

Multi Municipal Energy Working Group

AGENDA

MMEWG-2024-02

Thursday, March 14, 2024, 7:00 p.m.

Virtually via Microsoft Teams

Pages

1. Meeting Details

Microsoft Teams meeting

Join on your computer, mobile app or room device

[Click here to join the meeting](#)

Meeting ID: 268 390 541 401

Passcode: 83PGGM

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2. Call to Order

3. Adoption of Agenda

4. Disclosures of Pecuniary Interest and General Nature Thereof

5. Election of Vice-Chair

This order of business was postponed at the January meeting due to the absence of current Vice-Chair, Jim Hanna.

6. Minutes of Previous Meetings

6.1 MMEWG Minutes - January 11, 2024

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7. Business Arising from the Minutes

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Multi Municipal Energy Working Group MINUTES

**MMEWG-2024-01
Thursday, January 11, 2024, 7:00 p.m.
Virtually via Microsoft Teams**

Members Present: Mark Davis - Municipality of Arran-Elderslie - Citizen
Appointee
Ryan Nickason - Municipality of Arran-Elderslie
Scott Mackey - Township of Chatsworth
Tom Allwood - Municipality of Grey Highlands
Todd Dowd - Municipality of Northern Bruce Peninsula

Others Present: Julie Hamilton - Recording Secretary

1. Meeting Details

2. Call to Order

The Chair called the meeting to order at 7:00 pm. A quorum was present.

3. Adoption of Agenda

The Working Group passed the following resolution:

MMEWG-2024-01

Moved by: Scott Mackey - Township of
Chatsworth

Seconded by: Ryan Nickason -
Municipality of Arran-
Elderslie

Be It Resolved that the Multi-Municipal Energy Working Group hereby adopts the agenda of the Thursday, January 11, 2024 as distributed by the Recording Secretary.

Carried

4. Membership Update

The current Membership consists of the following:

Municipality of Arran-Elderslie

Municipality of Grey-Highlands

Township of Chatsworth

Township of Huron-Kinloss

Municipality of Northern Bruce Peninsula

With the province pushing to procure more capacity from various sources such as wind and BESS, the members felt that it would be appropriate to draft a letter to all municipalities in Grey and Bruce Counties that highlights the Group's newly expanded mandate and extend the invitation to join the MMEWG. The information regarding Battery Energy Storage Systems being provided in the presentations that have been made by the group to Grey and Bruce Counties and some lower tiered municipalities recently has proved to be valuable to municipality's in their understanding of the new energy technologies.

The Working Group passed the following resolution:

MMEWG-2024-02

Moved by: Stewart Halliday -
Municipality of Grey
Highlands - Citizen
Appointee

Seconded by: Mark Davis - Municipality of
Arran-Elderslie - Citizen
Appointee

Be It Resolved that the Multi-Municipal Energy Working Group hereby directs that a letter be drafted and sent along with the new terms of reference to all municipalities in Grey and Bruce Counties that highlights the groups newly expanded mandate and invites them to join the MMEWG.

Carried

5. Annual Election of Chair and Vice Chair

As per the Terms of Reference for the Multi-Municipal Energy Working Group, the Chair and Vice-Chair shall be elected annually at the first meeting of the year.

The Recording Secretary opened the floor to nominations for Chair of the Working Group for 2024.

Member Mackey nominated Member Allwood.
Member Allwood accepted the nomination.

The Recording Secondary called a second and third time for nominations. No further nominations were heard.

Nominations were subsequently closed and Tom Allwood was elected Chair for 2024.

The Vice-Chair, Jim Hanna, was not in attendance at the time so the election for vice-chair was proponed until Mr. Hanna was present.

6. Disclosures of Pecuniary Interest and General Nature Thereof

There were no disclosures of pecuniary interest declared at this time.

7. Minutes of Previous Meetings

7.1 November 16, 2023 MMEWG Minutes

The Working Group passed the following resolution:

MMEWG-2024-03

Moved by: Ryan Nickason -
Municipality of Arran-
Elderslie

Seconded by: Scott Mackey - Township of
Chatsworth

Be It Resolved that the Multi-Municipal Energy Working Group hereby approves the minutes of the Thursday, November 16, 2023 meeting as presented by the Recording Secretary.

Carried

8. Business Arising from the Minutes

8.1 Correspondence from Ministry of Health Re: Health Hazards Letter

Ms. Mekker commented on the BESS products in Eastern Ontario. In Ottawa, Councillor's received a lot of good information and there was only one proposal approved. In South Dundas, one proposal was withdrew because it did not meet the noise guidelines and in North Dundas and South Stormont, there were no proposals approved due to to many unanswered questions.

Ms. Mekker, who had requested the MMEWG to draft a letter to the Minister of Health regarding Industrial Wind Turbines being deemed a health hazard had the following comments on the response. She believes that the letter implies that:

1. The Health Protection and Promotion Act of Ontario does apply to complaints about wind turbine noise.
2. The wind turbine noise emissions could possibly be considered a health hazard as defined in the Health Protection and Promotion Act of Ontario
3. The local Medical Officer of Health does have a duty with respect to this potential health hazard
4. A local Medical Officer of Health has the power to issue an order if a health hazard is identified

Ms. Mekker has not received a response to the letter she sent to Carrie Warring at the Ministry of Health but believes that her response reaffirms that the HPPA does apply to wind turbines. She would like the Working Group to continue to pursue this topic by continuing to pursue the Ministry of Health. She would like to see the Ministry of Health make a statement province wide.

The members feel that the it may be a good time to address the local Medical Officer of Health, Dr. Arra by way of letter suggesting that a moratorium be places on the renewal of any existing wind turbine contracts so that a study can be completed on the health impacts related to wind turbines as there is evidence to support the concerns that they are making people sick.

Mr. Palmer has a presentation later in the agenda on this topic but added that the contracts are not just up for renewal but many of the companies are looking to increase the contracts with larger turbines on the same pads. He is currently writing to the Minister of Health and the Minister of Energy that addresses the facts that many of the projects are already in non-compliance with setbacks of 550m that have been put in place since they were constructed and of those 62 locations that are to close, there are at least 5 instances that he is aware of where people have died suddenly.

Mr. Howard added that the Chief Medical Officer of Health has renewed the 2010 statement and that direction will then be

given to Local Medical Officers of Health which creates a big challenge.

A suggestion was made that the Working Group request a delegation to the Grey Bruce Public Health Board who gives direction to Dr. Arra which follows up on the correspondence received from Director Warring.

It was noted that in the past, there was a favourable response received in the past from Dr. Hazel Lynn when she was the Medical Officer of Health and at the time Dr. Arra was an intern at the time and that review was completed by him.

Ms. Mekker noted that she would like to see both a letter to Director Warring and a presentation to the Board.

The Working Group passed the following resolution:

MMEWG-2024-04

Moved by: Stewart Halliday -
Municipality of Grey
Highlands - Citizen
Appointee

Seconded by: Mark Davis - Municipality of
Arran-Elderslie - Citizen
Appointee

Be It Resolved that the Multi-Municipal Energy Working Group hereby directs that a delegation be made to the Grey Bruce Public Health Board following up on the correspondence received from Director Warring and that the members who shall make the presentation will be determined as appropriate.

Carried

8.2 Letters distributed following the November 16 2023 meeting and Next Steps

There has been presentations made to both Grey and Bruce Counties, as well as the Council of the Municipality of Arran-Elderslie. There is an upcoming delegation being made to the Municipality of West Grey and the SVCA Agricultural Outreach Committee on March 8, 2024.

In order to address future presentation requests, the Working Group passed the following resolution:

MMEWG-2024-05

Moved by: Scott Mackey - Township of Chatsworth

Seconded by: Mark Davis - Municipality of Arran-Elderslie - Citizen Appointee

Be It Resolved that the Multi-Municipal Energy Working Group hereby provides blanket approval to accommodate any future delegation requests that are received.

Carried

8.3 FOI Request

The Recording Secretary has received an email since the agenda was distributed. The MECP staff member assigned to the requests is not longer with the ministry and the requests have been reassigned and an update should be coming shortly on the status of the requests.

9. Delegations/Presentations

9.1 Update on IESO Procurement - Warren Howard

The IESO is projecting that it will require 5 more terra-watt hours of energy starting in 2030 and is proposing three rounds of RFP's as part of its procurement efforts. Wind, solar, hydroelectric, storage and bioenergy projects all qualify for these RFPs.

The 2025 RFP will be to procure 2,000 MW and will be operational from 2029-2031.

The 2027 RFP will be to procure 1,500 MW and will be operational in 2032.

The 2029 RFP will be to procure 1,500 MW and will be operational in 2034.

Although the first RFP will not formally start until 2025, municipal support can be obtained beginning now. The goal is to push these projects through so there is new capacity for 2030. Factors behind this process include the expectations of sharply

growing demand, the retirement of the Pickering facility and the Federal Clean Energy Regulation.

Municipal Support is still required but it is being challenged. Requests continue to be brought forward before details of the project are known. Community engagement is part of the process however, the project details are not required in proposals.

Prime Agricultural Land is also an ongoing issue. Ontario currently prohibits use of Prime Agricultural Land as sites for wind turbine and solar projects. BESS projects are allowed as a "Diversified Use" which limits them to 2% of total land area or 1 ha. The IESO is asking proponents to provide feedback on the impact of the proposal on protecting prime agricultural land on their proposals. Most municipalities and rural residents support the current protections for agricultural land.

There are other procurement methods that include extending contracts on existing projects and retooling existing projects to increase output with fewer turbines. There was an ad in the Ontario Farmer from a company proposing that farmers installing turbines and storage units.

The IESO has noted the issues with siting such as the impact of restricting use of prime agricultural land and are encouraging projects in northern Ontario, development on crown land and there is a reference in one of the Ministerial Directives about clarifying the environmental approval requirements and permitting process for new and existing projects.

There is a new revenue model proposed to provide certainty that loans can be obtained to build turbines. Proposals must now declare the annual energy production factor which will provide the nameplate capacity and the IESO will use this to calculate the projected monthly energy revenue requirement. The actual revenue paid will be based off the monthly average of the day ahead market price time the production factor time the calendar hours per month. There will also be a new grid reliability payment that will cover shortfalls where the revenue requirement is not met.

In 2013, 115 municipalities declared themselves "Unwilling Hosts" for wind power projects. Since then, no changes have been made to the setbacks despite there being problems evident, there are issues with the enforcement of project approvals and there have been problems encountered with

people who live near turbine projects. Municipalities that already host projects can use the resolution to disallow future projects from coming if they wish. New resolutions should be adopted to re-enforce the concerns.

Mr. Howards presentation suggest a number of actions that should be taken by municipalities as well as action items for the MMEWG to consider.

The Chair opened the floor for discussion and comments.

Subsequent to further discussion, the Working Group passed the following resolution:

MMEWG-2024-06

Moved by: Stewart Halliday -
Municipality of Grey
Highlands - Citizen
Appointee

Seconded by: Todd Dowd - Municipality
of Northern Bruce
Peninsula

Be It Resolved that the Multi-Municipal Energy Working Group hereby directs,

1. That a letter be sent to the IESO; and
2. That a letter be sent to all Grey and Bruce municipalities and all former member municipalities.

Carried

9.2 Written Feedback - IESO Resource Adequacy and Long-Term 2 RFP Engagement - Dec. 13, 2023 - Bill Palmer

Mr. Palmer provided an overview of the submission he made to the IESO.

The submission examines the assumptions and conclusions derived from those assumptions contained in these IESO documents:

1. IESO Resource Adequacy and Long-Term 2 RFP Engagement, issued Dec. 13, 2023, for comment by Jan. 15, 2024.

2. Evaluating Procurement Options for Supply Adequacy, a Resource Adequacy Update to the Minister of Energy Dec. 11. 2023.

3. Phasing Out Natural Gas Generation in Ontario, The IESO's response to the draft Clean Electricity Regulations, Nov. 16, 2023.

Six assumptions and conclusions were discussed in the submission with supporting evidence provided for each area.

1. "With new supply on track to meet demand peaks mid-decade, the IESO is now addressing overall energy needs going into the 2030's and beyond." (Document 1, page 7)

2. "Forecasts project a need for approximately 5 TWh of energy beginning in 2030 and expected to grow significantly through the 2030s" (Document 1 – Page 11) "The LT2 RFP will focus on meeting system needs in the 2030 to 2034 timeframe, with an anticipated target of ~2,000 MW" (Document 1 – Page 11)

3. "Significant restrictions on using agricultural land could limit opportunities to repower/expand existing facilities, as well as the volume and timeliness of new resources that are needed to maintain reliability. While restrictions on siting based on agricultural land use were previously limited to ground-mount solar PV generation, some parties have called for restrictions to be expanded to include wind." (Document 2 – Page 13)

4. "Reliability" (16 mentions in Document 1, 7 mentions in Document 2, 10 mentions in Document 3.)

5. "Decarbonization" is a recurring theme in both "Evaluating Procurement Options" (Document 2) and the "Phasing our Natural Gas" (Document 3.) Numerous statements are made such as "The province's next procurements will make a significant contribution to decarbonizing its supply mix." (Document 2 – Page 10).

6. "The IESO is aware that the single most important contribution the electricity system can make towards broader decarbonization efforts is to support the electrification of key sectors, such as transportation and industry, by remaining safe, reliable and cost effective. This goal is central to the IESO's mandate of ensuring electricity is available when and where Ontarians need it." (Document 3 – Page 2)

Mr. Palmer provided the following summary of his findings in the submission;

"As presented by the evidence in the 3 referenced IESO documents, the proposal to accept the "IESO Resource Adequacy and Long-Term 2 RFP Engagement" fails.

- Score 2 of 5 on demonstrating conformance with the stated criteria that peak will be met mid-decade and ongoing
- Score 1 of 5 on demonstrating the criteria will be met that an additional 5 TWh will be available through repowering of existing wind turbines. No consideration was shown that larger turbines on existing sites will not meet O.Reg. 359/09.
- Score 2 of 5 on the criteria that IESO is applying uncalled for pressure on municipal councils to approve projects that may not be in the best interest of local citizens. • Score 2 of 5 on the criteria that the proposal will meet the definition of "reliability"
- Score 1 of 5 on the criteria that the IESO proposal will result in s significant decarbonization of the Ontario electrical system as not consistent with IESO assumptions for system growth.
- Score 1 of 5 on the criteria that the IESO proposal has been shown to be cost effective by any sort of a full cost alternative assessment. "

He concludes that the IESO proposal requires rework to demonstrate meeting the claimed criteria of being safe, reliable, and cost effective and that the reworked document should be recirculated for comment before approval.

Mr. Palmer responded to questions from the Members regarding his presentation.

