

June 6, 2012 Presentation to the Integrated Community Planning Committee Regional Niagara

Honorable Chair, Members of the Integrated Community Planning Committee and members in the gallery

You were elected to serve and protect all the citizens of this region. And today we are asking for your protection.

In the provincial governments rush toward Green Energy some precautionary measures have been overlooked and this has the potential to cause huge health and safety issues for people that live near Industrial Wind Turbines.

Legislative statutes (laws), regulations and policies are in place to protect the health, safety, quality of life and well-being of citizens, properties, and the environment. **It is the legal obligation of municipalities in reviewing applications and making decisions to require and ensure that there will be no “adverse effects” and “negative impacts” on the health, safety, quality of life and well-being of citizens, properties, and the environment.**

Seventy nine ( 79 ) municipal councils in Ontario have asked for a moratorium on the establishment of any new Industrial Wind Turbine developments. They would like to ensure a comprehensive, independent, and peer reviewed scientific study be conducted by the province to determine that Industrial Wind Turbines Projects do not pose a risk to the community, the health of its citizens, property values and the rural environment.

This is a reasonable request when you consider that The Green Energy Act has a minimum setback distance of 550 meter from a non-participating receptor – I call it my home PLUS a noise pollution level of 40 decibels. These Industrial Wind turbines can be 100 – 200 meters tall - that’s 350 to 600 feet tall and will be your new neighbor for the next 20 years.

Industrial Wind Turbines produce mechanical noise, acoustical noise, low frequency noise, infrasound, in addition to electro magnetic radiation, “dirty electricity” or transient voltage, light flicker, vibration as well as electricity. Any of which can create problems for the neighboring recipients. With all these additional by products of wind energy it is reasonable we would want a scientific investigation to determine if any health and safety issues exist for people in communities that are forced to host industrial wind turbines.

According to Dave Seglins and John Nicol, reporters for the CBC, in their report “Ontario wind farm health risks downplayed” posted Sept. 22, 2011 the computer model used to establish Ontario's wind turbine noise limits and “safe set back distances” for wind turbines was found to be flawed and inadequate. Properties which were bought out by the energy companies were then sold at a loss with a long list of disclaimers acknowledging that the wind turbine facilities may affect the buyer's “living environment”. The energy company admitted that ( and I quote) the “impacts may include heat, sound, vibration, shadow flickering of light, noise (including grey noise) or

any other adverse effect”. So even the IWT companies admit that the wind turbines decrease property values and can cause health problems.

Cameron Hall (April 9, 2010), a Senior Environmental Officer from the Guelph District Office of the Ministry of the Environment is on record stating that “given the errors involved in the computer modeling it appears reasonable to suggest that a conservative approach might be to establish setbacks and approve locating IWT's where the predicted sound levels at the receptors are 35 to 37 dBA (rounded-off)”. Hall went on to suggest a 5 dB penalty for tonal quality of the sound discharged into the natural environment. **Hall's conclusion was that “it appears reasonable to suggest the setback distances should be calculated using a sound level limit of 30 to 32 dBA at the receptor, instead of the 40 dBA sound level limit.”**

Many experts with no vested interest in the wind turbine industry conclude that when industrial wind turbines are located too close to family homes the prolonged exposure to the audible and inaudible range of acoustic characteristics of wind turbine noise adversely affects people's health.

In 2009, the World Health Organization released a peer-reviewed summary of research regarding the risks to human health from noise induced sleep disturbances. Some of the adverse health effects documented include fatigue, memory difficulties, concentration problems, mood disorders, cardiovascular, respiratory, renal disorders, ... impaired immune function and a reported increased risk of mortality.

([www.euro.who.int/document/e92845pdf](http://www.euro.who.int/document/e92845pdf))

The **World Health Organization recommends** that ambient noise levels be **below 35 decibels (dB)** for optimum sleeping conditions. There is another reference that the person should be able to sleep with their window open and the night time noise level should be below 30 decibels.

The **International Standards Organization** of which Canada is a member is a non-governmental organization that identifies what international standards are required by business, government and society. This network of the national standards of 162 countries recommends that daytime noise limits for rural communities be 35 dB and **night time noise limits be 25 dB.**

It is the responsibility of government and delegated agencies of government to ensure that effective guidance provides the **maximum level of protection** to families for their health, amenity and human rights, which the Government has contracted to honour in international conventions.

