

**RENEWABLE ENERGY APPROVAL**NUMBER 5272-A9FHRL  
Issue Date: June 29, 2016

North Kent Wind 1 GP Inc., as the general partner of  
North Kent Wind 1 LP  
2050 Derry Road West, 2nd Floor  
Mississauga, Ontario  
L5N 0B9

Project North Kent Wind 1 Project  
Location: Located on various parcels of land within an area generally  
bounded by Oldfield Line to the north, Bear Line Road to  
the West, Pioneer Line and Pine Line / Darrell Line to the  
south and Centre Side Road and Caledonia Road to the  
east, in the Municipality of Chatham-Kent

*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 up to 100 megawatts (MW).

*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 "North Kent 1 Wind Project - Renewable Energy Approval Application - Noise Impact Assessment", dated May 9, 2016, prepared by DNV.GL and signed by Shant Dokouzian P.Eng., C. Edwards, and S. Cho;
2. "Acoustic Audit - Emission" means an investigative procedure that is compliant with the CAN/CSA Standard 61400-11 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. "Acoustic Audit - Transformer Substation" means an investigative procedure that is compliant with the IEEE Standard C57.12.90 consisting of measurements and/or acoustic modelling of all noise sources comprising the transformer substation assessed to determine compliance with the Sound Power Level specification of the transformer substation described in the Acoustic Assessment Report;
7. "Acoustic Audit Report - Transformer Substation" means a report presenting the results of the Acoustic Audit - Transformer Substation;
8. "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;
9. "Act" means the *Environmental Protection Act*, R.S.O 1990, c.E.19, as amended;
10. "Adverse Effect" has the same meaning as in the Act;
11. "Application" means the application for a Renewable Energy Approval dated November 17, 2015, and signed by JT Lee, Director, North Kent Wind 1 GP Inc., as the general partner of North Kent Wind 1 LP, and all supporting documentation submitted with the application, including amended documentation submitted up to the date this Approval is issued;
12. "Approval" means this Renewable Energy Approval issued in accordance with Section 47.4 of the Act, including any schedules to it;
13. "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";
14. "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";
15. "CAN/CSA Standard 61400-11:07" means the "Wind turbine generator systems – Part 11: Acoustic noise measurement techniques", dated October 2007;

16. "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";
17. "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.
18. "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.
19. "Company" means North Kent Wind 1 GP Inc., as the general partner of North Kent Wind 1 LP, the partnership under the laws of Ontario, and includes its successors and assignees;
20. "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;
21. "Decibel" means a dimensionless measure of Sound Level or Sound Pressure Level, denoted as dB;
22. "Director" means a person appointed in writing by the Minister of the Environment pursuant to section 5 of the Act as a Director for the purposes of section 47.5 of the Act;
23. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Facility is geographically located;
24. "Equipment" means the forty five (45) wind turbine generators and one (1) transformer substation, identified in this Approval and as further described in the Application, to the extent approved by this Approval;

25. "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);
26. "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;
27. "IEEE Standard C57.12.90" means the IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers, 2010;
28. "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;
29. "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;
30. "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;
31. "Noise Receptor" has the same meaning as in O. Reg. 359/09;
32. "O. Reg. 359/09" means Ontario Regulation 359/09 "Renewable Energy Approvals under Part V.0.1 of the Act" made under the Act;
33. "P.Eng" means a professional engineer licensed under the *Professional Engineers Act*;
34. "P.Geo" means a professional geoscientist licensed under the *Professional Geoscientists Act*;
35. "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;
36. "Project Location" has the same meaning as in O. Reg. 359/09;
37. "Project Study Area" means the area designated as the "Project Study Area" in Figure 2-1 of the report included in the Application and entitled "North Kent Wind 1 Project Design and Operations Report", dated November 2015, and prepared by AECOM;
38. "Publication NPC-233" means Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October 1995;
39. "Sound Level" means the A-weighted Sound Pressure Level;

40. "Sound Level Limit" is the limiting value described in terms of the one hour A-weighted Equivalent Sound Level  $L_{eq}$ ;
41. "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;
42. "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 ( $\mu\text{Pa}$ );
43. "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  $\mu\text{Pa}$ ;
44. "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  
Schedule C - Noise Control Measures
- 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. The Company shall, at least six (6) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, consult the ministry responsible for agriculture in Ontario at that time regarding its plans for the decommissioning of the Facility, and the restoration of the project location to its previous agricultural capacity.
- A9. As described in Schedule A of the Approval the Company shall not construct or operate more than thirty six (36) out of the forty five (45) wind turbine generators identified in the Schedule 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>at or below 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. 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.
- C3. 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).
- C4. 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.

