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Dear Sirs/Madams:

***Re: The Universal Declaration of Human Rights; United Nation Convention for the Rights of Persons with Disabilities (UNCRRP); and United Nations Convention on the Rights of the Child***

We are the Canadian solicitors for the North American Platform Against Wind Power (“NA-PAW”). In the United States NA-PAW is represented by the Law Offices of Stephan C. Volker, Oakland, California.

NA-PAW was created to stand for the interests of the ever-growing number of organizations and individuals in Mexico, the Caribbean, Central America, Canada, its sovereign states and territories and the United States (U.S.) who, among other serious problems identified over many years, are concerned that the implementation and operations of industrial wind facilities can harm humans if placed in close proximity to residents.<sup>1</sup>

NA-PAW is associated with the European Platform Against Wind Farms (“EPAW”) which combined, represents over 600 groups from around the world concerned about negative effects and industrial wind turbines.

The purpose of this letter is to advise that in our client’s view the implementation of industrial wind energy facilities in close proximity to residences appears to violate a number of Articles of

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<sup>1</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122. Retrieved from <http://www.ert.gov.on.ca/english/decisions/index.htm>

the *UN Declaration of Human Rights*; *United Nations Convention for the Rights of Persons with Disabilities (UNCRPD)*; and *United Nations Convention on the Rights of the Child*.

Canada is a signatory to the *UN Declaration of Human Rights* December, 1948.<sup>2</sup> Canada<sup>3</sup> and the U.S.<sup>4</sup> are parties to *United Nations Convention for the Rights of Persons with Disabilities (UNCRPD)*. Canada<sup>5</sup> and the U.S.<sup>6</sup> are parties to the *United Nations Convention on the Rights of the Child*. It is noted that the U.S. has signed but not ratified this Convention.

This advisory does not seek compensation on behalf of our client but seeks to protect the basic Human Rights and the Rights of Persons with Disabilities and the Rights of the Child of the people of the Caribbean, Central America, Canada, its sovereign states and territories, and the U.S.A with respect to industrial wind turbine (“IWT”) project developments.

There is evidence that state and national industrial wind energy policies and- / -or legislation fails to protect human health; and further that industrial wind energy facilities negatively affect the physical, mental and social well being of family members when sited in close proximity to residents and as a result, a number of Articles of the *UN Declaration of Human Rights*, the *United Nations Convention for the Rights of Persons with Disabilities (UNCRPD)* and *United Nations Convention on the Rights of the Child* may be violated.

Violations of **Article 30** and **Article 8** of the *UN Declaration of Human Rights, December 10 1948* may lead to violations of: **Article 5, Article 12, Article 16, Article 17, Article 25** and **Article 28**.

Violations of **Article 3, Article 10, Article 11, Article 12, Article 13 Article 15, Article 17, Article 21** of the *United Nations Convention for the Rights of Persons with Disabilities* may be occurring.

Violations of **Article 3, Article 4, Article 20, Article 23, Article 27, Article 39, Article 44** of the *United Nations Convention on the Rights of the Child* may be occurring.

## **1. UN Declaration of Human Rights**

**Article 30**, *UN Declaration of Human Rights, December 10, 1948* states:

<sup>2</sup> Signed “In the name of Canada: Stephen Lewis August 23, 1985”

<sup>3</sup> United Nations' Convention for the Rights of Persons with Disabilities, Canada, May 28th, 1990 and ratified December 13th, 1991. Retrieved from <http://www.phac-aspc.gc.ca/ncd-jne/bck-info-un-eng.php>

<sup>4</sup> U.S.A. President Obama, June 30, 2009. Retrieved from <http://www.rollinggrains.com/2009/07/un-disability-convention-cprd-in-the-usa.html>

<sup>5</sup> UN Convention on the Rights of the Child and Canada’s Role, Ratified 1991. Public Health Agency of Canada. Retrieved from <http://www.phac-aspc.gc.ca/ncd-jne/bck-info-un-eng.php>

<sup>6</sup> U.S.A. ratification of the Convention on the Rights of the Child. Signed but not ratified.

Retrieved from

[http://en.wikipedia.org/wiki/US\\_ratification\\_of\\_the\\_Convention\\_on\\_the\\_Rights\\_of\\_the\\_Child](http://en.wikipedia.org/wiki/US_ratification_of_the_Convention_on_the_Rights_of_the_Child)

Nothing in this Declaration may be interpreted as implying for any State, group or person any right to engage in any activity or to perform any act aimed at the destruction of any of the rights and freedoms set forth herein.

Indications are that the purpose of **Article 30** is to prevent an individual state, group or person from permitting authorities and- / -or officers of the state which allow the discounting of certain provisions of the *UN Declaration of Human Rights* in order to further state policy.

In some provincial, state and national jurisdictions, the intention to develop renewable energy solutions<sup>7, 8</sup> appears to have overlooked fundamental rights to health and well being and inalienable rights including those relating to property rights. A recently published article acknowledges the existence of “trade-offs” between “mental and social well-being” of some individuals exposed to environmental noise pollution emitted by wind turbines “against the larger demand for energy and its source.”<sup>9</sup>

The National Research Council of the National Academies states:

There often are thresholds for project or turbine size, below which regulatory scrutiny either is not required or is much reduced. If several small projects are installed in a small area, their effects could accumulate without the benefit of regulatory review. For example, several individual businesses or farms may install small turbines, on the order of 40 kW. Although a single turbine meeting relevant construction and zoning requirements might have little effect on local wildlife, aesthetics, and cultural resources, several of them might have significant effects, but they would not be regulated. This is a gap in current regulatory policy.<sup>10</sup>

The erosion of community and municipal rights regarding the ability to influence the approval and- / -or planning process has been reported to occur in Australia, Canada, Japan, United Kingdom, and the U.S.<sup>11, 12, 13, 14</sup>

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<sup>7</sup> Green Energy and Economy Act. (2009). An Act to enact the Green Energy Act, 2009 and to build a green economy, to repeal the Energy Conservation Leadership Act, 2006 and the Energy Efficiency Act and to amend other statutes

<sup>8</sup> Energy and Environmental Affairs, Massachusetts. U.S.A. Retrieved from <http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/wind/>

<sup>9</sup> Knopper and Ollson: Health effects and wind turbines: A review of the literature. Environmental Health 2011 Retrieved from <http://www.ehjournal.net/content/10/1/78>

<sup>10</sup> National Research Council of the National Academies, Committee on Environmental Impacts of Wind-Energy Projects Board on Environmental Studies and Toxicology Division on Earth and Life Studies. <http://www.nap.edu/catalog/11935.html>

<sup>11</sup> Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? Bulletin of Science Technology & Society 2011 31: 321, DOI: 10.1177/0270467611412550, <http://bst.sagepub.com/content/31/4/321>

<sup>12</sup> Crable, A. D. (2011, May 18). Blowin' in the wind, outdoor trails. Intelligencer Journal. Retrieved from [http://lancasteronline.com/article/local/390927\\_Blowin--in-the-wind.html#ixzz1Od9SX84J](http://lancasteronline.com/article/local/390927_Blowin--in-the-wind.html#ixzz1Od9SX84J)

**Article 8, UN Declaration of Human Rights, December 10, 1948** states:

Everyone has the right to an effective remedy by the competent national tribunals for acts violating the fundamental rights granted him by the constitution or by law.

Access to State or National Tribunals is challenging for members of the public. For example, Krogh (2011) indicates: <sup>15</sup>

In Ontario, Canada, the Renewable Energy Approval [REA] (2009) process came into effect with the passing of the Green Energy and Economy Act. The REA is a fast tracking system with the intention to streamline the approval of renewable energy projects.

