

**RENEWABLE ENERGY APPROVAL**NUMBER 5663-9R9JTB  
Issue Date: January 30, 2015Grey Highlands Nominee (No. 1) Ltd.  
155 Wellington Street West, Suite 2930  
Toronto, ON M5V 3H1Project: Grey Highlands Zero Emission People  
Location: Municipality of Grey Highlands, County of Grey  
NOC 1M0

*You have applied in accordance with Section 47.4 of the Environmental Protection Act for approval to engage in a renewable energy project in respect of a Class 4 wind facility consisting of the following:*

- the construction, installation, operation, use and retiring of a Class 4 wind facility with a total name plate capacity of 10 megawatts.

*For the purpose of this renewable energy approval, the following definitions apply:*

1. "Acoustic Assessment Report" means the report included in the Application and entitled "Grey Highlands Zero Emission People Project - Noise Assessment Report", dated October 31, 2014, prepared by Jim Salmon and Sarah Stewart, Zephyr North Ltd. and signed by Andrea Kausel, Capstone Power Development;
2. "Acoustic Audit - Emission" means an investigative procedure that is compliant with the CAN/CSA Standard C61400-11-07 and consisting of measurements and/or acoustic modelling of noise emissions produced by wind turbine generators, assessed to determine compliance with the manufacturer's noise (acoustic) equipment specifications and emission data of the wind turbine generators, included in the Acoustic Assessment Report;
3. "Acoustic Audit - Immission" means an investigative procedure consisting of measurements and/or acoustic modelling of all sources of noise emissions due to the operation of the Equipment, assessed to determine compliance with the Noise Performance Limits set out in this Approval;
4. "Acoustic Audit Report-Emission" means a report presenting the results of the Acoustic Audit - Emission;

5. "Acoustic Audit Report-Immission" means a report presenting the results of the Acoustic Audit - Immission;
6. "Acoustical Consultant" means a person currently active in the field of environmental acoustics and noise/vibration control, who is knowledgeable about Ministry noise guidelines and procedures and has a combination of formal university education, training and experience necessary to assess noise emissions from wind facilities;
7. "Act" means the *Environmental Protection Act*, R.S.O 1990, c.E.19, as amended;
8. "Adverse Effect" has the same meaning as in the Act;
9. "Application" means the application for a Renewable Energy Approval dated February 25, 2013 and signed by Ingo Stuckmann, President and Chief Executive Officer, Grey Highlands Zero Emission People Wind Farm LP, and all supporting documentation submitted with the application, including amended documentation submitted up to the date this Approval is issued;
10. "Approval" means this Renewable Energy Approval issued in accordance with Section 47.4 of the Act, including any schedules to it;
11. "A-weighting" means the frequency weighting characteristic as specified in the International Electrotechnical Commission (IEC) Standard 61672, and intended to approximate the relative sensitivity of the normal human ear to different frequencies (pitches) of sound. It is denoted as "A";
12. "A-weighted Sound Pressure Level" means the Sound Pressure Level modified by application of an A-weighting network. It is measured in decibels, A-weighted, and denoted "dBA";
13. "CAN/CSA Standard 61400-11-07", "Wind Turbine Generator Systems – Part 11: Acoustic Noise Measurement Techniques", dated October 2007;
14. "Class 1 Area" means an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum";
15. "Class 2 Area" means an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 Areas:
  1. sound levels characteristic of Class 1 during daytime (07:00 to 19:00 or to 23:00 hours);
  2. low evening and night background sound level defined by natural environment and infrequent human activity starting as early as 19:00 hours (19:00 or 23:00 to 07:00 hours);
  3. no clearly audible sound from stationary sources other than from those under impact assessment.

16. "Class 3 Area" means a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as the following:
  1. a small community with less than 1000 population;
  2. agricultural area;
  3. a rural recreational area such as a cottage or a resort area; or
  4. a wilderness area.
17. "Company" means Grey Highlands Nominee (No. 1) Ltd. and includes its successors and assignees;
18. "Compliance Protocol for Wind Turbine Noise" means the Ministry document entitled, Compliance Protocol for Wind Turbine Noise, Guideline for Acoustic Assessment and Measurement, PIBS# 8540e;
19. "Decibel" means a dimensionless measure of Sound Level or Sound Pressure Level, denoted as dB;
20. "Director" means a person appointed in writing by the Minister of the Environment and Climate Change pursuant to section 5 of the Act as a Director for the purposes of section 47.5 of the Act;
21. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Facility is geographically located;
22. "Equipment" means the wind turbine generators and the transformer substation, identified in this Approval and as further described in the Application, to the extent approved by this Approval;
23. "Equivalent Sound Level" is the value of the constant sound level which would result in exposure to the same total A-weighted energy as would the specified time-varying sound, if the constant sound level persisted over an equal time interval. It is denoted  $L_{eq}$  and is measured in dB A-weighting (dBA);
24. "Facility" means the renewable energy generation facility, including the Equipment, as described in this Approval and as further described in the Application, to the extent approved by this Approval;
25. "IEEE Standard C57.12.90" means the IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers, 2010.
26. "Independent Acoustical Consultant" means an Acoustical Consultant who is not representing the Company and was not involved in preparing the Acoustic Assessment Report. The Independent Acoustical Consultant shall not be retained by the Acoustical Consultant involved in the noise impact assessment;
27. "Ministry" means the ministry of the government of Ontario responsible for the Act and includes all officials, employees or other persons acting on its behalf;

28. "Noise Guidelines for Wind Farms" means the Ministry document entitled, "Noise Guidelines for Wind Farms - Interpretation for Applying MOE NPC Publications to Wind Power Generation Facilities", dated October 2008;
29. "Noise Receptor" has the same meaning as in O. Reg. 359/09;
30. "O. Reg. 359/09" means Ontario Regulation 359/09 "Renewable Energy Approvals under Part V.0.1 of the Act" made under the Act;
31. "Point of Reception" has the same meaning as in the Noise Guidelines for Wind Farms and is subject to the same qualifications described in that document;
32. "Sound Level" means the A-weighted Sound Pressure Level;
33. "Sound Level Limit" is the limiting value described in terms of the one hour A-weighted Equivalent Sound Level  $L_{eq}$ ;
34. "Sound Power Level" means ten times the logarithm to the base of 10 of the ratio of the sound power (Watts) of a noise source to standard reference power of  $10^{-12}$  Watts;
35. "Sound Pressure" means the instantaneous difference between the actual pressure and the average or barometric pressure at a given location. The unit of measurement is the micro pascal ( $\mu\text{Pa}$ );
36. "Sound Pressure Level" means twenty times the logarithm to the base 10 of the ratio of the effective pressure ( $\mu\text{Pa}$ ) of a sound to the reference pressure of  $20 \mu\text{Pa}$ ;
37. "UTM" means Universal Transverse Mercator coordinate system.

