Multi Municipal Energy Working Group
AGENDA

MMEWG-2025-04
Thursday, September 11, 2025, 7:00 p.m.
Virtually via Microsoft Teams

Pages

1. Meeting Details

   Microsoft Teams Need help?

   Join the meeting now

   Meeting ID: 217 749 708 700

   Passcode: Lh7Ri7Vv

2. Call to Order

3. Adoption of Agenda

4. Disclosures of Pecuniary Interest and General Nature Thereof

5. Minutes of Previous Meetings

   5.1 MMEWG DRAFT Minutes - May 8 2025 — 1

6. Business Arising from the Minutes

   6.1 FOI - A2022-0198 Decision Letter — 6

   6.2 MPP Paul Vickers - Attendance on November 13 2025

7. Delegations/Presentations

7.1 Bill Palmer - Putting into Perspective the Risks to Public Health posed by Wind Turbine Installations 9

At the discretion of the Members, Mr. Palmer will share a 30 minute video of his presentation, with an opportunity for discussion afterwards.

https://www.wind-watch.org/documents/putting-into-perspective-the-risks-to-public-health-and-safety-posed-by-wind-turbine-installations/

8. Correspondence

8.1 Requiring Action

8.2 For Information

8.2.1 Wind Concerns Ontario letter to IESO 44

8.2.2 Procurement - September Update 47

8.2.3 Tara BESS Update 52

8.2.4 WCO letter to MECP 66

8.2.5 Correspondence from Warren Howard Re: SBP 69

9. Members Updates

10. New Business

11. Closed Session (if required)

Not Required.

12. Confirmation of Next Meeting

13. Adjournment

Multi Municipal Energy Working Group

MINUTES

MMEWG-2025-03
Thursday, May 8, 2025, 7:00 p.m.
Virtually via Microsoft Teams

Members Present: Mark Davis - Municipality of Arran-Elderslie - Citizen Appointee
Ryan Nickason - Municipality of Arran-Elderslie
Tom Allwood - Municipality of Grey Highlands
Todd Dowd - Municipality of Northern Bruce Peninsula
Sue Carleton - Township of Georgians Bluffs
Mike Pearson, Township of Georgian Bluffs - Citizen Appointee

Others Present: Julie Hamilton - Recording Secretary
Bill Palmer - Technical Advisor

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

MMEWG-2025-05-08-01

Moved by: Todd Dowd - Municipality of Northern Bruce Peninsula

Seconded by: Sue Carleton - Township of Georgians Bluffs

THAT the Multi-Municipal Energy Working Group hereby adopts the agenda of the Thursday, May 8, 2025 as distributed by the Recording Secretary.

Carried

4. Disclosures of Pecuniary Interest and General Nature Thereof

None disclosed.

5. Minutes of Previous Meetings

5.1 MMEWG Minutes - March 13, 2025

MMEWG-2025-05-08-02

Moved by: Ryan Nickason - Municipality of Arran-Elderslie

Seconded by: Sue Carleton - Township of Georgians Bluffs

THAT the Multi-Municipal Energy Working Group hereby approves the minutes of the Thursday, March 13, 2025 meeting as presented by the Recording Secretary.

Carried

6. Business Arising from the Minutes

6.1 Bill Palmer - Verbal Update on Grey Sauble Conservation Authority

Mr. Palmer shared an update regarding his attempt to delegate to the Grey Sauble Conservation Authority. His request was declined to prevent any presentation that might influence the board's impartiality when reviewing the Tara BESS application. The board's role is strictly to approve or reject applications based on established policy and floodplain mapping, and does not allow third-party input or commentary. If the application is denied, the applicant has the right to appeal. At the time Mr. Palmer spoke with the GSCA's CAO, no formal application had been submitted.

Members discussed the limitations of the conservation authority's mandate, noting that floodplain management is its primary responsibility, while oversight for municipal wells and groundwater protection falls to other agencies. Concerns were raised about the restricted ability of conservation authorities to comment on broader issues due to legislative changes, with source water protection now managed by different regulatory bodies. The importance of clear communication and the potential for bias in the dissemination of information to council members were also highlighted.

MMEWG-2025-05-08-03

Moved by: Ryan Nickason - Municipality of Arran-Elderslie

Seconded by: Todd Dowd - Municipality of Northern Bruce Peninsula

THAT the Multi-Municipal Energy Working Group receives Bill Palmers update for information.

Carried

6.2 MPP Paul Vickers - Correspondence

MPP Paul Vickers is tentatively scheduled to attend the meeting of November 13, 2025.

7. Delegations/Presentations

8. Correspondence

8.1 Requiring Action

8.2 For Information

MMEWG-2025-05-08-04

Moved by: Todd Dowd - Municipality of Northern Bruce Peninsula

Seconded by: Ryan Nickason - Municipality of Arran-Elderslie

THAT the Multi-Municipal Energy Working Group hereby receives correspondence on the agenda for information purposes.

Carried

8.2.1 Arran-Elderslie - Battery Energy Storage Policy

The policy establishes a maximum area of two hectares and a minimum setback of 300 metres. These restrictions, along with additional caps for prime agricultural land, affect the eligibility of larger systems, most of which exceed these limits. All projects are required to follow

agricultural impact assessment guidelines. No questions or concerns were noted during the discussion.

8.2.2 Mapleton - Unwilling Host Report

Chair Allwood noted that Mapleton remains an unwilling host.

8.2.3 AMO - Municipal Energy Procurement Toolkit

The AMO document covers energy procurement, municipal involvement, pre-engagement steps, support resolutions, permits, emergency planning, fire safety, decommissioning, and community benefit agreements.

8.2.4 IESO Feedback Submission - Warren Howard

Feedback was submitted by Warren Howard from an April 24 IESO webinar regarding the long-term 2 RFP. Key topics included agricultural impact assessments and contract deadline timing.

8.2.5 Article - Five Reasons Renewable Energy Developers are Losing Confidence in Ontario

An article distributed by Warren addresses lobbying efforts around renewable energy regulations, opposition to solar projects on farmland, and municipality responsibilities. The provincial government recently returned siting authority to local municipalities, but advocates argue it may go too far. The article also mentions bans on Chinese components in large turbines.

8.2.6 Oxford County Update - Warren Howard

Warren Howard submitted an updated on some projects in Oxford County.

9. Members Updates

None.

10. New Business

None.

11. Closed Session (if required)

Not Required

12. Confirmation of Next Meeting

September 11, 2025 7:00 p.m. via Microsoft Teams

November 13, 2025 7:00 p.m. via Microsoft Teams

13. Adjournment

MMEWG-2025-05-08-04

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

Seconded by: Todd Dowd - Municipality of Northern Bruce Peninsula

THAT the meeting of the Multi-Municipal Energy Working Group is hereby adjourned at 7:30 p.m.

Tom Allwood, Chair

Julie Hamilton, Recording Secretary

Ministry of the Environment, Conservation and Parks

Corporate Services Branch
40 St. Clair Avenue West
Toronto ON M4V 1M2

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des services ministériels
40, avenue St. Clair Ouest
Toronto ON M4V 1M2

Ontario

August 12, 2025

Julie Reid
Municipality of Arran-Elderslie
1925 Bruce Road 10, P.O. Box 70
Chesley, Ontario N0G 1L0
deputyclerk@arran-elderslie.ca

Dear Julie Reid:

RE: MECP FOI A-2022-01938 – Decision Letter

This letter is further to your request made pursuant to the Freedom of Information and Protection of Privacy Act (the Act) relating to:

> All summaries, reports, memoranda, notes of meetings and telephone calls, and e-mails related to accidents or incidents ("catastrophic failures") and fires occurring in wind turbines or wind power generators in Ontario, between and among the Ministry staff, District Offices, Regional Offices, wind power and wind "farm" developers/operators, and emergency services and/or police services, including but not limited to, notification of the occurrence of such incidents, reports of investigations, and any remediation activity undertaken as well as inspection or supervision by the Ministry. The list of wind power facilities where incidents have occurred is provided below:
> # 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 August 2021 Bow Lake Tower Collapse GE 1.62 6 years
>
> Timeframe: January 01, 2007 to March 07, 2022

After a thorough search through the ministry files, records were located in response to your request. The final decision has been made to provide partial access to the requested information. The official responsible for making the access decision on your request is the undersigned.

Some of the information has been severed or withheld under the following sections of the Act:

- s.13(1) Advice of staff and recommendations during the deliberative process to encourage the free flow of advice by staff in the context of the government's decision-making process.

- s.17(1) Corporate information supplied to the ministry in confidence for the protection of third-party records

- s.19 Legal advice from Ministry counsel to maintain solicitor-client privilege.

- s.21 Personal information of individuals for the protection of their personal privacy.

- Records or information that are not relevant to the request (e.g., records that are blank, outside of the date range or do not relate directly to the subject matter) have been removed and marked "Not Responsive"' or 'N/R'.

- Duplicate records have also been removed and marked as "Duplicate".

As noted in the ministry's letter of February 14, 2025 and May 9, 2025, the responsive records contain information relating to a number of third parties under section 17 of the Act. Records will be released to you once the affected third parties' opportunity to appeal the ministry's decision is complete by July 14, 2025, in accordance with subsection 28(8) of the Act. If one or more of the third parties' files an appeal, then the unaffected records will be released to you.

Your fee deposit was received on November 15, 2022. If payment was not in Canadian dollars, please contact our office immediately.

Section 57 of the Act authorizes certain fees to be charged for processing a request. Our charges for processing this request are:

Search Time 14 hours @ $30/hour ○ Time taken to locate and retrieve records (reduced from 19.25 hours in the interest of customer service)	$420.00
Preparation Time 50 min @ $30/hour ○ Time taken to sever records	$ 25.00
Preparation Time 1.03 hours @ $30/hour ○ Time taken to scan hardcopy records (1,200 pages/hour)	$ 31.00
Deposit	- $428.75
Total	**$47.25**

In order to receive a copy of the records please forward this amount in Canadian dollars to our office. Payment(s) may be made September 11, 2025. If payment has not been received by this date, the file will be closed and you will be required to submit a new

request.

Payment(s) may be made in Canadian dollars by one of the following options:

- Pay online through the Freedom of Information Request for Property Information Form: https://forms.mgcs.gov.on.ca/en/dataset/012-2146. Both the pdf download or "HTML" versions provide access to the payment option.
- Mail money order or cheque made payable to the "Minister of Finance (FOI)".

Please **do not** mail cash or send your payment information via email.

You may request a review of my decision within 30 days from the date of this letter by contacting the Information and Privacy Commissioner/Ontario at http://www.ipc.on.ca. Please note there may be a fee associated with submitting the appeal. You will be given another 30-day opportunity to request a review of my decision at the time the records are released to you.

If you decide to pursue this request after the deadline has passed, please contact the analyst below to discuss options that are available.

If you have any questions, please contact Amina Shah at 437-339-1251 or amina.shah@ontario.ca.

Yours truly,

for
Josephine DeSouza
Manager, Access and Privacy Office

Mechanical Engineering
Annual International Conference

Annual International Conference on Mechanical Engineering

August 7-8, 2025
Oxford, United Kingdom

Putting into perspective the risks to public health and safety posed by wind turbine installations

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Abstract

Evaluation of the risks to public health and safety posed by wind turbine installations is presented based on the special relationship between engineers and public welfare. Also, the evaluation investigated concerns identified by residents. "Risk" was considered as the answer to the questions of what can go wrong, what is the likelihood of it happening, and what are the consequences? Response to what can go wrong, was found from two methods. First was examination of 13 acute events that have occurred to 2712 wind turbines in Ontario, Canada. The second was an investigation of chronic occurrence of special noise characteristics. The likelihood of acute events was found to be 0.5 E-03 failures per turbine year. Chronic conditions of special noise characteristics were found that correlated with resident concerns. Consequences of inadequate protective barriers were discussed. Conclusions identified will provide more effective public safety, and will reduce annoyance impacting health.

Keywords: wind turbine; public safety; risk; tonality; cyclical noise; annoyance

Introduction

1.1 The Preamble – "risk"

The book, "Risk Assessment, Theory, Methods, and Applications" by Marvin Rausand and Stein Haugen [1] introduces risk analysis by quoting from Stan Kaplan. Kaplan identified that failing a common definition of the word "risk," each author should clearly define how the word "risk" will be used. This paper will use the definition proposed in "Risk Assessment, Theory, Methods, and Applications." The authors proposed that "risk" is the combined answer to three questions:

- What can go wrong? (identifying the accident scenarios that may cause harm)
- What is the likelihood of that happening? (Which can be answered either qualitatively, or quantitatively as probabilities or frequencies, but needs to consider all the accident scenarios identified, and essential modifiers that can impact the likelihood.)
- What are the consequences? (This needs consideration of protective barriers in the event something goes wrong.)

Often the determination of "risk" is given by the simplified word equation, Risk = Frequency x Consequences.

Engineers have a special obligation related to risk. As an example, the Canadian Province of Ontario Engineering Act [2] identifies the legal obligation of Professional Engineers to protect public safety. The act notes this responsibility is paramount, even above duties to clients or employers. This paper identifies how risks that may have consequence to public health and safety posed by wind turbine installations interacts with this engineering legal responsibility.

Gathering the Data – The Experimental Procedure

2.1 What can go wrong?

Wind turbine scenarios that could do harm were identified by two methods.

Peer-review under responsibility of the scientific committee of Annual International Conference on Mechanical Engineering

- Acute scenarios were identified by tracking accidents in the Province of Ontario, Canada. Scenarios were limited to those when turbine components greater than 1 metre in size fell from wind turbines with a nominal tip height of 100 metres or higher onto the ground. The components had to fall at a location that was not protected by an effective barrier that would prevent hitting a citizen. 2712 turbines meeting this size criteria have operated in Ontario, from 8 different manufacturers. (2 have been shutdown and dismantled.) Known accidents of this nature from the pool of wind turbines are shown in Table 1. Falling ice events and falling blade flow straighteners were not specifically tracked. Typical failures are shown in Figures 1 and 2.

