-----Original Message-----
From: Kowalewski, John (ENE)
Sent: Fri 06/03/2009 15:36
To: Laszlo, Richard (ENE)
Cc: Wallace, Marcia (ENE); Dumais, Doris (ENE); Low, Victor (ENE); Gillies, Bruce (ENE)
Subject: Technical Workshop - Wind Turbine Noise

Hi Richard,

Further to my comments at our last meeting, I have reviewed the proposed agenda for the Technical Workshop on Renewable Energy Technologies, in particular the section on Wind Turbine Noise and have these comments and suggestions.

As you know, recently we developed the MOE document Noise Guidelines for Wind Farms - October 2008 that replaced an earlier document used for wind farms noise approvals. This task was accomplished by MOE noise specialists (including myself) and supporting staff from within the EAAB. We solicited input from an external Noise Practitioners group, followed by input from a Stakeholders group which included critics of the Ministry's guidelines and policy. As a result of the open consultations, the new guidelines are now more clear and comprehensive allowing the development of wind farms along with protection from excessive noise exposure to people living nearby.

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The inputs and discussions included a very wide range of issues concerning noise impacts on residents from wind farms, including: Wind shear effects, amplitude modulation, infrasound, low frequency noise, calculations methodologies, acceptable noise exposure limits, limits in other jurisdictions, transformer noise, background noise, sound propagation parameters, setbacks, combined noise sources, and other issues.

Since these issues have been discussed openly already, is it prudent to open them again for debate at this time? Perhaps it would be better to recognize the current guidance document as the main reference from which a set of "setbacks" can be developed.

Given the significant number of variables and perturbations involving wind turbine layouts relative to various receptors the task of generating realistic "setbacks" (in a short time frame) is quite challenging. As agreed at the first meeting, I am preparing a draft setbacks matrix along with the supporting rationale for review and commenting. This is based on the above-noted MOE noise guideline. Preferably, the draft should be reviewed first internally, by my peer noise engineers, and then externally by qualified experts. The draft will not be ready for the March 11 meeting.

Some suggested topics of interest to us for input from experts and stakeholders would be:

- Update on perception and annoyance of humans to wind turbine noise.
- Status of international standards for wind turbine noise measurement (IEC 61400) and for sound propagation (ISO 9613-2).
- What should we do with medium and small wind turbines in terms of approvals or exemptions for noise.

I hope you find this information useful in preparing the agenda for the workshop and please call me if you have any questions.

Regards,

Kowalewski, John (ENE)

From: Wallace, Marcia (ENE)
Sent: March 07, 2009 12:00 AM
To: Kowalewski, John (ENE); Laszlo, Richard (ENE)
Cc: Dumais, Doris (ENE); Low, Victor (ENE); Gillies, Bruce (ENE); Henry, Dale (ENE); Fani, Jason (ENE); Perry, Kevin (ENE)
Subject: RE: Technical Workshop - Wind Turbine Noise

Hi John. I wanted to respond to your concerns, thanks for the fullsome description. I will say this to the full sub group looking at wind turbine setbacks and requirements, and our inter-ministry staff partners who will be attending the workshop, at the 9:00 AM meeting we have arranged on Tuesday.

I want you to know that I fully understand the work the Ministry has done to date on wind turbines and noise. Be assured, we are NOT starting from scratch. At the same time, as you know, the Ministry and the government is under renewed pressure to address health concerns, both real and perceived, in the establishment of regulated setbacks.

We can't avoid having the conversation, we just have to manage it properly. If we don't talk about these issues then we are open to criticism and will have no effective response when we are politically challenged on these points in the coming weeks. Saying we've looked at it in the past isn't going to be enough. We've had similar concerns raised by CanWEA about our approach for the day, and we've invited several people on their request to make sure the room has a balanced perspective.

That said, I see the discussion on things like low-frequency noise a carefully navigated part of Wednesday's agenda. We need to be clear up front what we have examined in the past, where we have landed (our noise guidelines) and solicit NEW research, or NEW information. This is the opportunity for industry to again make its case, for us to hear alternative perspectives and be able to effectively confirm (knowing we will be pressured on this later) that indeed there is nothing that we learn that brings into question where the Ministry landed last time these issues were discussed, should that be what we find.