*You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:*

## **TERMS AND CONDITIONS**

### **A - GENERAL**

- A1. The Company shall construct, install, use, operate, maintain and retire the Facility in accordance with the terms and conditions of this Approval and the Application and in accordance with the following schedules attached hereto:

Schedule A - Facility Description

Schedule B - Coordinates of the Equipment and Noise Specifications

- A2. Where there is a conflict between a provision of this Approval and any document submitted by the Company, the conditions in this Approval shall take precedence. Where there is a conflict between one or more of the documents submitted by the Company, the document bearing the most recent date shall take precedence.
- A3. The Company shall ensure a copy of this Approval is:
- (1) accessible, at all times, by Company staff operating the Facility and;
  - (2) submitted to the clerk of each local municipality and upper-tier municipality in which the Facility is situated.
- A4. If the Company has a publicly accessible website, the Company shall ensure that the Approval and the Application are posted on the Company's publicly accessible website within five (5) business days of receiving this Approval.
- A5. The Company shall, at least six (6) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, review its Decommissioning Plan Report to ensure that it is still accurate. If the Company determines that the Facility cannot be decommissioned in accordance with the Decommissioning Plan Report, the Company shall provide the Director and District Manager a written description of plans for the decommissioning of the Facility.
- A6. The Facility shall be retired in accordance with the Decommissioning Plan Report and any directions provided by the Director or District Manager.
- A7. The Company shall provide the District Manager and the Director at least ten (10) days written notice of the following:
- (1) the commencement of any construction or installation activities at the project location; and
  - (2) the commencement of the operation of the Facility.
- A8. As described in Schedule A of the Approval, the Company shall not construct or operate more than five (5) wind turbine generators and one (1) transformer substation, as specified in Schedules A and B of the Approval.

#### **B - EXPIRY OF APPROVAL**

- B1. Construction and installation of the Facility must be completed within three (3) years of the later of:
- (1) the date this Approval is issued; or
  - (2) if there is a hearing or other litigation in respect of the issuance of this Approval, the date that this hearing or litigation is disposed of, including all appeals.

B2. This Approval ceases to apply in respect of any portion of the Facility not constructed or installed before the later of the dates identified in Condition B1.

**C - NOISE PERFORMANCE LIMITS**

C1. The Company shall ensure that:

(1) the Sound Levels from the Equipment, at the Points of Reception identified in the Acoustic Assessment Report, comply with the Sound Level Limits set in the Noise Guidelines for Wind Farms, as applicable, and specifically as stated in the table below:

<b>Wind Speed (m/s) at 10 m height</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Sound Level Limits, dBA	40.0	40.0	40.0	43.0	45.0	49.0	51.0

(2) the Equipment is constructed and installed at either of the following locations:

- a) at the locations identified in Schedule B of this Approval; or
- b) at a location that does not vary by more than 10 metres from the locations identified in Schedule B of this Approval and provided that,
  - i) the Equipment will comply with Condition C1 (1); and
  - ii) all setback prohibitions established under O. Reg. 359/09 are complied with.

(3) the Equipment complies with the noise specifications set out in Schedule B of this Approval.

C2. Prior to construction and installation of the transformer substation the Company shall submit to the Director a written confirmation signed by an individual who has the authority to bind the Company that the subject transformer sound power levels, determined fully in accordance with the IEEE Standard C57.12.90-2010, do not exceed the maximum sound power levels specified in the Schedule B of the Approval.

C3. If the Company determines that some or all of the Equipment cannot be constructed in accordance with Condition C1 (2), prior to the construction and installation of the Equipment in question, the Company shall apply to the Director for an amendment to the terms and conditions of the Approval.

C4. Within three (3) months of the completion of the construction of the Facility, the Company shall submit to the Director a written confirmation signed by an individual who has the authority to bind the Company that the UTM coordinates of the “as constructed” Equipment comply with the requirements of Condition C1 (2).

## **D – CONFIRMATION OF VACANT LOT NOISE RECEPTORS**

D1. The fifteen (15) locations identified in the Table 7.2 entitled “Vacant lot surrogate receptor combined noise level summary table”, of the final Revised “Grey Highlands Zero Emission People Project - Noise Assessment Report Setbacks Report”, dated October 31, 2014, prepared by Jim Salmon and Sarah Stewart, Zephyr North Ltd. and signed by Andrea Kausel, Capstone Power Development; and, as the Non-participating Vacant Lots with ID numbers V2001, V2002, V2004, V2005-V2009, V2011-V2014, V2016, V2019 and V2100, are specified as Noise Receptors for the purposes of subsection 54 (1.1) of O. Reg. 359/09.

## **E - ACOUSTIC AUDIT - IMMISSION**

E1. The Company shall carry out an Acoustic Audit - Immission of the Sound Levels produced by the operation of the Equipment in accordance with the following:

- (1) the acoustic audit measurements shall be undertaken in accordance with Part D of the Compliance Protocol for Wind Turbine Noise;
- (2) the acoustic audit measurements shall be performed by an Independent Acoustical Consultant at two (2) separate occasions at the two (2) different Points of Receptions;
- (3) the Points of Reception shall be selected using the following criteria:
  - (a) the selected Point(s) of Reception should represent the location of the greatest predicted noise impacts, i.e., the highest predicted Sound Levels; and
  - (b) the selected Point(s) of Reception should be located in the direction of prevailing winds from the Facility; and
  - (c) subject to clauses (a) and (b) above and a written agreement by the Director, a measurement location other than a Point of Reception may be selected provided clear evidence is provided to the Director and the District Manager that the Point(s) of Reception are inaccessible.