Table 1: Ontario wind turbine accidents

Date	Where / What Failure / Turbine Type	Age at Failure
2007-04	Port Burwell / blade fail / GE 1.5	0.9 years
2008-01	Prince Wind / blade fail / GE 1.5	2.1 years
2013-04	Kingsbridge 1 / fire / Vestas V80	7 years
2015-08	Goshen / blade fail / GE 1.62	0.5 years
2017-04	Bornish / blade fail / GE 1.62	3 years
2018-01	Raleigh / tower collapse / GE 1.62	7 years
2018-05	Huron Wind / blade fail / Vestas V80	15.4 years
2019-04	Sumac Ridge / blade fail / Senvion MM92	1.3 years
2021-06	Skyway 8 / blade fail / Vestas V100	6.9 years
2021-08	Bow Lake / tower collapse / GE 1.62	6 years
2024-06	Kingsbridge 1 / fire / Vestas V80	18.2 years
2024-06	Gestner / fire / Gamesa 2 MW	11.4 years
2025-03	Port Burwell / hub collapse / GE 1.5	18.8 years

Fig. 1 Typical wind turbine fire (Kingsbridge 1 2024-06)

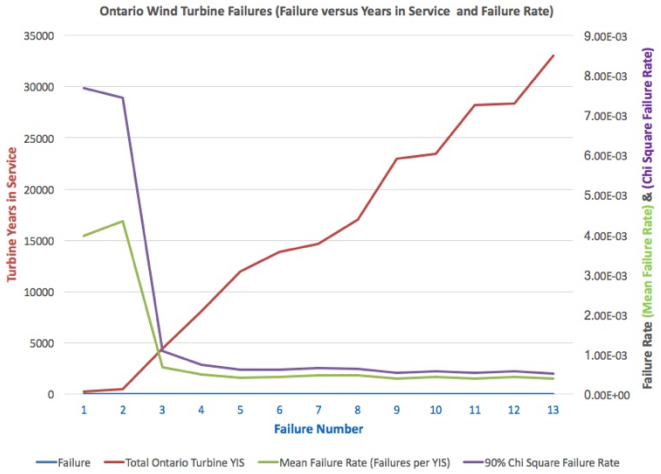
Fig. 2 Typical tower collapse (Bow Lake 2021-08)

- A list of chronic scenarios associated with acoustic conditions was derived by investigating some of over 100 citizen reports of adverse impacts. Acoustic monitoring was conducted as described in sections 2.4.1 to .3 to determine if specific acoustic conditions could be correlated to the complaints.

2.2 What is the likelihood of acute scenarios happening?

The tabulated wind turbine acute accident scenarios, and the total Ontario turbine-years of operation when each accident occurred, was used to identify a failure rate. The progression of failure rates (both mean and Chi Square) and the total turbine years in service at each failure, was plotted in Figure 3. The figure shows a fairly constant failure rate of 0.5 E-03 failures per turbine years in service after the first few failures had occurred.

Fig. 3 Ontario wind turbine failure rate



2.3 What is the consequence of acute scenarios happening?

In a comparable situation of assessing public safety risk, Canadian nuclear regulators require that a deterministic safety analysis be conducted for every facility licence. The analysis must demonstrate that defence in depth exists to protect the public, in the event of failure of equipment, internal or external event, or operator error. [3] The deterministic safety analysis is used in the assessment of event consequences to show that effective barriers exist. Additionally, for licensing new facilities, or for existing facilities when the licensing basis includes it, there is a requirement for a probabilistic safety assessment. [4] The intent of the probabilistic safety assessment is to identify that no particular feature or initiating event makes a disproportionately large or significantly uncertain contribution to risk. The combined goal of the deterministic safety analysis and probabilistic safety assessment is protection for both the most impacted individual and the population impacted by a failure.

Assessment of public safety risk for a wind turbine installation should similarly show protection for both the most impacted individual and the overall population impacted. Deterministic safety analysis would show that for each known

wind turbine failure identified in Table 1, an effective barrier would have to exist. For example, for a blade failure, it would be necessary to demonstrate that a barrier such as an exclusion zone would protect any member of the public from being impacted. The consequence of the failure would then be low or negligible. A probabilistic safety assessment for wind turbine accidents identified in Table 1 would show the impact of features such as lack of fire suppression.

For wind turbine installations, the public safety impact on individuals is greater than impact on overall population. The public, or neighbours to wind turbines in Ontario, Canada, are "protected" by a regulatory exclusion zone equal to the turbine rotor radius (blade length) plus 10 metres. For the 2018-05 Huron Wind blade failure identified in Table 1, a 1.2 metre wire fence, located 52 metres from the turbine that failed bears a sign. The sign reads, "No Entry, High Voltage Hazard, Falling Ice Hazard (during cold weather), Trespassers will be prosecuted." The day following the blade failure, the author visited the site, and photographed blade segments, including:

- 1.2 m x 3.6 m blade segment 150 m from tower
- 1.0 m x 3.6 m blade segment 170 m from tower
- 1.2 m x 3.0 m blade segment 210 m from tower
- 1.2 m x 3.0 m blade segment 280 m from tower
- 1.0 m x 0.15 m blade segment 560 m from tower

Other Ontario wind turbine failures have identified similar challenges to the "protective" exclusion zone. The 2021-08 Bow Lake tower collapse in Figure 2 shows the 50-ton turbine nacelle on the ground at a distance greater than blade length plus 10 metres from the tower. Wind facility staff reported to the municipality after the 2013-04 Kingsbridge 1 turbine fire consumed the nacelle, that burning debris landed 200 metres from the tower. A blade length plus 10 metre exclusion zone is demonstrably inadequate to protect the public for turbine collapse, blade failure, or turbine fire.

Ice falling from wind turbines, although not included in the table of acute failures, as hardly exceptional for Canadian installations, poses an additional challenge. Along Ontario provincial highway 21, a fence post with a 20 cm x 25 cm sign reads, "Caution, During Potential Icing Conditions Stay Back 305 metres from Turbines." This would seem a reasonable suggestion, and is consistent with common recommendations for the turbine size. However, the sign poses several problems. First, the lettering is too small to be read from passing vehicles. Second, it is located at the boundary of the "right-of-way" of the provincial highway. The nearest wind turbine is set back 121 metres (the hub height plus blade length) from the highway "right-of-way." Provincial monitoring shows an average daily count of 7050 motor vehicles pass by that location. [5] These vehicles cannot travel down the provincial highway and comply to stay 305 metres from the nearest wind turbine, located 121 metres from the right-of-way.

When considering consequences of known accidents with a frequency of 0.5 E-03 failures per turbine year, one might expect that the "protective" barrier would be effective. One would also expect that when a turbine operator posts a sign as a "protective" barrier, that it would be possible to comply.

Recognizing that neither expectation of "protective" barrier can be assured to make the consequence of known accident scenarios to be low or negligible, it is necessary to proceed further to investigate the consequence of each accident. We will approach the investigation from the accident boundary conditions. We consider first tower collapse, demonstrated to have placed a 50-ton nacelle on the ground at a distance from the tower greater than blade length plus 10 metres. Even without medical expertise, it is apparent that the consequence at the point of impact, a location outside the protective zone, would be fatal to any human. We consider next the opposite boundary condition, ice fall from stationary wind turbine blades. Photographs and reports show ice greater than 30 cm x 30 cm x 2 cm, falling from stationary wind turbine blades. landing at a distance of greater than blade length plus 10 metres from the tower. Lateral shift of where the ice lands, away from the tower occurs even with gentle breezes. Calculation shows this ice segment falling from the height of turbine blades is equivalent to dropping an 18-kg concrete block from an 8 storey window. Again, even without an expert assessment, the consequence can be seen to be fatal to a human. Heated turbine blades can result in even larger ice segments falling. [6]

We have considered bounding cases of the wind turbine tower collapse, or ice shed from stationary blades. Both demonstrated that a member of the public could suffer fatal consequences when located outside of the exclusion zones in locations purported to provide protection. It is logical that fatal consequences could occur from intermediary accidents, such as 1.2 m x 3.0 m blade segments 280 m from the turbine tower.

2.4 Gathering data for chronic noise issues

In addition to the acute wind turbine accident data collected, over 100 citizens reported adverse impacts to the author. A freedom of information request filed to the Ontario regulator showed 5832 complaints about wind turbine noise, vibration, and sound pressure filed from 2006-2018. This subsection identifies the data gathering to try to understand these issues.

2.4.1 Noise inside versus outside homes

Some reports were initially hard to comprehend. One family reported that when noise inside their home was untenable, they found some relief by sleeping in a tent, outside. This seemed odd, as it was expected that the home structure would attenuate the sound. Another resident reported that when unable to sleep due to noise, some relief was found by reversing sleeping position, with their head at the foot of the bed. Again, this was puzzling. Data was gathered by monitoring at different locations within the home, with windows open and closed. The results were reported at the 168th meeting of the Acoustical Society of America and subsequently documented in the Journal, Global Environment, Health and Safety [7]. The investigation showed that the phenomenon known as "room conditions" resulted in significantly different acoustic readings across a room. The centre of a room, near the foot of the bed, was lower in sound level than at the head of the bed in the room corner. Room shape, particularly if approaching cubic, impacts reverberation, and the variation across the room. Inside the home, where mid and higher frequency sound was attenuated, the cyclical variation of low frequency became predominant.

2.4.2 Tonal conditions reported from a particular turbine type

In another wind power development, residents reported they were troubled by tonal conditions from the wind turbines. An extended monitoring campaign was conducted. While "tonal-like" sound was apparent meeting the ECMA 74/418 code criterion for tonality, the current IEC or ISO/PAS codes for wind turbine tonality were too restrictive to note this as tonal, even though the annoyance was real. A similar acoustic profile was found at another site with the same wind turbine type. This work was documented in the Proceedings of Meetings on Acoustics of the Acoustical Society of America (ASA). [8]

2.4.3 Extended monitoring of conditions identified as annoying

Additional data was gathered at another site over a period of approximately 12 months to assess acoustic conditions identified by residents as annoying. This campaign monitored simultaneously at the residence in the vicinity of the wind turbines, and at a second nearby location of the same environmental profile, but without nearby wind turbines. Terrain, proximity to roads, trees, wind and weather conditions were very similar at both sites. This demonstrated the annoying sounds recorded were the result of the wind turbines, not the wind. This also was documented in the Proceedings of Meetings on Acoustics of the ASA. [8]

Results and Discussion

This work is an update and expansion of a 2018 study of public safety risk related to wind turbines. [9] Wind turbine failure rate has not fallen with the installation of newer wind turbines, but remains relatively constant at 0.5 E-03 failures per wind turbine year in operation.

Examination of the failures which have occurred demonstrate that the existing Ontario setback of blade length plus 10 metres does not provide an effective safety barrier to protect the public. Turbine collapses, fires, and blade failures have each resulted in impact that could have fatal consequences at distances greater than the required setback.

When considering the consequence of the failures which have occurred, the comparison was shown to other energy generating industries which have safety goals to ensure the protection of both the most impacted individual and the impacted population. While wind turbines tend to have little population effect, they do have a demonstrated impact on individuals. A person living near wind turbines might well look cautiously at their nearest turbine, and wonder, "Will this be the turbine to fail this year?" Their pleasure in their property can be limited by that consideration and noise from the turbines. The condition is different for an individual who lives continuously in the impacted area, compared to one who chooses to visit the area periodically, but can leave at will.

It is inappropriate for a wind turbine developer to encroach on the safety envelope of a neighbour, and inconsistent with individual safety goals of industry. The most impacted individuals are often those who moved to a quiet property as a sanctuary from a stressful past. Expropriation, the power of a government to transfer private property into public ownership, even if for perceived public good, usually involves some form of agreed compensation. Taking away pleasure of property without formal expropriation might be considered theft.

While this paper will not discuss specific health issues arising from wind turbine noise, the work referenced has identified that there are characteristics in the wind turbine noise consistent with annoyance complaints. In particular, a significant variation in Z-weighted sound (LZ10-LZ90)≥6 dBZ while A-weighted sound varied little (LA10-LA90) ≤3 dBA was found to correlate with resident annoyance complaints. [8]

Conclusions

Appropriate safety boundaries should be established around wind turbines, consistent with observed impact areas for known failures. Blade failure (impacting 280 metres for fatal consequences, or 560 metres for likely significant injury) would appear to be a bounding condition for physical impact for 120-150 metre turbines. Consistent with other generating means, the protection should apply to the most impacted individual. Noise from wind turbines needs to consider limiting the cumulative effect of all turbines impacting an individual. Avoidance of either tonal-like sound, or significant cyclical variation in Z-weighted sound while A-weighted sound varies little, needs to be controlled to limit annoyance.

Acknowledgements

The image in Fig. 1 of the wind turbine fire is from a CTV News broadcast by CTV reporter Scott Miller. It is used with permission.

The image in Fig. 2 of the turbine collapse is from SaultOnLine.com. It is used with permission. https://www.youtube.com/watch?v=klzE1fOgL7U

The sound monitoring equipment used to perform acoustic monitoring at resident homes was purchased by residents and loaned to the author for data gathering.

References

[1] Rausand M, Haugen S. (2020). *Risk assessment: theory, methods, and applications (Statistics in practice) 2nd Edition*, Hoboken, NJ; John Wiley & Sons.