An individual may appeal a REA if they provide (d) a description of how engaging in the renewable energy project in accordance with the renewable energy approval will cause,  
 (i) serious harm to human health, or  
 (ii) serious and irreversible harm to plant life,  
 animal life or the natural environment. . . <sup>16</sup>

Krogh (2011) continues:

Concern has been raised that the process for filing an REA appeal is daunting for the average Ontarian. Those who wish to appeal an REA, must file one within 15 days. This time limit provides little time to organize an appeal. The appeal process has a number of steps with which an environmental lawyer might be familiar, but most residents would not. The legal requirement to prove that the renewable energy project will cause serious harm requires a comprehensive inventory of evidence, including testimony from expert witnesses.

Typically, an REA appellant would face the well-funded legal resources of the government and the project developer. The associated financial costs are a significant deterrent, which would discourage most individuals from filing an appeal.

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<sup>13</sup> Frey, BJ and Hadden, PJ, (January 2012), Wind Turbines and Proximity to Homes: The Impact of Wind Turbines Noise on Health, a review of the literature & discussions of the issues. <http://www.windvigilance.com/about-adverse-health-effects/resource-centre>

<sup>14</sup> Juliette Jowit (February 26, 2012), Anti-wind power MPs may have Cameron's backing, The Guardian. <http://www.guardian.co.uk/environment/2012/feb/26/conservatives-opposed-coalition-policy-wind?intcmp=239>

<sup>15</sup> Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? Bulletin of Science Technology & Society 2011 31: 321, DOI: 10.1177/0270467611412550, <http://bst.sagepub.com/content/31/4/321>

<sup>16</sup> Rules of Practice and Practice Directions of the Environmental Review Tribunal, (July 9, 2010), section 142.1 (s. d. ss. i, ii) Retrieved from <http://www.ert.gov.on.ca/stellent/groups/public/@abcs/@www/@ert/documents/webasset/ec082676.pdf>



Indications are legitimate concerns expressed by residents at risk of adverse health effects appear to not be taken seriously by government. It is reported that an appeal regarding approval of a project in Ontario, Canada is “laughable”:

The appeal of a new wind farm project in Brooke-Alvinston township is "abusive" and "laughable," says counsel for the Ontario Ministry of Environment.

“All they have done is raised concerns,” said lawyer Frederika Rotter during a preliminary hearing on Thursday.

"People can be concerned until the cows come home." <sup>17</sup>

There is ample evidence that industrial wind energy facilities are adversely affecting human health as well as societal issues such as property impacts, and other intrusions when sited too close to residents leading to potential violations of **Article 5, Article 12, Article 16, Article 17 and Article 25**.

It is noted that exposure to noise pollution, visual impacts and other changes to the environment resulting from industrial wind facilities is typically involuntary, unless an individual has hosted the facility, and can intrude on neighbours who do not want to be exposed.

Indications are that in spite of authorities and- / -or officers of the state being advised by those experiencing negative effects and- / -or experts of the harm including negative physical, psychological and societal effects that can occur from siting industrial wind facilities in close proximity to residences, the authorities and- / -or public officials or persons acting in an official capacity grant approvals which allow the developments to proceed in the certain knowledge of likely injury to the health and quality of life of neighbouring families.

Therefore, those living in close proximity to the resulting wind energy facilities would have limited, if any, judicial recourse. Krogh (2011) states:

In Ontario, local communities no longer have planning authority to determine how or if renewable energy projects will be incorporated. As a result, a significant number of local municipalities and counties have expressed concern and have requested that planning authority be restored to local governments. At the time of this article, 76 municipalities have expressed concerns regarding the development of renewable energy projects (Wind Concerns Ontario, 2011). The disempowerment of local councils and residents is perceived as a loss of democratic rights and social justice.

Section 2 of the Green Energy and Economy Act (2009) states, “This Act shall be administered in a manner that promotes community consultation.” However, in practice, the community consultation process does not include the right to approve or not approve IWTs in individual communities.

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<sup>17</sup> Punch, Daniel, (Thursday, December 29, 2011), Powerless wind farm appeal: Province lawyer calls appeal of wind farm laughable, The Sarnia Observer, Retrieved from <http://www.theobserver.ca/ArticleDisplay.aspx?e=3414189>

In a reported statement by former Minister of Energy and Infrastructure (Ontario, Canada) George Smitherman: "We passed a law, and the law does not create an opportunity for municipalities to resist these projects just because they may have a concern" (Hendry, 2009).<sup>18</sup>

In California, U.S., (Kahn 2011) reports the Governor Jerry Brown stated:

When local communities try to block installation of solar like they did in San Luis Obispo, we act to overcome the opposition," Brown (D) said, referring to the city where environmental groups have been protesting two large-scale solar plants over environmental and endangered species concerns." ... "In Oakland I learned that some kind of opposition you have to crush," the former Oakland mayor said.<sup>19</sup>

It appears **Article 5** is being violated.

**Article 12** states:

No one shall be subjected to arbitrary interference with his privacy, family, home, or correspondence...Everyone has the right to the protection of the law against such interference or attacks.

Wind turbine generated environmental noise pollution and- / -or nuisance has been reported in a variety of references from Canada, United Kingdom, U.S and New Zealand.<sup>20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30</sup>

<sup>18</sup> Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? Bulletin of Science Technology & Society 2011 31: 321, DOI: 10.1177/0270467611412550, <http://bst.sagepub.com/content/31/4/321>

<sup>19</sup> Kahn, D, (July 26, 2011), New York Times, Calif. Governor Vows to 'Crush' Foes of Renewable Energy. <http://www.nytimes.com/gwire/2011/07/26/26greenwire-calif-governor-vows-to-crush-foes-of-renewable-22698.htm>

<sup>20</sup> Krogh, CME, Gillis, L, Kouwen, N, and Aramini, J, (2011), 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, DOI: 10.1177/0270467611412551, <http://bst.sagepub.com/content/31/4/334>

<sup>21</sup> Canadian Broadcasting Corporation, October 6, 2006, report on the d'Entremont family of Pubnico Point, Nova Scotia

<sup>22</sup> Zeller, Tom Jr., (October 5, 2010), For Those Near, the Miserable Hum of Clean Energy, Vinalhaven, Me,

New York Times. Retrieved from [www.windconcernsontario.net](http://www.windconcernsontario.net)

<sup>23</sup> Nissenbaum, M., Aramini, J., Hanning, C., (July 24 – 28, 2011), Adverse health effects of industrial wind turbines: a preliminary report 10th International Congress on Noise as a Public Health Problem (ICBEN) 2011, London, UK Retrieved from [http://www.windcows.com/files/Nissenbaum\\_et\\_al\\_ICBEN2011\\_0158\\_final\\_1\\_.pdf](http://www.windcows.com/files/Nissenbaum_et_al_ICBEN2011_0158_final_1_.pdf)

This noise pollution is considered to be a serious interference with family privacy, the home and quality of life and appears to violate **Article 12**.

It appears **Article 12** has also been violated if an official or authority of the state approves the development of a wind energy facility while ignoring evidence and- / -or testimonials of impacts from victims suffering from exposure to an existing facility, and- / -or from those who could suffer impacts from a proposed facility, and- / -or ignoring the advice of acoustical and psychoacoustical engineers and other healthcare professionals who caution that one or more family member in a household are likely to suffer chronic and severe sleep deprivation in increasing dosage over extended periods of time. It is noted that the court of Appeal in the Welsh Ministers Case found that "...duration of interference is plainly a material consideration..."<sup>31</sup>

Sleep deprivation associated with the operation of industrial wind facilities has been documented in peer reviewed and- / -or other sources.<sup>32, 33, 34, 35, 36, 37</sup> Health impacts from chronic sleep

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<sup>24</sup> Umatilla County (Feb 21, 2012), Oregon county tweaks 2-mile setback exemptions to address state objections, The Acoustic Ecology Institute. Retrieved from <http://aeinews.org/archives/1843>

<sup>25</sup> Kellett, L., (Sep 06, 2011) Residents in wind-turbine shadows seek noise, other relief. GateHouse News Service Retrieved from <http://www.littlefallstimes.com/features/x219202681/Residents-in-wind-turbine-shadows-seek-noise-other-relief>