Subsequent to further discussion, the Working Group passed the following resolution:

MMEWG-2024-07

Moved by: Mark Davis - Municipality of Arran-Elderslie - Citizen
Appointee

Seconded by: Scott Mackey - Township of Chatsworth

Be It Resolved that the Multi-Municipal Energy Working Group hereby receives agenda item, 9.2 Written Feedback - IESO

Adequacy and Long-Term 2 RFP Engagement - Dec. 13, 2023,
for information.

Carried

10. Correspondence

10.1 Requiring Action

10.1.1 Approval of 2024 Meeting Schedule

The Working Group passed the following resolution:

MMEWG-2024-08

Moved by: Stewart Halliday -
Municipality of Grey
Highlands - Citizen
Appointee

Seconded by: Scott Mackey - Township of
Chatsworth

Be It Resolved that the Multi-Municipal Energy Working
Group hereby approves the 2024 meeting agenda as
presented.

Carried

10.1.2 Recording Secretary Invoice

The Working Group passed the following resolution:

MMEWG-2024-09

Moved by: Scott Mackey - Township of
Chatsworth

Seconded by: Ryan Nickason -
Municipality of Arran-
Elderslie

Be It Resolved that the Multi-Municipal Energy Working
Group hereby approves payment of the invoice for the
Recording Secretary services for November and December
2023.

Carried

10.1.3 Year End Financial Statement and 2024 Membership Fee

The Working Group discussed the creation of a two tiered fee structure.

The regular membership would be status quo requiring the appointment of members by participating municipal Council's.

The associate membership would allow municipalities to join and be included in all circulations of information and materials and attend meetings as a non-voting member and would not be required to formally appoint any members to the Working Group.

Subsequent to further discussion, the Working Group passed the following resolution:

MMEWG-2024-11

Moved by: Stewart Halliday -
Municipality of Grey
Highlands - Citizen
Appointee

Seconded by: Ryan Nickason -
Municipality of Arran-
Elderslie

Be It Resolved that the Multi-Municipal Energy Working Group hereby,

1. Receives the 2023 Financial Statement for information; and
2. Approves the annual membership fees as follows:
 - Full Membership - \$500.00
 - Associate Membership - \$400.00

Carried

10.2 For Information

Subsequent to further discussion, the Working Group passed the following resolution:

MMEWG-2024-12

Moved by: Todd Dowd - Municipality
of Northern Bruce
Peninsula

Seconded by: Ryan Nickason -
Municipality of Arran-
Elderslie

Be It Resolved that the Multi-Municipal Energy Working Group
hereby receives the correspondence for information.

Carried

- 10.2.1 Township of Chatsworth Resolution Re: BESS
- 10.2.2 News Article - Bruce County Council delegation by
MMEWG
- 10.2.3 News Article - Grey County Council delegation by
MMEWG
- 10.2.4 News Article - Lithium-Ion Battery Fire
- 10.2.5 Ministerial Directives to the IESO and WCO
Responses
- 10.2.6 Article by Bill Palmer - Predicting Annoyance from
Wind Turbines from Objective Measures
- 10.2.7 IESO News Release
- 10.2.8 News Article - Ontario municipalities veto powers
granted by Ford are complicating efforts to avert electricity
shortages

11. Members Updates

Mr. Palmer confirmed that he has been able to secure liability
insurance and will continue consulting for the Working Group.

12. New Business

Ms. Mekker noted that Chatham-Kent Council has received no
response from the Ministry of Health to date on the water issues.

13. Closed Session (if required)

14. Confirmation of Next Meeting

The next meeting will be held on Thursday, March 14, 2024 at 7 p.m
via Microsoft Teams.

15. Adjournment

The Working Group passed the following resolution:

MMEWG-2024-13

Moved by: Ryan Nickason -
Municipality of Arran-
Elderslie

Seconded by: Stewart Halliday -
Municipality of Grey
Highlands - Citizen
Appointee

Be it Resolved that the meeting of the Multi-Municipal Energy Working Group is hereby adjourned at 9:12 p.m.

Carried

Tom Allwood, Chair

Julie Hamilton, Recording
Secretary

MULTI-MUNICIPAL ENERGY WORKING GROUP

TOM ALLWOOD, COUNCILLOR, GREY HIGHLANDS, CHAIR
 JIM HANNA, DEPUTY MAYOR, HURON-KINLOSS, VICE-CHAIR
 1925 BRUCE ROAD 10, BOX 70, CHESLEY, ON NOG 1L0
[519-363-3039](tel:519-363-3039) FAX: [519-363-2203](tel:519-363-2203)
jhamilton@arran-elderslie.ca

February 11, 2023

Dear Mayor and Members of Council,

The Multi-Municipal Energy Working Group (MMEWG) continues to actively follow the procurement processes the Independent Electricity System Operator (IESO) is undertaking to procure additional capacity to meet projected future energy needs. Details released regarding the Long-Term 2 Request for Proposals (LT2 RFP) has raised many concerns.

The IESO LT2 RFP calls for 5 TWh of new energy generation, and proposes that this be mostly derived from 2000 MW of new energy generation produced by mostly wind and solar by 2030. It further proposes that most of this generation could be derived by repowering on the current footprint of existing wind turbines that will reach their end of contract life between 2026 and 2034.

Since existence, the now Multi-Municipal Energy Working Group, formerly known as the Multi-Municipal Wind Turbine Working Group, has continued to advocate for stronger safety measures and best practices related to wind turbine installations across the province. To date, many of the concerns raised have not been addressed.

Severe health effects to many residents living within the vicinity of project sites have been identified and continue to jeopardized the health and well-being of many residents. The MMEWG will be making a presentation on this topic to the Grey Bruce Public Health Unit in the March in an effort to bring these concerns to the forefront in advance of the repowering of current projects.

Public safety continues to remain a paramount concern of the MMEWG. Setbacks for tower collapse remain insufficient. The current blade length plus 10 metres requirement not a strong enough protective measure for existing projects let alone repowered turbines on existing footprints. Setbacks for ice throw are also insufficient, as the blade length plus 10 metre setback is less than the ice throw distance witnessed in Ontario. Ontario has witnessed turbine fire and flaming debris on the ground at 200 metres, while setback was 50 metres. A Ministry review failed to recommend industry standard protective barriers for fire suppression in spite of examples of fires in similar turbines.

In 2013, 115 municipalities declared themselves "Unwilling Hosts" for wind turbine projects. With the expected surge in proposals given the ambitious procurement efforts

being undertaken by the IESO, and little change in the regulations, the MMEWG strongly recommends that municipalities take steps to prepare for new wind turbine projects.

This can include taking advantage of new powers to regulate wind turbine projects through the enactment of zoning by-laws that govern their locations within the municipality. Previously, the Multi Municipal group has recommended 2,000 metre setbacks between wind turbines and residential locations in place of the current 550 metres.

If your municipality is not able to put new zoning by-laws in place in a timely basis, the municipality may wish to reaffirm their unwillingness to host projects until the appropriate ministries address the concerns and make stronger rules and regulations. For consideration, a DRAFT declaration has been attached. Should your municipality declare its intention, please let us and we will continue to keep you apprised of any advancements in the industry and regulations.

The need for new electricity production capacity is real and the municipality may wish to also consider other less land intensive methods to support these requirements.

Warm Regards,



p.p.

Tom Allwood,
Chair, Multi-Municipal Energy Working Group
Councillor, Municipality of Grey Highlands

DRAFT

Independent Electrical System Operator

By email: engagement@ieso.ca

Re: Municipality/Township of _____ – Wind Turbine Projects

Please be advised at the Municipality/Township of _____ Council meeting held on _____, the following resolution was approved:

WHEREAS the Independent Electrical System Operator (the IESO) has proposed to move forward with three RFPs where new wind turbine projects can receive a contract from the IESO; and

WHEREAS people living near existing wind turbines report considerable impact on their lives due to noise and other emissions from the wind turbines; and

WHEREAS there are gaps in the enforcement of key terms of the Renewable Energy Approvals governing existing projects relative to noise standards and resolution of complaints; and

WHEREAS municipal approval is required to locate one of these projects in the Municipality/Township of _____; and

THEREFORE BE IT RESOLVED THAT the Council does not support the establishment of any new wind turbine projects within the municipality; and

THAT the IESO be directed to advise potential applicants of this resolution.

Sincerely,

Clerk, Municipality/Township of _____

c:

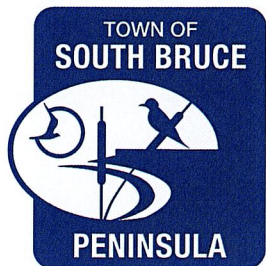
The Hon. Todd Smith - Minister of Energy - MinisterEnergy@ontario.ca

David Donovan, Chief of Staff, david.donovan@ontario.ca

Association of Municipalities of Ontario - policy@amo.on.ca

Local MPP

Multi-Municipal Energy Working Group – jhamilton@arran-elderslie.ca



Excerpt from Council Meeting Minutes – February 20, 2024

11. Correspondence – Consent Agenda Dated February 20, 2024

R-54-2024

It was **Moved** by T. Bell, **Seconded** by K. Durst and **Carried**

That the recommendation contained in the Consent Agenda dated February 20, 2024 be approved as presented.

1. Multi-Municipal Energy Working Group – Request for Support Resolution

Recommendation:

That Council recognizes that the Multi-Municipal Energy Working Group has requested a support resolution indicating that the Town does not support the establishment of new wind turbine projects within the Town;

And further that Council advises the Multi-Municipal Energy Working Group that previous Council's have adopted resolutions which are still relevant and which make declaration with regard to the Town's position that South Bruce Peninsula is not a willing host.

February 26, 2024

By Email Only: engagement@ieso.ca

Attention: Independent Electrical System Operator

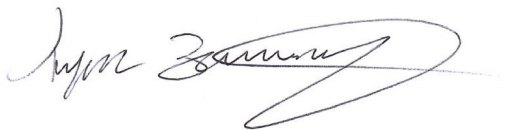
Re: Township of Chatsworth - Wind Turbine Projects

Please be advised at Township of Chatsworth Council held on February 21, 2024 the following resolution was carried:

WHEREAS the Independent Electrical System Operator (the IESO) has proposed to move forward with three RFPs where new wind turbine projects can receive a contract from the IESO; and
WHEREAS people living near existing wind turbines report considerable impact on their lives due to noise and other emissions from the wind turbines; and
WHEREAS there are gaps in the enforcement of key terms of the Renewable Energy Approvals governing existing projects relative to noise standards and resolution of complaints; and
WHEREAS municipal approval is required to locate one of these projects in the Township of Chatsworth; and
THEREFORE BE IT RESOLVED THAT the Township of Chatsworth Council does not support the establishment of any wind turbine projects within the municipality and continues to be an unwilling host; and
THAT the IESO be directed to advise potential applicants of this resolution.

Should you require additional information please contact the undersigned.

Sincerely,



Tyler Zamostny
Deputy Clerk

Cc:

The Hon. Todd Smith - Minister of Energy - MinisterEnergy@ontario.ca

David Donovan, Chief of Staff, david.donovan@ontario.ca

Association of Municipalities of Ontario - policy@amo.on.ca

Rick Byers, MPP — Bruce–Grey–Owen Sound - rick.byers@pc.ola.org

Multi-Municipal Energy Working Group – jhamilton@arran-elderslie.ca

Township of Chatsworth Multi-Municipal Energy Working Group Members -
scott.mackey@grey.ca & terry.mckay@grey.ca

Agenda Number: 12.1.2.
Resolution No. 57-05-2024
Date: Monday, February 26, 2024



Moved by: Councillor Nickason
Seconded by: Councillor Hampton

WHEREAS the Independent Electrical System Operator (the IESO) has proposed to move forward with three RFPs where new wind turbine projects can receive a contract from the IESO; and

WHEREAS people living near existing wind turbines report considerable impact on their lives due to noise and other emissions from the wind turbines; and

WHEREAS there are gaps in the enforcement of key terms of the Renewable Energy Approvals governing existing projects relative to noise standards and resolution of complaints; and

WHEREAS municipal approval is required to locate one of these projects in the Municipality of Arran-Elderslie; and

THEREFORE BE IT RESOLVED THAT the Council does not support the establishment of any new wind turbine projects within the municipality; and

THAT the IESO be directed to advise potential applicants of this resolution.

Carried

 Mayor Initials

SA

 Clerk Initials

CPM

MULTI-MUNICIPAL ENERGY WORKING GROUP

TOM ALLWOOD, COUNCILLOR, GREY HIGHLANDS, CHAIR
 JIM HANNA, DEPUTY MAYOR, HURON-KINLOSS, VICE-CHAIR
 1925 BRUCE ROAD 10, BOX 70, CHESLEY, ON NOG 1L0
[519-363-3039](tel:519-363-3039) FAX: [519-363-2203](tel:519-363-2203)
jhamilton@arran-elderslie.ca

February 7, 2024

Re: Feedback on the proposed LT2 RFP

The Multi-Municipal Energy Working Group continues to actively monitor the procurement processes the IESO is undertaking to secure additional energy supply to support projected future needs.

The MMEWG wishes to provide the following feedback on several areas of the procurement efforts. The feedback window provided was extremely short and the following should be strongly considered throughout the procurement process.

Municipal Support

- The full proposal, as outlined in Regulation 359-09, should be completed prior to the request for municipal support.
- The community consultation process outlined in Regulation 359-09 should be followed.

Prime Agricultural Lands

- The continued protection of agricultural lands needs to remain in place regardless of the renewable energy source.
- Priorities for development of new generation should be in urban areas where demand is growing fastest.
- Another potential possibility is as remote and First Nations communities currently depending on fossil fuel-based generators to supply electricity.

Other Procurement

- Contract holders that have not met the REA requirements are not eligible for contract extension.
- Pre-Green Energy projects need to be evaluated using current regulations before contract extension.
- New noise modeling and approvals required if retooling increases height and/or power of existing turbines.
- Municipal support must be required for these changes.

Project Siting Issues

- Municipalities will based decisions on proposed new projects based on the problems encountered with current setbacks need to be addressed before new projects come to Councils seeking support. . Municipalities will be looking to hear about MECP plans to update setbacks in the February 9 presentation.
- Failure of the MECP to enforce key terms in existing approvals related to noise audits and complaints also needs to be addressed.

Revenue Models

- Payments for new projects need to be based on actual purchase of electricity and must reflect time of day rates.
- The production factor varies widely and seasonal variation needs to be reflected in valuation of projects.
- Proponents understand the risks involved with their technologies and the IESO does not need to include a Grid Stabilization Fee in the process. That risk should be included in the initial bid price.
- Process needed to audit production factor and claw back over payments
- Pricing also needs to incorporate charges for the costs of back-up capacity for intermittent sources

I also wanted to confirm a discussion that I had with Minister Todd Smith at the IESO Working Lunch at ROMA. Municipalities are looking for amendments to Regulation 359-09 that relate to BESS projects. Regulation 359-09 contains two lists of energy projects – ones that the regulation applies to and ones that are exempted. As a new technology, BESS is not in either list. Regulation 359-09 needs to be amended so that it applies to BESS projects.