[2] Ontario, Professional Engineers Act, R.S.O. 1990, P. 28. https://www.ontario.ca/laws/statute/90p28

[3] Canadian Nuclear Safety Commission, REGDOC-2.4.1, Deterministic Safety Analysis. http://www.nuclearsafety.gc.ca/eng/acts-and-regulations/regulatory-documents/published/html/regdoc2-4-1/index.cfm

[4] Canadian Nuclear Safety Commission, REGDOC-2.4.2, Probabilistic Safety Assessment. http://www.nuclearsafety.gc.ca/eng/acts-and-regulations/regulatory-documents/published/html/regdoc2-4-2/index.cfm

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[8] Palmer, WKG. Objective measures confirm annoyance from wind turbine prominence (saliency) and psychoacoustic tonal-like perception. Acoustical Society of America, Proceedings of Meetings on Acoustics 2024, Vol. 54, 040001, p1-13 https://doi.org/10.1121/2.0001917

[9] Palmer, WKG. Wind turbine public safety risk, direct and indirect health impacts. Journal of Energy Conservation 2018; Vol. 1:1, p41-78, https://doi.org/10.14302/issn.2642-31

Annual International Conference on

Mechanical Engineering

August 7-8, 2025

Oxford, United Kingdom

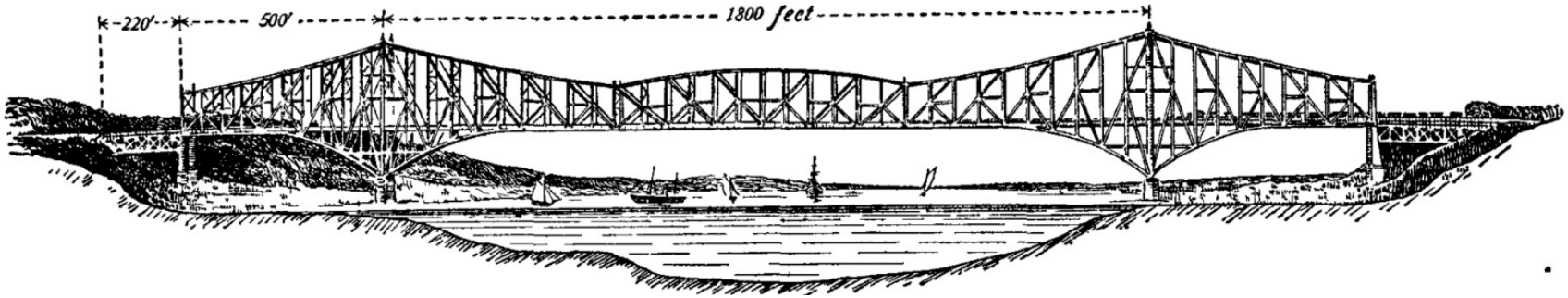
Thanks for attending this presentation – what will we cover

Thanks for listening

As an engineer,
you have a special relationship with "risk"

There will be time for discussion and your questions at the end

Why do engineers have this special relationship? – A Canadian example



This was what the Quebec bridge was to look like – from design drawing of 1907

It was to be an Engineering wonder – the longest bridge of it's kind in the world – longer even than the Firth of Forth bridge at Edinburgh

The Quebec bridge – what can happen if we ignore facts of risk.

Sadly – this is what the bridge looked like on August 29, 1907

- Three times, beginning 23 days before, a young engineer had reported structural problems on the construction project, but the Chief Engineer continued the work. 75 of the 86 workers on the bridge died on the day the bridge collapsed.

Then, after clearing the debris, when raising a new centre span on Sept. 11, 1916, the lift failed, and 13 more workers died.

Since 1937 the Ontario Professional Engineers Act has identified the legal obligation of Professional Engineers to protect public safety. The Act notes this responsibility is paramount, even above duties to clients or employers.

Most Canadian Engineers wear an iron ring – as a reminder of the Quebec bridge disaster, and that our work impacts people. We need to deal with errors that can happen – not ignore them.

The Preamble – "risk" – there are many definitions

Risk Assessment, Theory, Methods, and Applications, by Rausand, M, and Haugen, S. (2020) John Wiley & Sons, quotes risk researcher Stan Kaplan, that failing a common definition of "risk" each author should explain the way "risk" will be used.

This presentation follows the approach of Rausand and Haugen, noting "risk" is the combined answer to three questions:

- Q1 – What can go wrong? (identify the accident scenarios)
- Q2 – What is the likelihood of it happening? (consider all accident scenarios)
- Q3 – What are the consequences? (consider protective barriers)

Often, "risk" is simplified as: RISK = FREQUENCY X CONSEQUENCES

Q1. What can go wrong? *(actually what has gone wrong with Ontario wind turbines)*

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Date	What went Wrong? / Turbine Type	Turbine age at Failure
2007-04	Blade failure / GE 1.5 sle	0.9 years
2008-01	Blade failure / GE 1.5 sle	2.1 years
2013-04	Fire / Vestas V80	7 years
2015-08	Blade failure / GE 1.62	0.5 years
2017-04	Blade failure / GE 1.62	3 years
2018-01	Tower collapse / GE 1.62	7 years
2018-05	Blade failure / Vestas V80	15.4 years
2019-04	Blade failure / Senvion MM92	1.3 years
2021-06	Blade failure / Vestas V100	6.9 years
2021-08	Tower collapse / GE 1.62	6 years
2024-06	Fire / Vestas V80	18.2 years
2024-06	Fire / Siemens Gamesa 2 MW	11.4 years
2025-03	Hub Collapse / GE 1.5 sle	18.8 years

By Year End	Turbines In Service
2005	10
2010	808
2015	2297
2020	2679
2025	2712

Q1: What can go wrong? Fire - 2024-06 Vestas V80 Turbine - Kingsbridge Array

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Photos courtesy Scott Miller, CTV News

Q1: Another example - What can go wrong? Collapse - GE 1.62 turbine - Bow Lake Array

Tower collapse – 2021-08

Photo courtesy
Saultonline.com

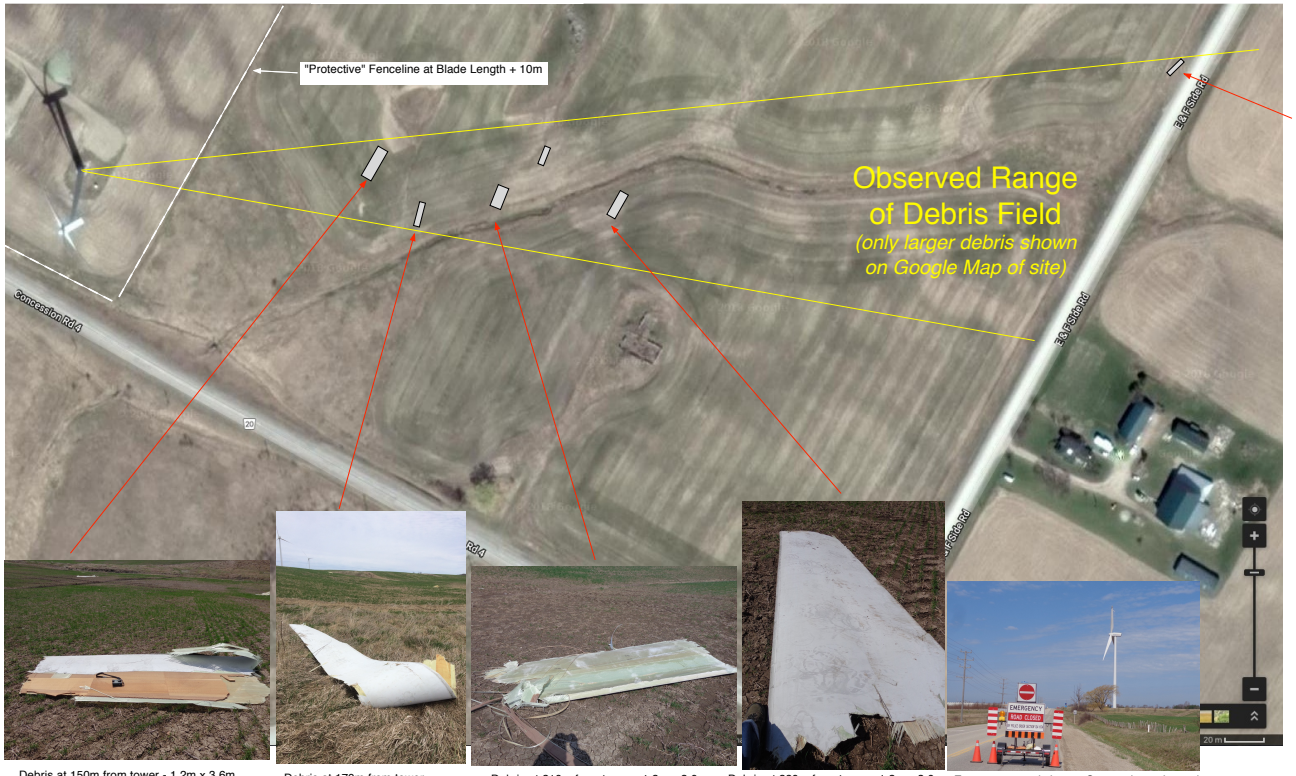
50 ton nacelle ~ 80m from tower base

Q1: Again - What can go wrong? - Blade failure.

Huron Wind Vestas V80
Wind Turbine Blade Failure
May 4, 2018

Estimated environmental conditions at time of failure - from Environment Canada
Wiarton Airport Monitoring Site

Wind speed at 10m above ground 14 to 15 m/s, gusting to 17 to 24 m/s



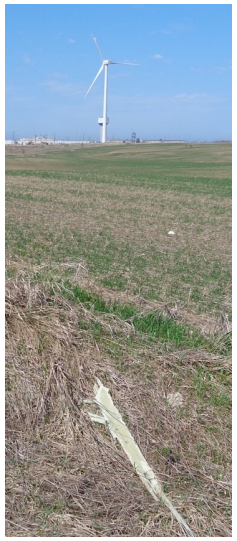
Debris at 150m from tower - 1.2m x 3.6m
- Note Binoculars placed on debris for Scale

Debris at 170m from tower -
1m x 3.6m

Debris at 210m from tower - 1.2m x 3.0m

Debris at 280m from tower - 1.2m x 3.0 m
- Note Boot at bottom left corner for Scale

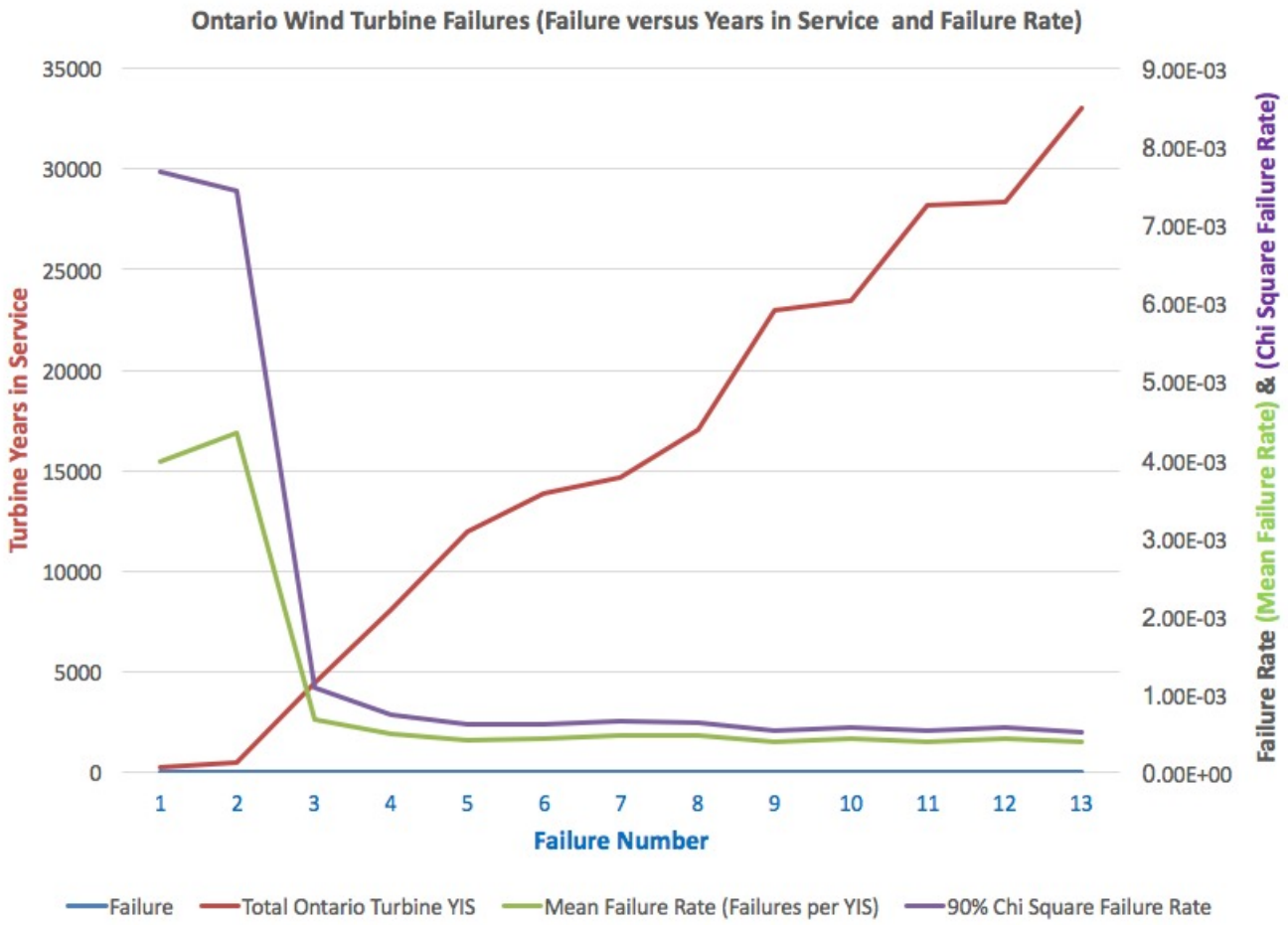
Emergency road closure Conc 4 due to hazard
May 4, 2018 - ongoing - looking westerly


Debris at 560m from tower - 1 m x 0.15m

Debris photography and placement on
Google Map of site by William Palmer, P. Eng.

Note - debris positioning as accurate as possible, but size is not to scale due to limitations of graphics program - refer to photographs for actual debris dimensions.