<sup>26</sup> Crofts, D., (November 30th, 2011) 'Silent But Deadly': Wind Turbines in Western New York - Part One, Retrieved from <http://downtown.wgrz.com/news/environment/61300-silent-deadly-wind-turbines-western-new-york-part-one>

<sup>27</sup> Phipps, R., Amati, M., McCoard, S., & Fisher, R. (2007). Visual and noise effects reported by residents living close to Manawatu wind farms: Preliminary survey results. Retrieved from: <http://www.windaction.org/documents/14920>

<sup>28</sup> Daily Telegraph (30 November 2011), Couple settle with wind farm operators over 'unbearable hum' Retrieved from <http://www.telegraph.co.uk/earth/environment/8925467/Couple-settle-with-wind-farm-operators-over-unbearable-hum.html>

<sup>29</sup> Linda Kellett (September 06, 2011) Residents in wind-turbine shadows seek noise, other relief. Fairfield, N.Y. GateHouse News Service, LittleFalls Times Retrieved from [www.littlefallstimes.com](http://www.littlefallstimes.com)

<sup>30</sup> Alex Smith (March 07, 2012) We should not have to take drugs. Retrieved from <http://www.thisissouthwales.co.uk/drugs/story-15419890-detail/story.html>

<sup>31</sup> Welsh Ministers Case Appeal (November 2010) C1/2010/1426/QBENF, Retrieved from <http://www.windvigilance.com/about-adverse-health-effects/resource-centre>

<sup>32</sup> Krogh, CME, Gillis, L, Kouwen, N, and Aramini, J, (2011), 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, DOI: 10.1177/0270467611412551, <http://bst.sagepub.com/content/31/4/334>

<sup>33</sup> Daniel Shepherd, David McBride, David Welch, Kim N. Dirks, Erin M. Hill (2011) Evaluating the impact of wind turbine noise on health related quality of life by Noise & Health,

deprivation have been documented in the scientific and medical literature which include extreme fatigue, cognitive dysfunction and inability to concentrate and learn, depression, anxiety, increased risk of cardiovascular problems, and emotional responses such as fear, anguish and humiliation.<sup>38, 39</sup>

In an editorial published in the British Medical Journal, Hanning and Evans (2012) state:

The evidence for adequate sleep as a prerequisite for human health, particularly child health, is overwhelming. Governments have recently paid much attention to the effects of environmental noise on sleep duration and quality, and to how to reduce such noise.<sup>1</sup> However, governments have also imposed noise from industrial wind turbines on large swathes of peaceful countryside.

The impact of road, rail, and aircraft noise on sleep and daytime functioning (sleepiness and cognitive function) is well established. Shortly after wind turbines began to be erected close to housing, complaints emerged of adverse effects on health. Sleep disturbance was the main complaint. Such reports have been dismissed as being subjective and anecdotal, but experts contend that the quantity, consistency, and ubiquity of the complaints constitute epidemiological evidence of a strong link between wind turbine noise, ill health, and disruption of sleep.<sup>40</sup>

According to Bonnet and Arand:

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September-October 2011, 13:54,333-9, DOI: 10.4103/1463-1741.85502

[www.noiseandhealth.org](http://www.noiseandhealth.org)

<sup>34</sup> Pierpont, N. (2009). Wind turbine syndrome: A report on a natural experiment. Santa Fe, NM: K-Selected Books. Retrieved from [www.windturbinesyndrome.com](http://www.windturbinesyndrome.com)

<sup>35</sup> van den Berg G P., et al. (2008). WINDFARM perception. Visual and acoustic impact of wind turbine farms on residents. FP6-2005-Science-and-Society-20. Specific Support Action Project no. 04462 Retrieved from

<http://www.epaw.org/documents.php?lang=en&article=n2>

<sup>36</sup> Hanning, C., (November, 2010), Wind Turbine Noise, Sleep and Health. Retrieved from <http://www.windvigilance.com/about-adverse-health-effects/wind-turbine-noise-sleep-and-health-by-dr-hanning>

<sup>37</sup> Lemoine, B., (February 16, 2012), Fond Du Lac County Residents Want Relief From Wind Farms Too, Wisconsin. WFRV. Retrieved from <http://betterplan.squarespace.com/todays-special/tag/fond-du-lac-county>

<sup>38</sup> Frey, BJ and Hadden, PJ, (January 2012), Wind Turbines and Proximity to Homes: The Impact of Wind Turbines Noise on Health, a review of the literature & discussions of the issues <http://www.windvigilance.com/about-adverse-health-effects/resource-centre>

<sup>39</sup> World Health Organization. (2009). Night noise guidelines for Europe. Retrieved from [http://www.euro.who.int/\\_data/assets/pdf\\_file/0017/43316/E92845.pdf](http://www.euro.who.int/_data/assets/pdf_file/0017/43316/E92845.pdf)

<sup>40</sup> Hanning C. D and Evans, A. (8 March 2012). Wind turbine noise, British Medical Journal. BMJ 2012;344:e1527. Cite this as: BMJ 2012;344:e1527. Retrieved from <http://www.windvigilance.com/about-adverse-health-effects/wind-turbine-noise-sleep-and-health-by-dr-hanning>

...There is strong evidence that sufficient shortening or disturbance of the sleep process compromises mood, performance and alertness and can result in injury or death. In this light, the most common-sense 'do no injury' medical advice would be to avoid sleep deprivation.<sup>41</sup>

The Centers for Disease Control Morbidity and Mortality Weekly Report of March, 2011 states:

Sleep impairment is linked as a contributing factor to motor vehicle crashes, industrial disasters, and medical and other occupational errors. Persons experiencing sleep insufficiency are more likely to have chronic diseases such as cardiovascular disease, diabetes, depression, or obesity. In 2008, approximately 28% of surveyed adults in the United States reported frequent insufficient sleep ( $\geq 14$  days in the past 30 days) (4), which has been associated with fair/poor general health, frequent mental and physical distress, depressive symptoms, anxiety, and pain.<sup>42</sup>

Recently published peer reviewed references document individuals living in the environs (i.e. within 2 kilometres) of wind turbines report reduced sleep quality and- / -or sleep disturbance and- / -or lower quality of life.<sup>43, 44, 45, 46</sup>

It appears **Article 12** is being violated.

**Article 17** states:<sup>47</sup>

(1) Everyone has the right to own property alone as well as in association

<sup>41</sup> Michael H. Bonnet and Donna L. Arand, We Are Chronically Sleep Deprived, Dayton Veterans Affairs Medical Center, Wright State University, and Kettering Medical Center Retrieved from <http://www.soundersleep.com/uploads/Bonnet-Arand.pdf>

<sup>42</sup> National Sleep Awareness Week (March 7–13, 2011) Centers for Disease Control and Prevention (MMWR) Morbidity and Mortality Weekly Report March 4, 2011 Weekly / Vol. 60 / No. 8 U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC) Retrieved from <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6008a1.htm>

<sup>43</sup> Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? Bulletin of Science Technology & Society 2011 31: 321, DOI: 10.1177/0270467611412550, Retrieved from <http://bst.sagepub.com/content/31/4/321>

<sup>44</sup> Krogh, CME, Gillis, L, Kouwen, N, and Aramini, J, (2011), 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, DOI: 10.1177/0270467611412551, Retrieved from <http://bst.sagepub.com/content/31/4/334>

<sup>45</sup> Shepherd D, McBride D, Welch D, Dirks KN, Hill EM. Evaluating the impact of wind turbine noise on health-related quality of life. *Noise Health* 2011;13:333-9.

<sup>46</sup> Nissenbaum, M., Aramini, J., Hanning, C., (July 24 – 28, 2011), Adverse health effects of industrial wind turbines: a preliminary report 10th International Congress on Noise as a Public Health Problem (ICBEN) 2011, London, UK. Retrieved from [http://www.windcows.com/files/Nissenbaum\\_et\\_al\\_ICBEN2011\\_0158\\_final\\_1.pdf](http://www.windcows.com/files/Nissenbaum_et_al_ICBEN2011_0158_final_1.pdf)

<sup>47</sup> UN Declaration of Human Rights Article 17, <http://www.un.org/en/documents/udhr>

with others.