The regulation outlines requirements for municipal support resolutions and for community consultation. It also establishes setbacks for various activities. The absence of setbacks, beyond those established by Hydro One, is a major gap in the process. Based on municipal actions required in response to recent US BESS system failures, the MMEWG is recommending a setback of 800 metres from residences and other occupied structures. We trust that BESS requirements will be addressed in the engagement webinar scheduled for February 9.

Our discussion with municipalities in this area and others that we contacted at the recent ROMA meeting suggest that there is very limited appetite for new wind turbine projects. The problems with the previous projects are well known, have not been addressed by the MECP and there is no interest supporting new

projects unless substantial changes are made in the regulations. As the need for additional capacity is real, the IESO should be looking at alternatives to large wind turbine projects in rural areas either by projects focused on urban areas or other technologies that are less land intensive i.e. biogas.

The Multi-Municipal Energy Working Group will continue to follow the IESO Procurement efforts and provide important feedback where it is deemed necessary.

Warm Regards,



p.p.

Tom Allwood,
Chair, Multi-Municipal Energy Working Group
Councillor, Municipality of Grey Highlands

cc.

Hon. Todd Smith, Minister of Energy, MinisterEnergy@ontario.ca

David Donovan, Chief of Staff - david.donovan@ontario.ca

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February 5, 2024

Independent Electricity System Operator/IESO
 Customer Relations, Engagement
 Via E-mail engagement@ieso.ca

RE: February 9 Engagement Session with the Ministries of Natural Resource and Environment

From a municipal perspective, a key issue with wind turbine projects is the lack of apparent action by Ministry of Environment, Conservation and Parks (MECP) in carrying out their role in overseeing both existing wind projects and new proposals. The engagement session on February 9 will be of particular interest in this regard.

In June of 2021, one turbine in Southgate project suffered a catastrophic failure that closed a major artery in Grey County for about a week. The Multi Municipal follow-up on this incident led to an investigation of the nine other turbine failures that have occurred in Ontario. The attached report documents these incidents plus one additional failure in New Brunswick. This report, along with a cover letter outlining recommendations, including increased setbacks from property lines, was sent to the MECP in December of 2021 along with municipalities with existing wind turbine projects.

Since the preparation of this report, there has been one additional failure in Ontario, a turbine fire in a turbine that was part of Capital Power's project in Ashfield-Colbourne-Wawanosh Township in Huron County in June of 2022.

To our knowledge, the MECP has not taken any steps to address the recommendations regarding siting of wind turbines and other matters. In this context, we look forward to an update in the February 9th engagement session.

As part of our follow-up, the Multi Municipal group filed a request under the Freedom of Information for Ministry documents related to these failures on

March 7, 2022. We have yet to receive any documents in response to this request.

If the IESO is interested in receiving municipal support for new wind projects, municipalities need to be reassured that the previous issues with inadequate setbacks have been addressed.

Warm Regards,



p.p.

Tom Allwood,
Chair, Multi-Municipal Energy Working Group
Councillor, Municipality of Grey Highlands

cc.

Hon. Todd Smith, Minister of Energy, MinisterEnergy@ontario.ca

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Wind Turbine Failures

Based on the number of catastrophic wind turbine failures, the Multi Municipal Wind Turbine Working Group (MMWTWG)¹ is deeply concerned about the associated implications. While the wind power industry reports that each is an isolated incident, there are now too many incidents for this response to be credible. At least 10 known turbines failures have happened in Ontario since 2007. Each of these resulted in significant portions of blades or the tower hitting the ground at some distance from the turbine base.

At the same time, there has been no public response from the provincial government that indicates these potentially serious incidents are being investigated either in the context of public and/or workplace safety. To date, there has been no information shared with MMWTWG member municipalities.

As a result, we have been working with several people that have technical experience with industrial applications of power and rotating equipment. We have developed our own assessment of the failures based on statements from project operators, pictures and other available information. This assessment of the following events points to a number of different causes:

- **Bow River** – Pictures suggest that tower collapse was linked to a bolt failure of tower sections.
- **Skyway 8** – Rotor failure occurred shortly after the installation of an experimental device.
- **Raleigh Wind** – Published information from the project owner indicates that the tower collapse is related to a single blade failure. Marks on the tower suggest that the blade struck the tower.
- **Sumac Ridge** – Blade fractures, no explanation available.
- **Kingsbridge 1** – Fire in the nacelle spread to the blades resulting in wide debris scatter.
- **Huron Wind** – Blade failure with the location of the debris thrown by this failure highlighting the inadequacy of current setbacks from property lines.

Another recent incident in New Brunswick adds to our concerns:

- **Kent Hills, NB** – Project operator linked the collapse of tower to a foundation failure.

Collectively, the assessments of these situations increased our concern that action is required to formally investigate these incidents. We believe they clearly demonstrate that the current setback distances are inadequate to protect the public and they will increase as tower heights and blade lengths increase.

Faced with continued public inaction by the provincial government, the MMWTWG decided to prepare this summary of available information relative to these failures with a goal of sharing the information with other municipalities that host wind turbine projects to enable them to better protect their citizens.

The MMWTWG recommends that the provincial government needs to:

¹ The MMWTWG formed in 2009 by member municipalities in Bruce, Grey and Huron Counties to share information on wind turbine projects being proposed or operating in our municipalities. The working group is a joint committee with elected and municipally-appointed citizen representatives from the member municipalities.

1. **Establish a formal public process for investigations of wind turbine failures** so that the cause can be firmly determined. These would involve third-party independent engineers starting with initial inspection procedures through to the public release of the final report;
2. **Complete comprehensive inspections of existing projects** to identify any project that shows signs of similar weaknesses;
3. **Establish requirements** for on-board predictive maintenance equipment for operating wind turbines to allow early identification of problems and establish protocols for information transfer to the MECP for review and sharing with the host municipality.
4. **Review the emergency response procedures** submitted by the proponents of wind turbine projects as part of the approval process to ensure that the plans are current and responsive to the types of failures being experienced; and
5. **Increase the setbacks** from property lines to a minimum of tower height plus blade length for new towers or repowering of existing sites to at least reflect the impact of a tower collapse while recognizing additional distances would be required to protect against ice throw and debris scatter like that seen in the Huron Wind failure where debris with the dimensions of a car were found 2.5 times the height of the tower plus blade length.

We suggest that Councils review these attached summaries to consider how they apply to the wind turbine project(s) in your municipality. It may be possible for the municipality to review the situations with the owner of each project to confirm that appropriate activities are underway to ensure public safety.

If you agree with the recommendations for action by the provincial government we ask that you communicate your support to David Piccini, Ontario Minister of Environment, Conservation and Parks.

When these projects were approved and built, provincial regulations limited municipal input into the projects and the supervision of their construction. This self-regulation process led to some serious problems for the municipalities. Now that further gaps in this process are becoming evident, the province needs to take responsibility for addressing the mistakes that were made.

Attachment 1: Bow Lake, Algoma Region, Ontario

Project Details:

Owners:

Batchewana First Nation – 50%

DIF Infrastructure V – 50%

BluEarth Renewables - operator

Location: Northwest of Sault Ste Marie

Capacity: 58.3 MW

Commissioned:

Phase 1: May 2015

Phase 2: April 2016

Equipment – GE Energy 1.6 MW

Height – 80 m tower; 50 metre blades

Date of Failure: August 28, 2021

Assessment of Failure:

The pictures strongly suggest that the failure mechanism was fatigue of the bolts holding the tower together. There is no evidence of buckling, tearing of the steel plate or general deformation at the adjoining section flanges.

A portion of one blade was found located on the ground near the tower base. The other two blades appear to have remained attached to the rotor as it collapsed into the adjacent trees.

Even though the tower contained 60 gallons of flammable petrochemical lubricants, the MECP Environmental Officer did not visit the site until 3 days after the accident took place.



Potential Learnings:

Tower bolt failures can have many potential causes; i.e. wrong bolts, excessive cyclical loading beyond design criteria, improper installation method regarding torque application, inadequate bolt maintenance checks during regular maintenance etc.

Fatigue damage cannot be seen until a crack develops. Since all aspects of the other towers seem to be identical, it would seem necessary to replace all their tower section bolts.



Attachment 2: Skyway 8, Grey County, Ontario

Project Details:

Owner: Capstone Infrastructure

Location: South west of Dundalk

Capacity: 9.5 MW

Commissioned: August 2014

Equipment

3 - Vestas V100- 1.8 MW

2 - Vestas V100- 2.0 MW

Height – 80 m tower; 50 metre blades

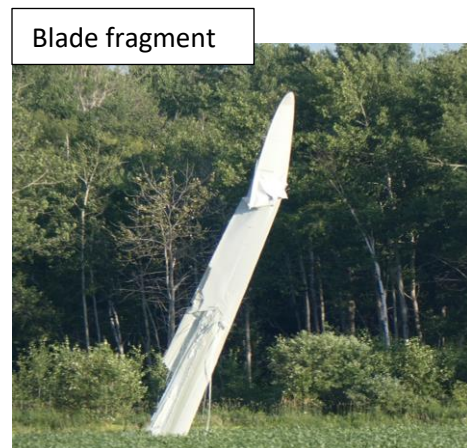
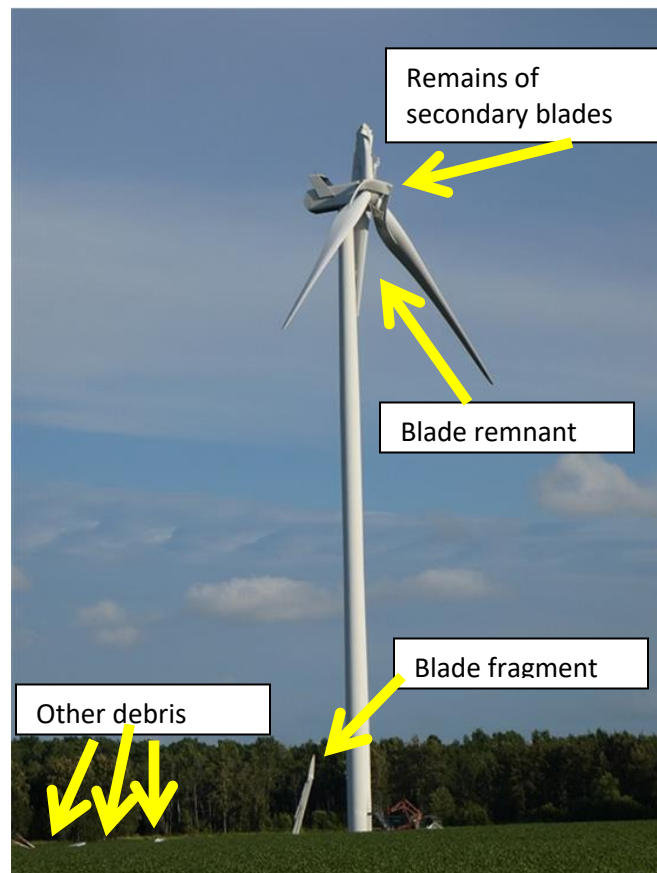
Modification – Biome Renewables secondary blades installed on this turbine in early 2021.

Date of Failure: June 30, 2021

Assessment of Failure:

This turbine was retrofitted approximately 3 months prior to the failure with a secondary rotor of three curved blades that fastened to the hub between the existing blades. This experimental device was not part of the original design and was added to increase power output. The failure resulted in the separation of one of the secondary blades and one of the existing blades. Although the exact sequence of the failure is not known, the most likely scenario is that the experimental blade partly separated, impacting the main blade which then failed.

MECP approved the change but there is no public information confirming that the turbine could handle the additional static and dynamic loads imposed by the secondary rotor.



Learnings:

This turbine was located only 195m from the road, Grey Rd. 8. The road closure that was immediately put in place for public safety confirms that existing setback requirements are insufficient. The failure raises many questions concerning how this project was executed and the engineering safety margins for the original wind turbine design.

Attachment 3: Raleigh Wind, Chatham-Kent

Project Details:

Owner:

2018 – Terraform Power

2020 – Brookfield Renewables

Location: South of Chatham

Capacity: 78 MW

Commissioned: January, 2011

Equipment: 52 - GE 1.5 MW

Height – 80 m tower;

42 metre blades

Date of Failure: Jan. 19, 2018



Assessment of Failure:

The company reported that their investigations indicated that the failure was caused by a single faulty blade.

This tower at Chatham-Kent buckled at approximately its midpoint and fell toward the wind. It was found with one blade wrapped around the tower base and markings on the tower that were above the fold line.

Based on the evidence of publicly available pictures, it seems that the most likely scenario for this catastrophic failure was that the tower was struck by a blade which weakened it such that it collapsed.



Learnings:

If the failure was indeed caused by a blade strike on the tower, this raises questions as to how this occurred. This suggests that the clearance may not have been adequate for the conditions encountered during operation. Alternately the blade may have started to separate and this caused it to get so close to the tower that it made contact with it. There may be other possibilities and variations as well.

Chatham-Kent Ward 2 Councillor Frank Vercooterren told CBC News at the time that he believed that the setback from roads was insufficient to protect public safety.

Attachment 4: Sumac Ridge, Kawartha Lakes

Project Details:

Owner:

2016: wpd

2021: Capstone Infrastructure

Location: Southwest of Peterborough

Capacity: 10.5 MW

Commissioned: November, 2017

Equipment: 5 - Senvion MM92 2.05 MW

Height – 80 m tower;

46 metre blades

Date of Failure: April 20, 2019

Assessment of Failure:

Residents reported hearing a grinding sound followed by a loud explosion at 9 a.m. on the morning of the incident.

It was found that one of the blades of the turbine had shattered. Parts of the blade fell to the ground while other pieces were still dangling off of the remaining sections of the blade. The nearby road was closed to ensure public safety.

Initial speculation was that the failure may have been related to the strong winds associated with the storm that moved through the area on the previous weekend.

The investigation and follow up on this incident was hampered as Senvion had filed for bankruptcy protection on April 9 – just before incident.

Learnings:

The blade that failed was relatively new having been in operation for only 1.5 years. This highlights the fact that failures can occur at any time during the life of a wind turbine.

If the failure was related to the strong winds, it raises questions concerning the design safety margins.



Attachment 5: Kingsbridge 1, Ashfield-Colborne-Wawanosh

Project Details:

Owner: Capital Power

Location: North of Goderich

Capacity: 40 MW

Commissioned: 2006

Equipment: Initially 21 – Vestas V80 with the failed turbine being replaced with a Vestas V 90.

Height – 80 m tower; 45m blades

Date of Failure: April, 2013

Assessment of Failure:

The fire started at about 1 am and burned for about two hours. Most of the nacelle was completely destroyed. The intensity of the fire also ignited the blades.

The fire department was called to the site but there was not much that they could do given the elevation of the fire and risks posed by burning pieces of the nacelle and the blades that were falling off of the towers.