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

- D1. The locations identified as vacant lot receptor in Appendix C of the Acoustic Assessment Report are specified as Noise Receptors for the purposes of subsection 54 (1.1) of O. Reg. 359/09 and subsection 35 (1.0.1) 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 on two (2) separate occasions at five (5) different Points of Reception that represent the location of the greatest predicted noise impacts, i.e., the highest predicted Sound Levels, and that are located in the direction of prevailing winds from the Facility;
  - (3) if any of the five (5) Points of Reception cannot be selected on the basis of the criteria described in Condition E1(2) due to access restrictions or for any other reason, the Company must select alternate Points of Reception or locations (other than a Point of Reception), and must provide a clear written explanation to the Director and District Manager prior to undertaking the acoustic audit measurements as to why the criteria described in Condition E1(2) could not be met and the basis for selecting the alternate Points of Reception or locations. The Company must obtain the written agreement of the Director, and follow any directions provided, for the use of these alternate Points of Reception or locations prior to proceeding with the acoustic audit measurements.
- E2. The Company shall submit to the Director and the District Manager 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 five (5) 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 five (5) different Points of Reception.
- E3. The Company shall carry out an Acoustic Audit - Transformer Substation and shall submit to the Director and the District Manager an Acoustic Audit Report – Transformer Substation prepared by an Independent Acoustical Consultant, in accordance with Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995 as amended, and no later than six (6) months after the commencement of the operation of the Facility.
- E4. In addition to the requirements described in Condition E3, the Acoustic Audit - Transformer Substation must include a compliance summary of the measurement results and the transformer sound data contained in the Acoustic Assessment Report. The following items must be included in the compliance summary:
- (1) transformer sound power levels (overall level and frequency spectra in octave bands); and
  - (2) a statement that the transformer overall A-weighted sound power levels do not exceed the maximum sound power levels specified in the Schedule B of the Approval.

## **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 three (3) of the wind turbine generators: on one (1) of the wind turbine generators rated at 3.2 megawatts (MW) generating output capacity and one (1) of the wind turbine generators rated at 2.942 megawatts (MW) generating output capacity and one (1) of the wind turbine generators rated at 2.772 megawatts (MW) generating output capacity 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 later 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 Siemens letter dated July 15, 2015, contained in the Appendix E 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 overall A-weighted 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 – GROUNDWATER MONITORING**

- G1. Prior to the commencement of the construction of the Facility, the Company shall contact owners of all active water wells (i) within the Project Study Area and (ii) all active water wells that are outside of the Project Study area and located within 1 km from each individual Equipment and meteorological tower, the microwave tower, and the operations & maintenance building and seek permission to undertake a groundwater survey at existing water wells. If permission is granted, the Company shall interview the residents regarding water well construction, groundwater quality, groundwater quantity and well locations to establish a history of the water well. The Company shall collect a water well sample from each well, prior to any treatment systems (“raw”), after allowing the distribution system to flow for approximately 5 minutes.
- G2. If the representation of active water wells (i) within the Project Study Area and (ii) all active water wells that are outside of the Project Study area and located within 1 km from each individual Equipment and meteorological tower, the microwave tower, and the operations & maintenance building is not adequate, the Company shall implement a groundwater monitoring well network by installing monitoring wells to a depth representative of the existing water wells in the area. The Company shall collect a representative groundwater sample from each monitoring well prior to the commencement of the construction of the Facility.
- G3. Prior to the commencement of the construction of the Facility, the Company shall submit the water samples described in Conditions G1 and G2 to a qualified laboratory for analysis of a general chemistry suite of water quality parameters, including but not limited to, the following: alkalinity, ammonia, bacteria, calcium, chloride, colour, conductivity, dissolved organic carbon (DOC), hardness, iron, magnesium, manganese, nitrite, nitrate, pH, potassium, sodium, sulphate, total dissolved solids (TDS), and turbidity.
- G4. The Company shall ensure that the work described in Conditions G1, G2, and G3 is undertaken, or approved by, a qualified expert (P.Eng. or P.Geo.).

- G5. Should the Company receive a complaint about wells or well water from an owner of an active water well (i) within the Project Study Area; or (ii) outside of the Project Study area and located within 1 km from each individual Equipment and meteorological tower, the microwave tower, and the operations & maintenance building, the Company shall retain a qualified expert (P.Eng or P.Geo) to immediately undertake the following:
- (1) collect a water well sample at the complainant's water well, prior to any treatment systems ("raw"), after allowing the distribution system to flow for approximately 5 minutes and submit the water sample to a qualified laboratory for an analysis of the general chemistry suite of water quality parameters identified in Condition G3;
  - (2) compare the results of the analysis of the water sample noted in Condition G5(1) to the pre-construction water sampling analysis results noted in Condition G3 for the subject well (if a pre-construction water sample at the subject well was taken); and
  - (3) provide a detailed written opinion as to whether the water sampling analysis results demonstrate that the construction, operation or decommissioning of the Facility caused or may have caused an adverse effect to the well's water supply.
- G6. Pursuant to Condition G5(3), if the qualified expert (P.Eng or P.Geo) determines that the construction, operation or decommissioning of the Facility caused or may have caused an adverse effect to a complainant's well or well water, the Company shall undertake the following measures, at the Company's expense:
- (1) immediately provide an adequate quantity of bottled water to the impacted party until such time that the issue has been resolved;
  - (2) immediately retain a qualified expert (P.Eng or P.Geo) to investigate and provide an opinion regarding the specific cause of the impact to the well or well water. The qualified expert shall consider the results of the ground-borne vibration monitoring described in Condition H1 in developing his/her opinion; and
  - (3) immediately implement the contingency plan described in Condition G7.
- G7. Prior to the commencement of the construction of the Facility, the Company shall retain a qualified expert (P.Eng. or P.Geo.) to establish a contingency plan. The contingency plan shall, at a minimum, include a sequence of remedial measures to be undertaken by the Company, at the Company's expense, to resolve any impacts to wells or well water resulting from the construction, operation, or decommissioning of the Facility.
- G8. The Company shall notify the District Manager, in writing, within one (1) business day of receiving a complaint pursuant to Condition G5. The written notification shall include a description of actions to be undertaken by the Company to resolve the complaint received.

