

RENEWABLE ENERGY APPROVALNUMBER 8279-9AUP2B
Issue Date: December 11, 2013Suncor Energy Products Inc.
150 6th Ave SW
Calgary, Alberta T2P 3E3Project: North, East, and West of 2340 Egremont Drive, R.R. #5
Location: Township of Adelaide-Metcalf, County of Middlesex

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 40 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 "Noise Assessment Report", dated July 8, 2013, prepared by HGC Engineering, signed by Ian R. Bonsma, P.Eng and Brian Howe P.Eng;
2. "Acoustic Audit - Emission" means an investigative procedure that is compliant with the IEC 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 28, 2012, and signed by Christopher Scott, Project Developer, Suncor Energy Products Inc., 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. "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";
16. "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);

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3. no clearly audible sound from stationary sources other than from those under impact assessment.
 17. "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.
 18. "Company" means Suncor Energy Products Inc. and includes its successors and assignees;
 19. "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;
 20. "Decibel" means a dimensionless measure of Sound Level or Sound Pressure Level, denoted as dB;
 21. "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;
 22. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Facility is geographically located;
 23. "Equipment" means the eighteen (18) 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;
 24. "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);
 25. "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;
 26. "IEEE Standard C57.12.90" means the IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers, 2010.
 27. "IEC Standard 61400-11" means the International Standard IEC Standard 61400-11, Wind turbine generator systems – Part 11: Acoustic noise measurement techniques, 2006;

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. "Publication NPC-233" means Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October 1995;
33. "O. Reg. 359/09" means Ontario Regulation 359/09 "Renewable Energy Approvals under Part V.0.1 of the Act" made under the Act;
34. "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;
35. "Sound Level" means the A-weighted Sound Pressure Level;
36. "Sound Level Limit" is the limiting value described in terms of the one hour A-weighted Equivalent Sound Level L_{eq} ;
37. "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;
38. "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 (μPa);
39. "Sound Pressure Level" means twenty times the logarithm to the base 10 of the ratio of the effective pressure (μPa) of a sound to the reference pressure of $20 \mu\text{Pa}$;
40. "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 Director and the District Manager 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, contact the Ministry of Agriculture, Food and Rural Affairs to discuss its plans for the decommissioning of the Facility, and follow any directions provided by that ministry in respect of the Company's plans to restore 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 eighteen (18) out of the twenty two (22) wind turbine generators identified in 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:

Wind Speed (m/s) at 10 m height	4	5	6	7	8	9	10
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).

D – CONFIRMATION OF VACANT LOT NOISE RECEPTORS

- D1. The locations identified in Table A5 of the Acoustic Assessment Report as “Point of Reception ID” numbers 52, 54, 57, 62, 64, 65, 148, 269, 508, 552, 553, 555, 556, 557, 560, 565, 567, 569, 571, 574, 578, 579, 583, 585, 587, 588, 591, 592, 595, 596, 598, 599, 604, 610, 612, 614, 615, 617, 619, 626, 628, 630, 631, 632, 633, 634, 639, 642, 646, 647, 650, 651, 652, 653, 654, 656, 657, 659, 660, 661, 664, 665, 666, 667, 668, 669, 670, 697, 699, 704, 705, 706, 707, 709, 717, 718, 728, 742, 743, 750, 751, 752, 753, 754, 755, PV_442, PV_443, PV_444, PV_461, V_272, V_276, V_331, V_341, V_349, V_350, V_351, V_355, V_356, V_357, V_359, V_360, V_361, V_382, V_385, V_387, V_388, V_389, V_390, V_400, V_403, V_420 and V_460 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 three (3) different Points of Reception that have been selected using the following criteria:
 - a) the Points of Reception should represent the location of the greatest predicted noise impact, i.e., the highest predicted Sound Level; and
 - b) the Points of Reception should be located in the direction of prevailing winds from the Facility;
 - (3) The acoustic audit measurements shall be performed on two (2) separate occasions;
 - (4) The acoustic audit measurements should be performed within a period of twelve (12) months.
- 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 nine (9) months after the commencement of the operation of the Facility for the first of the two (2) acoustic audit measurements at three (3) Points of Reception; and
- (2) no later than sixteen (16) months after the commencement of the operation of the Facility for the second of the two (2) acoustic audit measurements at three (3) 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 the IEEE Standard C57.12.90 and Ministry Publication NPC-233 and no later than six (6) months after the commencement of the operation of the Facility.