Blades continued to rotate and could not be stopped due to the fire in control mechanisms.

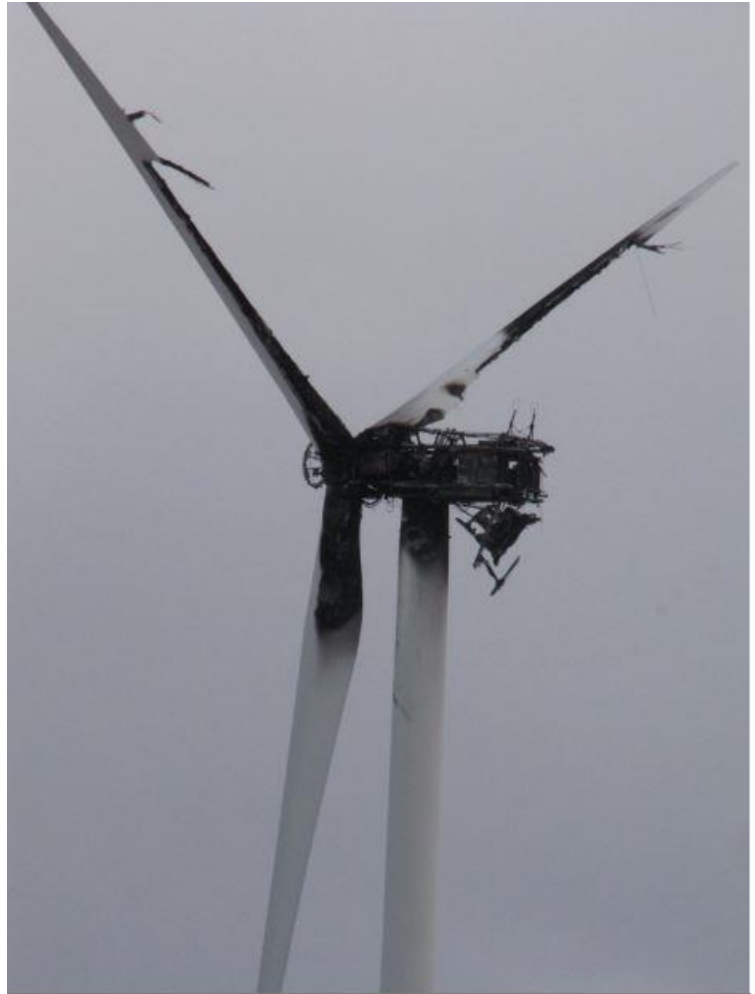
A representative of the operator addressed ACW Council the following day and indicated that elements of the turbine were found over 200 metres from the tower.

As the fire occurred in early spring, the ground was wet and there were no crops to be set on fire when burning elements fell off of the tower.

Learnings:

This failure highlights the need for fire identification and suppression systems to be installed within the nacelles of all wind turbines.

Had this fire occurred when dry crops were in the field below the turbine, the fire progression would have been more serious.



Attachment 6: Huron Wind, Bruce County

Project Details:

Owners:

TC Energy

OMERS

Location: North of Kincardine

Capacity: 9.0 MW

Operational: November 2002

Equipment – 5 Vestas V80 - 1.8 MW

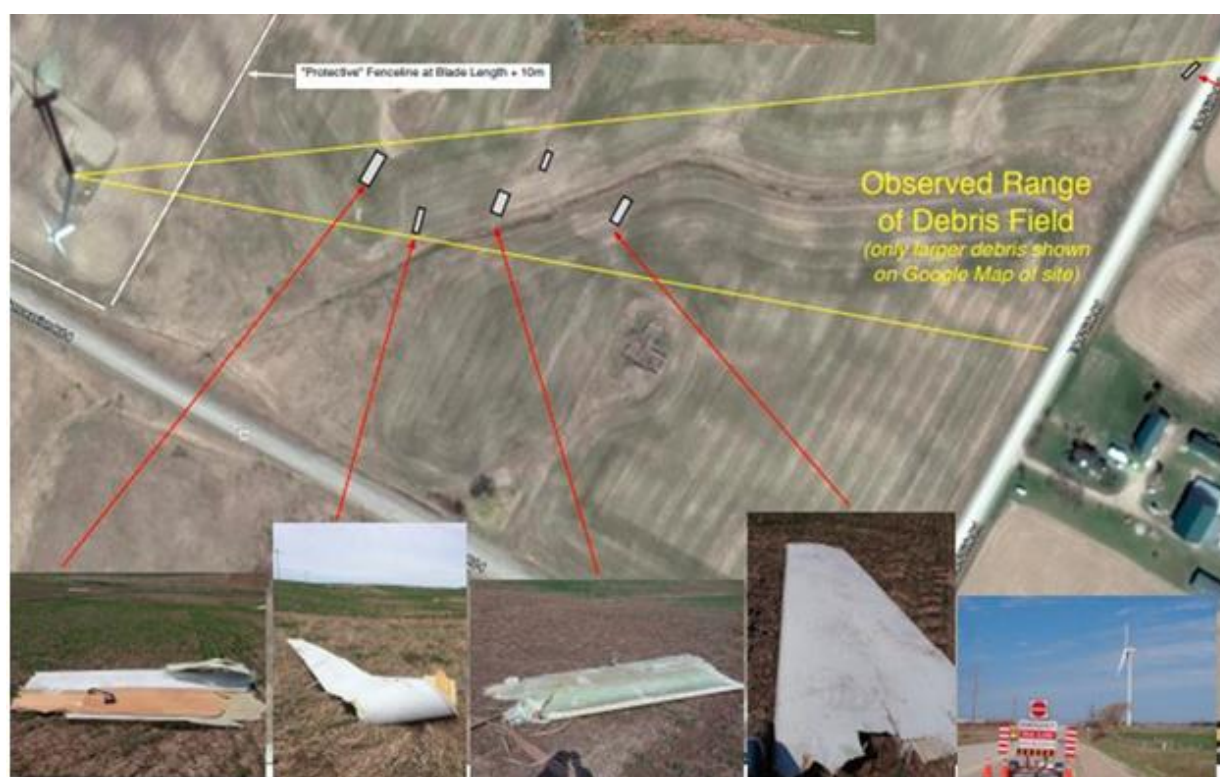
Height – 65 m tower; 40 metre blades

Date of Failure: May 4, 2018

Assessment of Failure:

Immediate access to the site allowed full documentation of the debris created by this blade failure.

The map below compares the limit of the protected area of 50 m with the actual locations of debris from the blade failure. Large pieces of debris found 280 m from the tower.



Debris at 150m
from tower -
1.3m X 3.6m

Debris at
170m from
tower

Debris at 210 m
from tower
1.2m X 3.0m

Debris at
280m from
tower
1.2m X 3.0m

Concession 4
closed to danger

Attachment 7: Kent Hills, New Brunswick

Project Details:

Owner: Trans Alta Renewables

Location: Southwest of Moncton, NB
Site shared with ATV/snowmobile trails

Capacity: 167 MW

Commissioned in Phases:

Dec 2008 – 25 turbines; Nov 2010 – 24 turbines; Oct 2018 – 5 turbines

Equipment – Vestas V90 3 MW

Height – 80 m tower; 45 metre blades

Date of Failure: October 14, 2021

Assessment of Failure:

As confirmed by the operator, this tower collapse was linked to a foundation failure (sub-surface crack propagation). The tower itself seems to have all the sections intact and bolted together. Basically, the pictures indicate that the top part of the foundation directly below the tower base was no longer adequately supporting the tower.

A close-up picture of the foundation shows the failed surfaces consists of concrete rubble and rebar. There does not seem to be evidence of the long primary anchor bolts that should fasten to the flange at the base of the tower and then be embedded deep into the concrete foundation.

Earlier pictures taken of wind turbines in this project indicate that numerous anchor bolts had been installed in the concrete bases. This is highly unusual and suggests that they were added when problems with the foundations became evident.

Potential Learnings:

The foundation problem(s) that caused the failure are very likely not an isolated case. Foundation failures can result from many factors i.e., faulty design, quality control, construction techniques, procedures etc.

This failure raises many questions that relate to how likely it is that the other foundations have the same problems. As well, it raises the question of public safety and the need for safe separation distances.



Attachment 8: History of Turbine Failures in Ontario

The following table documents the known equipment failures at Ontario wind turbine projects. that resulted in wind turbine blades hitting the ground so that members of the public may have been harmed if present in locations outside any protective exclusion zone. While the industry response to each failure is that the situation is unique and an exception, the table confirms that this is not the case.

#	Date	Project	Type	Equipment	Age at Failure
1	April 2007	Port Burwell	Blade Failure	GE 1.5	11 months
2	January 2008	Prince Wind	Blade Failure	GE 1.5	2.1 years
3	April 2013	Kingsbridge 1	Fire	Vestas V80	7 years
4	August 2015	Goshen	Blade Failure	GE 1.62	6 months
5	April 2017	Bornish	Blade Failure	GE 1.62	3 years
6	January 2018	Raleigh	Tower Collapse	GE 1.62	7 years
7	May 2018	Huron Wind	Blade Failure	Vestas V80	15.4 years
8	April 2019	Sumac Ridge	Blade Failure	Senvion MM92	1.3 years
9	June 2021	Skyway 8	Blade Failure	Vestas V100	6.9 years*
10	August 2021	Bow Lake	Tower Collapse	GE 1.62	6 years

*100 days after secondary blades installed.

These situations are similar to the operating experience with wind turbines in other jurisdictions. It suggests that the positioning of wind turbines relative to other adjacent activities needs to anticipate the potential for failure either the blades or the tower and other dangers such as ice throws or fires. Analysis of these failures indicates that the current Ontario setback of blade length plus 10 metres is not sufficient to protect the wider public.

The failures also indicate that there needs to be a program of ongoing monitoring of operation of these wind turbines with public reporting of the results of inspections and remedial actions ordered to address faults identified.

Update for MMEWG – Meeting between MPP Lisa Thompson & Bill Palmer 2024-02-16

This note will give an update of a (virtual) meeting on Friday Feb. 16 held with MPP Lisa Thompson to discuss issues relevant to Huron Bruce residents and my recent correspondence with Minister Todd Smith and Andrea Khanjin.

The meeting itself took quite a while to happen. I had written Lisa's office in November requesting a meeting to bring her up to date with what has been going on in the situations of Huron Bruce residents impacted by wind turbines (alternately nothing, or lots, depending on how you choose to see it.) It was only on Thursday last week, just after the virtual meeting between MMEWG Chair Tom Allwood and IESO staff in which I participated that I heard back from Lisa's scheduling person to offer the opportunity for me to meet with Lisa "virtually" the next day so I was quick to say yes.

We spoke for about 45 minutes. I began by updating Lisa on letters I had sent to the Energy Minister (Todd Smith) and the Environment Minister (Amanda Khanjin) in January to give her the opportunity to advise those Ministers of the key points of the letters. I suspect that the actual letters never get into the Minister's hands, but get dealt with by a clerk somewhere to send out the usual "boiler plate" response to thank me for writing, and advising me that the Ministry will carefully consider my views. That is usually the last ever heard, unless one gets to the Minister, hence why I approached through Lisa.

In both cases, the letters led in with my concern that the IESO issued in December several documents identifying their plan to add some 2000 MW of new and "repowered" wind turbines generation, to result in 5000 TWh of new generation, "on the existing footprint" of current turbines. This gave me the opportunity to point out to Lisa that in the Enbridge Underwood array for example, 41 of the 110 turbines are already located closer than the regulatory limit of 550 metres to the nearest home, and were causing problems, as she and I have discussed many times. To replace these with new larger turbines at least 168% larger (so as to achieve the desired additional generation) would mean bigger turbines, even closer to homes, and also closer to each other, for example in the Enbridge array it would mean turbine blade tips as close as 42 metres between adjacent turbines. I have to keep the points fairly high level when talking to Lisa. I showed Lisa a simple curve (Attachment 1) in which actual Ontario experience shows the futility of adding more wind turbines to produce needed generation. Wind is not there during the peaks. No amount of battery storage with 4-hour capacity was going to shift the generation to the time it was needed. I also pointed out that the IESO assumption that new wind turbines were going to be cheaper than old ones was badly flawed, as world experience is showing wind turbine manufacturers and installers everywhere reneging on contracts saying they needed more money to install turbines due to economic conditions. (Lisa often likes to reduce issues to the cost, so it is an avenue to approach her on.)

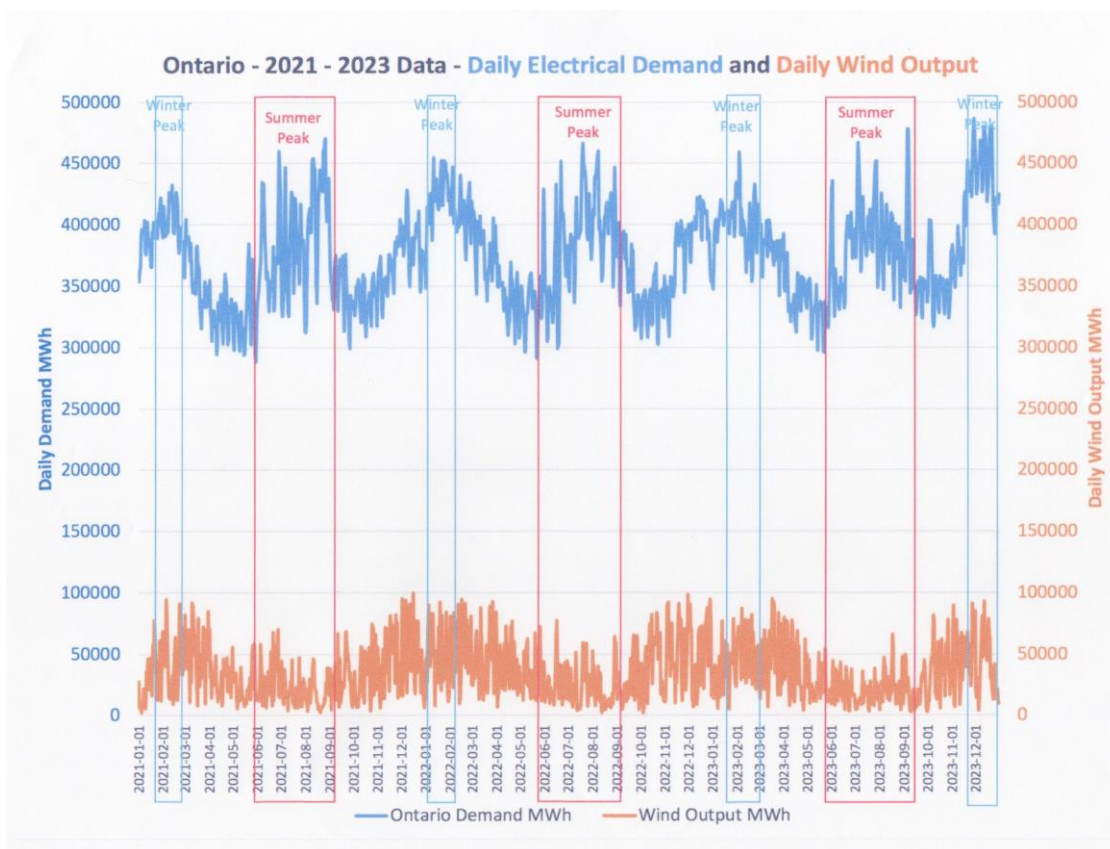
I went on to advise Lisa that my letter to the Minister of the Environment pointed out the absolute essential need of revising the Ontario regulation 359/09 for wind turbine siting, and the wind turbine noise guidelines, before there are more turbines. I had already identified the need in detail to the Ministry staff over 2 years ago after the Minister of the Environment of the time (Jeff Yurek) had asked me to brief the Ministry staff after the meeting I had with Minister Yurek, Minister Thompson and Minister Bill Walker that had been arranged by Minister Bill Walker. Yes, Lisa remembered that meeting. I pointed out that only the day before (Feb. 15) the MMEWG Chair along with myself and Santo Giano had met virtually with IESO staff, and that the IESO had pointed out quite explicitly that there would be NO changes to the wind turbine regulations before new turbines were

installed. This definitely got Lisa's attention as she said that in her conversations with the Energy Minister he had assured her that any new wind turbines would be sited further from homes. We'll see if my point gets conveyed by Lisa to Minister Todd Smith and Minister Amanda Khanjin.

