July 2005

Frequently Asked Questions for Wind Turbine Projects

1. **What are the environmental approval requirements for wind turbine projects?**

   Wind turbines require a Certificate of Approval (Noise) under section 9 of the *Environmental Protection Act* (EPA). Additionally, wind turbine projects greater than or equal to 2 megawatts (MW) are made subject to the *Environmental Assessment Act* (EAA) by the Electricity Projects Regulation (O.Reg. 116/01). Proponents must conduct an environmental screening according to the Ministry of the Environment's (MOE) "Guide to Environmental Assessment Requirements for Electricity Projects", which is available on the MOE Internet site at http://www.ene.gov.on.ca/envision/gp/4021e.pdf.

2. **Are there possible exceptions/exemptions for wind turbines from the requirement to obtain a Certificate of Approval (Noise)?**

   Yes. Selected types of residential and agricultural wind turbines are exempted under Section 9(3) of the EPA and by the Certificate of Approval Exemption Regulation (O.Reg. 524/98). For more information about exemptions, please refer to the legislation.

3. **What are the Ministry of the Environment (MOE) requirements for noise limits for wind turbine projects?**

   Specific guidance is given in a document titled "Interpretation for applying MOE Technical Publications to Wind Turbine Generators". This document is available on the MOE Internet site at www.ene.gov.on.ca/envision/gp/4709e.pdf.

4. **Does the interpretation document set new noise limits for wind turbines?**

   No. The noise limits in the interpretation document are consistent with the MOE criteria set in the technical publications titled "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural) – Publication NPC-232" and "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban) – Publication NPC-205". These documents are available in the "publications" section of the Ministry of the Environment Internet site.

5. **Are there different noise limits set for day time and night time operation of wind turbines?**

   No, the noise limits apply for continuous operation any time of the day. The Ministry recognizes that it is not practical to restrict the operation of wind turbines to specific times without reducing their potential productivity. Furthermore, it recognizes that the more sensitive times for noise impacts typically occur during evening and nighttime hours. Consequently, the noise limits for wind turbines are based on the existing criteria for nighttime hours set in publications NPC-205 & NPC-232.

6. **The interpretation document includes "camping area" in its definition of a potential "Point of Reception". What does this mean?**

   For these purposes, a "camping area" must be recognized as an official camp by a local municipality or the Ministry of Natural Resources.

7. **Are proponents for wind turbine developments allowed to enter into waivers with neighbouring land owners who are willing to accept higher noise limits than those specified by the MOE?**

   Waivers and other legal agreements of this type are beyond the scope of the ministry's interpretation document for wind turbines. Consequently, no other noise limits are accepted.

8. **What noise limits apply to residences of landowners who operate wind turbine(s) on their property?**

   The landowner's residence, on the same premises as the wind turbine(s), is not a Point of Reception as defined by the MOE noise guidelines. Consequently, that residence would be considered as part of the facility containing the wind turbine(s), so no noise limit would apply. The Point of Reception is located on a neighbouring property.

9. **When should proponents be conducting the noise impact assessment?**

   The noise impact assessment should be performed by a qualified noise consultant early on in the project planning cycle, as part of the environmental screening process. Results of the noise impact assessment should be included in the Environmental Screening Report or Environmental Review Report. These results can have a significant impact on necessary setback distances, and the number and location of turbines that could be constructed at a site, and would be of interest to nearby residents. MOE staff will perform a review of the noise assessment at the environmental screening stage. This review should take place prior to initiating the 30-day public and agency review period.

10. **Why is it necessary to make an application for a Certificate of Approval if the noise review takes place at the environmental screening stage?**

    Most wind turbines are not exempt from section 9 of the EPA; therefore there is a legal requirement to obtain a Certificate of Approval.

11. **Would an application for a Certificate of Approval (Noise) for a wind turbine project be posted on the Environmental Bill of Rights registry?**

    The Certificate of Approval application would only be posted if the wind turbine project was not subject to the EAA (i.e. if the project is less than 2 MW in nameplate capacity).

12. **What is the application fee for a Certificate of Approval (Noise) for a wind development?**

    The application fee is charged based on the current Fees - Certificates of Approval Regulation (O. Reg. 363). To calculate the fee for your application, please complete the form titled "Costs for EPA s.9 Applications, Supplement to Application for Approval". This form is available on the MOE Internet site at http://www.ene.gov.on.ca/envision/gp/4108e.pdf. Generally, the appropriate fee for a new wind turbine development would be the administrative processing cost ($200) plus the applicable cost for noise review described in items 3.2.1 and 3.2.2 of Table 3.2. Typically this would be $400 for up to five wind turbines and $100 for each additional unit.

13. Is there a recommended setback distance between wind turbines and sensitive land uses, for the purpose of compliance with noise limits?

The document titled "Interpretation for applying MOE Technical Publications to Wind Turbine Generators" describes the requirements for setback distances of less than 1000 metres. This document is available on the MOE Internet site at http://www.ene.gov.on.ca/envision/gp/4709e.pdf. At distances greater than 1000 metres, noise impact due to wind turbine operation is insignificant. Consequently, a noise assessment is not required. However, the project is still subject to approval under section 9 of the EPA.

14. Are there standard operational mitigation measures that can be used to decrease noise impacts to sensitive receptors if the company or MOE receives a complaint from a nearby resident (propeller speed, maintenance)?