(2) No one shall be arbitrarily deprived of his property.

Many families consider their real estate as a significant investment and in some cases, it represents their life savings which financially secures their retirement. When an authority or official of the state grants an approval in spite of the knowledge that the environmental noise pollution emitted from the development is likely to cause harm to families living nearby, the resale value of the property is reduced or in some cases, the property is unsaleable. In many jurisdictions, the disclosure associated with the sale of a home requires that the homeowner selling the home disclose all defects, including adverse health effects, noise pollution and other issues. The real-estate agent must similarly disclose negative issues to the buyer.

An example of the disclosure associated with the sale of a home and- / -or listing is as follows:

Located close to City Rd 124 on Grey Rd 4, set back from the road – AND away from the wind-mills...*Price Reduced to ...*<sup>48</sup>

In Ontario, Canada a resale of a residence had the following disclosure clause:

The Transferor hereby transfers, sells, grants, and conveys to the Transferee to use and enjoy for the benefit of the Transferee the right, liberty privilege and free and unencumbered easement (hereinafter "Easement") in perpetuity commencing on the date hereof, over, along and upon the Transferor's Lands for the right and privilege to permit heat, sound, vibration, shadow flickering of light, noise (including grey noise) or any other adverse effect or combination thereof resulting directly or indirectly from the operation of the Transferee's wind turbine facilities situated on the Transferee's leasehold interests located within the Townships of Melancthon and Amaranth, in the county of Dufferin for the Transferee's Melancthon EcoPower Centre, which shall include but not be limited to any and all options to lease and lease agreements and any renewals, extensions, amendments or replacements thereof, in any abutting, adjoining neighbouring or other lands (hereinafter, collectively the "Leasehold Lands"). The Transferor further acknowledges and agrees that the operation of the Transferee's wind turbine facilities located on the Leasehold Lands may affect the living environment of the Transferor and that the transferee will not be responsible or liable for, of and from any of the Transferor's complaints, claims, demands, suits, actions or causes of action of every kind known or unknown which may arise directly or indirectly from the Transferee's wind turbine facilities on the Leasehold Lands to the extent permitted by this Easement.

In addition, the Transferor hereby covenants and agrees to indemnify, defend and hold harmless the Transferee from any and all liabilities, claims, demands, costs and expenses arising from any direct, indirect or consequential damages arising out of a complaint, claim action or cause of action initiated by the Transferor as against the Transferee for anything permitted by this Easement in relation to the Transferee's wind turbine facilities located on the Leasehold lands.

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<sup>48</sup> Krogh, personal communications, 2012

This Easement and all acknowledgements contained herein shall endure to the benefit of and be binding upon the Transferor and Transferee and their respective heirs, executors, successors, servants, agents and assigns as the case may be. This Easement will also be registered on title and shall remain with the Transferor's Lands.<sup>49</sup>

In Canada and the U.S., reports are emerging regarding the loss of property values.<sup>50, 51, 52</sup>

Globally, some residents are leaving their homes due to negative impacts of the industrial wind turbines and thereby reducing the value of their property.<sup>53, 54</sup>

In Michigan, U.S., it is reported that "...20 Huron County residents who filed a lawsuit claiming the Ubyly-area Michigan Wind 1 development has harmed their quality of life and lowered their property values have agreed to settle with the wind companies."<sup>55</sup>

In California, U.S., a real estate appraiser during a public information session was reported to have stated: "McCann stated in no uncertain terms that property value losses of about 25 percent are becoming the norm within two miles of a wind farm."<sup>56</sup>

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<sup>49</sup> Transfer of Easement in Gross : Wind Turbine Purchase and Resale © Lansink Appraisals January 2012, Source: Attachment to Deed DC102016

<sup>50</sup> Senator Sean T. Kean, District 11 (Monmouth), Senator Andrew R. Ciesla, District 10 (Monmouth and Ocean), Co-Sponsored by Senator Gill, An Act concerning wind energy and supplementing Titles 13 and 40 of the Revised Statutes, the Senate and General Assembly of the State of New Jersey. Introduced November 8, 2010 Retrieved from [http://www.njleg.state.nj.us/2010/Bills/S2500/2374\\_I1.PDF](http://www.njleg.state.nj.us/2010/Bills/S2500/2374_I1.PDF)

<sup>51</sup> John Nicol and Dave Seglins, (Oct 1, 2011), Ontario wind power bringing down property values. CBC News.

Retrieved from <http://www.cbc.ca/news/canada/story/2011/09/30/ontario-wind-power-property-values.html>

<sup>52</sup> Wright, H., (March 1, 2012). Grand Bend, Ontario, Canada, Wind turbines blow down resale value of homes. Retrieved from <http://www.sarniathisweek.com/ArticleDisplay.aspx?e=3485334>

<sup>53</sup> Krogh, CME, Gillis, L, and Kouwen, N (March, 2011), WindVOiCe, a Self-Reporting Survey: Adverse Health Effects, Industrial Wind Turbines, and the Need for Vigilance Monitoring. Retrieved from [http://www.windvigilance.com/windvoice\\_home/download-a-copy-of-windvoice-results](http://www.windvigilance.com/windvoice_home/download-a-copy-of-windvoice-results)

<sup>54</sup> Johansson M., (26 May 2011), Letter to the Editor, Denmark reports residents leaving their homes.

Retrieved from <http://www.windturbinesyndrome.com>

<sup>55</sup> Hessling Kate, (February 18, 2012) Huron Daily Tribune, Residents settle Ubyly lawsuit with wind companies. Retrieved from [http://www.michiganstumb.com/articles/2012/02/17/news/local\\_news/doc4f3f39f48b63b527339868.txt](http://www.michiganstumb.com/articles/2012/02/17/news/local_news/doc4f3f39f48b63b527339868.txt)

<sup>56</sup> Jannen, Billie Jo, (January 28, 2011) Property Values and Health Impaired by Wind Turbines, Experts Tell East County Residents, East County Magazine. Retrieved from <http://eastcountymagazine.org/node/5326>

A property owner in Arizona, U.S., has also filed a legal action.<sup>57</sup>

In February 2011, it was reported that the County Board of Lake County, Illinois, U.S., voted to bar wind energy facilities. Property values were of concern: "...residents have already seen real estate values drop due to the recession and that such projects could worsen the impact for neighbors."<sup>58</sup>

Madsen, N., (April 7, 2010) reported regarding a project in the U.S.: ""Sales records show that Cape Vincent has had a steeper decline in residential property sales than its neighbors and real estate professionals are starting to blame proposed wind power developments. "People do not want to buy near windmills," said Amanda J. Miller, owner of Lake Ontario Realty, Dexter, who specializes in waterfront property sales. "They avoid purchasing in towns like Cape Vincent.""<sup>59</sup>

The Counsel for the Director of Ontario Ministry of Environment stated during an Ontario Environmental Review Tribunal, Canada:

We will see in the course of this hearing that lots of people are worried about windmills. They may not like the noise, they may think the noise makes them sick, but really what makes them sick is just the windmills being on the land because it does impact their property values. That's what makes them sick is that, you know, they'll get less money for their properties, and that's what's causing all this annoyance and frustration and all of that.<sup>60</sup>

This Counsel also noted:

...it's the social implications where people are complaining on web sites about how their property values have gone down.<sup>61</sup>

<sup>57</sup> Stuart R. Wahlin, (Friday Feb 24th, 2012), Lawsuit ensures wind farm won't be a breeze, The Rock River Times, Retrieved from <http://rockrivertimes.com/2010/02/03/lawsuit-ensures-wind-farm-won%E2%80%99t-be-a-breeze/>

<sup>58</sup> Newton, J. (Feb 9, 2011), Sun Times, County board restricts wind farm projects. Sun Times. Illinois Retrieved from <http://newssun.suntimes.com/news/3720465-418/county-board-restricts-wind-farm-projects.html>