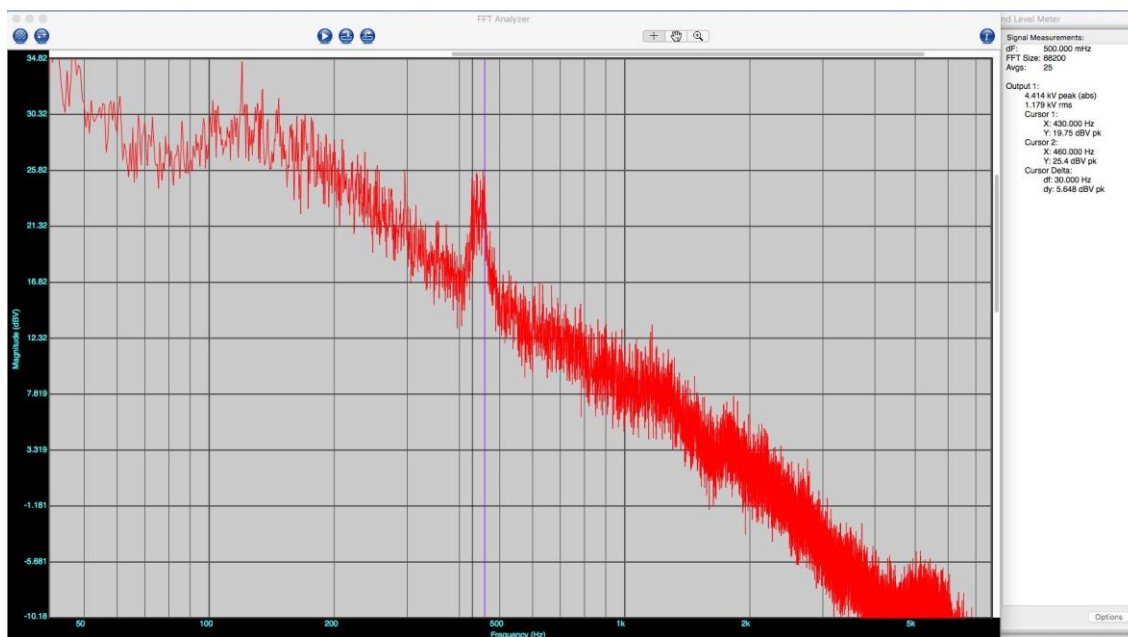
This gave me the opportunity to lead into the "new information" that has been developed from the monitoring of conditions at a home in the Enbridge Underwood array. I pointed out that a positive link has been shown between the acoustic conditions arising from wind turbines, and annoyance. Information that has been presented to the International Wind Turbine Noise Conference, to the Canadian Acoustical Association annual meeting, and published in the journal *WindTech - International*. The evidence shows that it is the sound from the wind turbines, not the wind, or the visual appearance of the wind turbines, or attitude that drives annoyance. I told Lisa that I had hoped to meet her in person to give her copies of the Journal to present to each of Minister Smith and Minister Khanjin, but given only a virtual meeting, I would send her an authorized copy of the journal. I am attaching a copy for which rights to distribute have been purchased from the publisher (I'll admit they gave me a deal) so you have permission to use, circulate, or post as you wish. The copy attached is a low-res copy suitable for web posting but a higher resolution copy is also available if you'd like.

I pointed out how the annoyance criterion presented in the article had been shown to exist in the data taken at the Enbridge Underwood wind power development. That gave me the opportunity to discuss how I have now been able to test the criteria against the audit sound files that the Ministry had accepted to show that the situation in the K2 array is "acceptable and not tonal". I pointed out that residents in the K2 array had only obtained the sound files through paying for them via a Freedom of Information request after several years of trying. However, it gave me the opportunity to show Lisa that by analyzing the MOE accepted files, it is clear that tonality does exist. See attachment 2. That permitted me to show the ~ 10 dB tonal peaks seen between 429 and 460 Hz in the example. It also gave me the opportunity to discuss how it was possible to "play games" with the data and say that since the definition of tonality calls for a single frequency peak to exist, that this case of a peak existing over perhaps a 30 Hz range would let a somewhat blind purist to say, "yup, no single tone exists here." I think I was able to convince her that in fact this narrow a peak does have all the annoying characteristics of a single peak, and is a problem. I was able to tell Lisa that I have already issued an abstract to present a further paper at the "joint congress" of the Acoustical Society of American and Canadian Acoustical Association to be held in May. Hopefully they accept the abstract. If nothing else I am going to continue to be a thorn in the side of the Ontario regulators for ignoring published work. I continue in hope that they will eventually get the message, and I closed my presentation to Lisa, "We need to do what is right." She nodded, and I'm sure she gets the message. Now if only she can and will bring the case forward. There is no doubt there is a political cost to do so, so I'm keeping my fingers crossed.

One thing that Lisa mentioned is that Minister Khanjin (current Minister of the Environment) is coming to Huron Bruce riding "soon". She invited me to meet her then. I pointed out that Jean and I are going to be away in April (going solar eclipse watching in the ocean via Holland America) but have confirmed with the impacted residents in Huron and Bruce counties they are willing for me to put their names forward to potentially meet with that Minister. I would like to invite Chairman Tom Allwood of the MMEWG if he'd also be willing to have his name put forward to meet with Minister Thompson and Minister Khanjin during their visit to Huron Bruce.



Attachment 1: Chart of 3 Years of IESO daily data for Ontario Electrical Demand and Wind Turbine Output – Demonstrates adding more wind turbines is futile to meet summer peaks



Attachment 2 – Analysis of K2 Wind Audit Data Submitted to MoECP - demonstrates tonality (See peak in curve showing 10 dB tonal peak from 430 to 460 Hz)

Multi Municipal Energy Working Group

Update on IESO's Procurement Activities

March 14, 2024

Lunch & Learn at ROMA

- **Capacity needs are real**
 - If LT 2 thro 4 are not successful, alternate sources of new capacity needed starting in 2030
- **Land area required for plan**
 - IESO estimates an area equivalent to 14X the size of Toronto required for energy production plan
 - Not seen as credible by attendees
 - Issue of protecting prime farmland raised

Revenue Guarantees Remain

- **Total Revenue**
 - Name Plate Capacity X
 - Annual Capacity Factor i.e. 30% X
 - Average Day Before Price for Electricity x
 - Number of Days in Month x 12
 - Grid Stability Payment to make up any short fall
 - No claw back of surpluses
- **Annual vs. Monthly Capacity Factors**
 - Potential for shortfalls in low production months
 - Extra sales revenue in high production months

No Consensus on Pricing

Industry participants have pushed back on pricing model

- Insufficient history with day before pricing to support revenue projection
- Concerns about additional nuclear capacity changing dynamics
- Shift to electric automobiles could cause change in day/night peaks
- Proposed monthly production capacity with variation in day and night output
- Brookfield proposing a return to fixed-price model to ensure LT2 is fully subscribed

Pricing model in flux – need to continue monitoring

MECP Requirements

- Ministry of Environment, Conservation & Parks
 - No changes in setbacks planned
 - Enforcement process is working
- Would non-compliant projects be granted extensions? – “MECP not involved in process”
- Requirements for repowering not well defined
 - CanREA - few existing sites could meet current REA standards
 - Santo Giorno – provided extensive requirements for repowering
- MMEWG Response – Unless setbacks change, it will be difficult to obtain municipal support.

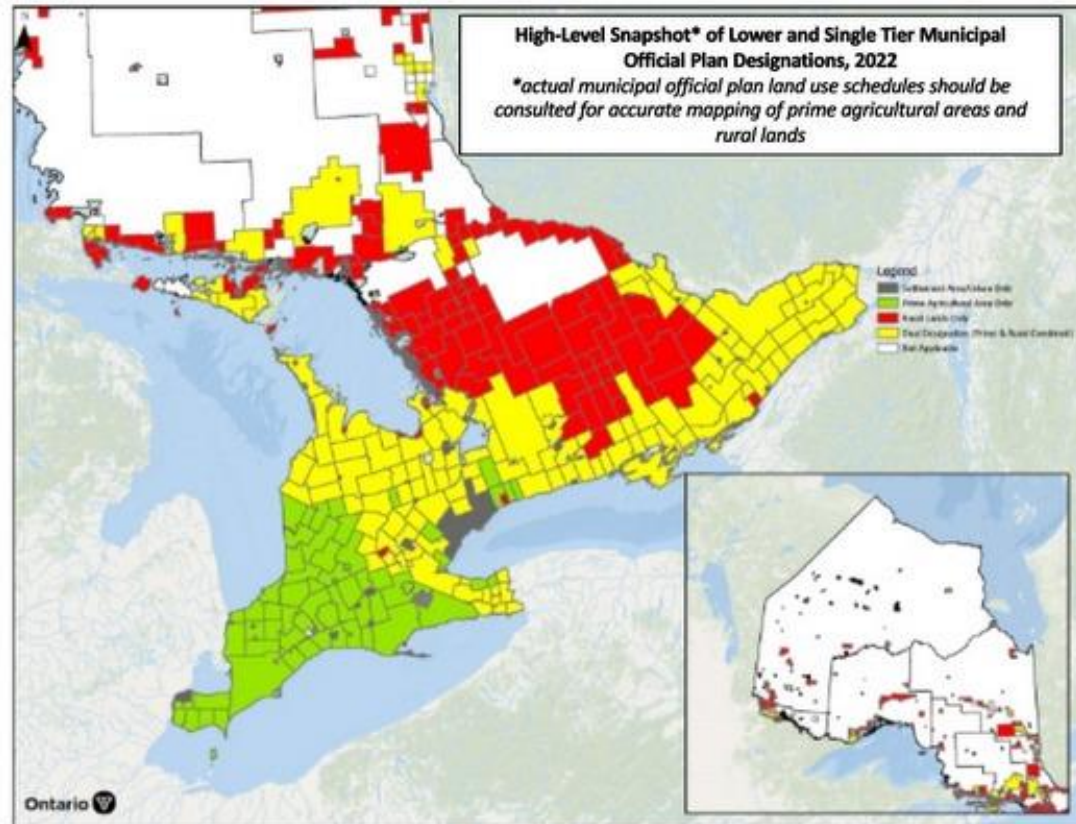
Use of Prime Farmland

- Session outlined current rules; IESO asked for feedback
- PPS and OMAFRA restrict use of prime farmland
 - Limited to 2% of land area or 1 ha for non-farm use
 - Developers should consider alternate sites i.e. brownfields
- PPS “renewable energy” statement
 - “should”; not a requirement
 - Does not require approval of a wind turbine project
 - Cannot be used to require rural municipalities to produce electricity for urban municipalities.
- Feedback form aims to get support for changes.
 - Commented on questions; added alternate questions.

OMAFRA - Prime Agricultural Areas

Appendix A

- In southwestern Ontario, many municipalities designate all land outside settlement areas as a PAA (green areas).
- This reflects the widespread quality of the agricultural soils and prevalence of farming in this region.
- Energy projects can be located in the grey, white, red, or yellow areas to avoid loss and fragmentation of prime agricultural areas.
- Projects with limited footprint could be sited in the green areas.



IESO vs. REA Process

- Municipal Support Resolutions required to obtain an IESO contract.
 - Separate process from REA process
- If contract awarded, proponent proceeds into the REA process.
- Proposal prepared as required by Reg. 359-09
 - Community consultations conducted
 - Further municipal input sought on detailed proposal
- In theory, municipalities could request changes to plan
- Once approved by municipality, proposal reviewed by MECP and approved.

East Zorra – Tavistock Proposal

- Serious proposal by Prowind – developer of Gunn's Hill project
- Leases being sought in 2 areas of municipality
- Quickly triggered negative community response
 - 3 community meetings – 1 small initial meeting followed by 2 larger meetings with 100 attendees each
- Community conducted email campaign with Councilors
- March 6 – Presentations by both Prowind and local land owners
 - Opposition focused on protecting prime farmland
- Result – Council adopts Unwilling Host Resolution unanimously

Next Steps

- Letter to Bruce/Grey Municipalities generated response
 - 2 Unwilling Hosts
 - Press coverage of issue
- Consider wider distribution of letter
 - Gaps in enforcement of existing REAs
 - Setbacks needed to be increased
 - Need to protect prime agricultural land

Questions or Discussion

MULTI-MUNICIPAL ENERGY WORKING GROUP

Meeting Date: March 14, 2024
Title: Proposed Changes to Operating Processes
From: Julie Hamilton, Recording Secretary

Recommendation:

That the Multi-Municipal Energy Working Group agree to the proposed changes and direct the recording secretary to work towards implementation of the same.

Background and Analysis:

With the ongoing advancements in the energy sector, there have been a number of different topics that the MMEWG has been discussing, investigating and advocating for. As a result, there has been a notable increase in the amount of correspondence being circulated between meetings between MMEWG members, members of the public and other levels and government organizations. In an effort to maintain transparency and ensure that all MMEWG members are kept up to date, a few changes are proposed to processes currently in place. This would also align the operation of the group with the procedural bylaw in which it operates under.

Webpage Creation

A website dedicated to the Multi-Municipal Energy Working Group would host all the information related to the workings of the group and provide information such as meeting schedules, membership details, how to access agendas, minutes, etc. and provide informational updates that the group may feel are important. It also provides a searchable option for anyone to access. Member municipalities would be able to link to the website from their sites if they wished. The best type of hosting for the site is still to be determined however, there are a few options that would not require any funds to support.