E2. The Company shall submit to the District Manager and the Director an Acoustic Audit Report - Immission, prepared by an Independent Acoustical Consultant, at the following points in time:

- (1) no later than twelve (12) months after the commencement of the operation of the Facility, or such other date as agreed to in writing by the Director, for the first of the two (2) acoustic audit measurements at the two (2) different Points of Reception; and
- (2) no later than eighteen (18) months after the commencement of the operation of the Facility, or such other date as agreed to in writing by the Director, for the second of the two (2) acoustic audit measurements at the two (2) different Points of Reception.

## **F - ACOUSTIC AUDIT- EMISSION**

- F1. The Company shall carry out an Acoustic Audit - Emission of the acoustic emissions produced by the operation of the wind turbine generators in accordance with the following:
- (1) the acoustic emission measurements shall be undertaken in accordance with the CAN/CSA Standard C61400-11:07;
  - (2) the acoustic emission measurements shall be performed by an Independent Acoustical Consultant; and
  - (3) the acoustic emission measurements shall be performed on two (2) of the wind turbine generators used in the Facility.
- F2. The Company shall submit to the Director and the District Manager an Acoustic Audit Report-Emission, prepared in accordance with Section 9 of the CAN/CSA Standard C61400-11:07 by an Independent Acoustical Consultant, no later than six (6) months after the commencement of the operation of the Facility, or such other date as agreed to in writing by the Director.
- F3. In addition to the requirements described in Condition F2, the Acoustic Audit Report-Emission must include a summary of the measurement results corresponding to the Maximum Sound Power Levels (dBA) shown in Table B1 of Schedule B, supported by the Senvion letter dated July 2, 2014 (contained in the Appendix B of the Acoustic Assessment Report). The purpose of the summary is to confirm the noise specifications of the wind turbine generators with specifications included in the Application. The following items must be included in the summary:
- (1) sound power levels (overall levels and frequency spectra in octave bands for each wind speed) of the wind turbine generators;
  - (2) tonal audibility values (for each wind speed) of the wind turbine generators;
  - (3) a statement that the measured sound power levels of wind turbine generators, do not exceed the values of the Maximum Sound Power Level (dBA) shown in Table B1 of Schedule B of the Approval; and
  - (4) a statement that the wind turbine generators tonal audibility values, as per Condition F3(2), comply with the maximum tonal audibility value noted in the Acoustic Assessment Report.
- F4. If results from the Acoustic Audit Report-Emission described in condition F3 find that any of the wind turbine generators sound power levels and/or the tonal audibility values exceed the values specified within Schedule B of the Approval and/or the Acoustic Assessment Report, the Company shall:



- (1) provide within the Acoustic Audit Report-Emission a detailed description of the operational mitigation measures which shall be implemented (no later than nine (9) months after the commencement of the operation of the Facility, or such other date as agreed to in writing by the Director) at all wind turbine generators at the Facility to ensure compliance with the applicable criteria and
- (2) carry out an additional Acoustic Audit - Emission of the acoustic emissions produced by the operation of the wind turbine generators in accordance with the requirements described in Conditions F1 to F3, and submit the Acoustic Audit Report-Emission to the Director and the District Manager no later than twelve (12) months after the commencement of the operation of the Facility, or such other date as agreed to in writing by the Director.

## **G - STORMWATER MANAGEMENT**

G1. The Company shall employ best management practices for stormwater management and sediment and erosion control during construction, installation, use, operation, maintenance and retiring of the Facility, as described in the Application.

## **H - WATER TAKING ACTIVITIES**

H1. For foundation dewatering, if the amount of discharge exceeds 50,000 litres per day:

- (1) the inlet pump head shall be surrounded with clear stone and filter fabric with the discharge of pumped water directed to a well-vegetated area, a minimum of 30 metres from any watercourse, to promote infiltration and filtration wherever possible;
- (2) the discharge must be sampled each day that water is discharged and analyzed for total suspended solids (TSS) and/ or turbidity. Options for sampling include:

Option 1: monitor turbidity (in NTUs) in the discharge water only. Non-compliance is deemed to have occurred when turbidity in the discharge water exceeds 8 NTUs until such time that a site specific relationship is established between TSS concentrations and turbidity levels in the discharge water that determines the turbidity limit that corresponds to a TSS concentration of 25 mg/L. This relationship will be based on a minimum of five concurrent readings of TSS and turbidity and should be verified for each excavation area. The relationship between the TSS and turbidity for each excavation area must be established prior to construction commencing with field testing.

Option 2: monitor turbidity in the discharge water as well as in the receiving water body both upstream (background location) and downstream of the point where the discharge enters the receiving water body. Non-compliance is deemed to have occurred if:

- (a) Turbidity at the downstream station exceeds the turbidity at the upstream station by more than 8 NTUs, when turbidity is below 80 NTUs at the upstream station; or

- (b) If turbidity at the downstream station exceeds the turbidity at the upstream station by more than 10%, when turbidity is equal to or above 80 NTUs at the upstream station.

In the event that the threshold for the selected method above is violated, the Company shall implement a response plan to prevent further mitigation of turbid water into the watercourse; and,

- (3) the Company shall regulate the discharge at such a rate that there is no flooding in the receiving water body or dissipate the discharge so that no soil erosion is caused that impacts the receiving water body; and
- (4) a record of all monitoring results shall be maintained on site and available for inspection by MOECC personnel as requested.