- G9. The Company shall create written records of all pre-construction water sampling activities and analyses of results undertaken in accordance with Conditions G1 to G3, all complaints received pursuant to Condition G5, and all investigative and remedial actions undertaken in accordance with Conditions G5 to G7 to resolve complaints regarding wells or well water. The Company shall retain these records for the life of the Facility, and shall make them available for inspection by the Ministry, upon request.
- G10. The Company shall consult with and follow any directions provided by the Director and/or District Manager in respect of measures to be implemented by the Company to investigate and resolve public complaints received by the Ministry or the Company regarding potential impacts of the construction, operation or decommissioning of the Facility to wells or well water.
- G11. The Company shall create written records of the well water sampling survey described in Condition G1. The Company shall retain the records for the life of the Facility, and shall make them available for inspection by the Ministry, upon request. The records shall include the following:
- (1) a list of active water wells sampled pursuant to Condition G1, including:
    - (a) the address of the property where the well is situated;
    - (b) the full name of the owner of the property where the well is situated;
    - (c) time and date that the water sample was taken;
  - (2) a list of all properties with active water wells at the locations specified in Condition G1 where active water wells were not sampled, including:
    - (a) the address of the property where the well is situated;
    - (b) full name of the owner of the property where the well is situated;
    - (c) time and date that the Company sought permission from the property owner to take a water sample pursuant to Condition G1;
    - (d) the rationale provided by the property owner for not providing the Company permission to take the water sample specified in Condition G1, if a rationale was provided.
    - (e) sign off by the property owner that permission to take a water sample was not granted, if the property owner signs off.
- G12. Two (2) years after the commencement of the operation of the Facility, the Company may submit a written request to the Director and the District Manager to amend or remove the monitoring requirements described in Section G and shall follow any written directions provided by the Director and the District Manager.

## **H – GROUND-BORNE VIBRATION MONITORING**

- H1. The Company shall retain a qualified expert (e.g. seismologist) to develop a ground-borne vibration monitoring program. The ground-borne vibration monitoring program shall include:
- (1) measuring and monitoring ground-borne vibration generated from blasting activities during construction of the Facility;
  - (2) measuring and monitoring ground-borne vibration generated from pile-driving activities during construction of the Facility;
  - (3) measuring and monitoring ground-borne vibration generated from the operation of the wind turbines at the Facility;
  - (4) locations in the Project Study Area where the vibration monitoring equipment will be installed. The vibration monitoring equipment shall be installed at locations which permit the qualified expert specified in Condition G6(2) to effectively fulfil the requirements of Condition G6(2).
- H2. The ground-borne vibration monitoring program described in Condition H1 shall be submitted to the Director and the District Manager prior to any pile-driving activities and blasting activities at the Project Location.
- H3. The Company shall not commence any pile-driving activities and blasting activities at the Project Location until the ground-borne vibration monitoring program described in Condition H1 has been approved in writing by the Director.
- H4. The Company shall implement the approved ground-borne vibration monitoring program prior to and during pile-driving activities and blasting activities at the Project Location and during the operation of the Facility.
- H5. Two (2) years after the commencement of the operation of the Facility, the Company may submit a written request to the Director and the District Manager to amend or remove the monitoring requirements described in the approved ground-borne vibration monitoring program and shall follow any written directions provided by the Director and the District Manager.
- H6. The Company shall create written records of the results of the approved ground-borne vibration monitoring program. The Company shall retain these records for the life of the Facility, and shall make them available for inspection by the Ministry, upon request.

## **I – WATER TAKING ACTIVITIES**

- I1. The Company shall carry out water taking activities in accordance with the report included in the Application and entitled "Hydrogeological Assessment and Effects Assessment", dated November 2015, and prepared by AECOM.
- I2. The Company shall implement any proposed mitigation measures, contingency measures, and monitoring described in the report included in the Application and entitled "Hydrogeological Assessment and Effects Assessment", dated November 2015, and prepared by AECOM.

## **J – STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL**

- J1. The Company shall employ best management practices for stormwater management and erosion and sediment control during construction, installation, use, operation, maintenance and retiring of the Facility.
- J2. The Company shall prepare a detailed, site-specific erosion and sediment control plan for the construction, installation, use, operation and maintenance of the Facility, and submit the plan to the Director.
- J3. The erosion and sediment control plan mentioned in Condition J2 shall be prepared by a qualified expert (P.Eng. or P.Geo.) and shall include details related to site-specific mitigation measures, contingency measures, monitoring, monitoring frequency, and the requirement for a qualified environmental monitor to do the monitoring.
- J4. The Company shall not commence construction of the Facility (including any site preparation, site clearing, or site grading) until the erosion and sediment control plan mentioned in Condition J2 has been approved in writing by the Director.
- J5. The Company shall implement the approved erosion and sediment control plan during the construction, installation, use, operation and maintenance of the Facility.

## **K – SURFACE WATER**

- K1. The Company shall implement any proposed mitigation measures, contingency measures, and monitoring described in the report included in the Application and entitled "North Kent Wind 1 Project Water Body Report", dated May 17, 2016, and prepared by Natural Resource Solutions Inc.
- K2. A qualified environmental monitor retained by the Company shall conduct the site inspections and monitoring described in the following reports:
  - (1) approved erosion and sediment control plan noted in Condition J5;
  - (2) the report included in the Application and entitled "North Kent Wind 1 Project Water Body Report", dated May 17, 2016, and prepared by Natural Resource Solutions Inc.
- K3. The Company shall create records of all inspections and monitoring carried out pursuant to Condition K2, and shall ensure that the records include the name of the qualified environmental monitor who conducted the inspections, date and timing of inspections, and any contingency actions taken. The Company shall retain these records for the life of the Facility, and shall make them available for inspection by the Ministry, upon request.