In August 2011, the Environmental Protection Agency of the Danish Ministry of the Environment issued new guidelines for low frequency noise emitted by wind turbines: The new regulation is based on a 20 decibel limit.

In the Netherlands it is reported that 440,000 inhabitants (2.5% of the population) are exposed to significant levels of wind turbine noise, they conclude that night time noise should be set conservatively to minimize harm, and on the bases of this data, suggest that setback distances need to be greater than 2 km.

The State Government of Victoria, Australia, established wind turbine “no-go zones” in August 2011 that prohibits building wind turbines within 2 km of houses

The French National Academy of Medicine recommended a 1.5 km setback as long ago as 2006.

A Dutch study “Effects of the Wind Profile at Night on Wind Turbine Sound”, published in the *Journal of Sound and Vibration* 277 (2004) reported that noise from a 30 MW Industrial Wind Turbine project becomes more noticeable and annoying to nearby residents at night. **Residents as far away as 1900 meters from the IWT development complained about the nighttime noise.** Excessive exposure to noise has been shown to cause health problems. Noise and sleep deprivation can both be used as methods of torture and are a violation of basic Human Rights.

Anecdotal complaints of annoyance and health effects from IWT noise have grown in number in recent years, not least because turbine size has increased and they have been placed closer to population centers.

According to a letter from Dr Nina Pierpont, author of Wind Turbine Syndrome sent to Mike Crawley, International Power Canada Incorporation on May 7, 2010, to build these turbines next to people is a **reckless and violent act**. The evidence for turbines producing substantial low frequency noise and, worse, infrasound, is no longer in dispute. Second, the clinical evidence is unambiguous - low frequency noise and infrasound profoundly disturb the body’s organs of balance, motion, and position sense (called “vestibular organs”)Third, the case studies performed by Dr. Pierpont and other medical scientists have demonstrated unequivocally that many people (especially 50 years old and older) living within 2 km of turbines are made seriously ill, often to the point of abandoning their homes. Fourth, there is no doubt that wind turbine low frequency noise and infrasound seriously disrupt the body’s vestibular organs; resulting in the constellation of illnesses Dr Pierpont calls Wind Turbine Syndrome.

The *cure* for Wind Turbine Syndrome is simple: Move away from the turbines or shut them off. The *prevention* of Wind Turbine Syndrome is even simpler: Don’t build these low frequency/infrasound-generating machines within 2 km of people’s homes.

According to Dr. Pierpont, governments and corporations who violate this principle are guilty of gross clinical harm. Such governments and corporations should be taken before whatever level of court is necessary to stop this outrage. Governments and the wind industry stubbornly- she would now add criminally - refuse to acknowledge that they are deliberately and aggressively harming people. This must stop. The evidence is overwhelming.

According to the legal advice of the Environmental, Municipal and Planning Law office of Garrod & Pickfield from Guelph Ontario: *Although the GEGEA (Green Energy and Green Economy Act) effectively removes municipal powers to regulate land use planning for renewable energy projects, the GEGEA does not alter a municipality's ability to regulate renewable energy project using existing municipal regulatory powers under other statutes including the Municipal Act.*

### ***Municipal Act***

*The Municipal Act grants to municipalities regulatory powers in a number of areas, opening up the opportunity to pass municipal by-laws to regulate wind energy projects. Under the Act, municipalities can enact by-laws in the following areas which could be useful in regulating such projects:*

- 1. Economic, social and environmental well-being of the municipality (Section 11(2)(5))*
- 2. Health, safety and well-being of persons (Section 11(2)(6))*
- 3. Protection of persons and property, including consumer protection (Section 11(2)(8))*
- 4. Business licensing (Section 11(3)(11))*
- 5. Public nuisances (Section 128)*
- 6. Noise, vibration, odour, dust, etc. (Section 129)*
- 7. Prohibiting destruction of trees and woodlands (Section 135)*

*The passage and enforcement of by-law requirements under the Municipal Act opens up opportunities to exert some regulatory control over wind projects in order to reasonably protect its residents from the potential impacts of such projects. p6*

Selecting a minimum distance of 2 km as a buffer between homes and the placement of an industrial wind turbine – though an even greater distance may be required – is not excessive when the lives and well-being of those affected is taken into account. Preventative proactive policies function to preserve the public's health.