<sup>59</sup> Madsen, N., (April 7, 2010), Property values blowing in the wind REALTOR'S REPORT: Proposed turbine projects put damper on residential property sales in Cape Vincent, Watertown Daily News. Retrieved from <http://www.watertowndailytimes.com/article/20100407/NEWS03/304079990>

<sup>60</sup> Environmental Review Tribunal, Opening submissions, Counsel for the Director, Ministry of the Environment, February 1, 2011, Volume 1, p. 91, l. 24) Quotes from the Environmental Review Tribunal, Appeal of Renewable Energy Approval, Kent Breeze Corp. and MacLeod Windmill Project Inc. (Kent Breeze Wind Farms) c/o Suncor Energy Services Inc. Case Nos.: 10-121 and 10-122, Counsel for the Ministry of Environment, Ontario, Canada

<sup>61</sup> Environmental Review Tribunal, Opening submissions, Counsel for the Director, Ministry of the Environment, February 1, 2011, Volume 1, p. 92, l. 23



A witness for the Ontario, Canada Ministry of the Environment stated during testimony:

We are very aware that many people don't like them because they adversely affect their property values; indeed, we had friends in that situation. <sup>62</sup>

Property value is a combination of factors such as location, size of building and plot, amenities, and the capability of beneficial occupation. When a residential property loses its capability of beneficial occupation by virtue of a neighbouring land discharging a pollution of a physical character that severs the capability of beneficial occupation, the residential property is deprived of its legal use and consequently the property owner is deprived of his property. <sup>63</sup>

If an individual's right to own property and the financial investment are arbitrarily and negatively affected this appears to violate **Article 17**. It appears to subject the property owner's land to being expropriated without compensation. This is an arbitrary sequestration of the property because the official or authority of the state has the ability to refuse the approval to engage in a wind energy project because of its close proximity to residences or to allow sufficient time for the developer to buy the homes at risk at market value and arrive at a financial arrangement for those who wish to relocate.

It appears **Article 17** is being violated.

**Article 25** states:

Everyone has the right to a standard of living adequate for the health and well-being of his family...

The World Health Organisation (WHO) definition of health states:

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. <sup>64</sup>

WHO ... recognizes the enjoyment of the highest attainable standard of health as one of the fundamental rights of every human being. <sup>65</sup>

Many jurisdictions, including the Canadian federal, provincial, and territorial governments and health officials have accepted WHO's definition of health. <sup>66</sup>

<sup>62</sup> Environmental Review Tribunal, Dr. C. Baines, Witness for the Ministry of the Environment, Transcript, March 25, 2011

<sup>63</sup> Rylands v Fletcher (UK) Retrieved from <http://jel.oxfordjournals.org/content/18/3/423.full>

<sup>64</sup> World Health Organization. (1948). Preamble to the constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948 Retrieved from [http://www.who.int/governance/eb/who\\_constitution\\_en.pdf](http://www.who.int/governance/eb/who_constitution_en.pdf)

<sup>65</sup> World Health Organization, Night Noise Guidelines for Europe, 2009 Retrieved from [http://www.euro.who.int/\\_data/assets/pdf\\_file/0017/43316/E92845.pdf](http://www.euro.who.int/_data/assets/pdf_file/0017/43316/E92845.pdf)

As noted in the WHO report, *Burden of Disease from Environmental Noise: Quantification of Health Life Years Lost in Europe, 2011*:

There is sufficient evidence from large-scale epidemiological studies linking the population's exposure to environmental noise with adverse health effects. Therefore, environmental noise should be considered not only as a cause of nuisance but also a concern for public health and environmental health.

Moreover... despite the considerable effort and progress made in controlling noise from industry, there has been little improvement in the levels of noise exposure of people across Europe.<sup>67</sup>

If the official or authority of the state granted approval to develop the facility with the knowledge, including evidence and- / -or testimony from experts and- / -or statements of adverse impacts from those suffering ill health, that the level and character of the noise emissions from an industrial wind energy facility in proximity to a residence can cause severe nuisance and harm human health then it appears **Article 25** has been violated.

**Article 28** states:

Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized.

Based on research:

It is acknowledged that IWTs, if not sited properly, can adversely affect the health of exposed individuals.<sup>68</sup>

Nissenbaum et al (2011) states:

Most respondents in the present study welcomed the IWT installations as offering economic benefits...

We conclude that IWT noise at these two sites disrupts the sleep and adversely affects the health of those living nearby.<sup>69</sup>

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<sup>66</sup> Health Canada. (2004). Canadian handbook on health impact assessment: Vol.1. The basics. A report of the Federal/Provincial/Territorial Committee on Environmental and Occupational Health. Retrieved from <http://www.who.int/hia/tools/toolkit/whohia063/en/index.html>

<sup>67</sup> World Health Organisation (2011), Burden of Disease from Environmental Noise: Quantification of Health Life years Lost in Europe. Retrieved from <http://www.euro.who.int/en/what-we-publish/abstracts/burden-of-disease-from-environmental-noise.-quantification-of-healthy-life-years-lost-in-europe>

<sup>68</sup> Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? Bulletin of Science Technology & Society 2011 31: 321, DOI: 10.1177/0270467611412550, Retrieved from <http://bst.sagepub.com/content/31/4/321>

Krogh (2011) reported that:

My research demonstrates that IWTs were initially welcomed into communities. The reported adverse impacts were unexpected.

In addition to physiological and psychological symptoms there are individuals reporting adverse impacts, including reduced well-being, degraded living conditions, and adverse societal and economic impacts. These adverse impacts culminate in expressions of a loss of fairness and social justice.<sup>70</sup>

Shepherd et al (2011) found:

... wind turbines were initially welcomed by many communities due to their environmental credentials...

... residents living within 2 km of a turbine installation reporting lower overall quality of life, physical quality of life, and environmental quality of life. Those exposed to turbine noise also reported significantly lower sleep quality...<sup>71</sup>

This indicates that the physical, psychological, and social well being is being negatively affected.

It appears **Article 28** is being violated.

## **2. United Nations Convention for the Rights of Persons with Disabilities**

The Governments of Canada<sup>72</sup> and the U.S.<sup>73</sup> are signatories to the *United Nations Convention for the Rights of Persons with Disabilities*

Indications are there are apparent contraventions of the terms and Articles contained in the "Convention".

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<sup>69</sup> Nissenbaum M, Aramini J, Hanning C. Adverse health effects of industrial wind turbines: a preliminary report. Proceedings of 10th International Congress on Noise as a Public Health Problem (ICBEN), 2011, London, UK. Curran Associates, 2011.

<sup>70</sup> Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? *Bulletin of Science Technology & Society* 2011 31: 321, DOI: 10.1177/0270467611412550, Retrieved from <http://bst.sagepub.com/content/31/4/321>

<sup>71</sup> Evaluating the impact of wind turbine noise on health-related quality of life by Daniel Shepherd, David McBride, David Welch, Kim N. Dirks, Erin M. Hill. *Noise & Health*, September-October 2011, 13:54,333-9

<sup>72</sup> Canada signed 30-3-2007 and ratified the Convention 11-3-2010. UN Enable - Convention and Optional Protocol Signatures and Ratifications Retrieved from <http://www.un.org/disabilities/countries.asp?navid=17&pid=166>

<sup>73</sup> United States of America signed 30-7-2009. UN Enable - Convention and Optional Protocol Signatures and Ratifications Retrieved from <http://www.un.org/disabilities/countries.asp?navid=17&pid=166>

If authorities and / or officers of the state support or are complicit in any approvals for industrial wind turbines that would not comply with the provisions of the Convention, the complainants reserve the right to make application to the courts for relief that would protect the legal rights of Persons with Disabilities.

It appears **Article 3, Article 10, Article 11, Article 12, Article 13, Article 15, Article 17, Article 21** are being violated.