## **L – ACCIDENTAL SPILLS**

- L1. The Company shall retain a qualified expert to prepare a spill prevention and response plan for the construction, installation, use, operation and maintenance of the Facility, and submit the plan to the District Manager.
- L2. The Company shall not commence construction of the Facility (including any site preparation, site clearing, or site grading) until the spill prevention and response plan mentioned in Condition L1 has been approved in writing by the District Manager.

**M – SEWAGE WORKS OF THE TRANSFORMER SUBSTATION SPILL CONTAINMENT FACILITY**

- M1. 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 stone (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 stone (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 have a minimum of two (2) PVC pipes (or equivalent material) 50mm diameter to allow for visual inspection of water accumulation. One pipe has to be installed half way from the transformer pad to the vehicle access route;
  - (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 M4; 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.

M2. 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. 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);
    - (iii) 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 M4, 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.

M3. 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.

M4. 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>
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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
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- (2) in the event of an exceedance of the maximum concentration objective set out in the table in Condition M3, 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;
- (3) if over a period of twenty-four (24) months of effluent monitoring under Condition M4, 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.

M5. The Company shall comply with the following methods and protocols for any sampling, analysis and recording undertaken in accordance with Condition M4:

- (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.

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

### **GENERAL**

N1. The Company shall implement the Environmental Effects Monitoring Plan for the North Kent Wind 1 Project, titled North Kent Wind 1 Project Bird and Bat Environmental Effects Monitoring Plan, dated October 2015, 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:

- North Kent Wind 1 Project, Natural Heritage Records Review Report, dated October 2015, and prepared by Natural Resource Solutions Inc.
- North Kent Wind 1 Project, Natural Heritage Site Investigation Report, dated October 2015, and prepared by Natural Resource Solutions Inc.

- North Kent Wind 1 Project, Natural Heritage Evaluation of Significance Report, dated October 2015, and prepared by Natural Resource Solutions Inc.
- North Kent Wind 1 Project, Natural Heritage Environmental Impact Study Report, dated October 2015, and prepared by Natural Resource Solutions Inc.
- North Kent Wind 1 Project; NHA Addendum, dated November 2, 2015, and prepared by Natural Resource Solutions Inc.
- North Kent Wind 1 Project; NHA Addendum II, dated November 26, 2015, and prepared by Natural Resource Solutions Inc.

N2. If the Company determines that it must deviate from the Environmental Effects Monitoring Plan or the Environmental Impact Study, described in Condition N1, the Company shall contact the Director, the District Manager 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.

#### **PRE-CONSTRUCTION MONITORING - SIGNIFICANT HABITAT**

- N3. The Company shall implement the pre-construction monitoring described in the North Kent Wind 1 Project, Natural Heritage Environmental Impact Study Report described in Condition N1, including the following:
- (1) Bat Maternity Colony surveys (BMA-001 and BMA-002);
  - (2) Colonially-Nesting Breeding Bird Habitat surveys (Trees/Shrubs) (CBT-001);
  - (3) Old Growth Forest surveys (OGF-001);
  - (4) Waterfowl Nesting Area surveys (WFN-001);
  - (5) Amphibian Breeding Habitat surveys (Woodland) (AWO-001);
  - (6) Marsh Bird Breeding Habitat surveys (MBB-001);
  - (7) Bird Species of Conservation Concern surveys (EWP-001 [SCC-A], EWP-002 [SCC-M], EWP-003 [SCC-G], WTH-001 [SCC-C]);

- (8) Plant Species of Conservation Concern surveys (PMI-001 [SCC-P], PAW-001 [SCC-B], MSE-001 [SCC-A], MSE-005 [SCC-N], MSE-006 [SCC-L], MSE-007 [SCC-K], MSE-008 [SCC-G], RSE-001 [SCC-P], BAS-001 [SCC-B], SRM-001 [SCC-E], SRM-002 [SCC-K], BGU-001 [SCC-A], BGU-003 [SCC-K], NFO-001 [SCC-A], NFO-005 [SCC-L], NFO-006 [SCC-N], NFO-007 [SCC-P], NFO-008 [SCC-K], SHU-002 [SCC-D], CPR-001 [SCC-P], LTA-001 [SCC-A], LTA-005 [SCC-N], LTA-006 [SCC-L], LTA-007 [SCC-K], LTA-008 [SCC-G], WSE-001 [SCC-G], WSE-003 [SCC-D], WSE-006 [SCC-K], WSE-007 [SCC-L], WSE-008 [SCC-N], WSE-009 [SCC-P], CUP-001 [SCC-D], CUP-002 [SCC-K], CUP-003 [SCC-N], CUP-004 [SCC-P], RGL-001 [SCC-P], SLT-001 [SCC-P], WIS-001 [SCC-A], WIS-005 [SCC-K], WIS-006 [SCC-L], WIS-007 [SCC-N], WIS-008 [SCC-G], GIW-003 [SCC-N], GIW-004 [SCC-A], GIW-005 [SCC-L], GIW-006 [SCC-K], GIW-008 [SCC-P], VCR-001 [SCC-P], CVI-001 [SCC-B]);

