to those required for construction, given the use of heavy machinery, trucks and oversize loads, and the potential for impacts to the surrounding environment. Authorisations by the following agencies or entities may be required:

- Township of Adelaide-Metcalf, in the Counties of Middlesex and North Middlesex, Ontario;
- Municipal building or demolition permits;
- St. Clair Region and Ausable Bayfield Conservation Authorities (if potential disturbance to watercourses);
- Ministry of Natural Resources (Record of Site Condition); and
- Ministry of Environment (Record of Site Condition).

Applications for the required approvals will be prepared prior to decommissioning and per the current regulations in place.

6 **SUMMARY**

This Decommissioning Plan Report has been prepared in accordance with regulatory requirements subject to *Ontario Regulation 359/09* (Renewable Energy Approval (REA)) under Part V.0.1 of the *Ontario Environmental Protection Act* (EPA)).

This report has provided procedures for decommissioning during construction and after ceasing operations. These procedures include above and below-ground decommissioning and equipment dismantling and removal.

Though site restoration has been discussed herein, it is expected that the Director will impose a condition that requires Kerwood Wind Inc. to generate an updated and more comprehensive decommissioning plan six months prior to commencement of decommissioning. This plan will provide more site-specific restoration strategies that will help return the site to pre-Project conditions.

Sections discussing emergency response, communications plans, and public, municipal, and aboriginal community notification have also been included as part of the complete Renewable Energy Approval Application.

7 **REFERENCES**

- [1] *Ontario Regulation 359/09*, made under the *Environmental Protection Act*, Renewable Energy Approvals under Part 1.0 of the Act.
- [2] *Ontario Regulation 521/10*, made under the *Environmental Protection Act*, Renewable Energy Approvals under Part 1.0 of the Act.
- [3] Technical Guide to Renewable Energy Approvals, Ontario Ministry of the Environment, July 2011.