**Article 3 – General Principles - (c) Full and effective participation and inclusion in society; and (e) Equality of opportunity**

Disabled persons do not participate in the industrial wind energy approvals process on an equal basis as those without a disability.

The health problems associated with IWTs make it important that the vulnerable members of society are allowed to have an equal participation. There are no special procedures in place to allow those with a disability to participate a meaningful and effective manner in the approvals process related to particular applications. Examples include accessibility to public meetings and availability of information for the sighted impaired.

**Article 3** is violated by a failure to permit “effective participation”.

**Article 10 – Right to Life**

Governments are failing to acknowledge or accept the mounting scientific evidence against IWTs and are exposing the most vulnerable members of society to long-term health problems from IWTs.

**Article 11 – Situations of Risk** – Governments shall take, in accordance with their obligations under international law, including international humanitarian law and international human rights law, all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk... This includes the application of the **precautionary principle**, which the government is failing to properly consider or apply.

Regarding the precautionary principle, Shain (2011) notes:

When scientific evidence concerning the harm potential of a given industrial activity leaves room for doubt, that activity should not be undertaken. Proposed mitigating measures are not an adequate response, because if you do not know the nature or degree of risk you cannot prepare for its eventuation.<sup>74</sup>

The World Health Organisation (WHO) states:

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<sup>74</sup> Martin Shain (2011), Public Health Ethics, Legitimacy, and the Challenges of Industrial Wind Turbines: The Case of Ontario, Canada. *Bulletin of Science Technology & Society*, 2011 31: 256, DOI: 10.1177/0270467611412552, <http://bst.sagepub.com/content/31/4/346>

...where there is a reasonable possibility that public health will be damaged, action should be taken to protect public health without awaiting full scientific proof.<sup>75</sup>

As noted previously in this document Bonnet and Arand state:

There is strong evidence that sufficient shortening or disturbance of the sleep process compromises mood, performance and alertness and can result in injury or death. In this light, the most common-sense 'do no injury' medical advice would be to avoid sleep deprivation.<sup>76</sup>

It appears **Article 11** is being violated.

**Article 12 – Equal Recognition Before the Law** – (3) State parties shall take appropriate measures to provide access by persons with Disabilities to the support they may require in exercising their legal capacity. This includes affordable legal representation whilst exercising their rights and protection from “undue influence”.

The financial requirements have been noted in the *UN Declaration of Human Rights, December 10, 1948* of this document.

It appears **Article 12** is being violated.

**Article 13 -Access to Justice** – This includes all legal proceedings, at investigative and preliminary stages as direct or indirect participants. Many Persons with Disabilities are being denied access to justice at this time.

It appears **Article 13** is being violated

**Article 17 – Protecting the Integrity of the Person** – “Every person with disabilities has a right to respect for his or her physical or mental integrity on an equal basis with others.” The Government has a legal obligation to protect the most vulnerable in society and a failure to act is a violation of the aforementioned Article.

It appears **Article 17** is being violated.

**Article 21 - Freedom of Expression and Opinion, and Access to Information** – State parties shall take all appropriate measures to ensure that persons with disabilities can exercise the right to freedom of expression and opinion, including the freedom to seek, receive and impart information and ideas on an equal basis with others and through all forms of communication of their choice, as defined in **Article 2** of the present Convention.

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<sup>75</sup> World Health Organization. (1999). Guidelines for community noise. Retrieved from <http://www.who.int/docstore/peh/noise/guidelines2.html>

<sup>76</sup> Michael H. Bonnet and Donna L. Arand, We Are Chronically Sleep Deprived, Dayton Veterans Affairs Medical Center, Wright State University, and Kettering Medical Center Retrieved from <http://www.soundersleep.com/uploads/Bonnet-Arand.pdf>

## Article 2 - Definitions

For the purposes of the present Convention:

"Communication" includes languages, display of text, Braille, tactile communication, large print, accessible multimedia as well as written, audio, plain-language, human-reader and augmentative and alternative modes, means and formats of communication, including accessible information and communication technology;

"Language" includes spoken and signed languages and other forms of non spoken languages;

"Discrimination on the basis of disability" means any distinction, exclusion or restriction on the basis of disability which has the purpose or effect of impairing or nullifying the recognition, enjoyment or exercise, on an equal basis with others, of all human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field. It includes all forms of discrimination, including denial of reasonable accommodation;

"Reasonable accommodation" means necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms;

"Universal design" means the design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. "Universal design" shall not exclude assistive devices for particular groups of persons with disabilities where this is needed.

Therefore, based on **Article 2** (definitions), **Article 21** requires that "...can exercise the right to freedom of expression and opinion, including the freedom to seek, receive and impart information and ideas on an equal basis with others and through all forms of communication of their choice..." by

Providing information intended for the general public to persons with disabilities in accessible formats and technologies appropriate to different kinds of disabilities in a timely manner and without additional cost;

Accepting and facilitating the use of sign language, Braille, augmentative and alternative communication, and all other accessible means, modes and formats of communication of their choice by persons with disabilities in official interactions.

Urging private entities that provide services to the general public, including through the Internet, to provide information and services in accessible and useable formats for persons with disabilities.

Ensuring facilities where meetings are held are available to persons with disabilities.

The current approval process as described in this document appears to violate **Article 21**.

### **3. United Nations Convention on the Rights of the Child**

Canada signed the Convention on May 28th, 1990 and ratified it on December 13th, 1991.<sup>77</sup> The U.S. played an active role in the drafting of the Convention and signed it February 16, 1995, but has not ratified it.<sup>78</sup>

The **Preamble** states:

The States Parties to the present Convention,

Considering that, in accordance with the principles proclaimed in the Charter of the United Nations, recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world,

Bearing in mind that the peoples of the United Nations have, in the Charter, reaffirmed their faith in fundamental human rights and in the dignity and worth of the human person, and have determined to promote social progress and better standards of life in larger freedom,

Recognizing that the United Nations has, in the *Universal Declaration of Human Rights* and in the *International Covenants on Human Rights*, proclaimed and agreed that everyone is entitled to all the rights and freedoms set forth therein, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status,

Recalling that, in the Universal Declaration of Human Rights, the United Nations has proclaimed that childhood is entitled to special care and assistance,

Convinced that the family, as the fundamental group of society and the natural environment for the growth and well-being of all its members and particularly children, should be afforded the necessary protection and assistance so that it can fully assume its responsibilities within the community,

Considering that the child should be fully prepared to live an individual life in society, and brought up in the spirit of the ideals proclaimed in the Charter of the United Nations, and in particularly in the spirit of peace, dignity, tolerance, freedom, equality and solidarity,

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<sup>77</sup> UN Convention on the Rights of the Child and Canada's Role. Public Health Agency of Canada. Retrieved from <http://www.phac-aspc.gc.ca/ncd-jne/bck-info-un-eng.php>

<sup>78</sup> Convention on the Rights of the Child, Retrieved from [http://en.wikipedia.org/wiki/Convention\\_on\\_the\\_Rights\\_of\\_the\\_Child](http://en.wikipedia.org/wiki/Convention_on_the_Rights_of_the_Child)

Bearing in mind that the need to extend particular care to the child has been stated in the Geneva Declaration of the Rights of the Child of 1924 and in the Declaration of the Rights of the Child adopted by the General Assembly on 20 November 1959 and recognized in the Universal Declaration of Human Rights, in the International Covenant on Civil and Political Rights (in particular in Articles 23 and 24), in the International Covenant on Economic, Social and Cultural Rights (in particular in Article 10) and in the statutes and relevant instruments of specialized agencies and international organizations,

Bearing in mind that, as indicated in the Declaration of the Rights of the Child, "the child, by reason of his physical and mental immaturity, needs special safeguards and care, including appropriate legal protection, before as well as after birth,..."<sup>79</sup>

There are reports that children of families exposed to industrial wind turbine noise and other emissions are suffering adverse health effects. Based on the **Preamble** and **Article 3**, **Article 4**, **Article 20**, **Article 23**, **Article 27**, **Article 39**, **Article 44** of the *United Nations Convention on the Rights of the Child*, there appear to be violations of this Convention.