Q2. Likelihood of a known accident happening?



Mean failure rate for

Components > 1 metre in size landing outside protected area of blade length + 10 metres

~ 0.5 x 10E-03 failures per turbine YIS

Q3: What are the consequences if an accident occurs? (are they limited by protective barriers?)

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Regulators of other energy systems possibly impacting public safety (e.g. Canadian Nuclear Safety Commission or U.S. Nuclear Regulatory Commission) require both:

- Deterministic safety analysis
  - Demonstrate defence in depth limits consequences to public (and workers) in the event of failure
  - Show effective safety barriers exist to protect against all known accidents
  - (e.g.) For a wind turbine blade failure, is there a sufficient barrier (such as distance) to protect the public from adverse consequences?

- Probabilistic safety assessment
  - Demonstrate no initiating event or contributor to failure consequences causes a disproportionately large or significantly uncertain contribution to safety
  - (e.g.) For wind turbines, does lack of fire suppression make contribution to safety uncertain?
  - (or e.g.) Does height restrict fire suppression, or safe exit of staff from fire?

Q3: Are the protective regulations for known wind turbine accidents effective to limit consequences?

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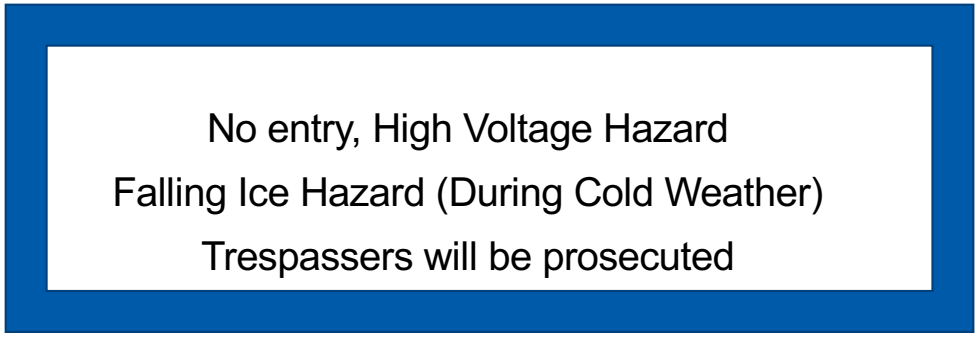
Ontario regulations “protect” the public from wind turbine accidents by an exclusion zone equal to blade length plus 10 metres (the “protective” fence line seen on the Huron Wind failure slide)

Turbine that failed 2018-05 shown previously has 1.2 metre high fence 52 metres from turbine with sign



Yet, following 2018-05 blade failure, blade segments were found and photographed:

- 1.2m x 3.6m, 150m from tower
- 1.0m x 3.6m, 170m from tower
- 1.2m x 3.0m, 210m from tower
- 1.2m x 3.0m, 280m from tower
- 1.0m x 0.15m, 560m from tower

Q3: Are consequences limited by regulations (continuing)

Photos of the 2021-08 tower collapse at Bow Lake show the 50 ton nacelle on the ground,

> blade length + 10 metres from the base

After the 2013-04 wind turbine fire at the Kingsbridge array, wind facility staff reported burning debris hit ground 200 m from tower

~ 4 x (blade length + 10m)

It appears that blade length + 10 metre separation from neighbouring property may NOT be adequate to limit consequences from the acute wind turbine failures already observed in Ontario with a frequency of 0.5 x10E-03 events per turbine year.

Ice falling from wind turbines, was not included in the analysis of acute wind turbine failures. Ice fall occurs frequently enough (e.g. often several times per year per turbine in Canada) to be considered as chronic, rather than acute.

Q3: Are industry safeguards and cautions effective to limit consequences? Consider this case.

- 20 cm x 25 cm sign at the edge of Provincial highway 21 reads

> CAUTION
> DURING POTENTIAL ICING
> CONDITIONS STAY BACK
> 305 METRES FROM
> TURBINES

- While that sounds reasonable, is it effective to limit consequences?
- The sign is too small to be read from the road
- 7050 vehicles/day pass this point
- How do vehicles comply to stay 305 metres away from turbines, when the roadway right of way is 121 metres from the turbine?

Q3: Consider consequences if they are not limited

Melancthon Wind Turbine Array – Jan. 19 case - credit Mr. Michael Pobjoy for photos of these GE 1.5 turbines

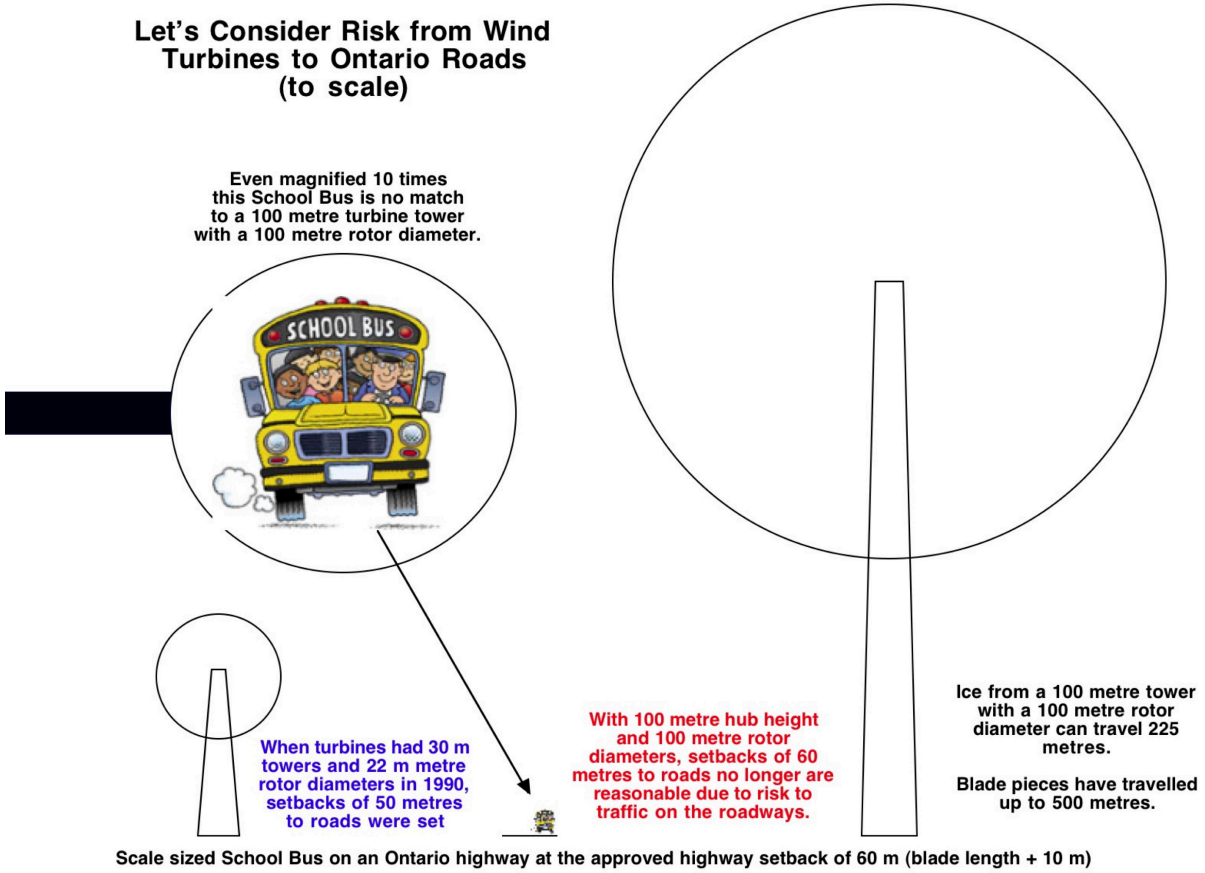
Wind Turbines in Cold Climate report, and GE Wind suggest setback of 1.5 x (Hub Height + Rotor Diameter)

Q3: Equivalency of falling ice from turbine = same as dropping 18 kg concrete block from 8th floor

Simple drop energy calculations for distance:
$S = V_0t + ½ at^2$

and energy:
$K = ½ mv^2$

Shows ice 30 cm x 30 cm x 2 cm falling from turbine blades has same energy as dropping 18 kg concrete block from 8th floor



Wind Turbine in Cold Climate report suggests setback of 1.5 x (Hub Height + Rotor Diameter) = 300 metre setback

5 x
blade length + 10 metres

Q3: Consider consequence of wind turbine accidents – from accident boundary cases

Upper boundary case: Turbine collapse placed 50 ton nacelle on ground at distance > blade length + 10 metres

- Even without medical assessment, a 50 ton nacelle falling from 80 metres hitting a human, would appear to have fatal consequences

Lower boundary case: Ice Drop – travels beyond blade length + 10 metres

- Falling ice of 30cm x 30cm x 2cm (~3 kg) from turbine blade , is equivalent to dropping 18 kg concrete block from 8th floor
- Again, even without medical assessment, would appear to have fatal consequences
- Heated blades do not mean no ice, only that ice falls off in bigger bits

At Right:
Heated blades can shed even larger ice pieces >> 3 kg

Back to Q1: What can go wrong – consider chronic scenarios associated with acoustic conditions

A presentation to the Grey Bruce Medical Officer of Health, and the Municipality of Kincardine (2012) by Crawford, C. documented "Health Impacts in Two Local Wind Projects" for 20 families. This presentation was referred at the Acoustical Society of America 165th Meeting (International Conference on Acoustics). Palmer, W., Wind turbine sound prediction - the consequence of getting it wrong, Proceedings of Meetings on Acoustics, Vol. 19, 040066 (2013), DOI: 10.1121/1.4800422.

A "Freedom of Information" request filed with the Ontario regulator by a citizens' group, "Wind Concerns Ontario" showed that 5832 complaints about wind turbine "noise, vibration, and sound pressure" were filed with the Ontario regulator from 2006 to 2018. 595 complaints were filed in 2018 alone, indicating that the frequency of complaints was not diminishing appreciably, even with the installation of newer "quieter" wind turbine types.

Peer reviewed papers have been written documenting the cases of 67 families living in the vicinity of wind turbines. Krogh, C.M., McMurtry, R.Y., Johnson, Punch, J.L., Dumbrille, A., Alvez-Pereira, M., Hughes, D., Rogers, L., Rand, R., Gillis, L., (2024), Wind turbines: Vacated/abandoned homes study – Exploring research participants' descriptions of observed effects on their pets, animals, and well water, *Environmental Disease* 9(1):p 1-12, Jan–Mar 2024. | *DOI:* 10.4103/ed.ed_2_23.

Over 100 citizens have met face to face with the author, each expressing words such as, *"Since the wind turbines were installed in the vicinity of our home, we just cannot stand it. Please, can't you do something?"*

This presentation summarizes data gathered to understand these issues.

Chronic scenarios – Step 1– Noise inside versus outside homes

Some reports were initially hard to comprehend.

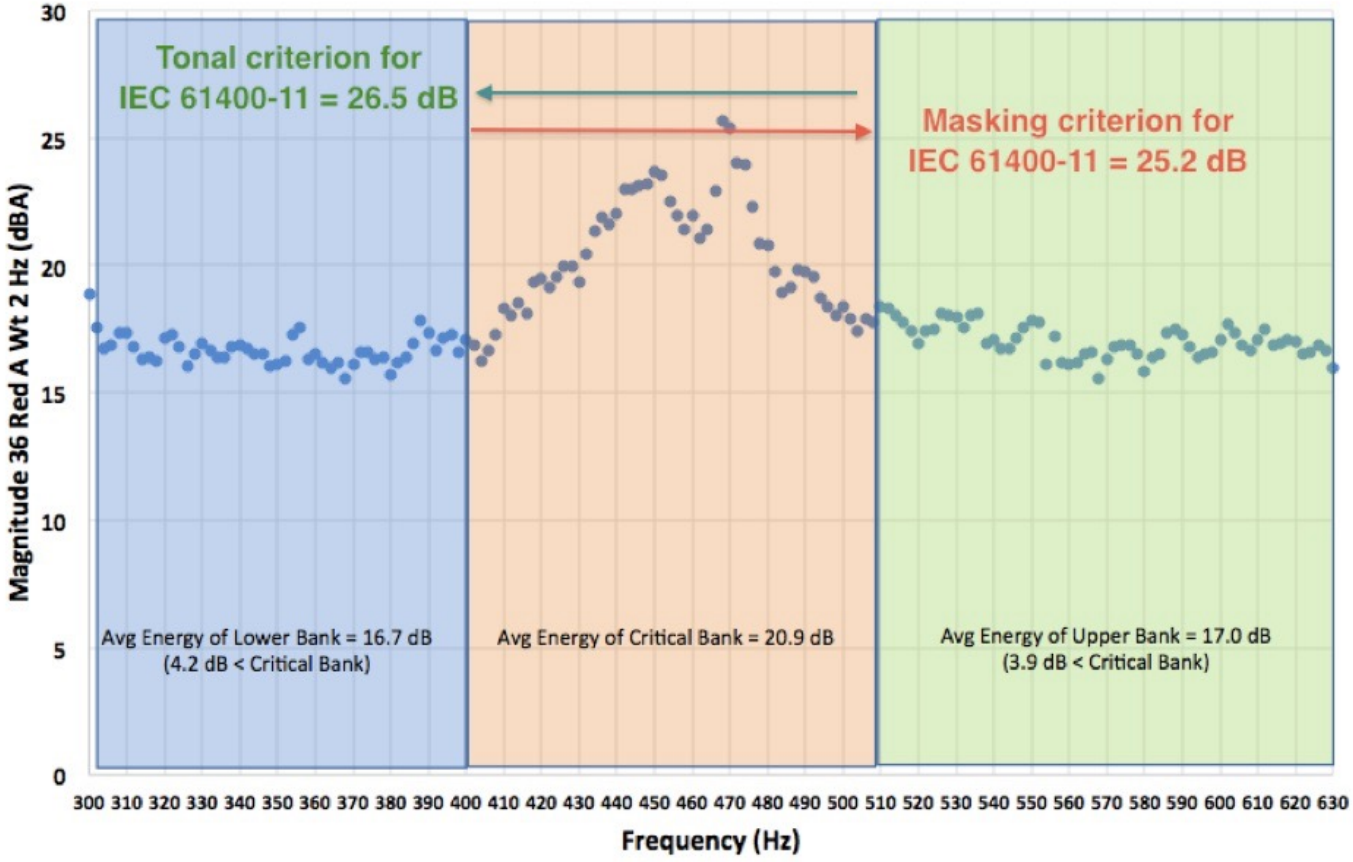
- One family reported that when noise within their home was untenable, they found some relief by sleeping in a tent, outside.
- This challenged the expectation that the home structure would attenuate sound more than a tent.
- Another resident reported that when unable to sleep due to noise from wind turbines, they found some relief by reversing sleeping position, with their head at the foot of the bed. Again, puzzling.
- To understand the reports data was gathered at various locations inside the second home, for many hours, with windows open or closed.
- The results were reported at the 168th meeting of the Acoustical Society of America, and subsequently documented, Palmer, W,K.G., Why wind turbine sounds are annoying and why it matters, *Global Environment, Health and Safety*, (2017), Vol. 1:2, p1-17.
- The investigation found that “room conditions” result in different acoustic conditions across a room. The centre of a room, near the foot of the bed, was lower in sound level than at the head of the bed, in the room corner. Inside the home, where mid and higher frequency sound is attenuated, the cyclical variation of low frequency became predominant.