#### **I - SEWAGE WORKS OF THE TRANSFORMER SUBSTATION SPILL CONTAINMENT FACILITY**

- II. The Company shall design and construct a transformer substation oil spill containment facility which meets the following requirements:
  - (1) the spill containment facility serving the transformer substation shall have a minimum volume equal to the volume of transformer oil and lubricants plus the volume equivalent to providing a minimum 24-hour duration, 50-year return storm capacity for the stormwater drainage area around the transformer under normal operating conditions. This containment area shall have:
    - (a) an impervious floor with walls usually of reinforced concrete or impervious plastic liners, sloped toward an outlet / oil control device, allowing for a freeboard of 0.25 metres terminating approximately 0.30 metres above grade to prevent external stormwater flows from entering the facility. The facility shall have a minimum of 300mm layer of crushed stoned (19mm to 38mm in diameter) within, all as needed in accordance to site specific conditions and final design parameters; or
    - (b) a permeable floor with impervious plastic walls and around the transformer pad; equipped with subsurface drainage with a minimum 50mm diameter drain installed on a sand layer sloped toward an outlet for sample collection purposes; designed with an oil absorbent material on floor and walls, and allowing for a freeboard of 0.25 metres terminating approximately 0.30 metres above grade to prevent external stormwater flows from entering the facility. The facility's berm shall be designed as needed in accordance to site specific conditions and the facility shall have a minimum 300mm layer of crushed stoned (19mm to 38mm in diameter) on top of the system, as needed in accordance to site specific conditions and final design parameters.
  - (2) the spill containment facility shall be equipped with an oil detection system; it also shall allow for visual inspection;

- (3) the spill containment facility shall have appropriate sewage appurtenances as necessary, such as but not limited to: sump, oil/grit separator, pumpout manhole, level controllers, floating oil sensors, etc., that allows for batch discharges or direct discharges and for proper implementation of the monitoring program described under Condition I4; and
- (4) the Company shall have a qualified person on-site during construction to ensure that the system is installed in accordance with the approved design and specifications.

I2. The Company shall:

- (1) within six (6) months after the completion of the construction of the transformer substation spill containment facility, provide to the District Manager an engineering report and as-built design drawings of the sewage works for the spill containment facility and any stormwater management works required for it, signed and stamped by an independent Professional Engineer licensed in Ontario and competent in electrical and environmental engineering or retain two Professional Engineers licensed in Ontario (one competent in environmental engineering and the other electrical engineering) to work together simultaneously on the project. The engineering report shall include the following:
  - (a) as-built drawings of the sewage works for the spill containment facility and any stormwater management works required for it;
  - (b) a written report signed by a qualified person confirming the following:
    - (i) on-site supervision during construction
    - (ii) in case of a permeable floor systems: type of oil absorbent material used (for mineral-based transformer oil or vegetable-based transformer oil, make and material's specifications)
    - (ii) use of stormwater best management practices applied to prevent external surface water runoff from entering the spill containment facility, and
    - (iv) confirm adequacy of the installation in accordance with specifications.
  - (c) confirmation of the adequacy of the operating procedures and the emergency procedures manuals as it pertains to the installed sewage works.
  - (d) procedures to provide emergency response to the site in the form of pumping and clean-up equipment within 24 hours after an emergency has been identified. Such response shall be provided even under adverse weather conditions to prevent further danger of material loss to the environment.
- (2) as a minimum, the Company shall check the oil detection systems on a monthly basis and create a written record of the inspections;

- (3) ensure that the effluent is essentially free of floating and settle-able solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen or foam on the receiving waters;
- (4) immediately identify and clean-up all losses of oil from the transformer;
- (5) upon identification of oil in the spill containment facility, take immediate action to prevent the further occurrence of such loss;
- (6) ensure that equipment and material for the containment, clean-up and disposal of oil and materials contaminated with oil are kept within easy access and in good repair for immediate use in the event of:
  - (a) loss of oil from the transformer,
  - (b) a spill within the meaning of Part X of the Act, or
  - (c) the identification of an abnormal amount of oil in the effluent.
- (7) in the event of finding water accumulation in the PVC pipes at the time of inspection, as per Condition I4, the Company shall: (a) for impervious floors, inspect the sewage appurtenances that allow drainage of the concrete pit; or (b) for permeable systems, replace the oil absorbent material to ensure integrity of the system performance and design objectives.
- (8) for permeable floor systems, the Company shall only use the type of oil specified in the design, i.e. mineral-based transformer oil or vegetable-based transformer oil. If a change is planned to modify the type of oil, the Company shall also change the type of the oil absorbent material and obtain approval from the Director to amend this Approval before any modification is implemented.

I3. The Company shall design, construct and operate the sewage works such that the concentration of the effluent parameter named in the table below does not exceed the maximum Concentration Objective shown for that parameter in the effluent, and shall comply with the following requirements:

<b>Effluent Parameters</b>	<b>Maximum Concentration Objective</b>
Oil and Grease	15mg/L

- (1) notify the District Manager as soon as reasonably possible of any exceedance of the maximum concentration objective set out in the table above;
- (2) take immediate action to identify the cause of the exceedance; and
- (3) take immediate action to prevent further exceedances.

I4. Upon commencement of the operation of the Facility, the Company shall establish and carry out the following monitoring program for the sewage works:

- (1) the Company shall collect and analyze the required set of samples at the sampling points listed in the table below in accordance with the measurement frequency and sample type specified for the effluent parameter, oil and grease, and create a written record of the monitoring:

<b>Effluent Parameters</b>	<b>Measurement Frequency and Sample Points</b>	<b>Sample Type</b>
Oil and Grease	Quarterly, i.e. four times over a year, relatively evenly spaced having a minimum two (2) of these samples taken within 48 hours after a 10mm rainfall event.	Grab

- (2) in the event of an exceedance of the maximum concentration objective set out in the table in Condition I3, the Company shall:
  - (a) increase the frequency of sampling to once per month, for each month that effluent discharge occurs, and
  - (b) provide the District Manager, on a monthly basis, with copies of the written record created for the monitoring until the District Manager provides written direction that monthly sampling and reporting is no longer required; and
- (3) if over a period of twenty-four (24) months of effluent monitoring under Condition I4, there are no exceedances of the maximum concentration set out in the table for Concentration Objective, the Company may reduce the measurement frequency of effluent monitoring to a frequency as the District Manager may specify in writing, provided that the new specified frequency is never less than annual.