## Part I

### Article 3 states:

1. In all actions concerning children, whether undertaken by public or private social welfare institutions, courts of law, administrative authorities or legislative bodies, the best interests of the child shall be a primary consideration.
2. States Parties undertake to ensure the child such protection and care as is necessary for his or her well-being, taking into account the rights and duties of his or her parents, legal guardians, or other individuals legally responsible for him or her, and, to this end, shall take all appropriate legislative and administrative measures.
3. States Parties shall ensure that the institutions, services and facilities responsible for the care or protection of children shall conform with the standards established by competent authorities particularly in the areas of safety, health, in the number and suitability of their staff, as well as competent supervision.

In Texas, U.S. it is reported that:<sup>80</sup>

Leaders of a South Texas city have rejected plans to build two wind turbines at a school amid concerns over noise and distracting views.

<sup>79</sup> Convention on the Rights of the Child Adopted and opened for signature, ratification and accession by General Assembly resolution 44/25 of 20 November 1989, Entry into force 2 September 1990, in accordance with article 49 Retrieved from <http://www2.ohchr.org/english/law/crc.htm>

<sup>80</sup> Texas city rejects wind turbines at school. (February 14, 2012). Retrieved from <http://abclocal.go.com/ktrk/story?section=news/state&id=8542979>



Two Sinton boards met Monday night and declined to approve variances for construction of turbines at Sinton High School. A 2011 city ordinance regulates the building of wind turbines in Sinton, located 25 miles north of Corpus Christi...

Critics have questioned the noise factor, raised property value concerns and complained that the towering turbines could be eyesores.

Research has demonstrated that children's learning is affected by noise.<sup>81</sup>

Stansfeld and Matheson (2003) note:

It is likely that children represent a group which is particularly vulnerable to the non-auditory health effects of noise. They have less cognitive capacity to understand and anticipate stressors and lack well-developed coping strategies. Moreover, in view of the fact that children are still developing both physically and cognitively, there is a possible risk that exposure to an environmental stressor such as noise may have irreversible negative consequences for this group...

Studies of children exposed to environmental noise have consistently found effects on cognitive performance. The studies which are most informative in terms of the effects of noise on cognition have been field studies focusing on primary school children. This article will focus on these studies. For details of noise effects on pre-school children and of laboratory studies of acute noise exposure,<sup>82</sup>

Ljung et al (2009) note that road traffic noise was found to impair reading speed and basic mathematics and that:

The American National Standards Institute emphasizes that school buildings' sound isolation should prevent two types of noise: noise that intrudes into the classroom from sources outside of the school building envelope, which include vehicular traffic, aircrafts, industrial plants, and activity in schoolyards and noise that originates within the school building such as unwanted speech.<sup>83</sup>

<sup>81</sup> Bronzaft, AL, (2011) The Noise From Wind Turbines: Potential Adverse Impacts on Children's Well-Being, *Bulletin of Science Technology & Society* 2011 31: 256, DOI: 10.1177/0270467611412548. Retrieved from <http://bst.sagepub.com/content/31/4/291>

<sup>82</sup> Stephen A Stansfeld and Mark P Matheson (2003), Noise pollution: non-auditory effects on health, *British Medical Bulletin* 2003; 68: 243–257 DOI: 10.1093/bmb/ldg033 Retrieved from <http://bmb.oxfordjournals.org/content/68/1/243.full.pdf>

<sup>83</sup> Robert Ljung, Patrik Sorqvist and Staffan Hygge (2009) Effects of road traffic noise and irrelevant speech on children's reading and mathematical performance..*Noise and Health*, Oct-Dec 2009 Retrieved from <http://www.noiseandhealth.org/article.asp?issn=1463-1741;year=2009;volume=11;issue=45;spage=194;epage=198;aualast=Ljung>

A report by Lercher et al (2002) concludes that exposure to ambient noise was found to be linked to small decrements in children's mental health and poorer classroom behaviour. This link was stronger in children with early biological risk.<sup>84</sup>

Children with autism,<sup>85</sup>,<sup>86</sup>,<sup>87</sup> asthma,<sup>88</sup>,<sup>89</sup> migraine,<sup>90</sup>,<sup>91</sup> and epilepsy<sup>92</sup>,<sup>93</sup> can be vulnerable to the effects of noise, stress and sleep disturbance which can be detrimental to their health.

Despite uncertainties regarding safe setback distances there are no precautionary measures for children in public or private child care centres, schools and other institutions that care for children part or full-time. Parents and caregivers are unable to protect the health of their children and their capacity to learn.

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<sup>84</sup> P Lercher, G W Evans, M Meis, and W W Kofler. Ambient neighbourhood noise and children's mental health. *Occup Environ Med* 2002; 59: 380-386 Retrieved from <http://oem.bmj.com/content/59/6/380.full>

<sup>85</sup> Cristina Becchio, Morena Mari, Umberto Castiello, (2010). Perception of Shadows in Children with Autism

*Spectrum Disorders PLoS ONE* | May 2010 | Volume 5 | Issue 5 | e10582. Retrieved from [www.plosone.org](http://www.plosone.org)

<sup>86</sup> Catherine Purple Cherry and Lauren Underwood. The ideal home for the autistic child: physiological rationale for design strategies. *Autism Science Digest: The Journal Of Autismone*, Issue 03 Retrieved from [www.purplecherry.com](http://www.purplecherry.com).

<sup>87</sup> Flavia Cortesi, Flavia Giannotti, Anna Ivanenko, Kyle Johnson (2010). Sleep in children with autistic spectrum disorder, *Sleep Medicine* 11 (2010) 659–664 Retrieved from [www.elsevier.com/locate/sleep](http://www.elsevier.com/locate/sleep)

<sup>88</sup> Hartmut Ising, Martin Ising (2002), Chronic cortisol increases in the first half of the night caused by road traffic noise. *Noise and Health* 2002,4:16:p13-21 Retrieved from <http://www.noiseandhealth.org/article.asp?issn=1463-1741;year=2002;volume=4;issue=16;spage=13;epage=21;aulast=Ising>

<sup>89</sup> Bockelbrink A, Willich SN, Dirzus I, Reich A, Lau S, Wahn U, Keil T. (2008) Environmental noise and asthma in children: sex specific differences *J Asthma*. 2008 Nov;45(9):770-3. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/18972293>

<sup>90</sup> Neut D, Fily A, Cuvellier JC, Vallée L (2011),. The prevalence of triggers in paediatric migraine: a questionnaire study in 102 children and adolescents. *J Headache Pain*. 2011 Nov 1. [Epub ahead of print] Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/22042255>

<sup>91</sup> Doreen Wagner, Velitchko Manahilov, Gunter Loffler, Gael E. Gordon, and Gordon N. Dutton, Visual Noise Selectively Degrades Vision in Migraine Investigative *Ophthalmology & Visual Science*, April 2010, Vol. 51, No. 4 Retrieved from <http://www.iovs.org/content/51/4/2294.full.pdf>

<sup>92</sup> Gilboa T. *Epilepsia*. 2011 Dec 9. Emotional stress-induced seizures: Another reflex epilepsy? doi: 10.1111/j.1528-1167.2011.03342.x. [Epub ahead of print] Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/22150553>

<sup>93</sup> *Epilepsy Facts - Epilepsy Canada* Cited March 2012, Retrieved from [www.epilepsy@epilepsy.ca](http://www.epilepsy@epilepsy.ca)

The health and ability of competent authorities or caregivers to care for the children is also potentially compromised by the noise and other harmful effects of industrial wind turbine facilities.

This appears to violate **Article 3**.

**Article 4** states:

States Parties shall undertake all appropriate legislative, administrative, and other measures for the implementation of the rights recognized in the present Convention. With regard to economic, social and cultural rights, States Parties shall undertake such measures to the maximum extent of their available resources and, where needed, within the framework of international cooperation.