## **POST-CONSTRUCTION MONITORING - SIGNIFICANT HABITAT**

N4. Based on the results of the pre-construction monitoring described in Condition N3, should any of the habitats described in Condition N3 be deemed significant, the Company shall implement the post-construction monitoring described in the Environmental Effects Monitoring Plan and the Environmental Impact Study described in Condition N1, at the specific habitats that are found to be significant, including the following:

- (1) Bat Maternity Colony surveys (BMA-001 and BMA-002);
- (2) Colonially-Nesting Breeding Bird Habitat surveys (Trees/Shrubs) (CBT-001);
- (3) Waterfowl Nesting Area surveys (WFN-001);
- (4) Amphibian Breeding Habitat surveys (Woodland) (AWO-001);
- (5) Marsh Bird Breeding Habitat surveys (MBB-001);
- (6) Bird Species of Conservation Concern surveys (EWP-001 [SCC-A], EWP-002 [SCC-M], EWP-003 [SCC-G], WTH-001 [SCC-C]);
- (7) Plant Species of Conservation Concern surveys (PMI-001 [SCC-P], PAW-001 [SCC-B], MSE-001 [SCC-A], MSE-005 [SCC-N], MSE-006 [SCC-L], MSE-007 [SCC-K], MSE-008 [SCC-G], RSE-001 [SCC-P], BAS-001 [SCC-B], SRM-001 [SCC-E], SRM-002 [SCC-K], BGU-001 [SCC-A], BGU-003 [SCC-K], NFO-001 [SCC-A], NFO-005 [SCC-L], NFO-006 [SCC-N], NFO-007 [SCC-P], NFO-008 [SCC-K], SHU-002 [SCC-D], CPR-001 [SCC-P], LTA-001 [SCC-A], LTA-005 [SCC-N], LTA-006 [SCC-L], LTA-007 [SCC-K], LTA-008 [SCC-G], WSE-001 [SCC-G], WSE-003 [SCC-D], WSE-006 [SCC-K], WSE-007 [SCC-L], WSE-008 [SCC-N], WSE-009 [SCC-P], CUP-001 [SCC-D], CUP-002 [SCC-K], CUP-003 [SCC-N], CUP-004 [SCC-P], RGL-001 [SCC-P], SLT-001 [SCC-P], WIS-001 [SCC-A], WIS-005 [SCC-K], WIS-006 [SCC-L], WIS-007 [SCC-N], WIS-008 [SCC-G], GIW-003 [SCC-N], GIW-004 [SCC-A], GIW-005 [SCC-L], GIW-006 [SCC-K], GIW-008 [SCC-P], VCR-001 [SCC-P], CVI-001 [SCC-B]);

## POST CONSTRUCTION MONITORING - BIRD AND BAT MONITORING

N5. The Company shall implement the post-construction bird and bat mortality monitoring described in the Environmental Effects Monitoring Plan, described in Condition N1, at a minimum of eleven (11) constructed turbines.

## THRESHOLDS AND MITIGATION

N6. The Company shall contact the Director, the District Manager, 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 North Kent Wind 1 Project described in Condition N1, exceeds:

- (1) 10 bats per turbine per year;
- (2) 14 birds per turbine per year at individual turbines or turbine groups;
- (3) 0.2 raptors per turbine per year (all raptors) across the Facility;
- (4) 0.1 raptors per turbine per year (provincially tracked raptors) across the Facility;
- (5) 10 or more birds at any one turbine during a single monitoring survey; or
- (6) 33 or more birds (including raptors) at multiple turbines during a single monitoring survey.

N7. If the bat mortality threshold described in Condition N6(1) is exceeded, the Company shall:

- (1) implement operational mitigation measures consistent with those described in the Ministry of Natural Resources 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:
  - (a) adjust 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 for the operating life of the facility; and
- (2) implement an additional three (3) years of effectiveness monitoring.

N8. If the bat mortality threshold described in Condition N6(1) is exceeded after operational mitigation is implemented in accordance with Condition N7, the Company shall prepare and implement a contingency plan, in consultation with the Director, the District Manager, and the Ministry of Natural Resources and Forestry, to address mitigation actions which shall include additional mitigation and scoped monitoring requirements.

- N9. If any of the bird mortality thresholds described in Conditions N6(2), N6(3), or N6(4) are exceeded for turbines located within 120m of bird significant wildlife habitat, or if disturbance effects are realized at bird significant wildlife habitat within 120m of turbine(s) while monitoring is being implemented in accordance with Conditions N5, the Company shall implement immediate mitigation actions as described in the Environmental Impact Study and Environmental Effects Monitoring Plan described in Condition N1, and an additional three (3) years of effectiveness monitoring.
- N10. If any of the bird mortality thresholds described in Conditions N6(2), N6(3), or N6(4) are exceeded for turbines located outside 120m 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, the District Manager, and the Ministry of Natural Resources and Forestry, for the first three (3) years following the implementation of mitigation.
- N11. If either of the bird mortality thresholds described in Conditions N6(5) or N6(6) 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, the District Manager, and the Ministry of Natural Resources and Forestry.
- N12. If any of the bird mortality thresholds described in Conditions N6(2), N6(3), or N6(4) are exceeded while monitoring is being implemented in accordance with Conditions N9 or N10, or if either of the bird mortality thresholds described in Conditions N6(5) or N6(6) are exceeded after mitigation is implemented in accordance with Condition N11, the Company shall contact the Director, the District Manager, 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, the District Manager, and the Ministry of Natural Resources and Forestry.