I5. The Company shall comply with the following methods and protocols for any sampling, analysis and recording undertaken in accordance with Condition I4:

- (1) Ministry of the Environment and Climate Change publication "Protocol for the Sampling and Analysis of Industrial/ Municipal Wastewater", January 1999, as amended from time to time by more recently published editions, and
- (2) the publication "Standard Methods for the Examination of Water and Wastewater", 21st edition, 2005, as amended from time to time by more recently published editions.

## **J - NATURAL HERITAGE AND PRE AND POST CONSTRUCTION MONITORING**

### **General**

- J1. The Company shall implement the Environmental Effects Monitoring Plan for the Grey Highlands Zero Emission People Wind Project, titled Grey Highlands Zero Emission People Natural Heritage Environmental Effects Monitoring Plan, dated January 27, 2014, and the commitments made in the following reports and included in the Application, and which the Company submitted to the Ministry of Natural Resources and Forestry in order to comply with O. Reg. 359/09:
- (1) Grey Highlands Zero Emission People Natural Heritage Environmental Impact Study Report, dated June 21, 2012 and prepared by M.K. Ince and Associates Ltd.
- J2. If the Company determines that it must deviate from the Environmental Effects Monitoring Plan or the Environmental Impact Study, described in Condition J1, the Company shall contact the Director and the Ministry of Natural Resources and Forestry, prior to making any changes to the Environmental Effects Monitoring Plan or the Environmental Impact Study, and follow any directions provided.

### **Post Construction Monitoring – Significant Wildlife Habitat**

- J3. The Company shall implement the post-construction monitoring described in the Environmental Effects Monitoring Plan described in Condition J1, including the following:
- (1) Disturbance Monitoring for Amphibian Breeding Habitat (ABH06).

### **Post Construction Mortality Monitoring - Birds and Bats**

- J4. The Company shall implement the post-construction bird and bat mortality monitoring described in the Environmental Effects Monitoring Plan, described in Condition J1, at all 5 constructed turbines.

### **Thresholds and Mitigation**

- J5. The Company shall contact the Director and the Ministry of Natural Resources and Forestry if any of the following bird and bat mortality thresholds, as stated in the Environmental Effects Monitoring Plan for the Grey Highlands Zero Emission People Project described in Condition J1, exceeds:
- (1) 10 bats per turbine per year;
  - (2) 14 birds per turbine per year at individual turbines or turbine groups;
  - (3) 2 raptors per wind power project per year (projects with <10 turbines)
  - (4) 10 or more birds at any one turbine during a single monitoring survey; or
  - (5) 33 or more birds (including raptors) at multiple turbines during a single monitoring survey.

- J6. If the bat mortality threshold described in Condition J5(1) is exceeded, the Company shall:
- (1) implement operational mitigation measures consistent with those described in the Ministry of Natural Resources and Forestry publication entitled "*Bats and Bat Habitats: Guidelines for Wind Power Projects*" dated July 2011, or in an amended version of the publication. Such measures shall include some or all of the following:
    - (a) increase cut-in speed to 5.5 m/s and/or feather wind turbine blades when wind speeds are below 5.5 m/s between sunset and sunrise, from July 15 to September 30 at all turbines;
  - (2) implement an additional three (3) years of effectiveness monitoring.
- J7. If the bat mortality threshold described in Condition J5(1) is exceeded after operational mitigation is implemented in accordance with Condition J6, the Company shall prepare and implement a contingency plan, in consultation with the Director and the Ministry of Natural Resources and Forestry, to address mitigation actions which shall include additional mitigation and scoped monitoring requirements.
- J8. If either of the bird mortality thresholds described in Conditions J5(2) or J5(3) are exceeded for turbines located outside 120 m of bird significant wildlife habitat, the Company shall conduct two (2) years of subsequent scoped mortality monitoring and cause and effects monitoring. Following the completion of scoped monitoring, the Company shall implement operational mitigation and effectiveness monitoring at individual turbines as agreed to between the Company, the Director and the Ministry of Natural Resources and Forestry, for the first three (3) years following the implementation of mitigation.
- J9. If either of the bird mortality thresholds described in Conditions J5(4) or J5(5) are exceeded, the Company shall prepare and implement a contingency plan to address immediate mitigation actions which shall include:
- (1) periodic shut-down of select turbines; or
  - (2) blade feathering at specific times of year; or
  - (3) an alternate plan agreed to between the Company, the Director and the Ministry of Natural Resources and Forestry.
- J10. If either of the bird mortality thresholds described in Conditions J5(2) or J5(3) are exceeded while monitoring is being implemented in accordance with Conditions J8, or if either of the bird mortality thresholds described in Conditions J5(4) or J5(5) are exceeded after mitigation is implemented in accordance with Condition J9, the Company shall contact the Director and the Ministry of Natural Resources and Forestry and prepare and implement an appropriate response plan that shall include some or all of the following mitigation measures:
- (1) increased reporting frequency to identify potential threshold exceedance;
  - (2) additional behavioural studies to determine factors affecting mortality rates;

- (3) periodic shut-down of select turbines;
- (4) blade feathering at specific times of year; or
- (5) an alternate plan agreed to between the Company the Director and the Ministry of Natural Resources and Forestry.