Feasibility of mitigation after installation is limited. Owners/operators should ensure proper maintenance. MOE reviews noise impact assessments at the planning stage to require compliance with applicable noise limits.

15. What environmental factors can influence noise impacts (i.e., wind direction, topography, etc.)?

Many environmental factors can influence noise impacts due to wind turbine operations, including wind gradient (speed and direction at various elevations), temperature inversions, ground effect, molecular absorption in air, acoustic shielding, and reflections, amongst others.

16. Should the company have a noise monitoring program for wind turbines?

It may be required that an applicant verify, correct, or monitor the noise emissions from their wind turbine units if there are issues of non-compliance with MOE noise limits.

17. Does the operation of a wind turbine produce infrasound/low frequency noise?

Infrasound/low frequency noise emissions were characteristics of some early wind turbine models. This has been attributed to early designs in which turbine blades are downwind of the main tower. This phenomenon does not occur with upwind turbine technology. Modern designs of wind turbine generators generally have the blades upwind of the tower (the rotor facing the wind). The basic advantage of upwind designs is that one avoids the wind shade behind the tower. There is no evidence that the current (upwind) turbine technology presents any problems related to the generation of infrasound/low frequency sound energy.

18. Does the operation of a wind turbine cause vibration?

A failure of mechanical components may result in adverse mechanical noise as well as vibration. However, there is no evidence that even such serious failure may generate significant vibration outside of a fifty-metre radius from the wind turbine tower.

19. Are special noise reducing features for wind turbines, based on automated reduced operations, an accepted parameter for demonstrating compliance with MOE noise limits at the approval stage?

No. The Ministry's guidelines require that the noise assessment be made based on the principle of "worst case scenario" in order to demonstrate compliance with noise limits.

20. What is the height above grade for wind speed data that is used for describing sound levels from wind turbines?

All sound level data, including wind turbine manufacturer's specifications and the MOE limits at Point of Reception, should correspond to wind speeds measured at 10 metres height above grade.

21. Some municipalities put in place policies requiring noise assessments and reports to be submitted for review. How do these differ from the provincial noise criteria and requirements for review?

The ministry supports coordination between the *Environmental Assessment Act* and *Planning Act.* Planning authorities (including municipalities and planning boards) may require additional requirements under the *Planning Act*, above what is required by provincial environmental legislation and guidelines. To facilitate proposals, proponents are encouraged to coordinate provincial and municipal noise requirements and address them in one noise assessment study and report.

22. If consultants, applicants or members of the public want more information about a wind turbine development who should they contact?

They may contact the Environmental Assessment and Approvals Branch by phone at 416-314-8001 (toll-free at 1-800-461-6290) or by email at EAABGen@ene.gov.on.ca.

23. Who is the appropriate contact if a neighbouring resident thinks that the noise impacts are excessive, once the turbines are constructed and operating?

Residents should contact their local MOE District Office. A list of MOE District Offices is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm.

24. Can I obtain a Certificate of Approval (Noise) under section 9 of the EPA, before I obtain approval under the EAA for wind turbine projects?

For any project requiring approval under the EAA, Certificates of Approval will not be issued until the EAA requirements have been met. It is advised that applications for Certificates of Approval be submitted after the EAA process has been completed.

25. Can any construction work of a wind turbine project proceed prior to obtaining a Certificate of Approval?

Under Section 9 of the EPA, it is required to obtain an approval before construction, alteration, extension or replacement of any equipment or structure that may emit, or from which may be emitted, a contaminant into the natural environment. If the project is unchanged as reviewed at the environmental screening process, then the application for a Certificate of Approval, under section 9 of the EPA, will be processed based on this ministry's prior technical review.

26. Are there Federal EA requirements for wind turbine developments?

Wind turbine developments may be subject to the *Canadian Environmental Assessment Act*. Proponents can refer to Appendix F in the "Guide to Environmental Assessment Requirements for Electricity Projects, March 2001" for further detail and federal contact information. This Guideline is available on the MOE Internet site at http://www.ene.gov.on.ca/envision/gp/4021e.pdf. On November 1, 2004, the Canada-Ontario Agreement on Environmental Assessment Cooperation was signed. The proponent can therefore consider coordinating the federal and provincial environmental assessment requirements, in consultation with both levels of government, when proceeding through the environmental assessment for the project. However, projects must still meet all applicable provincial legislative regulatory requirements, policies and guidelines.

Please note:

The Ministry of the Environment's approvals program requires that all undertakings requiring approval under ministry legislation are carried out in accordance with the Acts and applicable Regulations and Guidelines administered by the ministry. These requirements are updated from time to time by the ministry as environmental standards and environmental management approaches are modified. For additional information relating to Certificates of Approval, please refer to the publications titled "Guide to Applying for Approval (Air & Noise) and "Interpretation for applying MOE Technical Publications to Wind Turbine Generators". For additional information relating to environmental assessment requirements please refer to the publication titled "Guide to Environmental Assessment Requirements for Electricity Projects".

While every effort has been made to ensure the accuracy of the information contained in this document, it should not be construed as legal advice.

For more information about Certificates of Approval or to obtain an application package, please visit the Ministry of the Environment Internet site at http://www.ene.gov.on.ca or contact:

Ministry of the Environment
Environmental Assessment and Approvals Branch
2 St. Clair Ave W, Floor 12A
Toronto, ON M4V 1L5

Toll Free: 1-800-461-6290
Phone: 416-314-8001
Fax: 416-314-8452
Email: EAABGen@ene.gov.on.ca