Disbandment of the Public Mailing List

The website would provide the opportunity to move away from the public mailing list. Currently, the list has about 30 contacts and was created by the previous recording secretary. Since it has been quite some time since the list was created, there could be potential implications related to permission of use for contact information obtained in the list. With a webpage in place, those who wish to seek information will have a resource and from there will be able to reach out for further details where they deem it appropriate.

Agenda and Information Circulation

The agenda process would then work similar to a regular Council meeting. Delegation requests from the public will be received up to a week in advance with a deadline for materials. All other information deemed relevant will be compiled by the recording secretary and the Chair will confirm the final agenda prior to circulation.

There are often emails which contain news articles, short updates and other related information that may be of interest to the members and not necessary deemed necessary to be added to an agenda. These types of correspondence would be circulated to the members by the recording secretary and deemed to be delivered. If a member wishes to have that item raised at a future meeting, they can ask to have it added to a future agenda for discussion.

Conclusion:

During the transition, the public list would continue and prior to disbandment, an email would be circulated to everyone on it highlighting the changes and how they can access information going forward.

It is anticipated that the changes could be implemented prior to the May meeting. This would require some extra time by the recording secretary to implement, so a slight increase in the hours would be seen during the implementation and transition, otherwise, there should be no other financial impacts.

INVOICE

Municipality - Arran-Elderslie
PO Box 70
1925 Bruce Rd 10
Chesley ON N0G 1L0

Customer Number

00000101072
1380-General Receivables

Invoice Number: 0107054
Billing Date: MAR 11, 2024
Due Date: APR 10, 2024
Amount Due: 459.68
Amount Enclosed \$ _____

MUNICIPALITY OF ARRAN-ELDERSLIE
PO BOX 70
CHESLEY, ONTARIO N0G 1L0

Please detach and return this portion with your payment.

Description	Unit Charge	Qty	Amount
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Invoice: 0107054 Multi-Municipal Energy Working Group/Services

Recording Secretary Serv	35.3600	13.00000	459.68
January-February			

Billing Amount: 459.68

00000101072
MUNICIPALITY OF ARRAN-ELDERSLIE
PO BOX 70
CHESLEY, ONTARIO N0G 1L0

Invoice Charges	<u>459.68</u>
Balance Due	459.68

Tax Reg: 87242 7158

A finance charge of 2% per month is added to balances not paid after 30 days.

Municipality - Arran-Elderslie
Telephone - (519) 363-3039

E. & O.E.

February 12, 2024

Hon. Todd A. Smith
Minister of Energy
10th Floor, 77 Grenville Street
Toronto, ON
M7A 2C1
Sent by email to: MinisterEnergy@ontario.ca

Dear Minister Smith,

Municipal governments are committed to continuing work with energy partners to support a transition to a clean, sustainable, affordable energy system to meet the needs of our communities. We understand, the Independent Electricity System Operator's (IESO) Long-Term 1 Procurement (LT1) submission deadline passed in December and the IESO is now reviewing proposal submissions. AMO is pleased that the province continues to recognize the importance of ensuring there is municipal support before a proposed project before it can proceed.

Municipal officials take seriously the important role that local governments have been asked to perform in the energy procurement process. While considering projects, municipal officials have surfaced important questions regarding energy projects that were not able to be answered before the LT1 submission deadline. As a result, many councils felt they had no choice but to withhold their support for these projects due to a lack of information. These questions include:

- Understanding and addressing new safety concerns, such as the risk and containment of fire in lithium-battery storage facilities;
- Balancing the need for energy with the importance of maintaining prime agricultural land; and,
- How gas-fired generation plants fit into the province's long-term energy planning.

AMO calls on the provincial government to play a leadership role in resolving these important questions in collaboration with municipalities and energy partners to help ensure a reliable, safe and clean energy system for our communities.

Fire Safety Considerations

One of the most common questions that has been raised at municipal councils is with regards to understanding and addressing the risk of fires in Battery Energy Storage System (BESS) projects. Municipal councils and fire chiefs have expressed concern that the use of lithium-ion batteries in BESS projects creates safety risks that are not currently addressed in the Ontario Fire Code or fire risk and response standards. This knowledge gap makes it challenging for municipalities to determine how to assess the risk to their communities, set fire safety standards for projects, and establish fire containment protocols to respond in the event of a fire situation.

We understand that Ministry of the Solicitor General is anticipated to provide an update to the Fire Code some time during 2024 and that the Ontario Fire Marshal is currently monitoring incidents involving lithium batteries. AMO recommends that as part of this work, the Solicitor General and the Fire Marshal provide guidance on fire prevention and containment standards for lithium-ion batteries and specifically for BESS facilities. This guidance should include direction on risk mitigation, requirements for suppression systems, safety setbacks, and direction on how emergency responders can safely respond to a BESS fire incident.

This information will help ensure that municipalities can make informed decisions when working with energy partners to establish fire safety plans, determining the costs of fire mitigation and response, and assessing the risk of a fire incident to the community. This will help ensure that municipalities are equipped to ensure the safety of our residents and the environment is accounted for when determining whether to provide municipal support to BESS energy projects.

Land Use Planning Considerations

Many of the projects that are being brought forward for municipal support are located on prime agricultural land that have restrictions regarding permitted uses. We understand that several ministries have a role in providing guidance about project siting and approving energy projects. Municipal decision makers are balancing energy needs with the importance of protecting agricultural and conservation land and have identified questions about how energy projects fit within the broader land use planning framework including:

- Whether renewable energy projects are permitted as non-agricultural or diversified uses and what other siting requirements should apply (e.g. setbacks, noise and vibration mitigation);
- How large an energy facility can be before qualifying as the primary use of land rather than agricultural uses; and,
- Whether BESS projects fit within the definition of a ‘renewable energy source’ or ‘alternative energy source’ that are permitted on agricultural land

Providing clarity on how these projects should be treated under the provincial land use framework will improve the ability of municipalities to make informed decisions about siting energy projects. Without enhanced clarity, there is also an increased risk that land use planning decisions related to energy projects are appealed to the Ontario Land Tribunal which would result in costs to municipalities to defend decisions and delay the start of approved projects.

We call on the Minister of Energy to collaborate with other ministries including Municipal Affairs and Housing; Environment, Conservation and Parks; and Agriculture, Food and Rural Affairs to provide clarity and guidance around requirements and best practices for energy project siting including, but not limited to BESS projects. This will help ensure that municipalities are both fully informed when determining whether a project is the right fit for a community and align with provincial planning policy.

The Role of Natural Gas

Several of the projects brought to municipalities for support during the LT1 process are for new or expanded gas-fired generation plants. Although natural gas makes up almost 40 per cent of Ontario’s energy supply, the future of natural gas in the province is currently a source of uncertainty. While the Ministry of Energy’s 2023 “Power Ontario’s Growth” report indicates that the province is expanding access to natural gas, the federal government has committed to achieving net-zero emissions by 2050 and the IESO’s 2023 “Pathways to Decarbonization” report provides a pathway on how to phase out gas-fired generation on the same timeline.

Further complicating the question is the fact that public expectations of the role of natural gas are different across different communities. While some municipalities have met public demand to implement decarbonization and green energy plans that include moratoriums on natural gas generation in their communities, other municipalities are actively seeking natural gas expansion

to provide affordable energy to their communities.

A crucial element of making informed decisions is understanding the province's long-term plan for electrification and decarbonization of Ontario's energy grid including the role that natural gas will play in this transition. In addition to concerns about the ability to maintain access to affordable electricity to residents – particular for home heating – municipalities are concerned about the possibility of being left with expensive costs to decommission abandoned or stranded infrastructure following a rapid phase out of natural gas.

We understand that the final report of Ontario's electrification and energy transition panel includes recommendations for the Ministry of Energy to develop and communicate an energy transition policy vision and integrated long-term energy plan, including clear direction on the role of natural gas in Ontario's future energy system. AMO supports this recommendation which presents an opportunity for the province to collaborate with municipalities and energy partners to ensure municipal officials can make informed decisions about how we power our economy and heat our homes in the future.

We also call on the Minister to play an active role in helping connect natural gas project proponents with willing host communities who are seeking increased access to natural gas.

Conclusion

AMO is pleased that the government remains committed to ensuring that municipalities have a clearly defined role in the ongoing energy procurements and to only moving forward with projects that have received municipal support.

Municipalities take the important role that they play in the procurement process seriously. Municipal decision makers must be able to determine whether the projects are safe, sustainable, provide value, and meet the needs of their communities. Efforts to address the challenges municipalities have identified in seeking to resolve questions about energy projects in collaboration with energy partners will lead to a better, safer energy system.

AMO looks forward to working with provincial partners to address these important questions so that municipalities are positioned to give support to more projects moving forward.

Sincerely,



Colin Best
AMO President

Cc:

Hon. Paul Calandra, Minister of Municipal Affairs and Housing
Hon. Lisa Thompson, Minister of Agriculture, Food and Rural Affairs
Hon. Michael Kerzner, Solicitor General
Hon. Andrea Khanjin, Minister of Environment, Conservation and Parks
Jon Pegg, Fire Marshal of Ontario
Lesley Gallinger, CEO and President, Independent Electricity Systems Operator
Carla Nell, Vice President, Independent Electricity Systems Operator

February 12, 2024

Lesley Gallinger
Chief Executive Officer and President
Independent Electricity Systems Operator
1600 – 120 Adelaide Street West
Toronto, ON M5H 1T1

Sent by email to: Lesley.Gallinger@ieso.ca

Dear Lesley Gallinger,

Municipal governments are committed to continuing work with energy partners to support a transition to a clean, sustainable, affordable energy system to meet the needs of our communities. We understand, the Independent Electricity System Operator's (IESO's) Long-Term 1 Procurement (LT1) submission deadline passed in December and the IESO is now reviewing proposal submissions. AMO is pleased that IESO continues to recognize the importance of ensuring there is municipal support before a proposed project before it can proceed.

Municipal officials take seriously the important role that local governments have been asked to perform in the energy procurement process. While considering requests for support resolutions, municipal officials have surfaced important questions regarding energy projects that were not able to be answered before the LT1 submission deadline. As a result, many councils felt they had no choice but to withhold their support for these projects due to a lack of information. These questions include:

- Understanding and addressing new safety concerns, such as the risk and containment of fire in lithium-battery storage facilities;
- Balancing the need for energy with the importance of maintaining prime agricultural land; and,
- How gas-fired generation plants fit into the province's long-term energy planning.

AMO understands that you are now seeking feedback to inform the design of the next long-term procurement (LT2). While the identified policy questions are not within the purview of IESO, we have received feedback regarding challenges municipalities have experienced that hinder the ability to obtain answers to these questions. IESO has an opportunity to address these challenges and better position municipalities to make informed decisions about energy projects.

Capacity and Expertise Constraints

Although some municipalities have dedicated staff with backgrounds in energy planning, most municipalities do not have this level of technical expertise. Further, in most cases the staff responsible for energy planning balance this work with other important responsibilities. Limited capacity and lack of technical expertise makes it difficult to conduct thorough assessments of projects and leaves municipalities without the information needed to make informed decisions.

We understand that in November 2023, the Minister of Energy wrote to IESO highlighting similar concerns and asking that IESO be available to municipalities to answer questions regarding the needs of the Ontario electricity system and the province's goals of growing a reliable, affordable

and clean electricity system. AMO has heard that since this letter was sent, senior staff and elected officials feel they have had opportunities to participate in IESO education sessions, but that there are not similar opportunities targeted to the general public. As a result, many residents' first – or only – exposure to information about the energy section and Ontario's energy needs is coming from project proponents and is perceived as being biased.

AMO recommends that IESO continue proactive outreach to municipalities to build information about the energy system, and that IESO seek opportunities to engage with the broader public, in particular where councils are considering requests for municipal support resolutions. This could include participation at proponents' town halls, or at council meetings. Municipalities are prepared to help facilitate IESO's participation in local engagement to help increase opportunities to ensure our officials and the public have the information needed to participate in informed discussions about the role these projects play in supporting Ontario's energy needs when considering specific projects.

Timing Constraints

We understand that proponents are not required to demonstrate municipal support until several months after being awarded a contract by IESO. However, municipalities have heard from many proponents that they will not proceed with projects unless they have support prior to the procurement submission deadline due in order to mitigate the potential financial impact of investing in a project only to have support declined late in the process.

It is ultimately up to proponents to determine whether to move forward with a project and to manage how and when they seek municipal support. However, the different project submission and municipal support deadlines creates a situation where the needs of proponents and municipalities are misaligned. In to ensure all energy partners are working on the same timelines, AMO recommends that municipal support be required prior to submitting a project proposal to IESO. This change should be balanced with a longer time frame between the launch of the RFP and the submission deadline to ensure sufficient time for community consultation.

We understand that IESO already provides guidance to proponents regarding the municipal support requirement. There is however an opportunity to enhance this guidance by providing information to proponents about key considerations when planning outreach to municipalities. These considerations include:

- Ensuring that sufficient time is provided for municipalities to review proposed project in order to identify and answer key questions about project suitability, safety, and impacts on the community. Multiple meetings may be required over several weeks ensure that councils have all the information needed to make informed decisions.
- Ensuring that sufficient notice is given to members of the community regarding information sessions. Particularly in rural, northern and remote communities, proponents should consider a large notice radius including contacting residents in neighbouring communities who may be affected by noise or environmental impacts of projects.
- Ensuring that opportunities for communities that are impacted by projects but are not the host municipality to receive information about the project. Host municipalities may need to consult with neighbouring municipalities to inform their decisions. For example, where a municipality has a shared services or mutual aid agreement with a neighbouring municipality, they have a responsibility to explore the potential impact of an energy project on this agreement.

Community Benefit Agreements

Municipalities understand their important role in supporting Ontario's energy sector including hosting energy generation and storage facilities where appropriate. Although these projects benefit all of Ontario, they often come with increased costs to host municipalities through increased demands on local infrastructure and services including wear and tear on roads for construction and maintenance vehicles, water servicing for fire suppression systems, and monitoring bylaw compliance and noise complaints.

AMO is pleased to see that many energy project proponents offer community benefit agreements (CBAs) to help offset the costs of these services and provide direct financial benefit to host municipalities. However, these agreements are not always offered and the terms are often inconsistent between communities.

AMO recommends that IESO make CBAs mandatory for the LT2 procurement and consider providing a template agreement that can be used as a starting point for negotiations. Increased use of CBAs will help mitigate municipal costs incurred to host energy projects and could increase the likelihood that projects are deemed to be a net benefit to communities.

Conclusion

AMO is pleased that IESO remains committed to ensuring that municipalities have a clearly defined role in the ongoing energy procurements and to only moving forward with projects that have received municipal support.

