



WIND TURBINE NOISE AND HEALTH STUDY: SUMMARY OF KEY FINDINGS

Canada

WHAT IS THE WIND TURBINE NOISE AND HEALTH STUDY?

Health Canada, in partnership with Statistics Canada, has conducted a study involving communities in Southern Ontario and Prince Edward Island to better understand the impacts of wind turbine noise on health and well-being. A total of 1238 households participated, out of a possible 1570.

The study had three parts:

- An in-person questionnaire, which was given to randomly selected participants living at various distances from the wind turbines;
- A collection of physical health measures that assessed stress levels using hair cortisol, blood pressure and resting heart rate, as well as measures of sleep quality, and
- More than 4000 hours of wind turbine noise measurements conducted by Health Canada to support calculations of wind turbine noise levels at all homes in the study.

The *Wind Turbine Noise and Health Study* is a landmark study and the most comprehensive of its kind. Both the methodology used and the results are significant contributions to the global knowledge base and examples of innovative, leading-edge research.

KEY FINDINGS

IT IS IMPORTANT to note that the results from this study do not provide definitive answers on their own and should be considered along with the other research available on the impacts of wind turbine noise on health. Results may also not be applied to other communities as the wind turbine locations in this study were not randomly selected from all possible sites operating in Canada.

*Illness and chronic disease**

No evidence was found to support a link between exposure to wind turbine noise and any of the self-reported illnesses (such as dizziness, tinnitus, migraines) and chronic conditions (such as heart disease, high blood pressure, diabetes).

*Stress**

No association was found between the multiple measures of stress (such as hair cortisol, blood pressure, heart rate, self-reported stress) and exposure to wind turbine noise.

*Sleep**

The results of this study do not support an association between wind turbine noise and self-reported or measured sleep quality.

* While some people reported some of the health conditions above, their existence was not found to change in relation to exposure to wind turbine noise.

Annoyance and quality of life

An association was found between increasing levels of wind turbine noise and individuals reporting to be very or extremely annoyed.

No association was found with any significant changes in reported quality of life, or with overall quality of life and satisfaction with health. This was assessed using the abbreviated version of the World Health Organization's Quality of Life Scale.

Noise

Calculated noise levels were found to be below levels that would be expected to directly affect health (World Health Organization—*Community Noise Guidelines [1999]*). This finding is consistent with self-reported and measured results of the study.

HOW WILL THE INFORMATION BE USED?

Health Canada will consider the results of this study, along with other scientific research available, when providing advice on the health impacts of wind turbine noise.

These findings will also support decision-makers, such as provincial and territorial governments, in the development of decisions, advice and policies related to wind power development proposals, installations and operations.

These results are considered preliminary until published in the peer-reviewed scientific literature.

For more information

A more detailed Summary of Findings from the Wind Turbine Noise and Health Study has been published on the Health Canada website at www.hc-sc.gc.ca. For more information, please contact: ccrpb-ccrpsc@hc-sc.gc.ca.



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CANADA

Municipal group focused on wind turbines wants reports on breakage and failures

By **M.T. Fernandes**, Local Journalism Initiative Reporter Dundalk Herald

Tue., Jan. 11, 2022 | 3 min. read

READ THE CONVERSATION

Correction: Setback from dwellings is 550 metres, corrected from 50 metres

A municipal coalition is arguing that municipalities should get reports on when and how failures of wind turbines, such as broken blades, hubs or towers, occur.

The Multi-Municipal Wind Turbine Working Group is getting ready to rouse support across the province on the issue.

Tom Allwood, a Grey Highlands councillor, shared a list of the information about these incidents that would be required at its meeting on Jan. 5. Grey Highlands decided to forward the matter to committee of the whole for a longer discussion.

Mr. Allwood made reference to the June 30, 2020 incident of a wind turbine blade breaking off at Skyway 8, a Capstone project just southwest of Dundalk on Grey Road 8.

When the Herald recently asked for an update on the company's investigation into that blade failure, Megan Hunter, a Capstone corporate communications manager, replied that the investigation is still underway, but findings on the cause are expected early in the new year.

A press release by the company at the time noted that the turbine affected had a pilot device attached at the hub to increase the turbine's efficiency. The device, being developed in Canada, is called a Power Cone. It has been tested in tidal turbines, as well.

"The turbine at Skyway 8 was recommissioned without the Power Cone in October, and we have no plans for future tests the Power Cone at any of our facilities at this time," Ms Hunter wrote last week.

At the time of the turbine damage, Ms Hunter told the Herald/Advance that all the turbines at the Skyway 8 facility "were taken offline, inspected, and confirmed to have no increased risk before being returned to service."

