

Community group coalition recommends 2-kilometer setback for Ontario wind turbines to protect health, safety

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OTTAWA--- Wind turbines built in Ontario to generate electricity from wind energy should have a setback of a minimum of two kilometers says Wind Concerns Ontario.

Ontario's present regulations for siting of wind turbines cite a minimum of 550 metres; that is not adequate to protect health or safety, Wind Concerns Ontario says.

The Ontario government currently has almost 7,000 formal Incident Reports documenting environmental noise pollution, dating from 2006 to the end of 2018, many of which also contain citizen complaints of adverse health effects.¹

"Since wind turbines first started operating in Ontario, people have been complaining about the noise," says Jane Wilson, RN, Wind Concerns Ontario president. "The comments made to Provincial Environmental Officers are just heartbreaking—people cannot sleep for days on end. They often leave their homes to get rest. Some of them leave, and never go back."

Environmental noise pollution is a known factor in adverse health effects including sleep disturbance, which over the long term, can lead to other health effects such as high blood pressure and other cardiac problems.

The Ontario government pledged to monitor research around the world and revise regulations as required, but this has not occurred, Wind Concerns Ontario says. The Ontario government returned siting powers to municipalities when it amended the Planning Act in 2019, but it did not provide any guidance as to what new zoning by-laws could be.

At present, many jurisdictions—particularly those with a long history of using wind turbines—are adopting greater setbacks for health and safety. In Bavaria, Germany, for example, setbacks from residences are 10 times the height of the turbine which is equivalent to more than 2,000 metres or 2 kilometres. In Spain, Sweden, Scotland and Poland, setbacks are between 1 and 2 kilometres. In its new zoning bylaw, the Ontario municipality of Dutton-Dunwich implemented a setback of 2,000 metres.

¹ Wind Concerns Ontario. 2021. Response to Wind Turbine Noise Complaints by Ontario's Environment Ministry 2018.

Wind turbine noise is uniquely intrusive on the environment. U.S. acoustics professional Robert Rand says, “Unlike other power plant technologies which have numerous noise control options, the only reliable noise control for wind turbines is distance.”²

Other jurisdictions may have greater setbacks, and some have shorter, says Wilson. “We believe 2 kilometres is a reasonable compromise to protect health. Given the evidence, wind power operators should be supportive of every effort to be good acoustic neighbours.”

Wind turbine setbacks need to apply to all types of receptors including residential locations, both participant and non-participant, work locations, including farm locations, other employment locations, care facilities and schools.

A recent review of turbine equipment failures conducted by a group of Ontario municipalities also highlighted the inadequacy of the current setback of blade length plus 50 metres from property lines. The failure incidents profiled show that a minimum setback from the property line of tower height plus blade length (at least 200 metres for equipment used currently) is needed to protect against complete tower collapse. Additional distances are needed to protect against ice throw and the scattering of debris that can extend as far as twice the height of a wind turbine tower.

New setbacks also need to be applied to any repowering of existing turbines. The current practice of “grandfathering” existing wind turbines is not appropriate in light of evidence.

Wind Concerns Ontario is a coalition of community groups and individuals concerned about the negative impacts of industrial-scale or grid scale wind turbines (IWTs) on the environment, human health and the economy.

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² Rand, Robert. 2019. Health Impacts of Industrial Wind Turbines. Presentation at Erie County Community College, September 10, 2019.

APPENDIX 1: CURRENT SETBACKS IN VARIOUS JURISDICTIONS

EXAMPLES OF U.S. SETBACKS

| State | County | Setback (m) | Comment |
|-------------|--------------|-------------|--------------------------------|
| Indiana | Miami | 600 | Property lines |
| Kansas | Pratt | 628 | |
| Kentucky | Mason | 1,600 | Property Lines |
| Maine | Caratunk | 2,414 | Property Lines |
| | Clifton | 1,219 | Residences |
| Nebraska | Lancaster | 1,600 | Residences |
| N. Carolina | Newport | 1,524 | Property Lines |
| Oregon | Umatilla | 3,219 | Residences |
| Wyoming | All Counties | 1,100 | 5.5 X Height to Property Lines |

*Note the setbacks to property lines, not the centre of houses as in Ontario

EXAMPLES OF EUROPEAN SETBACK DISTANCES

| Country | Set-back |
|----------------------|-------------------------------|
| Austria | 800 to 1,200 m |
| Denmark | 4 X total height – 829 m |
| Estonia | 1,000 to 2,000 m |
| Bavaria, Germany | 10 x total height – 2,073 m |
| Baden, Germany | 700 m |
| Brandenburg, Germany | 1000 m |
| Sachsen, Germany | 10 X hub height – 1,380 m |
| Hungary | 1,000 to 2,000 m |
| Poland | 10 x total height – 2,073 |
| England | Local – 700 m to 10 x height |
| N Ireland | 10 x rotor diameter – 1,386 m |
| Scotland | Local up to 2,000 m |

Source: European Commission. 2018. Wind potentials for EU and neighbouring countries, p.52.