I trust this is helpful perspective.
Marcia

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Sent: Fri 06/03/2009 15:36
To: Laszlo, Richard (ENE)
Cc: Wallace, Marcia (ENE); Dumais, Doris (ENE); Low, Victor (ENE); Gillies, Bruce (ENE)
Subject: Technical Workshop - Wind Turbine Noise

Hi Richard,

reasonable to assume that the current guidelines will remain intact? If new guidance documents are prepared, CanWEA suggests that a grandfathering approach be used for projects that have already completed field programs.

Developers need some certainty from the MNR with respect to the field programs to be completed for both bird (those within MNR's jurisdiction) and bat studies. CanWEA suggests that prior to the commencement of a field program a developer must submit a field program protocol based on existing policies to the MNR for review and approval. We also request that the MNR guarantee a response time on approvals for field protocols prior to a field program commencing. Once a reasonable field program is agreed upon between the proponent and the MNR, both parties should sign-off on the program. This will establish a clear process with certainty for the project developer early on in the process and will hopefully prevent the MNR from requesting proponents to complete additional studies as the project nears the end of the project permitting stage which has been the case to date.
If the MNR deems that the results of the approved field program warrants additional studies, these studies, if reasonable, should be made as a condition of the REA approval and should not prevent or delay a proponent from receiving a REA approval.

Page 15, "Decommissioning Plan" - How detailed does this plan have to be? Clarification is required.

Page 15, "Conditions of Approval" - CanWEA takes issue with the requirement for infrasound monitoring as the current scientific evidence clearly shows this is not an issue. Studies across the world have shown that turbines do not produce infrasound at levels anywhere near those that can have an impact on humans. No peer-reviewed study has ever established a link between infrasound from turbines and human health, therefore CanWEA submits that the proposed requirement for infrasound or low frequency noise monitoring as a condition of the REA be removed.
As well, CanWEA requests further information on what types of 'shut-down conditions' MOE envisions.

Other Comments:
Service Guarantee - Where is the Service Guarantee within the REA? Proposed regulations appear to be silent on this important issue.

Timelines - The current timeframe for confirmation of approvals appears to be onerous on the proponent and needs to be clarified. The steps and timelines (where known) are presented in the following Table. A clarification of the timelines to review the application for completeness and for the review of the REA is needed. CanWEA suggests that the time to review the REA for completeness by the MOE be limited to 10 days and the time for the MOE to review the REA be limited to 4 months, giving a total time of approximately 6 months from submission to approval, assuming no elevation to the ERT.

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development with the applied setback. However, this is not the intent of the setback regulations for Natural Heritage and Water Body features. The intent of these setbacks is not to preclude development but rather to require specific technical study, through an Environmental Impact Study (EIS).

The term 'minimum setback' and the table heading 'setback required' the Natural Heritage section should be changed to avoid erroneous use of the terms.

7) Bird and Bat Studies (Page 15)

Greater certainty from the MOE and MNR with respect to the field programs to be completed for both bird (those within MNR's jurisdiction) and bat studies is required within the regulations. The regulations should establish a clear process, including field program protocols based on existing policies, to provide certainty early in the process and prevent requirements for additional studies towards the end of the permitting stage, which has been the case to date.

If results of the approved field program warrants additional studies, these studies, if reasonable, should be made as a condition of the REA approval and should not prevent or delay a proponent from receiving a REA approval.

8) Conditions of Approval (Page 15)

We question the proposed requirement for infrasound or low frequency noise monitoring as a condition of the REA. Experts on the issue of infrasound are unanimous in their conclusion that infrasound produced by wind turbines is below the perceptible level of humans and therefore has no impacts on human health or safety. Similar conclusions have been reached on low frequency noise impacts. We suggest that these requirements should be removed from the regulations.

The MOE must also offer further information on what types of 'shut-down conditions' would be contemplated through conditions of approval and in what circumstances.

AIM respectfully submits these comments and welcomes the opportunity to discuss any of the issues raised in this submission. Please feel free to contact me directly if you have any questions or need clarification on any comments.

Respectfully,

David Timm
Vice President, Strategic Affairs

Similarly, the Proposed Regulations are unclear with regard to low frequency noise. The regulations must be clear on limits of perception based upon scientific, published threshold values. Audible 'low frequency noise' is most often the presence of audible mechanical noise from the nacelle of the wind turbine. The limited low frequency noise contribution from a turbine is best addressed prior to construction by accounting for noise characteristics in the ENIA.

