

# Summary of Proposed Changes to REA Projects

## O.Reg. 359/09

The following is a summary of noise related changes currently proposed within **O.Reg. 359/09**. Please note that Aercoustics Engineering Ltd. (hereafter referred to as AEL) review is based on draft documents provided by the MOECC, which are subject to change. AEL's review is limited to implied impacts for acoustic related issues and makes no warranties, either express or implied, regarding the MOECC's documents, project specifics, or legal implications. Furthermore, AEL shall not be responsible, in whole or in part for any interpretations, decisions or other actions any third parties may take as a result of reading this document.

Item #	Section	Description of change	Impact
1	1.1	Sound Power Level – Definition has been amended to remove CAN/CSA C61400-11:2007. The specified standard by which “apparent sound power level” has to be reported is now defined in Section 6.1	This allows for the implementation of a more up to date version of the standard (Edition 3.0, released in 2012). <b>See Items 2 &amp; 3!</b>
2	6.1	The governing standard by which a manufacturer has to report sound power level has been split into 3 categories  1. If an application was filed before January 1, 2016 and a power purchase agreement signed before July 1, 2015 the existing standard (CAN/CSA C61400-11:2007) would apply  2. For applications filed on or after January 1, 2016 sound power must be reported CAN/CSA C61400-11:2013 <b><u>including any positive uncertainty values provided by the manufacturer</u></b>  3. If/when adoption of new versions of CAN/CSA C61400-11:2013 are made, submissions must be reported as per the updated version including any positive uncertainty values provided by the manufacturer	All future facilities would have to include equipment uncertainty into their acoustic assessment.  Existing regulations only require modelling of sound power levels based on nominal values (i.e. do not include equipment uncertainty).  This proposed change will significantly impact how wind facilities are assessed.
3	6.2	The use of C61400-11:2007 (Category 1, noted in Point 3) would continue to apply to a facility unless: 1. A wind turbine location is changed 2. A wind turbines sound power level increases with use of the 2007 standard	For existing facilities that may want to upgrade their wind turbines, this has potential to force them to apply for an amendment with inclusion of equipment uncertainty. This has the potential for facilities to be held to a higher standard than what they were originally permitted under.

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## Noise Guidelines for Wind Farms

The following is a summary of noise related changes currently proposed within **Noise Guidelines for Wind Farms**. Please note that Aercoustics Engineering Ltd. (hereafter referred to as AEL) review is based on draft documents provided by the MOECC, which are subject to change. AEL's review is limited to implied impacts for acoustic related issues and makes no warranties, either express or implied, regarding the MOECC's documents, project specifics, or legal implications. Furthermore, AEL shall not be responsible, in whole or in part for any interpretations, decisions or other actions any third parties may take as a result of reading this document.

Item #	Section	Description of change	Impact
4a	6.4.10	Acoustic modelling parameters – Ground factor will change from 0.7 to 0.5	This increases the conservatism of the acoustic model and will further impact how wind facilities are assessed
4b	6.4.7 and 6.4.10	Acoustic modelling parameters – application on non-flat terrain. Additional considerations will have to be made when modelling hilly terrain as per “A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise, Issue1 May 2013, Institute of Acoustics.	The requirement to consider this will vary from project to project. Most terrain in Ontario is pretty flat and it is not expected that this will have to be considered widely
5	5.2, 5.3, and 6.4.8	Tonality – Reference to MOECC NPC-104 (tonality) are removed and replaced with reference to CAN/CSA C61400-11:2013. When tonality exceeds 3dB a Tonality Report will need to be submitted and a 5 dB penalty will be imposed	The MOECC has been requesting tonality as per CAN/CSA C61400-11 for some time and this simply clarifies the process. More information will be required about the “Tonality Report” to determine what, if any, impact it may have on post-construction audits and how a 5 dB penalty would be applied
6	6.2.3 and 6.6.1	Wind Shear – the language around wind shear has been modified to ensure the worst-case impact is assessed	The MOECC has always required assessment of “worst-case” and the industry has seldom actually utilized a wind shear adjustment (to model to a limit of 43 dBA at 7 m/s, for example). This is expected to have minimal impact on future projects that use pitch regulated turbines. This may impact facilities that intend to obtain an amendment, but will vary from project to project.
7	6.4.10	Sound Power Level – The requirement for inclusion of 31.5Hz Octave band in the acoustic model has been added	Current modelling requires inclusion of only 63-8,000Hz (Octave bands). Inclusion of the 31.5Hz band may slightly increase the predicted impact at a receptor.