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 IEC Standard 61400-11;
- (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 IEC Standard 61400-11 by an Independent Acoustical Consultant, no later than nine (9) months after the commencement of the operation of the Facility.

G - WATER TAKING ACTIVITIES

G1. The Company shall not take more than 50,000 litres of water on any day by any means during the construction, installation, use, operation, maintenance and retiring of the Facility.

H - SEWAGE WORKS OF THE TRANSFORMER SUBSTATION SPILL CONTAINMENT FACILITY

H1. 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 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 H4; 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.

H2. 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)
 - (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 (visual inspection) after 48 hrs of any storm event, 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.

H3. 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:

Effluent Parameters	Maximum Concentration Objective
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.

H4. 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:

Effluent Parameters	Measurement Frequency and Sample Points	Sample Type
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 H3, 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 H4, 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.

- (4) the Company shall, in the event of an exceedance of the maximum Concentration Objective set out in the table under Condition H3, increase the frequency of sampling to once per month and provide the District Manager, with copies of the written record created for the monitoring until the District Manager provides written direction that monthly sampling is no longer required.

H5. The Company shall comply with the following methods and protocols for any sampling, analysis and recording undertaken in accordance with Condition H4:

- (1) Ministry of the Environment 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.

I – NATURAL HERITAGE

General

11. The Company shall implement the Environmental Effects Monitoring Plan for the Suncor Energy Adelaide Wind Power Project, titled Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitat, dated July 2012, and the commitments made in the following reports and included in the Application, and in which the Company submitted to the Ministry of Natural Resources in order to comply with O. Reg. 359/09:
 - (1) *Suncor Energy Adelaide Wind Power Project Natural Heritage Assessment and Environmental Impact Study* dated July 2012 and prepared by Stantec Consulting Limited for Suncor Energy Products Inc.
 - (2) *Suncor Energy Adelaide Wind Project Addendum 1* letter report dated October 2012 prepared by Stantec Consulting Limited for Suncor Energy Products Inc.
 - (3) Memo titled *Suncor Energy Adelaide Minor Modifications* dated February 2013 and prepared by Stantec Consulting Limited for Suncor Energy Products Inc.
 - (4) Memo titled *Suncor Energy Adelaide Wind Power Project Modifications* dated November 5, 2013 and prepared by Stantec Consulting Limited for Suncor Energy Products Inc.
12. If the Company determines that it must deviate from either the Environmental Effects Monitoring Plan or the Environmental Impact Study and Addendum or minor modifications thereto, described in Condition I1, the Company shall contact the Ministry of Natural Resources and the Director, prior to making any changes to the Environmental Effects Monitoring Plan or the Environmental Impact Study and Addendum or minor modifications thereto, and follow any directions provided.

Post Construction Monitoring - Significant Wildlife Habitat

- I3. The Company shall implement the post-construction monitoring described in the Environmental Effects Monitoring Plan and the Environmental Impact Study, described in Condition I1, including the following:
- (1) Disturbance monitoring of amphibian breeding habitat woodland for features 6 and 20,
 - (2) Disturbance monitoring of amphibian breeding habitat wetland for feature 16.

Post Construction Monitoring - Birds and Bats Mortality Monitoring

- I4. The company shall implement the post-construction bird and bat mortality monitoring described in the Environmental Effects Monitoring Plan, described in Condition I1, at a minimum of 10 of 18 constructed turbines.

Thresholds and Mitigation

- I5. The Company shall contact the Ministry of Natural Resources and the Director if any of the following bird and bat mortality thresholds, as stated in the Environmental Effects Monitoring Plan for the Suncor Energy Adelaide Wind Power Project described in Condition I1, are reached or exceeded:
- (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 a wind power project;
 - (4) 0.1 raptors per turbine per year (provincially tracked raptors) across the wind power project;
 - (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.
- I6. If the bat mortality threshold described in Condition I5(1) is reached or 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 including:
 - (a) increase cut-in speed to 5.5 m/s 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.