Chronic scenarios – Step 2 – tonal sound conditions from wind turbines

Extended monitoring campaign conducted in parallel with audit performed for regulator.

- Field visits by regulatory staff had confirmed that they could hear “tonality,” but the audit report submitted to the regulator for the wind farm operator stated the facility was not tonal.
- The data collection confirmed that “tonal-like” sound exists, meeting the ECMA 74/418 criterion for tonality which compares energy in a “critical bark” surrounding the tone, to the energy in the “upper” and “lower” bark.
- However, the data collection showed the sound usually met neither the International Electrotechnical Commission (IEC) technical standard 61400-11, nor the International Standards Organization / Publicly Available Specification (ISO/PAS) technical standard 20065 methods for determining tonality. They focus on the highest narrow band energy, relegating energy around that to background.
- Psychoacoustics – Facts and Models, (2nd Ed), Zwicker, E., Fastl, H., Springer (1999) (Now in 3rd Edition) identified that humans identify sounds falling in grouped energy bands together when assessing tonality. The “critical bark” for these turbines from about 400 Hz to 510 Hz would be assessed together as tonal.

A case not meeting IEC 61400-11 (nor ISO/PAS 20065) for tonality but meeting ECMA 74 criteria (critical bark energy > upper or lower bark) by difference of ~ 4 dB)

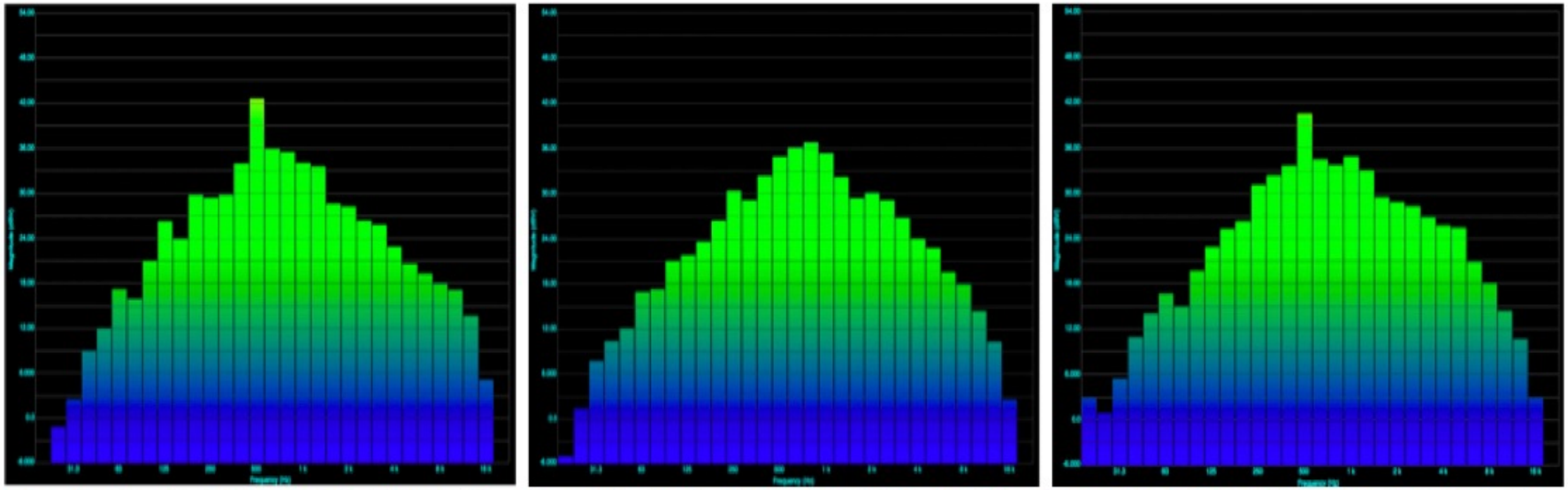


Zwicker & Fastl showed humans tend to group all energy in a "bark" together

Note dual frequency peaks, both in critical bark – and how energy in critical bark is > upper or lower barks

The critical bark is perceived as "tonal-like"

Example of variation in one-third octave – three plots separated by 1 second in time each



Peaks varying ~ 6 dB in amplitude, and in frequency of peak, over short period, heighten perception

What Step 2 – tonal investigation revealed

- There was high correlation between resident complaints of tonality, and “tonal-like” property of the sound. (as identified by Zwicker & Fastl)
- IEC or ISO/PAS methods to determine “tonality” miss this property of the sound.
- The “tonal-like” property actually increased when remedial action to reduce the output on these Siemens pitch regulated turbines was implemented.
- The “tonal-like” property was observed and recorded on a second wind power development a distance away, using the same turbine model.

Step 3 – Ongoing investigation of chronic annoyance at a different wind power development

- Monitored at a home 537 m from nearest wind turbine, with 19 within 3 km – residents annoyed
- Amplitude modulation (AM) – (variation of sound up and down in amplitude) is widely considered to be indicative of annoyance
- The investigation looked for difference between L90 (low sound pressure level present 90% of the time - commonly considered background) and L10 (the higher sound level present less than 10% of the time) as an indication of amplitude modulation
- Sound was continuously recorded and analyzed for the times identified by residents as annoying
- Found high correlation between resident assessment as annoying and the condition

  (LZ10-LZ90) ≥ 6 dBZ while (LA10-LA90) was ≤ 3 dBA
- Tested criterion in two more phases
  - Analysed sound just before turbines shut down, just after shutdown, and just after restart
  - testing by simultaneous monitoring near turbines, and farther from them.

Step 3 - Phase 1 - Testing the hypothesis – turbine shutdown and restart – a typical case on 2021-03-25

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Before wind turbine shutdown, (LZ10-LZ90) = 11.3 dBZ, (LA10-LA90) = 3.0 dBA
- MET CRITERION for ANNOYANCE
  Also {LA90 = 40.8 dBA}

20 minutes later, just after wind turbine shutdown, (LZ10-LZ90) = 3.2 dBZ, (LA10-LA90) = 6.2 dBA
- DID NOT MEET CRITERION FOR ANNOYANCE
  Also {LA90 = 33.2 dBA}

In next hour, just after wind turbine restart, (LZ10-LZ90) = 9.3 dB, (LA10-LA90) = 1.6 dB
- MET CRITERION for ANNOYANCE
  Also {LA90 = 36.6 dBA} – while still at low power

Criterion Tested

$$\boldsymbol{IF}\ (LA10 - LA90) \leq 3\ dBA\ \boldsymbol{AND\ IF}\ (LZ10 - LZ90) \geq 6\ dBZ$$

Annoyance Can be Predicted

Phase 2 - Testing the hypothesis – simultaneous results near turbines and distant from turbines

- Second monitoring site chosen, (> 6 km from nearest turbine) but from which turbines at first site (537 metres from nearest turbine) were still visually seen – even though 10 km away.

- Both sites of similar environment, except for proximity of turbines.
  - Very similar terrain
  - Similar proximity to vegetation, roads
  - Similar wind speed and direction

- Simultaneous monitoring at both sites revealed:
  - Times identified by residents at first site correlated to annoyance criterion
  - No correlation to annoyance criterion at second site

- Confirmed that meeting annoyance criterion was NOT related to wind speed, but to proximity of wind turbines

What Step 3 – What investigation of resident reported chronic annoyance revealed

- Found high correlation between resident reporting of annoyance and the criterion
  - (LZ10-LZ90) ≥ 6 dB while (LZ10-LA90) ≤ 3 dB

- Testing with nearest wind turbines “ON” / “OFF” / “ON” over short time interval showed criterion met with turbines “ON” but not met with turbines “OFF”

- Testing at site near wind turbines showed annoyance criterion met when reported by resident as annoying, and for 7 of 10 days in sampling period, for periods from 2 to > 12 hours per day. Chronic.

- Simultaneous testing at site distant from wind turbines showed annoyance criterion NOT met, even though wind speed, direction, and environmental conditions very similar.

- Turbines, not the wind, cause the annoyance criterion to be met.

Conclusions: What this means to engineers

We must do better. Quebec bridge failure reminds us of the consequences of ignoring risk.

- Risk Criterion #1. Have known accidents or impact on health occurred?
  - Accidents have happened that could impact public safety.
  - Noise causing Annoyance exists.
- Risk Criterion #2. Is Frequency known of accidents or noise annoyance?
  - Accidents have happened, and continue to happen. Frequency of 0.5 x 10E-03 seen, and continues.
  - Noise causing annoyance seen in 7 of 10 days of test period, from 2 to 12 hours per day. That is Chronic.
- Risk Criterion #3. Is protection provided by known barriers?
  - Fatalities could occur outside protective barriers
  - Annoyance is not ameliorated by standards
    - Tonal-like is known to be annoying but not found by standard used for regulation
    - Cyclical annoyance is not addressed by limitation of A-weighted noise

Conclusion: A Path Forward – what needs to be done?

To fulfil engineering legal responsibility to protect public welfare from physical accidents:

- Physical accidents need boundaries to limit consequences
  - Deterministic analysis suggests needed barriers to protect from known events
    - Propose 280 metres for turbines up to 120 to 150 metres in height to avoid fatal consequences (Taller turbines will require greater distance separation)
    - Protection should apply to the most impacted individual, and population
  - Probabilistic assessment needed to identify significant contributors (e.g. fire)

To fulfil engineering legal responsibility to protect public from the acoustic properties of wind turbines that are known to cause annoyance (health impact):

- Need to avoid “tonal-like” conditions meeting ECMA 74/418 conditions of critical “bark” more than 4 dB above upper or lower “barks”
- Need to avoid significant cyclical variation detected by criterion (LZ10-LZ90) ≥ 6 dBZ, while (LA10-LA90) ≤ 3 dBA

Discussion and Questions

Thanks for your attention

I invite your discussion and questions

William Palmer (trileaem@bmts.com)

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WCO | WIND CONCERNS ONTARIO

August 28, 2025

Lesley Gallinger, President and CEO

Chuck Farmer, Executive VP of Power System Development

Carla Y. Nell, Executive VP of Corporate Relations, Engagement and Strategy

Independent Electricity System Operator

Re: Problems with IESO bid process for industrial-scale wind power installations

We are writing again to express concerns about how renewable energy corporations are preparing for bids in response to the LT2-RFP.

Citizens and municipalities alike have communicated their opinions on problems with this process, it remains unchanged, and problematic.

We refer to three problems in this letter.

1.The South Algonquin proposal

This proposal never reached you as it was withdrawn on August 22nd, but it is a prime example of how the IESO process is lacking in guidance for both proponents and communities. In this case, a company based in Austria proposed 14 industrial-scale wind turbines along a lake exactly adjacent to Algonquin Park. The wind turbines would have been visible and audible for a large part of this national historic site and wilderness preserve, yet there is no constraint on a proposal in such a location. We point out that Alberta has a setback of 35 km from historic sites and notable “viewscapes”, which is criticized as not being far enough.

The proponent gave only minimal notice to the community and held its mandatory information session for which only 10 people showed up. There was no project website, only scant notification of residents, and less than a month’s notice before a presentation to Council. Municipalities have time and again told you they do not have time to evaluate these proposals. In this case, there is a volunteer council with few staff, ye a large project that would negatively impact countless businesses and the community for decades was put forward with shockingly little notice. This is an insult, and doubtless, a strategy to bulldoze the community.

Unacceptable.

Residents took it on themselves to inform everyone of this proposal and within eight days the proposal was withdrawn.

RECOMMENDATIONS:

- the IESO needs to create requirements that protect national historic sites and other fragile environments from industrialization by wind power projects.
- the IESO needs stricter requirements for public engagement. Companies are rushing citizens and municipalities into this. Municipalities have already told you they do not have the time or the resources to deal with such complex proposals, and to have only days to carry this out is further insult.

2.Current engagement in Ontario during July/August

Just last evening an "information sessions" was held in Adelaide-Metcalfe by a proponent. Attendees described it as deeply disappointing in terms of actual information. While billed as a "meeting" it was not: it was the usual collection of storyboards attended by personnel hired for the occasion. In this case, the maps keep changing and the one presented last night did not depict any "receptors", commonly known as "homes' to regular folk.

A news story appeared this week noting that two other jurisdictions were included on a map circulating at that time, which surprised the mayors of those townships who have never been notified of the project.

This is a very shabby way to treat the community. It also raises questions about the ability of the current proponent to meet the IESO's requirements to qualify as a bidder.