Municipalities take the important role that they play in the procurement process seriously. Municipal decision makers must be able to determine whether the projects are safe, sustainable, provide value, and meet the needs of their communities. Efforts to address the challenges municipalities have identified in seeking to resolve questions about energy projects in collaboration with energy partners will lead to a better, safer energy system.

AMO looks forward to working with energy partners to address these important questions so that municipalities are positioned to give support to more projects moving forward.

Sincerely,



Colin Best
AMO President

Cc:

Hon. Todd Smith, Minister of Energy

Carla Nell, Vice President, Independent Electricity System Operator

Multi Municipal Energy Working Group

Update on IESO Energy Projects

Township of Georgian Bluffs

March 13, 2024

Multi Municipal Energy Working Group

- Made up of elected municipal plus community representatives from Grey, Bruce and Huron Counties.
- Originally focused on issues related to development and operation of wind turbines.
- Mandate expanded when municipalities asked to support Battery Energy Storage System (BESS) projects based on a minimum of information.
- Presentation provides updates on BESS and wind turbines.

2023 IESO Focus on Storage & Gas

Program	Capacity	Type	Timing
Expedited	930 MW	Electricity Storage Projects	Awarded
	570 MW	Other Expansions	Awarded
Upgrades	300 MW	Improve facility; amend contract	Awarded
LT1 RFP	1600 MW	Electricity Storage Projects	Award in Q2
	918 MW	Non Storage Projects	Award in Q2

Specific Requirements

- Provide electricity on demand.
- Duration - up to 4 (storage) or 8 (non-storage) hours.
- Length of Contracts
 - Storage – end in 2047
 - Natural Gas - end in 2040

Next IESO Procurements

- IESO has announced series of 3 additional RFP's in mid December:

LT RFP's	Launch Date	Operational	Target
LT2	2025	2029 – 2031	2,000 MW
LT3	2027	2032	1,500 MW
LT4	2029	2034	1,500 MW
Total		2029-2034	5,000 MW

- Includes wind, solar, hydroelectric, storage and bioenergy projects.
- Also potential for existing projects with expiring contracts to repower and participate in RFP's.

IESO's RFP Process for BESS

- Proponent proposes to build and operate a facility
 - Specifies size in MW, location
 - Hydro One confirms grid capacity available
- Proposal includes fixed cost for facility
- Points used to reduce cost in evaluation process
 - Municipal Support – if yes, points awarded
 - If no, municipal support must be obtained later
 - Indigenous support – if yes, points awarded
- Contracts go to lowest bidder based on adjusted price
- Hydro One uses facility as required to fill gaps in supply
 - No usage fees – just a fixed monthly cost

Battery Energy Storage Systems

Operating Experience Suggests Caution

- Contain flammable electrolytes, can create unique hazards if the battery cell enters thermal runaway
- During thermal runaway, large amounts of flammable and potentially toxic battery gas generated
- Major toxic gases emitted can include CO, HF, NO₂, HCL, - can pose very large threat to human health, a greater threat than the heat of the fire
- Tracking shows 32 destructive failures in 3 years since Dec. 2020. Some resulted in fatalities or serious injury of fire fighters

Emergency Response Required

- The response to a fire situation is often to let the affected battery section burn out - can take a day or multiple days.
- Fire crews need special training as some burning batteries can explode if water is used on the fire.
- Adjacent battery sections must be cooled with copious water. Dry sprinkler systems can be used to direct cooling water.
- Need to consider handling of effluent fire protection water to prevent contamination of adjacent land and water courses.
- Need to ensure safety setbacks to residences, roads, etc. to protect against heat and toxic gases,
- Need to assess the ability of emergency services to provide this type of extended response.

Regulations Related to BESS

- BESS technology is new and evolving rapidly.
- Unlike wind projects, Regulation 359-09 provides no standards or guidelines for BESS projects.
- US standards available for reference
 - Fire Code – NFPA 855; UL Testing – 9540A
- Hydro One identified a substantial fire risk to its infrastructure and published standards that proponents need to meet to connect to grid.
- Ontario Fire Marshall reviewing fire safety requirements – decision expected in 6 months

Municipal Role in Process

- Municipal support required for all IESO projects.
 - No rules for when multiple municipalities involved
- Responsibilities to evaluate projects
 - Need to fully understand BESS risks
 - Impact on municipal services
 - Decommissioning requirements
- Risk Management - joint/several liability
- Municipalities should complete a full evaluation of project before approving support resolution, site plans or building permits

Assessments Required by Hydro One

- For approval, proponents must have completed:
 - Hazard Mitigation Analysis
 - Fire Risk Assessment
 - Community Risk Assessment
 - Air/Gas Dispersion Study
 - Fire Protection Design Documentation
 - Passive Fire Protection System
 - Active Fire Protection System
 - Emergency Response Plan
- Applies only to Hydro One infrastructure
- At a minimum, municipalities should be requesting similar studies.

Hydro One BESS Separation Distances

Hydro One Facilities	Setback Distance
Hydro One – 500 kV Right of Way	150 metres
Hydro One – 230 kV Right of Way	100 metres
Hydro One – 115 kV Right of Way	60 metres
Hydro One – 500 kV Substation	300 metres
Hydro One – 230 kV Switching Station	200 metres
Hydro One – 115 kV Switching Station	100 metres

- Hydro One rules focused on fire risk and apply only to its infrastructure
- Municipal setbacks also need to consider toxic gases
 - eg. – Southern California fire in Sept 2023 – evacuation zone of 400 metres; shelter indoors – 800 metres.
- Municipal zoning by-laws could include 800 metre setbacks

Wind Turbine Projects

- Municipal support also required
- Experience with turbines indicate setbacks are not sufficient
- Gaps evident in enforcement of key terms in Renewable Energy Approvals
- Ministry of Environment, Conservation and Parks has no plans to change noise standards or minimum setbacks
- Municipalities now have authority to enact zoning by-laws governing placement of wind turbines.

Prime Agricultural Land

- Siting of energy projects on Prime Agricultural Land concerns local communities and councils.
- Current Provincial Policy Statement places a high priority on protecting prime land
- Projects allowed as a secondary “Diversified Use” on prime agricultural land
 - Size limited to 2% of total land area up to a maximum of 1 ha
- IESO has requested input whether this restriction should be relaxed.

New Zoning Rules

- **Prohibit energy projects on Prime Agricultural Land**
- **Establish setbacks for BESS facilities**
 - 400 metres from property line; 800 metres from other uses
 - Focus of projection is protection from toxic fumes
- **Establish wind turbine noise setback from other uses**
 - Recommending 2,000 metres
 - Protection for residential, industrial, institutional and agricultural uses.
 - Protects against audible and low frequency noises
- **Establish wind turbine setback from property lines**
 - Recommending 1,200 metres
 - Limits impact of turbine failure and ice throw to site

Other Municipal Concerns for BESS

- **Define Emergency Response Requirements**
 - Role of municipal services in responding to emergencies needs to be full documented. Annual training plan required.
- **Source of Water Supply for Emergencies**
 - If municipal water supply is not at site, the source of water to be used for cooling in an emergency needs to be defined.
 - Some US sites maintain water on site.
- **Limits on Noise Emissions**
 - Project will contain equipment used 24/7 to cool modules
 - Impact on neighbouring properties needs to be established
- **Decommissioning Requirements**
- **Process for Change in Ownership**

Summary

BESS Projects

- Technology is new and rapidly evolving.
- Limited direction from provincial level.
- Limited information provided to municipality.

Wind Turbines

- More familiar technology with known problems
- No changes to address issues
- Enact zoning by-law or holding by-law, or,
- Adopt “unwilling host” resolution

Bottom Line: Municipalities have the right to decline support for the IESO’s energy projects

Questions or Discussion

Revisiting the Association between Wind Turbines and Public Health

Deputation to Grey Bruce Board of Health

Multi Municipal Energy Working Group (MMEWG)

Presenters

Tom Allwood, Chair MMEWG, Councilor Grey Highlands

William Palmer, P. Eng.

Why we are here:

- The MMEWG is comprised of elected members of municipal councils and council appointed citizens whose “Terms of Reference” note:
 - The purpose of the Committee is to draw together representatives from municipalities to share, discuss and advocate “best practices” and other means to address mutual concerns regarding energy generation facilities and storage infrastructure to all the relevant Government Ministries and Agencies.
- A citizen’s delegation to the MMEWG requested clarification for the association between wind turbines and public health.
 - Correspondence received from the A/Director, Health Protection, Policy and Partnerships Branch, Office of the Chief Medical Officer of Health in response to a request from the MMEWG for this clarification stated (in part):
 - *Pursuant to s. 13 of the Health Protection and Promotion Act (HPPA), a medical officer of health (MOH) or a public health inspector may make a health hazard order where he or she is of the opinion, upon reasonable and probable grounds that a health hazard exists in the health unit served by him or her, and that the requirements specified in the order are necessary in order to decrease the effect of or to eliminate the health hazard.*
- We note that in Feb. 2013, the Grey Bruce Medical Officer of Health, Dr. Hazel Lynn, accompanied by Dr. Ian Arra reported an association between wind turbines and health, and as described by CTV News, Dr. Lynn stated, *“more public health research is needed on the turbine issue.”*
- This delegation from the MMEWG is to request that subject should be revisited now.

Why it matters to act now:

- The IESO (Independent Electricity System Operator) issued two documents in Dec. 2023, one for public comment, and one as an update to the Minister of Energy that propose:
 - The need to develop 5 TWh of new energy supply by 2030 due to growing demands on the electrical system (mostly to supply decarbonization initiatives such as electric cars and electric heat pumps)
 - This is to be supplied by 2000 MW of new generation, mostly from repowering 2940 MW of existing wind turbines whose contract ends between 2026 and 2034, and a smaller part from new solar arrays.
 - They suggest repowering wind turbines can be done on their existing footprint. Existing turbines would need to increase in output by 168% to 4940 MW, requiring taller towers and larger turbine rotors.
 - Most of the turbines to be repowered were installed before current setbacks of 550 metres were in effect, or the current method of assessing noise was established.

What this will mean to citizens:

- Using the example of the Enbridge Underwood array in Bruce County, 41 of the 110 turbines in the array are located at distances under the regulated limit of 550 metres. These would all be increased in size and output under repowering.
- 52 of the homes assessed in the “final” environmental noise assessment used to approve the array have setbacks to the nearest turbine less than 550 metres, some as close as 444 metres. Some homes 2 turbines closer than 550 metres and up to 37 turbines within 3000 metres.
- Many of the homes already have noise exposures greater than allowed by current regulations when the assessment is done using rules established after the original approval.
- An already bad situation will become worse as turbines are replaced with larger rotors and taller towers.

The so what? Consequences noted already.

- A few examples, using the example of the Enbridge Underwood array.
 - A male, in his 50's, with no previous known heart conditions, living within 485m of the nearest turbine, with 4 within 1000m, 11 within 2000m and 13 within 3000 m died suddenly of a cardiac arrest.
 - A female, in her 30's, with no previous known conditions, living within 530m of the nearest turbine, with 3 within 1000m, 13 within 2000m, and 35 within 3000m died suddenly. ERT were unable to restart her heart.
 - A male, in his early 60's with no known previous conditions, living within 518m of the nearest turbine, with 2 within 1000m, 10 within 2000m, 18 within 3000m died suddenly.
 - A female in her 50's, with no known previous conditions, living within 453 m of the nearest turbine, with 6 within 1000, 14 within 2000m, 26 within 3000m had to leave her employment and home after making critical mistakes that could impact the health of others. OK when away from home, symptoms of sleep deprivation, and nausea returned when back at home.
 - A male in his teens, who was an infant when turbines installed, living within 500m of the nearest wind turbine, with 5 within 1000m, 10 within 2000m, and 12 within 3000m suffers chronic headaches, medical staff unable to determine a cause
 - There are many more ...

What current research shows:

- Research conducted in Ontario, partly within Grey-Bruce presented to International Wind Turbine Noise Conference, to Canadian Acoustic Association Convention, and documented in industry journal WindTech International concluded:
 - *annoyance can be reliably predicted by an objective measure based on simple-to-determine acoustic parameters. The objectively predicted annoyance correlates closely with times when impacted residents subjectively identify annoyance. This criterion can be used to assess when annoyance is predicted to occur and thus when mitigatory action should be taken. The important finding shows that annoyance is linked to an acoustic condition present when wind turbines operate and is not only a product of visual triggers or attitude.*

Briefly, how research conducted:

- Collected continuous 10 minute samples of sound recordings using MOE compliant methods over 8 months, at a home 537 metres from nearest wind turbine, with 19 turbines within 3000 metres.
- Residents logged conditions identified as annoying.
- Sound sample later analyzed for times annoyance logged (residents did not know the sound conditions when logging conditions identified as annoying)
- Identified hypothesis from analysis of acoustic condition existing when annoying conditions logged.
- Tested hypothesis by analysing conditions at other sites, and when turbines started up or shut down. Confirmed hypothesis criterion was met when turbines on, not when they were shut down.
- Collected second set of data, with simultaneous recordings at location near wind turbines, and at second location more than 6 km from wind turbines, but same environmental conditions. Confirmed hypothesis met near turbines but not present at location distant from wind turbines.

Impact on conclusion if turbines repowered.

- Research hypothesis shows annoyance criterion met when variation of low frequency component of sound sensed by full spectrum analysis (Z weighting) is greater than variation of normal audible (A-weighted, used for regulatory limits) sound.
 - Annoyance criterion **$LA_{10}-LA_{90} \leq 3 \text{ dB}$** while **$LZ_{10}-LZ_{90} \geq 6 \text{ dB}$** tends to match actual annoyance reports.
- Turbines with larger rotor diameter have a greater fraction of noise in the low frequency spectrum sensed by Z weighting.
- Repowering turbines will increase objective measure of annoyance.
- The bottom line ... things that are bad now, will get worse.

What can Board of Health do?

- Institute rigorous review of reports of annoyance, adverse health consequences, or deaths, correlated to residence proximity to nearest wind turbine, and the number of turbines within 1000, 2000, and 3000 metres. (We can share data we have from citizen deputations)
- Review the current research into an objective measure of annoyance from analysis of sound from wind turbines, and share review findings with Chief Medical Officer of Health. Research shows need to change current method of calculating limits based only on A-weighted sound.
- As necessary, issue a health hazard order before IESO issues licences to repower current wind turbines – many not even meeting current standards, as repowering would worsen an already bad situation.

How does this fit Board of Health priorities?

- Many current issues facing Grey Bruce Public Health arise from a public feeling of despair, and loss of hope:
 - Growing opioid addiction, overdoses, and deaths.
 - Citizens identify concerns with rising housing costs, inflation arising from increasing money supply, and more and more are living “on the streets” with little hope of ever returning to a normal life.
 - Health care professional burn out, and citizen difficulty receiving medical care.
- Many of these issues are dominated by the too common impression that those in authority do not care.
- The actions suggested are ones that can be accomplished with relatively small expenditure, and will demonstrate that the Board of Health does care, and want to prevent a bad situation from becoming worse.
- Any action that generates hope can have benefits to reduce overall despair, and impact even seemingly unrelated issues.