### **Reporting and Review of Results**

- J11. The Company shall report, in writing, the results of the post-construction disturbance monitoring described in Conditions J3, to the Director and the Ministry of Natural Resources and Forestry for one (1) year on an annual basis and within three (3) months of the end of the calendar year in which the monitoring took place.
- J12. The Company shall report, in writing, bird and bat mortality levels to the Director and the Ministry of Natural Resources and Forestry for three (3) years on an annual basis and within three (3) months of the conclusion of the November mortality monitoring, with the exception of the following:
- (1) if either of the bird mortality thresholds described in Conditions J5(4) or J5(5) are exceeded, the Company shall report the mortality event to the Director and the Ministry of Natural Resources and Forestry within 48 hours of observation;
  - (2) for any and all mortality of species at risk (including a species listed on the Species at Risk in Ontario list as Extirpated, Endangered or Threatened under the provincial *Endangered Species Act, 2007*) that occurs, the Company shall report the mortality to the Ministry of Natural Resources and Forestry within 24 hours of observation or the next business day;
  - (3) if the bat mortality threshold described in Condition J5(1) is exceeded, the Company shall report mortality levels to the Director and the Ministry of Natural Resources and Forestry for the additional three (3) years of monitoring described in Condition J6, on an annual basis and within three (3) months of the conclusion of the October mortality monitoring for each year;
  - (4) if either of the bird mortality thresholds described in Conditions J5(2) or J5(3) are exceeded for turbines located outside 120 m of bird significant wildlife habitat, the Company shall report mortality levels to the Director and the Ministry of Natural Resources and Forestry for the additional two (2) years of cause and effects monitoring described in Condition J8, on an annual basis and within three (3) months of the conclusion of the November mortality monitoring for each year; and
  - (5) if the Company implements operational mitigation following cause and effects monitoring in accordance with Condition J8, the Company shall report mortality levels to the Director and the Ministry of Natural Resources and Forestry for the three (3) years of subsequent effectiveness monitoring described in Condition J8, on an annual basis and within three (3) months of the conclusion of the November mortality monitoring for each year.



J13. The Company shall publish the following documents on the Company's website:

- (1) any modifications to the Environmental Effects Monitoring Plan as described in Condition J2 within ten (10) days of submitting the final plan to the Director and the Ministry of Natural Resources and Forestry;
- (2) the results of the post-construction disturbance monitoring as described in Condition J11 within ten (10) days of submitting the final report(s) to the Director and the Ministry of Natural Resources and Forestry; and
- (3) annual bird and bat mortality monitoring as described in Condition J12 with the exception of subsection J12(2), within ten (10) days of submitting the final report(s) to the Director and the Ministry of Natural Resources and Forestry.

#### **K - ENDANGERED SPECIES ACT REQUIREMENTS**

K14. The Company shall ensure that activities requiring authorization under the *Endangered Species Act, 2007* will not commence until necessary authorizations are in place.

#### **L - MUNICIPAL CONSULTATION**

- L1. Within three (3) months of receiving this Approval, the Company shall prepare a Traffic Management Plan and provide it to the Municipality of Grey Highlands and Grey County.
- L2. Within three (3) months of having provided the Traffic Management Plan to the Municipality of Grey Highlands and Grey County, the Company shall make reasonable efforts to enter into a road users agreement with the Municipality of Grey Highlands and Grey County, as applicable.
- L3. If a road users agreement has not been signed with the Municipality of Grey Highlands and Grey County within three (3) months of having provided the Traffic Management Plan to the Municipality of Grey Highlands and Grey County, the Company shall provide a written explanation to the Director as to why this has not occurred.
- L4. The Company shall make reasonable efforts to keep the Municipality of Grey Highlands and Grey County informed of construction, operation and decommissioning activities associated with the Facility, and make reasonable efforts to ensure that all commitments made to the Municipality of Grey Highlands and Grey County are met.

#### **M - COMMUNITY LIAISON COMMITTEE**

M1. Within three (3) months of receiving this Approval, the Company shall make reasonable efforts to establish a Community Liaison Committee. The Community Liaison Committee shall be a forum to exchange ideas and share concerns with interested residents and members of the public. The Community Liaison Committee shall be established by:

- (1) publishing a notice in a newspaper with general circulation in each local municipality in which the project location is situated; and
- (2) posting a notice on the Company's publicly accessible website, if the Company has a website;

to notify members of the public about the proposal for a Community Liaison Committee and invite residents living within a one (1) kilometer radius of the Facility that may have an interest in the Facility to participate on the Community Liaison Committee.

- M2. The Company may invite other members of stakeholders to participate in the Community Liaison Committee, including, but not limited to, local municipalities, local conservation authorities, Aboriginal communities, federal or provincial agencies, and local community groups.
- M3. The Community Liaison Committee shall consist of at least one Company representative who shall attend all meetings.
- M4. The purpose of the Community Liaison Committee shall be to:
- (1) act as a liaison facilitating two way communications between the Company and members of the public with respect to issues relating to the construction, installation, use, operation, maintenance and retirement of the Facility;
  - (2) provide a forum for the Company to provide regular updates on, and to discuss issues or concerns relating to, the construction, installation, use, operation, maintenance and retirement of the Facility with members of the public; and
  - (3) ensure that any issues or concerns resulting from the construction, installation, use, operation, maintenance and retirement of the Facility are discussed and communicated to the Company.
- M5. The Community Liaison Committee shall be deemed to be established on the day the Director is provided with written notice from the Company that representative Community Liaison Committee members have been chosen and a date for a first Community Liaison Committee meeting has been set.
- M6. If a Community Liaison Committee has not been established within three (3) months of receiving this Approval, the Company shall provide a written explanation to the Director as to why this has not occurred.
- M7. The Company shall ensure that the Community Liaison Committee operates for a minimum period of two (2) years from the day it is established. During this two (2) year period, the Company shall ensure that the Community Liaison Committee meets a minimum of two (2) times per year. At the end of this two (2) year period, the Company shall contact the Director to discuss the continued operation of the Community Liaison Committee.
- M8. The Company shall ensure that all Community Liaison Committee meetings are open to the general public.

M9. The Company shall provide administrative support for the Community Liaison Committee including, at a minimum:

- (1) providing a meeting space for Community Liaison Committee meetings;
- (2) providing access to resources, such as a photocopier, stationery, and office supplies, so that the Community Liaison Committee can:
  - a) prepare and distribute meeting notices;
  - b) record and distribute minutes of each meeting; and
  - c) prepare reports about the Community Liaison Committee's activities.

M10. The Company shall submit any reports of the Community Liaison Committee to the Director and post it on the Company's publicly accessible website, if the Company has a website.