17. If the bat mortality threshold described in Condition I5(1) is reached or exceeded after operational mitigation is implemented in accordance with Condition I6, the Company shall prepare and implement a contingency plan, in consultation with the Ministry of Natural Resources, to address mitigation actions which shall include additional mitigation and scoped monitoring requirements.
18. If either of the bird mortality thresholds described in Conditions I5(2) or I5(3) or I5(4) is reached or exceeded, 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 for the operating life of the Facility, and effectiveness monitoring at individual turbines, for the first three (3) years following the implementation of mitigation.
19. If either of the bird mortality thresholds described in Conditions I5(5) or I5(6) is reached or 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;
 - (2) blade feathering at specific times of year; or
 - (3) an alternate plan agreed to between the Company and the Ministry of Natural Resources.
- I10. If either of the bird mortality thresholds described in Conditions I5(2) or I5(3) or I5(4) is reached or exceeded while monitoring is being implemented in accordance with Condition I8, or if either of the bird mortality thresholds described in Conditions I5(5) or I5(6) is reached or exceeded after mitigation is implemented in accordance with Condition I9, the Company shall contact the Ministry of Natural Resources 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 and the Ministry of Natural Resources.

Reporting and Review of Results

- I11. The Company shall report, in writing, the results of the post-construction disturbance monitoring described in Conditions I3, to the Ministry of Natural Resources 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.

- I12. The Company shall report, in writing, bird and bat mortality levels to the Ministry of Natural Resources 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 I5(5) or I5(6) is reached or exceeded, the Company shall report the mortality event to the Ministry of Natural Resources 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 within 24 hours of observation or the next business day;
 - (3) if the bat mortality threshold described in Condition I5(1) is reached or exceeded, the Company shall report mortality levels to the Ministry of Natural Resources for the additional three (3) years of monitoring described in Condition I6, 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 I5(2) or I5(3) or I5(4) is reached or exceeded in the project area, the Company shall report mortality levels to the Ministry of Natural Resources for the additional two (2) years of cause and effects monitoring described in Condition I8, 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 in accordance with Condition I8, the Company shall report mortality levels to the Ministry of Natural Resources for the three (3) years of subsequent effectiveness monitoring described in Condition I8, on an annual basis and within three (3) months of the conclusion of the November mortality monitoring for each year.

J - STORMWATER MANAGEMENT

- J1. 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.

K - SURFACE WATER

- K1. Within one year of the completion of the construction of the Facility, the Company must provide the District Manager, in writing, a description of post-construction surface water quality conditions and a written description of any additional remediation works required. The written description shall include surface water conditions during the freshet period occurrence in the first Spring following the construction of the Facility.

L - TRAFFIC MANAGEMENT PLANNING

- L1. Within three (3) months of receiving this Approval, the Company shall prepare a Traffic Management Plan and provide it to the Township of Adelaide-Metcalf and the County of Middlesex.
- L2. Within three (3) months of having provided the Traffic Management Plan to the Township of Adelaide-Metcalf and the County of Middlesex, the Company shall make reasonable efforts to enter into a Road Users Agreement with the Township of Adelaide-Metcalf and the County of Middlesex.
- L3. If a Road Users Agreement has not been signed with the Township of Adelaide-Metcalf and the County of Middlesex within three (3) months of having provided the Traffic Management Plan to the Township of Adelaide-Metcalf and the County of Middlesex, the Company shall provide a written explanation to the Director as to why this has not occurred.

M - ARCHAEOLOGICAL RESOURCES

- M1. 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.
- M2. 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.

N - COMMUNITY LIAISON COMMITTEE

- N1. 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.

- N2. 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.
- N3. The Community Liaison Committee shall consist of at least one Company representative who shall attend all meetings.
- N4. 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.
- N5. 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.
- N6. 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.
- N7. 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.
- N8. The Company shall ensure that all Community Liaison Committee meetings are open to the general public.
- N9. 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.

N10. 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.