In other events, the same storyboard format is used with no open Q&A, despite communities asking for that. Again, very little notice is given, project websites are either non-existent or buried somewhere. How does a community know about an information even if it is posted on a website for a project no one knows anything about?

We also note, and have already written to you about this, that proponents continue to offer the 2014 Health Canada paper on wind turbine noise as evidence that there is no possibility of health h impacts from wind turbine noise emissions. This is a grave error and grossly misleading. That paper did indicate there could be health impacts, but more important, the authors stated at the outset that the paper was to be used for the study locations only and that the conclusions could not be generalized for other projects and locations. For proponents to put this up as "proof" of no harm is a serious misrepresentation of the truth, and should be stopped.

RECOMMENDATION:

- There should be a prescribed timeline for community engagement so that proponents cannot spring proposals on communities and then demand expedient municipal support. Secret meetings with municipal officials are NOT community engagement.
- The IESO, the Ministry of Environment and the Ministry of Health should issue a statement that the Health Canada report may not be offered as evidence of health risks as described in the report's own directions.

3.Information on risk from wind turbine noise emissions

We have heard from a number of acoustics experts who are concerned that the new wind turbines being proposed have a much higher power rating and are more likely to emit harmful infrasound. This is widely documented, including in a 2015 report commissioned by Health Canada and published by the Council of Canadian Academies.

This is a grave concern as a public health risk is not even being discussed, and Ontario has no regulations for it.

RECOMMENDATION:

- The IESO needs to request the Ontario ministries of environment and health need to undertake a review of the potential for harm from infrasound from wind turbines, with a view to appropriate regulation, immediately.

With the dodgy engagement tactics being employed, including actions that go against the IESO's minimal prescribed process, we ask, what consequences are there for proponents who do not follow your rules?

We wish to go on record as having brought these issues to your attention at this time.

We are writing similar letters today to the Minister of Energy, Health, and Environment to share these concerns with them.

Sincerely,

Jane Wilson

President

WIND CONCERNS ONTARIO

Ottawa, ON

president@windconcernsontario.ca

www.windconcernsontario.ca

WIND CONCERNS ONTARIO PO BOX 91047 RPO SIGNATURE CTR KANATA ON K2T 0A3

Summary of Wind Turbine Projects proposed for 2025

Rejected/Withdrawn	8
Pending Decision	7
Targeting 2026	3
Total	18

Overview

Prime Agricultural Areas

- Despite new PPS rules, prime agricultural areas continue to be the focus of development i.e. Oxford, Middlesex, Chatham-Kent
- Some activity in Northern Ontario but it is focused on productive farmland around New Liskeard
- Proponent stated in a public meeting that the need for power is forcing the IESO to ignore the rules.
- Protecting farmland is a key factor in building support for Unwilling Host resolutions.

Official Plans Out of Date

- Most official plans have not been updated to reflect October 24 PPS changes
- Frequently only Class 1 – 3 land is zoned as "Agricultural" to be protected.
- Class 4 – 7 lands are ignored or grouped among general rural lands
- If there is any action, proponents are only considering agricultural zoning even the definition of the zoning class does not align with the PPS.

Larger Turbines are being used

- All projects involve 5 – 6 MW turbines
- Towers are taller – likely meaning a wider dispersion of the noise.
- May have less audible noise but concerned about Low Frequency Noise/Infrasound
- No changes in setbacks are being proposed for these projects.

Recent IESO Rule Clarifications

- Agricultural Impact Assessment split into 3 parts
    - 1st part submitted as part of an MSR request confirms that prime farm areas are avoided when possible.
    - Soil type is to be the prime driver when sites are being leased
    - Little evidence that this direction is being followed
- While things are vague in initial phases, municipalities must follow direction in Provincial Policy Statement when amending zoning and issuing building permits.
    - Potential for problems as projects being implemented
- Priority given to Canadian firms
    - Definition of "Canadian" has teeth
    - Canadian projects receive a 2% reduction in their bid price.

Project Details

Oxford County

- **East Zorra-Tavistock**
  - ProWind – 6 turbines @ 6 MW
  - Unwilling Host – March 2024
- **Blanford-Blenheim**
  - ProWind – 6 turbines @ 6 MW
  - Unwilling Host – in 2015 but not on list
  - Re-confirmed - Nov 2024
- **Zorra**
  - ProWind – 6 turbines @ 6 MW
  - Support from Mayor who controls Council – one Councillor publicly opposed
  - Insufficient Direction from Province – no approvals until resolved – October 2024
  - New leasing activity reported in August 2025
- **South-West Oxford (2 projects)**
  - ProWind – 6 turbines @ 6 MW
  - wpd – 20 turbines @ 6 MW
  - Unwilling Host – July 2025 – opposed by mayor but supported by 5 other members of Council
  - ProWind – Challenged fairness of resolution
  - September 2 - Council decided to reconfirm Unwilling Host status
  - Opponents propose wind turbine zoning by-law with 2,000 metre setbacks
- **Malahide Twp., Elgin County**
  - wpd – 14 turbines @ 6 MW
  - Unwilling Host – June 2025

Middlesex County

- **South-West Middlesex**
  - Venfor (Peter Budd) – 17 turbines @ 6.1 MW
  - Unwilling Host – August 2025
- **Brooke-Alvinston**
  - Venfor (Peter Budd) – 20 turbines @ 6.1 MW
  - Council meeting scheduled for Sept 11
- **Adelaide-Metcalfe**
  - Venfor (Peter Budd) – 20 turbines @ 6.1 MW
  - Approval schedule unknown
- **Warwick, Enniskillen**
  - Venfor (Peter Budd)
  - Turbines shown on interim plans for Brooke-Alvinston project
  - Removed from final version

Chatham-Kent

Crossfields

- Former Townships of Howard and Harwich
- Capstone –15 turbines @ 6.1 MW
- Targeting 2030
- Timing of Council meeting – unknown
- Number of Councillors do not support projects – Chatham-Kent has done enough

Botany Wind

- New EDF project – 100 MW
- Targeting 2031 Operational
- 1st Public meeting – Aug 27
- Near Ridgetown

Temiskaming

Little Claybelt Wind

- Kerns/Hudson Townships
- 35 turbines @ 6 MW – 200 MW
- Single project spread across 2 small townships –townships share administration
- Substantial cash payments to municipalities
- Promising to reduce property taxes by 57%
- $1 to $2 million in road upgrades/repairs
- Councils have made no decisions – next meetings October 1 and 7.
- Project is on marine clay – not stable when vibrated

Temiskaming Wind

- Separate project around Temiskaming Shores (New Liskeard)
- Temiskaming Shores plus Harris and Harley Townships
- ABO Energy -100 - 150 MW Project
- 20 turbines of 6-7 MW each
- One public meeting held
- Has not been to any Council meetings – 3 municipalities involved

Iroquois Falls

- Invenergy
- 19-21 turbines on rural lands south of Iroquois Falls
- Now targeting 2026 intake
- Iroquois Falls official plan limits size of wind turbines

Township of South Algonquin, Nipissing District

- SWEB (Austrian firm) 14 wind turbines
- Adjacent to Hay Lake; east of Whitney
- Turbines visible from Algonquian Park

- Presentation scheduled for Sept 21 Council meeting
- Immediate opposition within township and from users of Algonquin Park
- Proposal withdrawn by proponent within about 8 days.

Sault Ste Marie

- EDF – 30 - 35 turbines @ 6 MW
- About one-half of project is within city but will impact 3 neighbouring townships plus Crown Land.
- Active discussions with Sault Ste Marie officials for about 1 year
- Proposal included in Council agenda on a Friday; withdrawn before the Monday Council meeting.
- Project may resurface in 2026.

Elliot Lake

- Proposed by First Light – owned by Public Sector Pension Investment Board
- Up to 200 MW – north west of Elliot Lake
- Initial Council briefing – June 23
- 2 public meetings held in August - mixed community reaction
- Second Council meeting in September

Solar Panel Projects

Ottawa

Westridge, West Carleton

- 300 MW
- Uses 400 acres of Class 3 that is tile drained

Portage 1,2,3

- Developed by Portage Power/Ottawa Hydro
- 300 acres mostly on poor land but some Class 2

Carp Airport

- 40 megawatts

South Bruce Peninsula

- Proposed for Class 5 farmland
- Includes sheep
- pasturing around the turbines
- Received Municipal Support

Battery Energy Storage

Fitzroy BESS

- Brookfield - located in western Ottawa
- Did not receive municipal support (not required in LT1
    - Ottawa selected another project to support
- Granted contract anyway
- Located in agricultural land; volunteer fire department; no municipal water
- Ottawa received ministerial directive to issue MSR – which it did
- Debate taking place over siting of project
- Will likely be approved in substandard location

Elora Bess

- Aypa Power – Centre Wellington
- 50% participation by Six Nations
- 200 MW – had received MSR before submission
- Municipality received ministerial directive urging rapid
- Processing already underway.
- Only issue – site would be a prime location for housing in a rapidly growing area.

South-West Oxford

- Boralex – in partnership with Six Nations
- Municipal Support Resolution approved by Council
- 125 MW for 4 hours = 500 MWh
- Sited in former gravel pit; has access to municipal water
- Close to the western edge of Woodstock – housing subdivision may be within danger zone.

MUNICIPALITY OF
ARRAN-ELDERSLIE

Staff Report

Council Meeting Date: August 11, 2025

Subject: CAO-2025-20 Tara BESS Project Update

Report from: Emily Dance, Chief Administrative Officer

Attachments:

Recommendation

Be It Resolved that Council hereby receives for information Report CAO-2025-20 Tara BESS project update.

Background

Zoning By-law Amendment

At the meeting of July 14, 2025 Council of the Municipality of Arran-Elderslie refused the planning application for the Tara BESS project proposed for 39 Concession 4, determining that the applicant had not adequately demonstrated that the proposed development aligns with the Provincial Policy Statement (PPS) 2024, or with the Bruce County Official Plan.

Key areas of non-conformity include, but are not limited to:

- The proposed use is not permitted under the current zoning designations (Environmental Protection and General Agriculture) and does not align with Section 3.1.1 or 3.2 of the Zoning By-law.

- The project does not meet the siting, setback, or lot coverage requirements outlined in the Municipality's BESS Policy.

- The proposed location within a regulated floodplain and proximity to sensitive land uses raises significant concerns regarding land use compatibility and public safety.

- Required agreements, fees, and technical reviews have not been completed or submitted in accordance with municipal policy.

Neoen submitted correspondence following Council's decision to deny the ZBA application for the Tara Battery Energy Storage System (BESS) project. While expressing disappointment at not being given the opportunity to respond to staff comments prior to Council's consideration, Neoen has acknowledged the feedback received and is actively exploring alternative locations within the Municipality to host the project.

Neoen has advised that, based on legal counsel, they are required to file an appeal to the Ontario Land Tribunal (OLT) within the mandated 20-day period to preserve their rights under the Planning Act and to support any future force majeure claims. However, they have indicated a willingness to withdraw the appeal should a mutually agreeable resolution be reached, including the possibility of relocating the project and submitting a new application.

Neoen has identified three potential alternative sites within Arran-Elderslie (outside of GSCA-designated lands) and is currently conducting technical feasibility studies and land negotiations. They anticipate determining a preferred location by the end of August and have committed to providing a substantive progress update within two weeks.

Neoen has reiterated their interest in maintaining a constructive and collaborative dialogue with the Municipality and has requested guidance on how they may contribute capacity funding to support the Municipality's engagement efforts, including the retention of external resources.

County of Bruce Official Plan
On August 7, 2025 the Council of the County of Bruce refused the Official Plan Amendment as it is not consistent with the PPS 2024 and the intent of the Bruce County Official Plan.

Analysis

Staff are disappointed by Neoen's decision to proceed with an appeal to the Ontario Land Tribunal (OLT). This action will require significant time and resources from both municipal and County staff and may complicate the working relationship at a time when efforts could be better focused on identifying and advancing a viable new site.

While Neoen has indicated a willingness to withdraw the appeal if a resolution is reached, the intention to file itself introduces procedural and legal complexities that may hinder progress.

Staff emphasize that any new site will require a full planning application, public consultation, and compliance with applicable timelines and legislative requirements. Any expectation of a less-than-comprehensive review process is unrealistic and not aligned with the Municipality's obligations under the Planning Act.

Staff note that the LT1 project requires proponents to demonstrate meaningful community and Indigenous engagement as part of the IESO's procurement process. Staff will communicate further with the IESO to clarify expectations and ensure alignment with municipal procedures and community interests.

Staff also acknowledge Neoen's offer to contribute capacity funding to support the Municipality's engagement efforts, including the retention of external resources. This offer is appreciated, and staff will review potential options and provide a recommendation to Council for consideration at an upcoming meeting.

Link to Strategic/Master Plan

6.3 Facilitating Community Growth

Financial Impacts/Source of Funding/Link to Procurement Policy

Staff time dedicated to reviewing the Tara BESS project and related correspondence has been significant. In addition, the appeal to the Ontario Land Tribunal (OLT) will result in further costs associated with legal counsel and professional consultants.

Approved by: Emily Dance, Chief Administrative Officer

MUNICIPALITY OF
ARRAN-ELDERSLIE

Staff Report

Council Meeting Date: August 11, 2025

Subject: CAO-2025-20 Tara BESS Project Update – OLT Appeal Confirmation

Report from: Emily Dance, Chief Administrative Officer

Attachments: KAGAN SHASTRI DeMELO WINER PARK LLP Cover Letter to the OLT, August 15, 2025

Recommendation

Be It Resolved that Council hereby receives for information Report CAO-2025-20 Tara BESS project update (2).

Background

At its meeting on July 14, 2025, Arran-Elderslie Council rejected the Zoning By-law Amendment (ZBA) application submitted by Neoen for the Tara Battery Energy Storage System (BESS) project at 39 Concession 4. The decision was based on the application's failure to demonstrate alignment with the 2024 Provincial Policy Statement (PPS) and the Bruce County Official Plan.