The 3MW Industrial Wind Turbines that Niagara Region Wind Corporation would like to install in West Lincoln are 197 meters (600 feet) tall. The turbines in the Burnaby area, as stated by Mr. Maxner, are 95 meters (310 feet) tall. The larger turbines produce more low frequency sound (20 – 200 Hz) which is less attenuated by walls and enclosures. Low frequency noise can cross larger distances without significant energy loss from atmospheric and ground attenuation. According to a Danish study “Low Frequency Noise Emission from Wind Farms – Potential Health Effects” by Brynhild Davidsen 2009, **for a 3MW Industrial Wind Turbine to remain within the 40dB noise level, the IWT would have to be installed at least 2100 meters away from the nearest receptor**

When you study the research done on the negative health effects of Industrial Wind Turbines cardiovascular complaints such as arrhythmias & palpitations are mentioned frequently (according to the the 2009 WindVOICE survey, Carmen Krogh CME, Gillis L., Kouwen N. and Aramini, J WindVOICE, a self-Reporting Survey: Adverse Health Effects, Industrial Wind Turbines, and the Need for Vigilance Monitoring. *Bulletin of Science, Technology & Society* 2011;31:334-345)

Originally the assumption was that that air disturbance from the turbine would settle down to ambient conditions 550 meters downstream of the location. It doesn't. The Danes have found that it is closer to 2,000 meters, and the downstream disturbance pulls air from up to 1,000 meters above the disturbance corridor to mix into the airstream. An event that lowers the temperature and affects barometric pressure.

According to David Biello, "On a Wing and Low Air: The Surprising Way Wind Turbines Kill Bats" published in the Scientific American August 26, 2008 it is the pressure change, not the blades, that wipe out thousands of bats annually at wind farms.

Ecologist Erin Baerwald of the University of Calgary in Alberta, who led research into the deaths of bats as part of her master's project found that as turbine height increases, bat deaths increase exponentially. What she found was that internal hemorrhaging was the cause of death.

Bats are mammals – like us. . Do the issues with barometric pressure transfer to humans and contribute to the increase in cardiovascular symptoms that people living near IWT's report? We don't know. What about people with pacemakers, are they affected? There are a lot of unanswered questions. In light of these findings, what assurances do we have that our health will be protected?

Our future – your future and mine is dependent upon vigilance The Green Energy Act has a minimum 550 meter setback distance from a non-participating receptor PLUS a noise pollution level of 40 decibels. That's like me building a 50 story industrial complex next to your house that is going to produce mechanical noise, acoustical noise, low frequency noise, infrasound, electro magnetic radiation, "dirty electricity" transient voltage, light flicker, vibration as well as electricity whenever the wind blows for the next 20 years. What is the minimum "safe" set back distance? Until the provincial government conducts a comprehensive, independent, and peer reviewed scientific health study to establish a safe setback distance we don't know.

Until the long-term health effects of giant wind turbines are truly established, further propagation should be halted. There are currently enough wind turbines in the province, from which to glean scientific data to evaluate the issue. Allowing more developments to move forward in the absence of evidence of their harm, is a policy fraught with danger and could prove to be very expensive. These IWT's are simply too expensive a form of infrastructure to just pack up and move, if the science turns against industrial wind turbines. And there are enough precedents for governments allowing (even supporting) things which have not worked out so well for mankind in the end, to give us all concern. Thalidomide, asbestos, DDT, lead water pipes, UFFI insulation, are all examples of "good ideas" that were to revolutionize their industries at one time or other.

When you change the rules to disenfranchise someone whom you are elected to protect, in favour of the private, for profit often multinational corporations we are all headed for the abyss. We are all responsible for each other's health and safety and when we

disenfranchise someone to further our own agenda then people have a right to protection and compensation.

Bylaws are in place to protect the roads and the infrastructure of this region, it is time to protect the health and the property values of the people that elected you and live in the rural municipalities. It is time to establish a 2 km safe set back distance.

Those of us that are expected to live in the shadow of these giants do not want to assume an unfair financial burden for this initiative. All turbine ordinances, should establish mechanisms to ensure that turbine developers buy out any affected family at the full pre-turbine value of their home, so that people are not trapped between unlivable lives and destitution through home abandonment. The region has policies to compensate home owners that are next to land fill sites if their property devalues. Why would we hold the private, for profit Industrial Wind Turbine corporations to a lower standard?

We urge the committee to take these findings seriously and to bring them to the attention of the Niagara Region Council.

Respectfully submitted

Catherine Mitchell & John Dykstra  
6822 Elcho Rd  
Wellandport, ON  
L0R 2J0  
905 386-6500