> *Recommendation: Remove the requirement for the monitoring of perceptible infrasound since the inaudibility of infrasound at the level generated by wind turbines has been consistently demonstrated. In the event that the MOE feels the need to include some assessment of infrasound, clear science-based standards and measurement methodology are required in order to ensure the utility of any monitoring that is undertaken.*
>
> *The contribution of low-frequency noise should be addressed at the ENIA stage through accounting for noise characteristics demonstrated by the frequency information provided from the turbine manufacturers.*

Lot Line Setbacks

Along with the natural environment setbacks described in previously under *Natural Heritage Setbacks*, the proposed lot-line setbacks are among the most problematic of the constraints imposed by the Proposed Regulation. However, revision of these proposed setbacks represents a clear opportunity for re-establishing the necessary balance between setbacks and project feasibility.

Where the proposed noise setbacks are understood to be an effort to address perceived concerns related to turbine-receptor interactions, the lot-line setback does not appear to provide any real benefit or address any real risk.

The lot line setbacks are critically problematic for the following reasons:

- Application of the setback to the lot fabric in Ontario (there are multiple rural lot sizes throughout Ontario, including both English and French lot styles) results in extensive constraints on turbine siting;
- Lot line setbacks push turbines toward human receptors and natural features, contradictory to the intent of the noise and natural features setbacks;
- There is very limited risk associated with turbine collapse and thus the 'topple distance' setback employed by the Proposed Regulation is not justified;
- Any minute risk associated with collapse is magnified by the proposed setbacks by pushing turbines toward other features (constructed or natural);
- The effect of the property line setbacks, when coupled with the receptor and natural feature setbacks, is that wind turbines are 'pushed' into the centre of agricultural fields, resulting in increased fragmentation of agricultural lands, disruption to farming practices and infrastructure (e.g. tile drainage) and increased disturbance due to additional access road construction. This is inconsistent with the specific guidance provided by the Ontario Ministry of Agriculture and Food in relation to wind energy projects.

No consideration is given for adjacent lots belonging to the same landowner or adjacent lots under legal agreement with the same project. If a landowner owns two adjacent lots, or if two abutting landowners are both involved in the same project, there is no reason to have such a limiting setback from property lines.

The proposed setback from roads does not take into consideration frequency of use. The municipality of Chatham-Kent's zoning by-laws for wind turbines are a good example of how roads can be classified in order to determine appropriate setbacks. High traffic roads are given greater setbacks; low traffic roads have less stringent setbacks applied. Implementing one regulation with a large setback from all roads would unnecessarily restrict development on properties that have an "exterior side lot line" (a side lot line adjacent to a road right of way).

Suncor suggests the setbacks outlined in the table below:

Description		Proposed Setback
Roads	Provincial Roads/Highways	Hub Height + Blade Length
	County Roads	Hub Height + Blade Length
	Municipal Roads	Blade Length + 10 m
Lot Lines	Non Participating (rear and interior side lot lines)	Blade Length + 10 m
	Participating (rear and interior side lot lines)	Blade Length

Comment #1.5

Part IV – A – Conditions of Approval

Monitoring infrasound or low frequency vibrations

Response #1.5: Suncor believes that most upwind modern turbines do not emit sounds in the infrasound range < 20 Hz that would harm humans and feel this monitoring should not be mandatory. Suncor looks forward to understanding more details around the "technical guidance" that the MOE intends to develop.

Comment #1.6

Part IV – A – Conditions of Approval

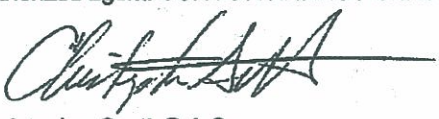
Under "appropriate circumstances" shut-down conditions may be addressed through conditions of approval

Response #1.6: Suncor asks that the MOE please define "appropriate circumstances".

Suncor is pleased to be able to participate in the preparation of the Renewable Energy Approval Regulation and looks forward to future discussions on the topic. I would be pleased to answer any further inquiries about responses in this letter.

If you have any questions or comments I can be contacted via email to cscott@suncor.com or by phone (403) 920-8934.

All of Which is Respectively Submitted,
SUNCOR ENERGY PRODUCTS INC., by its duly
authorized agent: SUNCOR ENERGY SERVICES INC.



Christopher Scott, B.A.Sc.
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Suncor Energy Inc.