On August 7, 2025, Bruce County Council also refused the related Official Plan Amendment (OPA), citing inconsistency with the PPS 2024 and the intent of the Bruce County Official Plan.

The Grey Sauble Conservation Board hearing scheduled for September 4, 2025 has been cancelled. Staff have not been notified if the hearing will be re-scheduled.

Appeal to the Ontario Land Tribunal (OLT)

Following Council's decision, Neoen submitted correspondence expressing concern that they were not given the opportunity to respond to staff comments prior to the meeting and indicated their intent to appeal the decision stating:

> "We are advised by legal counsel that Neoen has no choice but to exercise its right to appeal Council's decision denying the ZBA to the Ontario Land Tribunal

within the twenty-day deadline. This is a requirement both for our force majeure claims and to preserve our rights under the Planning Act."

However, on August 15, 2025, Neoen Ontario BESS 1 Inc. filed an appeal to the OLT under Section 34(11) of the Planning Act. The grounds for appeal include:

- The ZBA is consistent with the PPS 2024.
- The ZBA conforms with provincial energy plans, including Powering Ontario's Growth, Ontario's Affordable Energy Future, and Energy for Generations.
- The ZBA aligns with the Bruce County Official Plan, subject to the OPA.
- The Tara BESS project supports provincial interests in energy conservation, climate adaptation, and economic development 1.

Analysis

Staff are disheartened by the decision of to proceed with the appeal, particularly given Neoen's stated willingness to withdraw it if a mutually agreeable resolution is reached. While the appeal may be a procedural necessity to preserve rights under the Planning Act, it nonetheless signals a need to rebuild trust and ensure clarity in future communications.

Of additional concern are several statements made in the appeal regarding the Municipality's Battery Energy Storage System (BESS) Policy. The assertion that the policy restricts all large-scale BESS development is inaccurate and misrepresents the intent of the policy. The BESS Policy outlines site guidelines including setbacks, screening, and maximum site coverage to assist developers in aligning proposals with municipal expectations. It does not introduce new zoning regulations, nor does it prohibit large-scale BESS projects.

Furthermore, the requirement to enter into a site plan agreement for industrial uses is not new. The Municipality of Arran-Elderslie has applied this requirement, as established under By-law 43-2018.

Information regarding Council's intention to introduce a BESS Policy was shared with members of the developer's team as early as December 2024 and staff mentioned its progression during working group meetings.

The developer was aware of the evolving policy landscape and had the opportunity to defer or withdraw their application to allow for further review. Instead, they chose to proceed with both the ZBA and OPA applications, which ultimately led to the appeal.

It is also important to acknowledge that battery energy storage is a relatively new land use, and the LT1 procurement process itself is a recent initiative. For a small municipality such as Arran-Elderslie, it is unreasonable to expect that all policies, procedures, and frameworks would be fully established and refined at the outset.

Staff have worked diligently to respond to this emerging sector in a responsible and transparent manner, and the introduction of the BESS Policy was a proactive step to guide future development. Mischaracterizing these efforts undermines the collaborative approach that is essential for successful project delivery.

Link to Strategic/Master Plan

6.3 Facilitating Community Growth

Financial Impacts/Source of Funding/Link to Procurement Policy

Staff time dedicated to reviewing the Tara BESS project and related correspondence has been significant. In addition, the appeal to the Ontario Land Tribunal (OLT) will result in further costs associated with legal counsel and professional consultants that are not covered

Neoen has offered to contribute capacity funding to support the Municipality's engagement efforts, including the retention of external resources. Staff appreciate this offer and will review potential options, bringing forward a recommendation to Council for consideration at an upcoming meeting.

Approved by: Emily Dance, Chief Administrative Officer

Kagan | Shastri
DeMelo | Winer | Park
LAWYERS | LLP

JASON PARK
Direct: 416-645-4572
jpark@ksllp.ca

File No. 24148

August 15, 2025

FILED BY OLT E-FILE SERVICE & SENT BY EMAIL (info@arran-elderslie.ca)

Ms. Christine Fraser-McDonald, Town Clerk
Municipality of Arran-Elderslie
1925 Bruce Road 10, Box 70
Chesley, ON N0G 1L0

Attention: Ms. Christine Fraser-McDonald, Town Clerk

Dear Ms. Fraser-McDonald,

Re: Notice of Appeal to the Ontario Land Tribunal Pursuant to Subsection 34(11) of the *Planning Act*, R.S.O. 1990, c. P.13
39 Concession 4 Arran, CON 4 PT LOT 36, Municipality of Arran-Elderslie
Appeal filed on behalf of NEOEN Ontario BESS 1 Inc.
Municipal File Number: Z-2025-011

We are the solicitors for NEOEN Ontario BESS 1 Inc. (the "**Applicant**"). The subject property is known municipally as 39 Concession 4 Arran, in the Municipality of Arran-Elderslie with a legal description of PT LT 36 CON 4 ARRAN AS IN R352883 EXCEPT PARTS 1 & 2 3R8227 N OF 3R1688, T/W R352883; MUNICIPALITY OF ARRAN-ELDERSLIE (the "**Site**"). The Applicant is an international independent producer of renewable energy and is proposing to establish a Battery Energy Storage System (BESS) facility on a portion of the Site. The proposed BESS project is known as the "**Tara BESS**".

This letter and the enclosed materials comprise our client's Notice of Appeal to the Ontario Land Tribunal (the "**Tribunal**") pursuant to section 34(11) of the *Planning Act*, respecting the Municipality of Arran-Elderslie's (the "**Municipality**") refusal of our client's application for a Zoning By-law Amendment ("**ZBA**") for the Site (the "**ZBA Application**").

APPLICATION BACKGROUND

Following nearly a year of pre-consultation, the Applicant filed the ZBA, as well as a related Official Plan Amendment ("**OPA**"), with the Municipality on April 3, 2025.

On April 28, 2025 the Municipality passed By-law 33-2025 under the *Municipal Act*, S.O. 2001, c. 25 to bring into force a new Battery Energy Storage Policy (the "**BESS Policy**"). The BESS Policy was not adopted into the Municipality's Official Plan and/or enacted under the *Planning Act* despite it, in effect, introducing new zoning regulations (setbacks etc.) and requiring the equivalent of the Site Plan Approval Application, which the Tara BESS does not require pursuant to the *Planning Act*. The BESS Policy contains several provisions that restrict not only Tara BESS from development as proposed but effectively restricts any large-scale BESS within the Municipality. It is the Applicant's position that the BESS Policy is inapplicable to the Tara BESS project. It also conflicts with Provincial energy policies and the Provincial Policy Statement, 2024 ("**PPS 2024**").

Staff at Bruce County, the upper-tier municipality, (the "**County**") prepared a Planning Report dated July 14, 2025 recommending that the Municipality's Council deny the ZBA (the "**ZBA Staff Report**"). The ZBA Staff Report only became available to the Applicant when it was made public on July 10, 2025. The ZBA Staff Report relies both on the BESS Policy as a reason to deny the ZBA and Official Plan conformity as reasons to deny the ZBA (despite an OPA being filed and having not been considered at the time of the decision for the ZBA). The Applicant immediately wrote to the Municipality requesting that consideration of the ZBA be deferred, namely because the Municipality had yet to consider the corresponding OPA. The ZBA was considered and denied on July 14, 2025. Notice of Refusal was issued by the County on July 29, 2025.

The County prepared a second Staff Report with respect to the OPA dated August 7, 2025 (the "**OPA Staff Report**"). The OPA Staff Report recommends that the OPA be refused for being inconsistent "with the PPS 2024 and the intent of Bruce County Official Plan". The OPA was considered and denied on August 7, 2025. Notice of Refusal has not yet been issued by the County.

SUBJECT SITE, DEVELOPMENT PROPOSAL & REQUIRED APPROVALS

The Site is located at the south-west corner of Concession Road 4 and Grey Bruce Line. It has a total area of 42 hectares (103 acres) with approximately 410 metres of frontage on Concession 4 and 950 metres of frontage on Grey-Bruce Line. The Site is in agricultural use with a beef cattle operation as well as pasture and cropland. The Sauble River and associated environmental features bisect the Site in a north/south alignment. These environmental features include an Unevaluated Wetland and Provincially Significant Woodland, and the Sauble River floodplain with two tributaries. A constructed drain (Fenton Drain Brach A) connects to the portion of the Sauble River on the Site. The immediate surrounding area is generally characterized as agricultural with pockets of environmental features including the Sauble River and woodlands.

A Hydro One transmission line is located immediately south of the Site. BESS facilities must connect to existing transmission corridors, and the transmission corridor it connects to must be able to carry electricity across the Province. The transmission line that the Tara BESS would connect to is a key transmission line that has a high voltage carrying capacity

and connects to other lines across Ontario. As a result, this transmission line is ideally suited for a BESS project.

The Applicant will lease approximately 9.05 hectares (22.3 acres) of the east portion of the property to accommodate the Tara BESS facility. The BESS will have primary access from Concession 4 Road and a secondary point of access from Grey-Bruce Line. Both access points will connect directly to the facility. The balance of the Site will either remain in its current natural condition or be rehabilitated to an agricultural use.

No permanent infrastructure or lot creation is required for the Tara BESS. This facility is expected to have a lifespan of approximately 20 years, after which time the project area will be returned to agricultural use. The proposed BESS is not currently permitted in the land use designation or zoning. To facilitate the proposed use, both the OPA and ZBA are required. The intent of the amendments is to re-designate and re-zone the project area to Agricultural with specific exceptions to permit the establishment of a BESS on a portion of the Site.

OVERVIEW OF POLICY AND REGULATORY CONTEXT

Powering Ontario's Growth Plan

The Ontario government in July 2023 released *Powering Ontario's Growth*, a strategic plan to ensure the province has reliable, affordable, and clean energy to support its expanding economy. A key component of this plan is the procurement of electricity storage. In October 2022 the Ministry of Energy directed the provincially owner Independent Electricity System Operator ("**IESO**") to acquire 2,500 MW of clean energy storage. As part of this effort, in May 2024, the IESO awarded a 20-year contract to the Applicant for Tara BESS, a 400-megawatt facility that will contribute to the province's energy security. The Tara BESS will not only support grid stability but also contribute to Ontario's economic growth by ensuring a dependable power supply for industries and businesses. Prior to being submitted to the procurement program, the Tara BESS received municipal support resolutions from the Municipality in August 2023 and October 2023.

The Tara BESS project is critical infrastructure investment that supports Ontario's long-term economic growth and sustainability goals. By ensuring a stable and reliable electricity supply, the project helps attract and sustain businesses, fostering job creation and economic development. Additionally, by optimizing energy use and reducing reliance on carbon-intensive peaking plants, Tara BESS contributes to improved air quality and supports Ontario's broader efforts to mitigate climate change. The project also strengthens the province's energy security by adding much-needed capacity to the grid, ensuring that electricity remains available when and where it is needed most. As a facility that enhances grid reliability and capacity, Tara BESS provides a crucial public service, reinforcing Ontario's ability to meet the growing energy needs of businesses and communities alike.

The ZBA conforms with this important Provincial Plan.

In October 2024, the Ministry of Energy and Electrification also issued *Ontario's Affordable Energy Future: The Pressing Case for More Power*. This document recognizes that Ontario's energy policy will determine the success of the Province, today and for the next generation. The ZBA is also consistent with this Provincial document.

Finally, in June 2025 the Ministry of Energy and Electrification issued *Energy for Generations: Ontario's Integrated Plan to Power the Strongest Economy in the G7*. The Plan addresses energy needs with the goal of making the economy more competitive, resilient and self-reliant over the long term. The ZBA also conforms with this important Provincial plan.

Matters of Provincial Interest

Section 2 of the *Planning Act* required the Municipality to have regard to matters of provincial interest when considering the ZBA. Subsection 2(e) requires regard to be had for the supply, efficient use and conservation of energy and water and subsection 2(s) requires regard to be had for the mitigation of greenhouse gas emissions and adaptation to a changing climate. Among other things, the Tara BESS project supports Ontario's grid resilience and reduces reliance on fossil fuels. The ZBA has had regard for matters of provincial interest, particularly subsections 2(e) and 2(f).

Provincial Planning Statement (2024)

On August 20, 2024, the Province of Ontario released the updated Provincial Planning Statement (2024) (the "**PPS 2024**"), following a series of consultations beginning in 2022. The PPS 2024 came into force and effect on October 20, 2024.

The PPS 2024 replaces both the Provincial Policy Statement, 2020 ("**PPS 2020**") and A Place to Grow: Growth Plan for the Greater Golden Horseshoe (the "**Growth Plan**"), and consolidates elements of both into a single land use policy document. The PPS 2024 is therefore a consolidated statement of the government's policies on land use planning, providing policy direction on matters of Provincial interest related to land use planning and development. In accordance with Section 3(5) of the *Planning Act*, all decisions that affect a planning matter are required to be consistent with the PPS. In this regard, Policy 6.1 provides that the PPS 2024 "shall be read in its entirety and all relevant policies are to be applied to each situation".

The PPS 2024 gives provincial policy direction on key land use planning issues that affect communities, such as construction of housing where it is needed, making land available for development, creating opportunities for economic development and job creation, planning for the appropriate transportation, water, sewer and other infrastructure necessary to accommodate current and future needs, protecting the environment and important resources including farmland, water, archaeology, cultural heritage, mineral aggregates and petroleum, and protecting people, property and community resources by directing development away from natural or human-made hazards, such as flood prone areas.

Like the PPS 2020 before it, the PPS 2024 places emphasis on increasing the mix and supply of housing, protecting the environment and public safety, reducing barriers and costs for development, and providing greater certainty, and supporting the economy and job creation.

In the context of these policies, the Tara BESS project leverages the capacity of a qualified private proponent, reduces reliance on fossil fuels, and supports Ontario's grid resiliency. Energy storage is recognized in the PPS 2024 as a critical component of the energy supply system. It will also align with policy 2.8 by supporting the local economy by improving reliability for residents and businesses, creating direct and indirect employment, and enhancing the region's investment-readiness.