## **REPORTING AND REVIEW OF RESULTS**

- N13. The Company shall report, in writing, the results of the post-construction disturbance monitoring described in Conditions N4 and N5, to the Director, the District Manager, and the Ministry of Natural Resources and Forestry for three (3) years on an annual basis and within three (3) months of the end of each calendar year in which the monitoring took place.
- N14. The Company shall report, in writing, bird and bat mortality levels to the Director, the District Manager, 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 N6(5) or N6(6) are exceeded, the Company shall report the mortality event to the Director, the District Manager, 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 N6(1) is exceeded, the Company shall report mortality levels to the Director, the District Manager, and the Ministry of Natural Resources and Forestry for the additional three (3) years of monitoring described in Condition N7, on an annual basis and within three (3) months of the conclusion of the October mortality monitoring for each year;
  - (4) if any of the bird mortality thresholds described in Conditions N6(2), N6(3), or N6(4) are exceeded for turbines located within 120m of bird significant wildlife habitat, the Company shall report mortality levels to the Director, the District Manager, and the Ministry of Natural Resources and Forestry for the additional three (3) years of effectiveness monitoring described in Condition N9, on an annual basis and within three (3) months of the conclusion of the November mortality monitoring for each year;
  - (5) if any of the bird mortality thresholds described in Conditions N6(2), N6(3), or N6(4) are exceeded for turbines located outside 120 m of bird significant wildlife habitat, the Company shall report mortality levels to the Director, the District Manager, and the Ministry of Natural Resources and Forestry for the additional two (2) years of cause and effects monitoring described in Condition N10, on an annual basis and within three (3) months of the conclusion of the November mortality monitoring for each year; and
  - (6) if the Company implements operational mitigation following cause and effects monitoring in accordance with Condition N10, the Company shall report mortality levels to the Director, the District Manager, and the Ministry of Natural Resources and Forestry for the three (3) years of subsequent effectiveness monitoring described in Condition N10, on an annual basis and within three (3) months of the conclusion of the November mortality monitoring for each year.
- N15. 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 N2 within ten (10) days of submitting the final plan to the Director, the District Manager, and the Ministry of Natural Resources and Forestry;
- (2) the results of the post-construction disturbance monitoring as described in Condition N13 within ten (10) days of submitting the final report(s) to the Director, the District Manager, and the Ministry of Natural Resources and Forestry; and
- (3) annual bird and bat mortality monitoring as described in Condition N14 with the exception of subsection N14(2), within ten (10) days of submitting the final report(s) to the Director, the District Manager, and the Ministry of Natural Resources and Forestry.

#### **O – ENDANGERED SPECIES ACT REQUIREMENTS**

- O1. The Company shall ensure that activities requiring authorization under the *Endangered Species Act, 2007* will not commence until necessary authorizations are in place.

#### **P – ARCHAEOLOGICAL RESOURCES**

- P1. 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.
- P2. 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.

#### **Q – CULTURAL HERITAGE RESOURCES AND PROTECTED PROPERTIES**

- Q1. The Company shall implement all of the recommendations, if any, for the protection of cultural heritage resources and protected properties found in the heritage consultant'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.

#### **R – PETROLEUM ASSETS**



- R1. Prior to the commencement of the construction of the Facility, the Company shall verify/obtain the location of all active and abandoned petroleum assets in the Project Location through consultation with all owners or operators of petroleum assets in the Project Location.
- R2. The Company shall draft a report which documents the information gathered pursuant to Condition R1. The Company shall retain this report for the life of the Facility, and shall make it available for inspection by the Ministry, upon request.
- R3. The Company shall take all measures necessary to ensure that the construction, operation, and decommissioning of the Facility does not significantly impact a petroleum resources operation, subject to any legal agreements made between Company and the applicable petroleum resources owner/operator.
- R4. When there is an overlap between regulatory requirements, the Company shall apply the more stringent and the more protective requirements for the protection of petroleum resources operations.

**S – PROPERTY LINE SETBACKS**

- S1. The Company shall not commence construction of Turbine 43 unless the Company has entered into an agreement with the property owner of PIN#007570022 (9992 Oldfield Line, Tupperville, ON, N0P 2M0) in accordance with the requirements of subsection 53(2)(b) of O. Reg. 359/09.
- S2. The Company shall notify the Director and the District Manager in writing within five (5) business days of fulfilling the requirements of Condition S1.

**T – MINISTRY OF TRANSPORTATION REQUIREMENTS**

- T1. The Company acknowledges that the project is located adjacent to Provincial Highway 40, designated as a Controlled Access Highway, and that elements of the project fall within the Permit Control Area of the Ministry of Transportation of Ontario, as defined in Section 38 of the *Public Transportation and Highway Improvement Act*.
- T2. The Company shall ensure that any project activities requiring authorizations and permits under the *Highway Traffic Act* (HTA) and the *Public Transportation and Highway Improvement Act* (PTHIA) will not commence unless all necessary HTA and PTHIA authorizations and permits have been obtained from the Ministry of Transportation of Ontario.
- T3. The Company shall comply with all applicable requirements under the HTA and the PTHIA to the satisfaction of the Ministry of Transportation of Ontario.