Mr. Allwood is the new chair for the multi-municipal wind turbine group, which works on issues associated with the wind turbines on behalf of municipalities where wind projects are located. These include safety, as well as health effects on those living close to the turbines, he said in an interview.

Mr. Allwood also mentioned ice throw from the blades, saying that on Road 63 south of Grey Rd. 4 in Grey Highlands, there are warning signs of possible ice throw onto the road.

Turbines are allowed to be located as close as the blade length plus 10 metres from roads and lot lines, and 550 metres from the centre of a dwelling or institutional building.

The Skyway 8 blade failure in Southgate is one of 10 events that have put part or whole wind turbines on the ground, many at distances greater than the setback, says the group's report about its proposed protocol.

The protocol is going to be sent out to municipalities across Ontario in the next month or two, who can then pass resolution to adopt or support them and forward those motions on to the provincial ministry, Mr. Allwood said.

The points include requirements to demonstrate ongoing safety. Where components hit the ground at a distance greater than the provincial setback requirement, the operator would be required to report both to the municipality and provincial agencies within 24 hours.

A later report detailing the cause and actions taken would be needed before that turbine and any others of the same type in the project could be restarted.

Municipalities would then share those reports with residents.

The protocol proposes that operators anywhere in the province would have to demonstrate they have reviewed such reports from elsewhere in Ontario, and applied any lessons learned.

If all the facts were known, Coun. Allwood suggested that setbacks could be re-examined in light of the reports.

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The lack of progress in protecting people who live in Ontario's rural communities is highlighted in a news story out today in the Ottawa Business Journal.

In spite of thousands of noise complaints, the Ontario government has not changed any regulations including setbacks from homes for to industrial-scale or grid-scale wind turbines. The regulations were implemented under the McGuinty government in 2009.

Opposition to wind turbines has not gone away, according to the story, with Wind Concerns Ontario actually "ramping up" efforts, in the wake of recent announcements about procurement of 1,000 megawatts of new power generation in the province.

Complaints about noise, vibration and other impacts from the industrial-scale wind power plants have never gone away.

Wind Concerns Ontario, a coalition of community groups, families and individuals, recently recommended that setbacks between grid-scale or industrial-scale wind turbines should be 2 kilometres going forward. The recommendation is based on a review of other jurisdictions internationally, and on Ontario experiences, which suggest the current 550-metre setback is not adequate to protect health or for safety.

WCO president Jane Wilson is quoted as saying that noise audits of the turbine projects, while required by wind power approvals, have not been completed in many cases. That means that compliance with regulations has not been verified.

8/4/22

Stephen Smith

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ELUC Members,

I want to rebut the idea that we will be turning down millions of dollars that would be going to our school districts if the windmills were not built. I have checked with the Shiloh School District on the amount of money they have received for their district now that the windmills have been there for two years. As of July 7th of 2022, they have not received any money whatsoever. This year is the first year which the windmills will provide a tax revenue for the school district. Now what most people do not know is that every year the tax assessment is depreciated down to zero dollars after fifteen years. That means they will not pay for schools, roads, fire departments, police, drainage district assessments, township costs, bridges, libraries, or any other taxes after the fifteen years. The windmills, however, will still be there for another 35 years disrupting the community. The productive farmland where they have the right of way will be out of production, reducing the tax revenue for the affected land.

Now, on to the topic of renewable energy and the environment. What is it which makes a method of producing energy renewable? What makes it green? That which makes energy renewable is its ability to be continuity produced, and what makes energy green is whether or not it is releasing carbon dioxide and other greenhouse gasses into the atmosphere. By these metrics, it is not wind energy, but rather bio-fuels, which are most helpful to the environment. This is because when a plant grows, it is taking CO₂ out of the atmosphere and creating sugar through the process of photosynthesis. Therefore, biofuel is carbon neutral. Now, although the operation of a windmill does not use fossil fuels in itself, the production of a windmill does. A windmill requires a tremendous amount of energy, materials, and hours of construction. This means that a windmill will never be carbon neutral, unlike the green energy which is biofuel.

As to what was said about the windmills not causing negative health effects, the University of Illinois did a study released by Eric Zou which showed a significant increase in suicides of those living near the windmills. This direct effect on the health of the citizens of Champaign County is not worth any dollar amount. If the members of this committee think there is no risk to the health of the residents of Champaign County, then let the committee build the windmills on their properties, by their houses, and around their families.

The ZBA researched the issues and in addition heard research information presented by the public at their meetings. They made informed decisions and they even told you their reasons for voting the way they did. The ZBA's research was well done and well thought out. On the

other hand, this committee has not done any research. You have brought no science, no studies, and no citations as to the use, benefit, and lack of risk regarding these windmills. Let us then go with the science, and uphold the vote of the ZBA.

Thank You

Stephen R. Smith

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