#### **N – ABORIGINAL CONSULTATION**

N1. During the construction, installation, operation, use and retiring of the Facility, the Company shall:

- (1) create and maintain written records of any communications with Aboriginal communities; and
- (2) make the written records available for review by the Ministry upon request.

N2. The Company shall provide the following to interested Aboriginal communities:

- (1) updated project information, including the results of monitoring activities undertaken and copies of additional archaeological assessment reports that may be prepared; and;
- (2) updates on key steps in the construction, installation, operation, use and retirement phases of the Facility, including notice of the commencement of construction activities at the project location.

N3. If an Aboriginal community requests a meeting to obtain information relating to the construction, installation, operation, use and retiring of the Facility, the Company shall make reasonable efforts to arrange and participate in such a meeting.

N4. If any archaeological resources of Aboriginal origin are found during the construction of the Facility, the Company shall:

- (1) notify any Aboriginal community considered likely to be interested or which has expressed an interest in such finds; and,
- (2) if a meeting is requested by an Aboriginal community to discuss the archaeological find(s), make reasonable efforts to arrange and participate in such a meeting.

## **O - ARCHAEOLOGICAL RESOURCES**

- O1. The Company shall implement all of the recommendations, if any, for further archaeological fieldwork and for the protection of archaeological sites found in the consultant archaeologist's report included in the Application, and which the Company submitted to the Ministry of Tourism, Culture and Sport in order to comply with O. Reg. 359/09.
- O2. Should any previously undocumented archaeological resources be discovered, the Company shall:
- (1) cease all alteration of the area in which the resources were discovered immediately;
  - (2) engage a consultant archaeologist to carry out the archaeological fieldwork necessary to further assess the area and to either protect and avoid or excavate any sites in the area in accordance with the *Ontario Heritage Act*, the regulations under that act and the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consultant Archaeologists*; and
  - (3) notify the Director as soon as reasonably possible.

## **P - OPERATION AND MAINTENANCE**

- P1. Prior to the commencement of the operation of the Facility, the Company shall prepare a written manual for use by Company staff outlining the operating procedures and a maintenance program for the Equipment that includes as a minimum the following:
- (1) routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;
  - (2) emergency procedures;
  - (3) procedures for any record keeping activities relating to operation and maintenance of the Equipment; and
  - (4) all appropriate measures to minimize noise emissions from the Equipment.
- P2. The Company shall;
- (1) update, as required, the manual described in Condition P1; and
  - (2) make the manual described in Condition P1 available for review by the Ministry upon request.
- P3. The Company shall ensure that the Facility is operated and maintained in accordance with the Approval and the manual described in Condition P1.

## **Q - RECORD CREATION AND RETENTION**

Q1. The Company shall create written records consisting of the following:

- (1) an operations log summarizing the operation and maintenance activities of the Facility;
- (2) within the operations log, a summary of routine and Ministry inspections of the Facility; and
- (3) a record of any complaint alleging an Adverse Effect caused by the construction, installation, use, operation, maintenance or retirement of the Facility.

Q2. A record described under Condition Q1 (3) shall include:

- (1) a description of the complaint that includes as a minimum the following:
  - a) the date and time the complaint was made;
  - b) the name, address and contact information of the person who submitted the complaint;
- (2) a description of each incident to which the complaint relates that includes as a minimum the following:
  - a) the date and time of each incident;
  - b) the duration of each incident;
  - c) the wind speed and wind direction at the time of each incident;
  - d) the ID of the Equipment involved in each incident and its output at the time of each incident;
  - e) the location of the person who submitted the complaint at the time of each incident; and
- (3) a description of the measures taken to address the cause of each incident to which the complaint relates and to prevent a similar occurrence in the future.

Q3. The Company shall retain, for a minimum of five (5) years from the date of their creation, all records described in Condition Q1, and make these records available for review by the Ministry upon request.

## **R - NOTIFICATION OF COMPLAINTS**

- R1. The Company shall notify the District Manager of each complaint within two (2) business days of the receipt of the complaint.
- R2. The Company shall provide the District Manager with the written records created under Condition Q2 within eight (8) business days of the receipt of the complaint.

## **S - CHANGE OF OWNERSHIP**

- S1. The Company shall notify the Director in writing, and forward a copy of the notification to the District Manager, within thirty (30) days of the occurrence of any of the following changes:
- (1) the ownership of the Facility;
  - (2) the operator of the Facility;
  - (3) the address of the Company;
  - (4) the partners, where the Company is or at any time becomes a partnership and a copy of the most recent declaration filed under the *Business Names Act* , R.S.O. 1990, c.B.17, as amended, shall be included in the notification; and
  - (5) the name of the corporation where the Company is or at any time becomes a corporation, other than a municipal corporation, and a copy of the most current information filed under the *Corporations Information Act* , R.S.O. 1990, c. C.39, as amended, shall be included in the notification.

## **SCHEDULE A**

### **Facility Description**

The Facility shall consist of the construction, installation, operation, use and retiring of the following:

- (a) a total of five (5) Senvion MM92/60 Hz/CCV wind turbine generators each rated at 2.0 megawatts as specified in the Acoustic Assessment Report;

with a total name plate capacity of 10 megawatts, designated as source ID Nos. T1-T5, respectively, each with a hub height of 100 metres above grade; and sited at the locations shown in Schedule B;

- (b) one (1) transformer substation rated at 10 MVA and sited at the locations shown in Schedule B; and
- (c) associated ancillary equipment, systems and technologies including, but not limited to, on-site access roads, underground cabling and overhead distribution lines;

all in accordance with the Application.