The proposed amendments are seeking to change the project area from Hazard Lands to Agricultural. To achieve this, a floodproofing strategy is proposed to raise the development area above the regulatory flood level. Once regraded, the Site is proposed to be re-designated to Agricultural. This approach is consistent with policy 5.2 of the PPS 2024 which permits development in hazardous lands where the risks are minor and can be effectively mitigated.

The Tara BESS is considered a limited non-residential use in an agricultural area, consistent with PPS policy 4.3.5(b). The Agricultural Impact Assessment prepared in support of the proposed development confirms that the Site is not a specialty crop area, the use is temporary, and no reasonable alternative sites exist.

The Tara BESS, and in particular, the requested ZBA and OPA are consistent with the PPS, and specifically, those policies relating to supporting the local economy and protecting the environment. Tara BESS project is inconsistent with the PPS 2024 and advances important policy objectives set out therein.

Conservation Authorities Act & Grey Sauble Conservation Authority Policies

The *Conservation Authorities Act*, *1990* provides the legislative framework for Conservation Authorities to manage natural hazards and watershed resources. The Site lies within the regulated area of the Grey Sauble Conservation Authority ("**GSCA**") and is subject to Ontario Regulation 41/24, which requires a permit for certain types of development and site alternation in or adjacent to hazard lands, wetlands, watercourses, and other sensitive environmental features.

The Tara BESS project involves grading and fill placement in a floodplain and, therefore, a permit from the GSCA is required. Similar approvals under O. Reg. 41/24 for the development of a BESS facility within a floodplain have been approved by the Lower Thames Valley Conservation Authority in the Municipality of Lakeshore (Tilbury).

The proposed floodproofing measures have been evaluated in the Floodplain Assessment Report filed in support of the proposed development. The Floodplain Assessment Report concludes that no adverse impacts are expected, and the existing floodplain storage

capacity of the Site will be maintained. There will be no risk to public safety or susceptibility to natural hazards will not increase. The proposed grading will not impact storage capacity, care will be taken during and after the site works to minimize impacts and implement appropriate construction controls. The Environmental Assessment concludes that no impacts to the natural environment are anticipated, and ecological functions will be maintained. Safe access will be provided, and the site works will be based on engineering standards. A permit from the GSCA will be obtained prior to floodproofing measures occurring. Any works within the floodplain will be temporary to remove the project area from the floodplain. The project's location was selected through a Class Environmental Assessment and is tied to existing grid infrastructure. The Class Environmental Assessment confirms that the project does not encroach upon or lie adjacent to natural features such as wetlands, woodlands, or valleylands.

Tara BESS has been designed specifically to meet the requirements of the GSCA policies, which will address development in flood hazard areas and public infrastructure. The siting, floodplain compensation approach, and technical studies have all been guided by these policy frameworks to ensure compliance.

Bruce County Official Plan

The County Official Plan (the "**Official Plan**") came into effect in September 1998, with its most recent formal review completed in 2010. While a new Official Plan is currently under development, it has not yet come into force.

The proposed BESS facility is not currently permitted in the *Agricultural* or *Hazard Lands* designation. An amendment is therefore proposed to re-designate the portion of the property accommodating Tara BESS to the *Agricultural* designation and add a site specific policy permitting BESS. The proposed amendment will ensure that the Site is maintained in agricultural use through the lifetime of the facility, and that once the facility is decommissioned, the Site will be rehabilitated to agricultural use for the long term.

General Policies

Section 4 of the Official Plan sets out the general policies for land use in the County. General policies are provided for the environmental, economic development, and service and utilities.

The BESS facility is located outside the identified natural features, and a Class Environmental Assessment report has been completed. The Class Environmental Assessment report confirms that the appropriate setbacks will be implemented from all adjacent environmental features, including the Sauble River, unevaluated wetlands, and woodlands. The project conforms with the Official Plan's direction to avoid negative impacts and protect ecological functions.

The proposed development will support the economic development of the County. The project will provide direct, indirect, and induced economic effects in the County. The

project will generate up to 200 jobs through the construction phase, and will provide up to 10 full-time employment opportunities during operations. The BESS will support the Bruce Energy complex as the transmission line will extend from the complex. The BESS will store unused energy from the complex in order to release it when needed, rather than wasting energy as it is produced. The BESS facility will also support local business by ensuring a reliable electricity system and the provision of adequate energy. The Tara BESS represents a low-impact, clean infrastructure investment that supports long-term economic growth and energy security in the County, which aligns with the Official Plan policies concerning economic development.

The Tara BESS aligns with the policy objective of coordinated infrastructure delivery and long-term energy planning. The facility will help ensure stable electricity supply in the County while respecting Official Plan policies.

Hazard Lands Policies

Policies for Hazard Lands are set out in section 5.8 of the Official Plan. The BESS is not a permitted use under these existing policies, a site-specific OPA is therefore proposed to permit the BESS facility on a temporary basis. An application for a Permit has been filed with the GSCA in order to permit the proposed grading and flood control works in the floodway and demonstrate compliance with O. Reg 41/24. The proposal conforms with the intent of Section 5.5 of the Official Plan which identifies permitted uses in *Agricultural* areas. The Tara BESS project balances the protection of agricultural land with the need for provincial energy infrastructure.

Zoning By-law 36-09

The Site is zoned 'General Agricultural (A1)' and 'Environmental Protection (EP)' in the Municipality's Zoning By-law No. 36-09. The project area is proposed to be re-zoned to the A1 – General Agricultural zone with site specific provisions that will permit the Tara BESS. The proposed amendment for the Tara BESS is taking a similar approach to comparable municipalities to implement the BESS in an agricultural area. The proposal will comply with all the zoning regulations in the A1 zone with the exception of the exterior side yard and lot coverage requirements.

CONCLUSION

Notwithstanding the Municipality's refusal of the ZBA, it is our client's position that the ZBA has regard for matters of provincial interest, is consistent with the PPS 2024, conforms with the Official Plan, subject to the OPA, and represents good planning.

For all of the foregoing reasons, we hereby appeal and commend the ZBA to the Tribunal for consideration and approval.

Once Notice of Refusal is issued with respect to the OPA our client intends to also appeal the OPA to the Tribunal. Once the OPA is filed we will be requesting that the Tribunal consolidate the two appeals. The Appellant requests that once the OPA appeal is filed, a

single Case Management Conference be scheduled to deal with the ZBA and pending OPA appeal.

SUPPORTING MATERIALS

In support of this appeal, please find enclosed the following:

1. A completed and signed Tribunal Appeal Form; and
2. A solicitor's cheque in the amount of $1,100, payable to the "Minister of Finance", which represents the Tribunal's prescribed appeal fees.

Should you have any questions or require further information, please do not hesitate to contact me directly.

Yours truly,

KAGAN SHASTRI DeMELO WINER PARK LLP

Jason Park
JIP/ch

Enclosures

cc. NEOEN Ontario BESS Inc.

WCO | WIND CONCERNS ONTARIO

August 10, 2025

The Hon. Todd McCarthy

Minister of Environment, Conservation and Parks

Minister.mecp@ontario.ca

RE: Assurance needed regarding higher power levels in proposed wind turbines and potential health impacts

Dear Minister McCarthy:

Thank you for your recent letter addressing our concerns. If we may take a few more minutes of your time, there is another pressing issue in Ontario related to industrial wind turbines.

As you know, the IESO has launched its LT2-RFP and wind power proposals are being developed, with a deadline of October 16 for submission. We have received multiple emails expressing concern about new wind power projects because of the higher power levels being proposed for these industrial wind turbines, and the potential for health effects, over and above what we have already seen in the province from turbines built since 2006 under the McGuinty and Wynne governments. Some of these letters come from engineers, acoustics experts, and people involved in public health.

While the most powerful wind turbines to date in Ontario are those at Crysler at about 3.4 megawatts, new proposals feature wind turbines with power levels greater than 5 megawatts. For example, the Capstone proposal for Chatham-Kent presents turbines 6.6 megawatts or more; a smaller project in Oxford County is also presenting turbines at 6 megawatts.

The subject of the greater power levels came up recently at a council meeting for South West Oxford when a councillor asked the wind power developer representative whether the new, more powerful wind turbines would make more noise. To his credit, he did not try to skim over the issue, or say that there would be no problem. Instead, he said, “I don’t know.” While his honesty is appreciated, I submit that that is not good enough for the people of Ontario.

Last year, during an IESO “engagement” webinar where the MECP was a co-presenter, the IESO meeting host asked the MECP whether there were problems with noise from wind turbines in Ontario. The IESO was assured there are not. We question the accuracy of this statement when we have internal MECP documents of thousands of noise and incident reports, as well as internal correspondence about noise pollution.

Audible noise has been a problem for some Ontario families, as it can result in sleep disturbance which then leads to other health impacts. It has already been acknowledged that Ontario regulations are flawed in that they rely on audible sound only, and then only a narrow range. To quote the Council of Canadian Academies, commissioned by Health Canada to look at the problem of wind turbine noise,

> "**Standard methods of measuring sound may not capture the low-frequency sound and amplitude modulation characteristic of wind turbine noise**. Measurement of sound for health surveillance and research uses standard methods. The most commonly used methods include A-weighting, which emphasizes the frequencies according to human hearing sensitivity, and de emphasizes low and very high frequencies. Although A-weighted measurement is an essential method, it may **fail to capture the low-frequency components of wind turbine sound**. In addition, measurement is often averaged over time (Leq), which does not convey changes in sound pressure levels occurring in short periods (for example, within a second). Time-averaged measurement may thus fail to capture amplitude modulation."

However, the greater risk to health is from low frequency noise or LFN, which is less detectable by the human ear. Moreover, Ontario's current regulations do not measure or allow for LFN. (We have documentation from 2010, an internal document from the then Ministry of the Environment or MOE which says in fact, staff were **directed not to consider** any noise emissions as tonal or LFN.)

The extreme of LFN is infrasound which is created each time a turbine blade passes the tower. As it involves frequencies less than 20 HZ it is not captured in most assessments of wind turbine noise emissions. It is not heard by the people affected but rather, is *felt* as a vibration in various parts of the body.

Scientists in New Zealand, among many others, characterize LFN as a "contentious" and "well documented effect" of wind turbines. Low frequency noise has the following characteristics, according to Phipps et al of Massey University:

- **low frequency noise is <u>not attenuated with distance</u> from the source**, making low frequency noise more prominent at greater distances
- low frequency noise is not attenuated by typical building envelope designs to the same extent as other frequencies making low frequency more prominent inside a building and
- low frequency noise can cause light weight elements of a building structure to vibrate.

These findings are critical to Ontario because current regulations for wind turbines apply for audible noise only, and are based on a sound power measurement at the source, and supposedly mitigated by distance.

The problem with the new wind turbines is that the greater power levels mean more LFN. Two professors in Sweden are currently offering sound mapping models to power developers to help them avoid developing projects that will create problematic LFN and affect both people and livestock nearby

the wind power sites. Professor Ken Mattson confirmed in a recent interview, “as today’s wind turbines get bigger, they make more noise, especially in the low frequencies.” The professors expressly say their aim is to help developers design “legally secure” projects, by which they mean there is acknowledged legal liability in developing a power project that you know may cause harm.

Our concerns are:

> Ontario regulations for sound emissions from wind turbines were already inadequate and have not been reviewed or updated since 2009; and
>
> Current proposals feature industrial wind turbines of much greater power levels, which are acknowledged to have the potential for harm from LFN.

The responsibility for this legislation lies with the Ministry of Environment, Conservation and Parks, and our hope is that your staff are already looking at this very serious issue, and are planning new regulations that will protect the health of Ontario rural residents. The timing is critical, as proposals are in development now, with new contracts to be awarded in less than eight months. It is very difficult if not impossible to alter the operations of the wind turbine facilities once they are constructed.

We would be happy to discuss this with you at any time.

Sincerely,

Jane Wilson

President

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References:

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Massey University, noise study (92) VISUAL AND NOISE EFFECTS REPORTED BY RESIDENTS LIVING CLOSE TO MANAWATU WIND FARMS: PRELIMINARY SURVEY RESULTS

Uppsala University Calculating noise with precision - Uppsala University

Outlook

South Bruce Peninsula

From Warren Howard <howardwarr@aol.com>
Date Tue 2025-08-26 5:47 PM
To tom Allwood <councillorallwood@greyhighlands.ca>
Cc Julie Fenton <jfenton@arran-elderslie.ca>

You will recall that South Bruce Peninsula approved approved a solar project (with grazing sheep) in late July based on a recommendation from a promoter. I do not think that the municipality did much research into the rules related to this proposal. In their municipal support resolution for the first part of the project, they incorrectly confirmed that it does not use Prime Agricultural Areas. As it is sited on Class 5 soil, this is not true, given the PPS definition of Prime Agricultural Area which includes Class 1 - 7 soils.

I brought this matter to the attention of the South Bruce Peninsula officials in early August but at the mid-August meeting Council of this project approved an expansion of of the project. I had suggested that the municipality talk to the IESO about the rules for wind turbines but no new learning is evident from the new proposal, The second site just represents more of the same,

The problem is the structure of the South Bruce Peninsula Official Plan which limits "Agriculture" zoning to Class 1 - 3 soils (and some Class 4). Class 4 through 6 soils are included in the Rural zone where protection of farmland is also an objective. This parallels the Bruce County Official Plan and neither of the plans are consistent with the current PPS which required protection of all farm land.

The County plan is still receiving input from the communities and as part of this process is would be appropriate for plans in Bruce County be brought in line with the current requirements of the PPS.

If the project receives a contract, implementation will require that rezoning takes place before building permits are issued. This will require approval from both the lower tier municipality plus Bruce County Council.

I will not be at the next MMWEWG meeting but the group may want to discuss how they want to proceed.

Warren Howard