**U - MUNICIPAL CONSULTATION**

- U1. Within three (3) months of receiving this Approval, the Company shall prepare a traffic management plan and provide it to the Municipality of Chatham-Kent.

- U2. Within three (3) months of having provided the traffic management plan to the Municipality of Chatham-Kent, the Company shall make reasonable efforts to enter into a road users agreement with the Municipality of Chatham-Kent.
- U3. If a road users agreement has not been signed with the Municipality of Chatham-Kent within three (3) months of having provided the traffic management plan to the Municipality of Chatham-Kent, the Company shall provide a written explanation to the Director as to why this has not occurred.
- U4. The Company shall make reasonable efforts to have ongoing discussions with the Municipality of Chatham-Kent, and make reasonable efforts to ensure that all commitments made to the Municipality of Chatham-Kent are met.

#### **V - COMMUNITY LIAISON COMMITTEE**

- V1. 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) kilometre radius of the Facility that may have an interest in the Facility to participate on the Community Liaison Committee.
- V2. 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.
- V3. The Community Liaison Committee shall consist of at least one Company representative who shall attend all meetings.
- V4. 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.
- V5. The Community Liaison Committee shall be deemed to be established on the day the Director is provided with written notice from the Company that Community Liaison Committee members have been chosen and a date for a first Community Liaison Committee meeting has been set.
- V6. 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.
- V7. 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.
- V8. The Company shall ensure that all Community Liaison Committee meetings are open to the general public.
- V9. 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.
- V10. 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.

## **W – ABORIGINAL CONSULTATION**

- W1. 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.
- W2. 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.
- W3. 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.
- W4. The Company shall invite members of Aboriginal communities to participate in further archaeological fieldwork.
- W5. 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.

## **X - OPERATION AND MAINTENANCE**

- X1. 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.
- X2. The Company shall;
- (1) update, as required, the manual described in Condition X1; and
  - (2) make the manual described in Condition X1 available for review by the Ministry upon request.

X3. The Company shall ensure that the Facility is operated and maintained in accordance with the Approval and the manual described in Condition X1.

## **Y - RECORD CREATION AND RETENTION**

Y1. 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.

Y2. A record described under Condition Y1(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.

Y3. The Company shall retain, for a minimum of five (5) years from the date of their creation, all records described in Condition Y1, and make these records available for review by the Ministry upon request.

## **Z - NOTIFICATION OF COMPLAINTS**

Z1. The Company shall notify the District Manager in writing of each complaint within two (2) business days of the receipt of the complaint.

Z2. The Company shall provide the District Manager with the written records created under Condition Y1(3) within eight (8) business days of the receipt of the complaint.

**AA - CHANGE OF OWNERSHIP**

AA1. 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**

1. The Facility shall consist of the construction, installation, operation, use and retiring of the following:
  - (a) a total of thirty six (36) out of forty five (45) Siemens SWT-3.2-113 wind turbine generators:
    - eleven (11) wind turbines rated at a maximum of 3.2 megawatts (MW), SWT-3.2-113;
    - eight (8) wind turbines rated at a maximum of 2.942 megawatts (MW), SWT-2.942-113;
    - twenty six (26) wind turbines rated at a maximum of 2.772 megawatts (MW), SWT-2.772-113;and a maximum total name plate capacity of 100 megawatts (MW), designated as source ID Nos. T1-T7, T11, T12, T14-T17, T19-T21, T23, T24, T26-T28, T30-T46, T48-T52, T72 and T73 each with a hub height of 99.5 metres above grade, and sited at the locations shown in Schedule B, in accordance with Condition C1(2)(b); and
  - (b) associated ancillary equipment, systems and technologies including one (1) transformer substation, on-site access roads, and underground and overhead cabling and distribution lines,all in accordance with the Application.
2. The location of any temporary laydown areas, interior access roads, entrances to the site, underground or overhead distribution or transmission lines, and other project components associated with the Facility, excluding the Equipment, may be altered or moved by up to 20 metres from that specified in the Application, provided that:
  - (a) proposed modifications to the project are all within the already-assessed project location;
  - (b) all setback prohibitions established under O. Reg. 359/09 are complied with;
  - (c) the appropriate ministries have been consulted, including the Ministry of Natural Resources and Forestry and the Ministry of Tourism, Culture and Sport, as applicable;
  - (d) any applicable revised report in respect of the proposed modifications, as well as the modifications document prepared in accordance with Chapter 10 of the Ministry of the Environment and Climate Change publication "Technical Guide to Renewable Energy Approvals", 2013, as amended, is prepared and submitted to the Director;
  - (e) no modifications to the project will occur until such time as the Director provides written approval of the proposed modifications in the form of a letter.
3. The Company shall follow any and all directions provided to the Director in respect of project adjustments proposed pursuant to Item 2 of Schedule A.