O - OPERATION AND MAINTENANCE

- O1. 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.
- O2. The Company shall;
- (1) update, as required, the manual described in Condition O1; and
 - (2) make the manual described in Condition O1 available for review by the Ministry upon request.
- O3. The Company shall ensure that the Facility is operated and maintained in accordance with the Approval and the manual described in Condition O1.

P - RECORD CREATION AND RETENTION

- P1. 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.

P2. A record described under Condition P1 (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.

P3. The Company shall retain, for a minimum of five (5) years from the date of their creation, all records described in Condition P1, and make these records available for review by the Ministry upon request.

Q - NOTIFICATION OF COMPLAINTS

- Q1. The Company shall notify the District Manager of each complaint within two (2) business days of the receipt of the complaint.
- Q2. The Company shall provide the District Manager with the written records created under Condition P2 within eight (8) business days of the receipt of the complaint.
- Q3. If the Company receives a complaint related to groundwater, the Company shall contact the District Manager within one (1) business day of the receipt of the complaint to discuss appropriate measures to manage any potential groundwater issues.

R - CHANGE OF OWNERSHIP

- R1. 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.

S – ABORIGINAL CONSULTATION

- S1. 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.
- S2. 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.
- S3. 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.
- S4. 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.

T – ENDANGERED SPECIES ACT REQUIREMENTS

- T1. No construction or installation activities shall be commenced in areas at the project location that support habitat for Bobolink and Eastern Meadowlark until the Company has met all requirements under the *Endangered Species Act, 2007*.

SCHEDULE A

Facility Description

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

- (a) a total of eighteen (18) out of twenty two (22) Siemens SWT-2.3-113 wind turbine generators each rated at a maximum of 2.221 megawatts (MW) generating output capacity with a maximum total name plate capacity of 40 megawatts (MW), 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) 62 megavolt-ampere (MVA) transformer substation, 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

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

(Coordinates of the Equipment below in UTM, Z17-NAD83 projection)

Source ID	Maximum Sound Power Level (dBA)	Easting (metres)	Northing (metres)	Source Description
WTG05	104.0	451,199	4,762,373	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG06	104.0	451,980	4,762,609	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG07	104.0	449,661	4,762,144	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG08	104.0	451,156	4,763,377	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG09	104.0	449,734	4,763,094	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG11	104.0	449,148	4,763,621	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG12	104.0	447,877	4,763,360	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG13	104.0	447,187	4,762,975	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG14	104.0	447,170	4,764,853	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG15	104.0	446,096	4,765,010	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG16	104.0	445,133	4,765,332	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG17	104.0	444,507	4,765,066	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG18	104.0	443,799	4,765,061	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG19	104.0	442,948	4,764,967	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG20	104.0	440,256	4,765,227	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG21	104.0	439,160	4,763,535	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG22	104.0	438,309	4,763,209	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG23	104.0	438,309	4,763,703	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG24	104.0	436,172	4,763,648	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG26	104.0	436,111	4,764,848	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG27	104.0	435,962	4,765,466	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG28	104.0	435,864	4,766,263	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
TS1	100.8	439,770	4,763,131	Transformer Substation, 62 MVA, See Table B2

Table B2: Maximum Sound Power Spectrum of Transformer Substation

Transformer Substation	1/1 Octave Band Centre Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Sound Power Level (dB Lin)	103.4	105.4	100.4	100.4	94.4	89.4	84.4	77.4

Note: The Maximum Sound Power Level of Transformer Substation (Source ID "TS1") includes the applicable 5 dB tonal adjustment described in the Noise Guidelines for Wind Farms.

SCHEDULE C
Noise Control Measures

Acoustic Barrier

One (1) 15 metres long, 6 metres high, L-shaped acoustic barrier, positioned as per Figure 3 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 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. 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 A8, C2, C3 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, K, L and T 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 M is included to protect archaeological resources that may be found at the project location.
11. Condition N is included to ensure continued communication between the Company and the local residents.
12. Condition O 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.

13. Condition P 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.
14. Condition Q 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.
15. Condition R 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.
16. Condition S is included to ensure continued communication between the Company and interested Aboriginal communities.

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
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**

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, 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 11th day of December, 2013



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

NC/

c: District Manager, MOE London - District
Mark Kozak, Stantec Consulting Inc.