## SCHEDULE B

### Coordinates of the Equipment and Noise Specifications

Coordinates of the Equipment are listed below in UTM, Z17-NAD83 projection:

Table B1: Coordinates and Maximum Sound Power Levels of Wind Turbine Generators and Transformer Substation:

Source ID	Maximum Sound Power Level (dBA)	Easting (m)	Northing (m)	Source Description
T1	103.2	555982	4907469	Senvion MM92/60Hz/CCV, 2.0 MW, hub 100 m
T2	103.2	556010	4907710	Senvion MM92/60 Hz/CCV, 2.0 MW, hub 100 m
T3	103.2	556028	4907962	Senvion MM92/60 Hz/CCV, 2.0 MW, hub 100 m
T4	103.2	556138	4908200	Senvion MM92/60 Hz/CCV, 2.0 MW, hub 100 m
T5	103.2	557642	4907974	Senvion MM92/60 Hz/CCV, 2.0 MW, hub 100 m
TS	82.5	556070	4908244	Transformer Substation 10 MVA

\*NOTE: The Sound Power Level reported above for the Transformer Substation does include the 5 decibels (dB) adjustment for tonality as prescribed in Publication NPC-104.

Table B2: Maximum Sound Power Spectrums (dBA and dB Lin) for the Transformer Substation

Transformer Substation (10 MVA, 44 kV)	Octave Band Centre Frequency (Hz)								
	63	125	250	500	1000	2000	4000	8000	Overall
Lw (dB A)	60.0	72.1	75.6	80.0	72.2	66.4	61.2	53.2	82.5
Lw (dB Lin)	86.2	88.2	84.2	83.2	72.2	65.2	60.2	54.1	92.0

Note: The Transformer Substation Sound Power Level values include the 5 decibel (dB) adjustment for tonality as prescribed in Publication NPC-104.



*The reasons for the imposition of these terms and conditions are as follows:*

1. Conditions A1, A2, and A8 are included to ensure that the Facility is constructed, installed, used, operated, maintained and retired in the manner in which it was described for review and upon which Approval was granted. These conditions are also included to emphasize the precedence of conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review.
2. Conditions A3 and A4 are included to require the Company to provide information to the public and the local municipality.
3. Conditions A5 and A6 are included to ensure that final retirement of the Facility is completed in an aesthetically pleasing manner, in accordance with Ministry standards, and to ensure long-term protection of the health and safety of the public and the environment.
4. Condition A7 is included to require the Company to inform the Ministry of the commencement of activities related to the construction, installation and operation of the Facility.
5. Condition B is intended to limit the time period of the Approval.
6. Conditions C1 and C2 are included to provide the minimum performance requirement considered necessary to prevent an Adverse Effect resulting from the operation of the Equipment and to ensure that the noise emissions from the Equipment will be in compliance with applicable limits set in the Noise Guidelines for Wind Farms.
7. Conditions C3, C4 and D are included to ensure that the Equipment is constructed, installed, used, operated, maintained and retired in a way that meets the regulatory setback prohibitions set out in O. Reg. 359/09.
8. Conditions E and F are included to require the Company to gather accurate information so that the environmental noise impact and subsequent compliance with the Act, O. Reg. 359/09, the Noise Guidelines for Wind Farms and this Approval can be verified.
9. Conditions G, H, I, J and K are included to ensure that the Facility is constructed, installed, used, operated, maintained and retired in a way that does not result in an Adverse Effect or hazard to the natural environment or any persons.
10. Condition L is included to ensure continued communication between the Company and the local municipalities.
11. Condition M is included to ensure continued communication between the Company and the local residents.
12. Condition N is included to ensure continued communication between the Company and interested Aboriginal communities.

13. Condition O is included to protect archaeological resources that may be found at the project location.
14. Condition P is included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the Act, O. Reg. 359/09 and this Approval.
15. Condition Q is included to require the Company to keep records and provide information to the Ministry so that compliance with the Act, O. Reg. 359/09 and this Approval can be verified.
16. Condition R is included to ensure that any complaints regarding the construction, installation, use, operation, maintenance or retirement of the Facility are responded to in a timely and efficient manner.
17. Condition S is included to ensure that the Facility is operated under the corporate name which appears on the application form submitted for this Approval and to ensure that the Director is informed of any changes.

**NOTICE REGARDING HEARINGS**

*In accordance with Section 139 of the Environmental Protection Act, within 15 days after the service of this notice, you may by further written notice served upon the Director, the Environmental Review Tribunal and the Environmental Commissioner, require a hearing by the Tribunal.*

*In accordance with Section 47 of the Environmental Bill of Rights, 1993, the Environmental Commissioner will place notice of your request for a hearing on the Environmental Registry.*

*Section 142 of the Environmental Protection Act provides that the notice requiring the hearing shall state:*

1. The portions of the renewable energy approval or each term or condition in the renewable energy approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*The signed and dated notice requiring the hearing should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The renewable energy approval number;
6. The date of the renewable energy approval;
7. The name of the Director;
8. The municipality or municipalities within which the project is to be engaged in;

*This notice must be served upon:*

The Secretary\*  
 Environmental Review Tribunal  
 655 Bay Street, 15th Floor  
 Toronto, Ontario  
 M5G 1E5

AND

The Environmental Commissioner  
 1075 Bay Street, 6th Floor  
 Suite 605  
 Toronto, Ontario  
 M5S 2B1

AND

The Director  
 Section 47.5, *Environmental Protection Act*  
 Ministry of the Environment and Climate  
 Change  
 2 St. Clair Avenue West, Floor 12A

Toronto, Ontario  
M4V 1L5

**\* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or [www.ert.gov.on.ca](http://www.ert.gov.on.ca)**

*Under Section 142.1 of the Environmental Protection Act, residents of Ontario may require a hearing by the Environmental Review Tribunal within 15 days after the day on which notice of this decision is published in the Environmental Registry. By accessing the Environmental Registry at [www.ebr.gov.on.ca](http://www.ebr.gov.on.ca), you can determine when this period ends.*

*Approval for the above noted renewable energy project is issued to you under Section 47.5 of the Environmental Protection Act subject to the terms and conditions outlined above.*

DATED AT TORONTO this 30th day of January, 2015



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Vic Schroter, P.Eng.  
Director  
Section 47.5, *Environmental Protection Act*

SE/

c: District Manager, MOECC Owen Sound  
Andrea Kausel, Capstone Power Development  
Shawna Peddle, Stantec Consulting Ltd.