## SCHEDULE B

### Coordinates of the Equipment and Noise Specifications

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

Source ID	Maximum sound power level (dBA)	Easting (m)	Northing (m)	Source description
T1	105.0	396,873	4,702,359	Siemens SWT-2.942-113
T2	106.0	396,542	4,704,663	Siemens SWT-3.2-113
T3	104.0	394,852	4,708,795	Siemens SWT-2.772-113
T4	104.0	395,101	4,709,126	Siemens SWT-2.772-113
T5	105.0	391,442	4,708,371	Siemens SWT-2.942-113
T6	106.0	397,729	4,705,464	Siemens SWT-3.2-113
T7	106.0	399,956	4,705,846	Siemens SWT-3.2-113
T11	104.0	395,880	4,709,716	Siemens SWT-2.772-113
T12	104.0	401,302	4,704,868	Siemens SWT-2.772-113
T14	104.0	394,310	4,706,512	Siemens SWT-2.772-113
T15	104.0	393,831	4,705,813	Siemens SWT-2.772-113
T16	104.0	396,836	4,708,763	Siemens SWT-2.772-113
T17	104.0	397,508	4,709,300	Siemens SWT-2.772-113
T19	104.0	393,752	4,704,242	Siemens SWT-2.772-113
T20	105.0	394,829	4,712,531	Siemens SWT-2.942-113
T21	104.0	395,052	4,712,806	Siemens SWT-2.772-113
T23	106.0	392,550	4,704,974	Siemens SWT-3.2-113
T24	104.0	392,722	4,710,675	Siemens SWT-2.772-113
T26	104.0	395,026	4,706,889	Siemens SWT-2.772-113
T27	104.0	395,614	4,707,629	Siemens SWT-2.772-113
T28	106.0	399,611	4,709,270	Siemens SWT-3.2-113
T30	106.0	399,317	4,708,555	Siemens SWT-3.2-113
T31	104.0	399,318	4,704,940	Siemens SWT-2.772-113
T32	106.0	397,777	4,707,587	Siemens SWT-3.2-113
T33	105.0	391,381	4,709,440	Siemens SWT-2.942-113
T34	104.0	390,530	4,710,407	Siemens SWT-2.772-113



**Table B1:** Coordinates and Maximum Sound Power Levels of Wind Turbine Generators  
(continued)

<b>Source ID</b>	<b>Maximum sound power level (dBA)</b>	<b>Easting (m)</b>	<b>Northing (m)</b>	<b>Source description</b>
<b>T35</b>	106.0	402,374	4,702,350	Siemens SWT-3.2-113
<b>T36</b>	104.0	398,719	4,700,650	Siemens SWT-2.772-113
<b>T37</b>	104.0	399,138	4,703,184	Siemens SWT-2.772-113
<b>T38</b>	105.0	397,398	4,703,580	Siemens SWT-2.942-113
<b>T39</b>	104.0	393,206	4,702,357	Siemens SWT-2.772-113
<b>T40</b>	104.0	393,486	4,701,762	Siemens SWT-2.772-113
<b>T41</b>	106.0	394,992	4,702,594	Siemens SWT-3.2-113
<b>T42</b>	104.0	393,628	4,701,244	Siemens SWT-2.772-113
<b>T43</b>	106.0	395,556	4,713,106	Siemens SWT-3.2-113
<b>T44</b>	105.0	393,222	4,707,428	Siemens SWT-2.942-113
<b>T45</b>	104.0	396,579	4,710,352	Siemens SWT-2.772-113
<b>T46</b>	104.0	397,036	4,710,748	Siemens SWT-2.772-113
<b>T48</b>	104.0	394,303	4,700,916	Siemens SWT-2.772-113
<b>T49</b>	104.0	396,365	4,706,402	Siemens SWT-2.772-113
<b>T50</b>	106.0	397,338	4,699,753	Siemens SWT-3.2-113
<b>T51</b>	104.0	394,004	4,703,960	Siemens SWT-2.772-113
<b>T52</b>	104.0	391,721	4,708,652	Siemens SWT-2.772-113
<b>T72</b>	105.0	394,976	4,699,764	Siemens SWT-2.942-113
<b>T73</b>	105.0	395,167	4,699,474	Siemens SWT-2.942-113
<b>NKW1_Transformer</b>	106.5	400,584	4,704,198	Transformer

Note: The Maximum Sound Power Level of Source ID "NKW1\_Transformer" includes the applicable 5 dB tonal penalty described in the Noise Guidelines for Wind Farms.

## SCHEDULE C

### Noise Control Measures

#### Acoustic Barrier

One (1) three sided, 62 metres long, 7 metres high acoustic barrier, positioned as per Table 4-4 and Figure 4-1 of the Acoustic Assessment Report. The acoustic barrier shall be continuous without holes, gaps and other penetrations, and having a surface mass density of at least 20 kilograms per square metres.

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

1. Conditions A1, A2 and A9 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, A6, and A8 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. Condition C1 is 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 C2, C3, D, and S 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. Specifically, Condition F is also included to verify whether the results of the acoustic emission measurements for wind turbines comply with the Maximum Sound Power Levels (dBA) shown in Table B1 of Schedule B of the Approval.

9. Conditions G - O, R, T, and U 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 P is included to protect archaeological resources that may be found at the project location.
11. Condition Q is included to protect cultural heritage resources and protected properties.
12. Condition V is included to ensure continued communication between the Company and the local residents.
13. Condition W is included to ensure continued communication between the Company and interested Aboriginal communities.
14. Condition X 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 Y 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 Z 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 AA 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 and District Manager 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  
135 St. Clair Avenue West, 1st Floor  
Toronto, Ontario  
M4V 1P5

**\* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 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 29th day of June, 2016




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Mohsen Keyvani, P.Eng.  
Director  
Section 47.5, *Environmental Protection Act*

MK/

- c: Area Manager, MOECC Windsor
- c: District Manager, MOECC Sarnia
- Joshua Vaidhyan, Samsung
- Jody Law, Pattern
- Becky Grieve, Pattern
- Mark Van der Woerd, AECOM