Thanks for your attention.

Questions, or comments?

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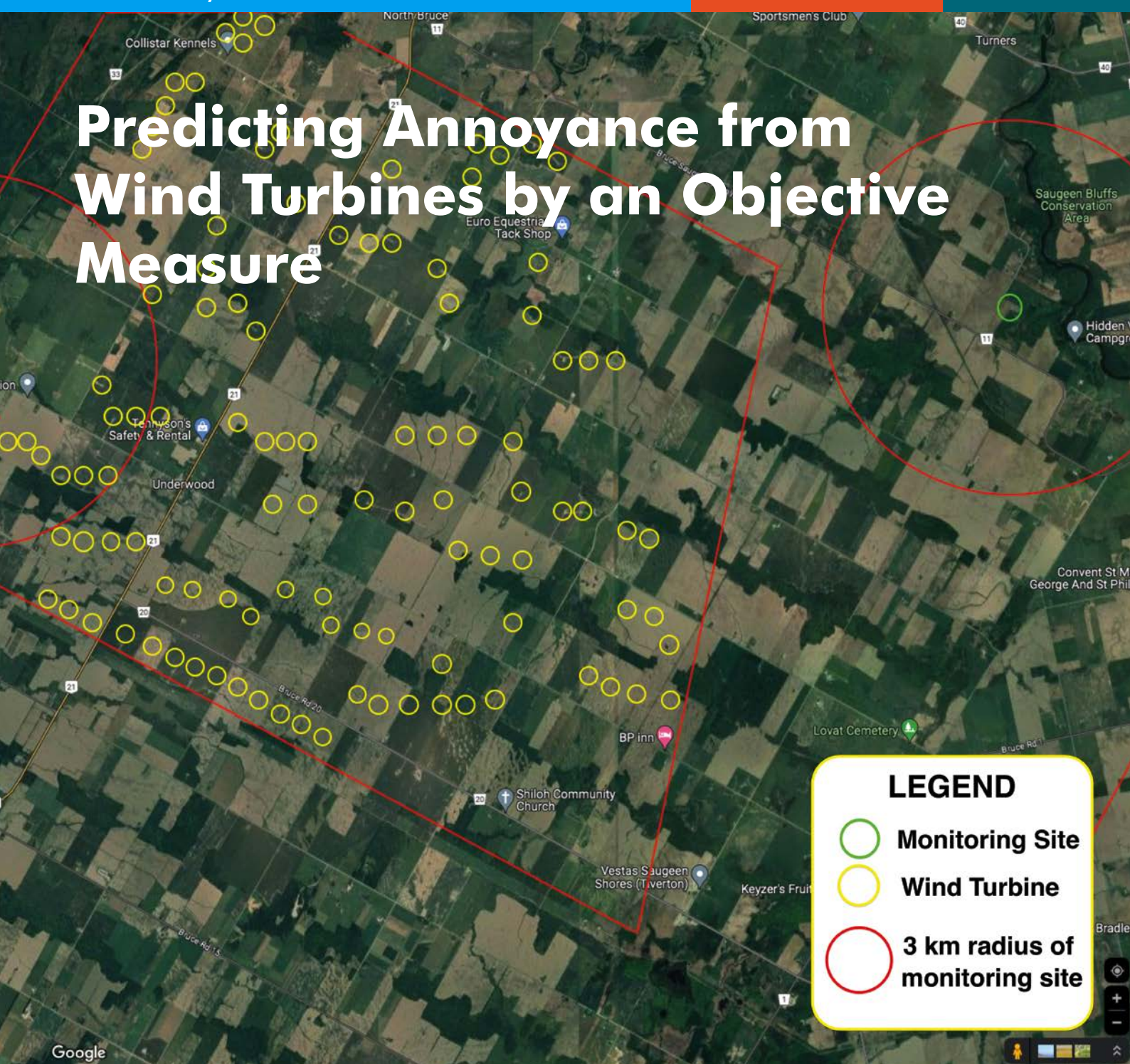
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Predicting Annoyance from Wind Turbines by an Objective Measure



A Step Towards Mitigating Wind Turbine Annoyance

Predicting Annoyance from Wind Turbines by an Objective Measure

By William K.G. Palmer,
Independent Researcher, Canada

'What is their problem, really?' This question has been voiced by developers and operators of wind power, as it relates to citizens who complain of annoyance from wind turbines. 'After all, most people are not annoyed, and they recognise how important development of wind resources is to combat climate change,' we hear. Sometimes, the statement is more forceful: 'most normal people are not annoyed,' implying somewhat harshly that there may be something abnormal with those annoyed. When one makes a conscientious effort to communicate with people expressing annoyance, one finds they are neither malcontents nor oblivious to climate change concerns. Yet, one hears them express words such as, 'I just haven't been able to stand it in my home since the wind turbines were installed.' For those impacted, annoyance is not merely a temporary unpleasant phenomenon but a condition that adversely impacts their life and health.



Figure 1. The sites, at 537m and at > 6 km, from the nearest wind turbine

To assess annoyance, the customary technique is to assemble a random panel of assessors to stay in the environment of the one annoyed for a period of time. But that method is

not practical for a condition that is neither continuous nor even fully predictable. The goal of this work was to develop an objective method based on measures of physical parameters that could replace

a subjective assessment of when annoyance exists.

It is well established in the scientific literature that amplitude modulation (or AM), a measure of the

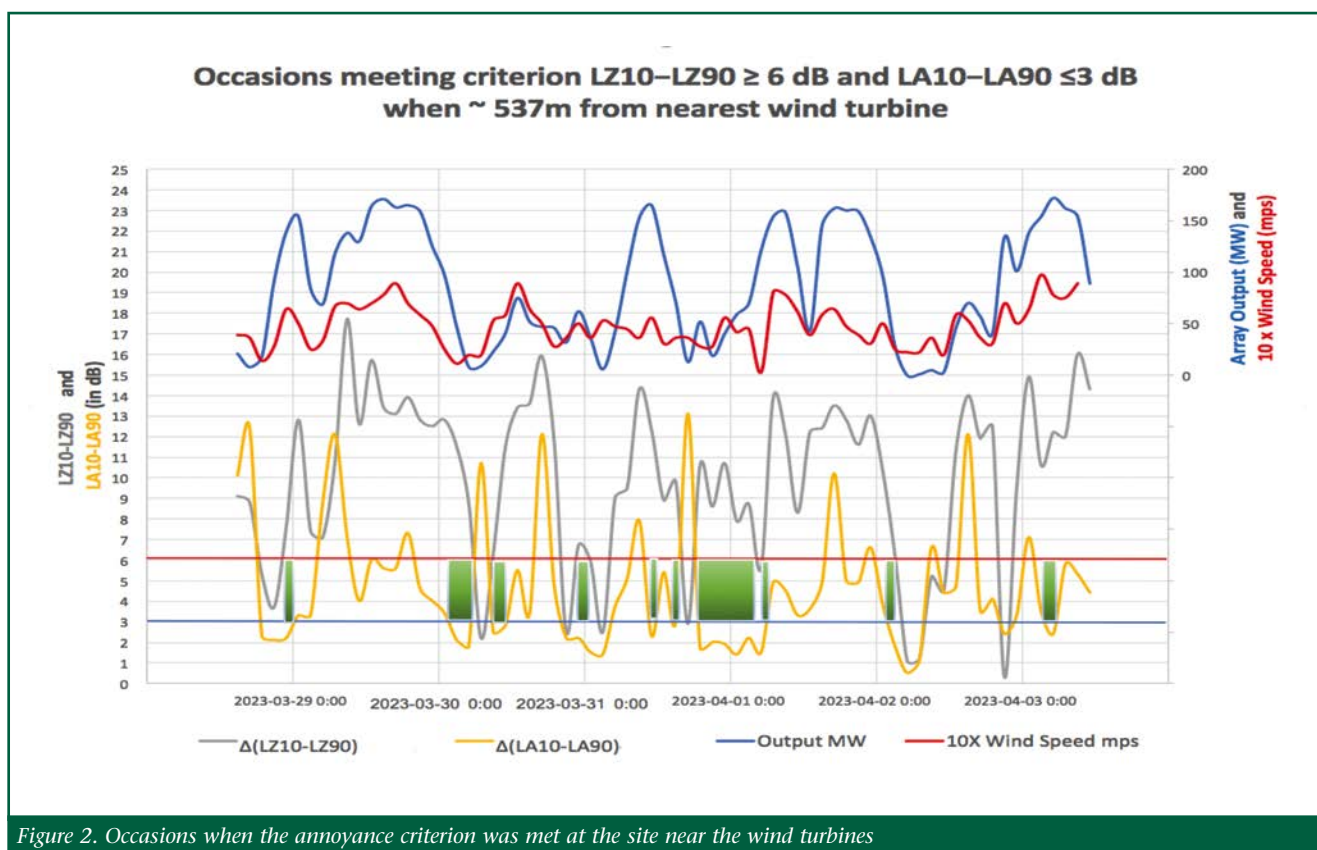


Figure 2. Occasions when the annoyance criterion was met at the site near the wind turbines

variation of the broadband intensity of the sound received from a wind turbine, can be linked to annoyance. This is often considered a method of assessing the depth of the signature ‘swoosh’ as the wind turbine blades rotate. Although there are techniques to assess the amplitude of AM, such as the procedure of the Institute of Acoustics in the UK, the

assessment is neither simple nor quick. A simplified method of assessing the variation of the sound received is to calculate the difference between the L10 and L90 sound levels. While this is not an actual assessment of the depth of the AM, it does provide an alternate comparison of the variation. L90, the minimum sound level present over 90% of the

time is often considered an assessment of the background noise. Similarly, L10 is an assessment of a higher sound level present less than 10% of the time. Thus, L10–L90 can be considered an assessment of the variation in the sound level.

Calibrated microphones were installed to monitor and enable the recording of sound levels

Date	Resident assessment	LZ10–LZ90	LA10–LA90
28-Nov-20	8-Oct	13.4	2.3
5-Dec-20	7-Oct	7.7	1.8
9-Dec-20	8-Oct	13.9	3.0
10 December 2020 to 15 January 2021	9 reports 7/10 to 9/10	Power failure – loss of recording – no assessment	
03 January 2021	8-Oct	9.2	2.5
20 February 2021	8-Oct	13.0	2.8
24 February 2021	8-Oct	15.0	3.1
01 March 2021	8-Oct	13.0	3.0
09 March 2021	7-Oct	13.5	2.6
26 March 2021	7-Oct	7.3	2.6
27 March 2021 to 02 July 2021	10 reports 7/10 to 9/10	Power failure – loss of recording – no assessment	

Table 1. Analysis of examples considered annoying

present outside a residence where the occupants had filed complaints of annoyance from wind turbines. During a 195-day monitoring period, the occupants logged 29 representative examples of when the conditions were considered moderately (7/10) to highly (9/10) annoying. They did not log every occasion of annoyance. Even if conditions persisted for some days, the occupants would only log an example every three or four days. At the end of the monitoring period, the recording apparatus was removed to analyse the recordings made on the days when annoyance was recorded. It was found that data was only available for 81 of the 195 days of the monitoring period due to losses of recording arising from power failures. Analysis was done for 1-minute samples for each period considered moderately to highly annoying, for which data was available, assessing both LA10–LA90 and LZ10–LZ90. The results of the analysis are shown in Table 1.

A change of 3dBA is typically considered to be the minimum for most people to perceive that a change in sound amplitude

has occurred. The measure of sound by Z-weighting does not suppress higher and lower frequencies that may be less easily perceived. A change of greater than 6 dBZ might be required for many people to recognize that a Z-weighted change in sound amplitude had occurred. These considerations, and a review of the results in Table 1, suggest that a criterion for annoyance might be when LA10–LA90 ≤ 3dBA, and LZ10–LZ90 ≥ 6dBZ.

Analysis of 25 additional recordings from other locations with different turbine types showed that also in those situations the criterion was met when annoyance by different observers was recorded.

The criterion was tested next to determine whether it was only met as a result of wind on the microphones, or the surroundings. Analysis was conducted of the acoustic conditions during wind turbine change of state, as the wind conditions change little in the few minutes of the transition. The results of the analysis in Table 2 show that the criterion was met when turbines were operating but not when turbines were shut down.

A further test was carried out to ensure that it was the proximity of turbines and not the wind that resulted in the criterion being met. Simultaneous acoustic monitoring was conducted at a site about 537 metres from the nearest wind turbine and at a second site > 6 kilometres from the nearest wind turbine. Figure 1 shows that the locations of the two monitoring sites, which were in similar terrain, had a similar proximity to roadways and very similar environmental conditions. In a 7-day monitoring period, there were no occasions when the criterion was met at the site distant from the wind turbines. However, it was met for varying durations on 6 days of the 7-day period near the wind turbines. Figure 2 shows, by green shaded rectangles, the times when the annoyance criterion was met at the near site. The figure shows that the annoyance criterion was not necessarily met when turbine output or wind speeds were highest. The criterion was met when the Z-weighted turbine sound variation dominated the A-weighted variation. Even though environmental conditions were very similar at both sites, there were no

Date and time and turbine state	LZ10	LZ90	LA10	LA90
16 January 2021 09.30 to 09.32	81.3	77.9	42.0	35.9
Turbines not running	LZ10–LZ90 = 3.5dBZ		LA10–LA90 = 6.1dBA	
	Does NOT meet criterion for annoyance			
16 January 2021 10.13 to 10.15	82.1	75.8	37.6	36.1
Turbines running	LZ10–LZ90 = 6.3dBZ		LA10–LA90 = 1.5dBA	
	Meets criterion for annoyance			
25 March 2021 13.38 to 13.40	83.8	72.5	43.8	40.8
Turbines running	LZ10–LZ90 = 11.3dBZ		LA10–LA90 = 3.0dBA	
	Meets criterion for annoyance			
21 March 2021 14.10 to 14.12	79.4	76.2	39.4	33.2
Turbines not running	LZ10–LZ90 = 3.2dBZ		LA10–LA90 = 6.2dBA	
	Does NOT meet criterion for annoyance			

Table 2. Analysis of the effect of turbine change of state on the criterion for annoyance (with little wind change)

occasions when the annoyance criterion was met due to wind-induced noise at the distant site.

The work shows that annoyance can be reliably predicted by an objective measure based on simple-to-determine acoustic parameters. The objectively predicted annoyance correlates closely with times when impacted residents subjectively identify annoyance. This criterion can be used to assess when annoyance is predicted to occur and thus when mitigatory action should be taken. The important finding shows that annoyance is linked to an acoustic condition present when wind turbines operate and is not only a product of visual triggers or attitude.

Further Reading

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