As described in this document relating to *The Universal Declaration of Human Rights* and *United Nations Convention for the Rights of Persons with Disabilities (UNCRPD)* the rights of families including those with children have been limited as a result of government processes to encourage or impose wind energy facilities in close proximity to residences.

State parties have not exercised due diligence to ensure that the homes, institutions, facilities and services that care for children are a safe distance from industrial wind turbines. State parties in Canada and the U.S. have not conducted or funded independent health studies to determine a safe distance of industrial wind turbines from children (not from homes and- / -or receptors, as the distance is currently measured); to the family members that protect them and the communities that support them.

Health Authorities in Canada or the U.S. have not funded or conducted independent laboratory and- / -or clinical and- / -or epidemiology studies to address gaps in the knowledge respecting adverse health effects and industrial wind turbines despite the specific knowledge gaps have been identified.<sup>94</sup> This lack of research and lack of will to fund and conduct the research is a threat to children and their families in Canada, the U.S. and worldwide.

By using homes to measure setback distances rather than property lines, children in some cases, may be limited in their ability to play outdoors without the potential risk of ill health.

In the case of children growing up in the homes of participating landowners there is no safe place, as the terms of the agreement to host turbines can over ride the minimum setback determined by the state.<sup>95</sup> This is inequitable, and violates the principle that all children are to be treated equally.

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<sup>94</sup> Rideout, K., Copes, R., & Bos, C. (2010). Wind turbines and health. Vancouver, British Columbia, Canada: National Collaborating Centre for Environmental Health. Retrieved from [http://www.nccch.ca/sites/default/files/Wind\\_Turbines\\_January\\_2010.pdf](http://www.nccch.ca/sites/default/files/Wind_Turbines_January_2010.pdf)

<sup>95</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122. Retrieved from <http://www.ert.gov.on.ca/english/decisions/index.htm>

A vigilant monitoring program is necessary to evaluate the risks to children when industrial wind turbines are placed in close proximity to residences. Without such oversight, it is difficult to monitor the incidence of negative issues.

States authorities do not commit resources to vigilance monitoring and remediation to ensure children are not exposed to noise that exceeds safe limits. State authorities have not committed resources to the development of tools to accurately measure the health impacts of noise levels including low frequency noise.

Children living in homes exposed to the noise and other emissions of industrial wind turbines are reported to suffer adverse health effects<sup>96</sup> and may be at risk of mental and- / -or physical adverse health effects similar to that of their parents as noted in the sections relating to *The Universal Declaration of Human Rights* and *United Nations Convention for the Rights of Persons with Disabilities (UNCRPD)*.

The Policy Interpretation Network on Children's Health and Environment comments on the use of the precautionary principle:

Policies that may protect children's health or may minimise irreversible health effects should be implemented, and policies or measures should be applied based on the precautionary principle, in accordance with the Declaration of the WHO Fourth Ministerial Conference on Environment and Health in Budapest in 2004.<sup>97</sup>

It appears **Article 4** is being violated.

**Article 20** states:

1. A child temporarily or permanently deprived of his or her family environment, or in whose own best interests cannot be allowed to remain in that environment, shall be entitled to special protection and assistance provided by the State.
2. States parties shall in accordance with their national laws ensure alternative care for such a child.

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<sup>96</sup> Hansard. (2009, April 15). Legislative assembly, first session, 39<sup>th</sup> parliament première session, official report. Standing Committee on Green Energy and Green Economy Act. Retrieved from [http://www.ontla.on.ca/web/committee-proceedings/committee\\_transcripts\\_details.do?locale=en&Date=2009-04-15&ParlCommID=8856&BillID=2145&Business=&DocumentID=23801#P68\\_2644](http://www.ontla.on.ca/web/committee-proceedings/committee_transcripts_details.do?locale=en&Date=2009-04-15&ParlCommID=8856&BillID=2145&Business=&DocumentID=23801#P68_2644)

<sup>97</sup> Report WP7 Summary PINCHE policy recommendations Policy Interpretation Network on Children's Health and Environment (PINCHE) Policy Interpretation Network on Children's Health and Environment QLK4-2002-02395

There are reports that some adolescents and- / -or children have been affected by noise and other emissions of industrial wind turbines and have been removed from their home environment.<sup>98</sup>

States parties are remiss in not acknowledging the child's loss of home, family and community and therefore do not take responsibility for the provision or costs of alternative care.

This appears to violate **Article 20**.

**Article 23** states:

1. States Parties recognize that a mentally or physically disabled child should enjoy a full and decent life, in conditions which ensure dignity, promote self-reliance and facilitate the child's active participation in the community.
2. States Parties recognize the right of the disabled child to special care and shall encourage and ensure the extension, subject to available resources, to the eligible child and those responsible for his or her care, of assistance for which application is made and which is appropriate to the child's condition and to the circumstances of the parents or others caring for the child...

The child risk factors for disabled children are related to those noted in the *United Nations Convention for the Rights of Persons with Disabilities (UNCRPD)*. It appears **Article 23** is being violated.

**Article 27** states:

1. States Parties recognize the right of every child to a standard of living adequate for the child's physical, mental, spiritual, moral and social development.
2. The parent(s) or others responsible for the child have the primary responsibility to secure, within their abilities and financial capacities, the conditions of living necessary for the child's development.
3. States Parties, in accordance with national conditions and within their means, shall take appropriate measures to assist parents and others responsible for the child to implement this right and shall in case of need provide material assistance and support programmes, particularly with regard to nutrition, clothing and housing...

**Article 27** relates to the right for a child to obtain an adequate standard of living and the child's physical, mental and social development.

As noted in previous references, families, including those with children, are physically, mentally and socially at risk regarding industrial wind turbine operations when sited in close proximity to

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<sup>98</sup> Krogh, CME, Gillis, L, and Kouwen, N (March, 2011), WindVOiCe, a Self-Reporting Survey: Adverse Health Effects, Industrial Wind Turbines, and the Need for Vigilance Monitoring. Retrieved from [http://www.windvigilance.com/windvoice\\_home](http://www.windvigilance.com/windvoice_home)

residences. This potential is in conflict with the World Health Definition of health<sup>99</sup> which has been reported in peer reviewed literature.<sup>100, 101</sup>

There is increasing evidence that families living in close proximity to turbines must leave their homes to maintain their health. Some are unable to sell their homes, others sell at a non-trivial loss. This fact severely undermines the ability of parents to economically provide for the children.

It appears **Article 27** is being violated when industrial wind turbines are placed too close to residences.

## PART II

**Article 44** states:

1. States Parties undertake to submit to the Committee, through the Secretary-General of the United Nations, reports on the measures they have adopted which give effect to the rights recognized herein and on the progress made on the enjoyment of those rights

(a) Within two years of the entry into force of the Convention for the State Party concerned;

(b) Thereafter every five years.

2. Reports made under the present article shall indicate factors and difficulties, if any, affecting the degree of fulfilment of the obligations under the present Convention. Reports shall also contain sufficient information to provide the Committee with a comprehensive understanding of the implementation of the Convention in the country concerned.

The next report is due 2012. It is anticipated the report is in draft stage and the child serving organizations have submitted their reports to the States for their consideration in the preparation of the report. The report may not have included the risk to children with respect to industrial wind turbines being sited in close proximity to family homes and schools.

It appears **Article 44** is being violated.

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<sup>99</sup> World Health Organization. (1948). Preamble to the constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948

<sup>100</sup> Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? Bulletin of Science Technology & Society 2011 31: 321, DOI: 10.1177/0270467611412550, Retrieved from <http://bst.sagepub.com/content/31/4/321>

<sup>101 101</sup> Shepherd D, McBride D, Welch D, Dirks KN, Hill EM. Evaluating the impact of wind turbine noise on health-related quality of life. Noise Health 2011;13:333-9 Retrieved from [http://docs.wind-watch.org/NAH\\_2011.pdf](http://docs.wind-watch.org/NAH_2011.pdf)

#### **4. Discussion and overview of evidence**

Authorities and- / -or officials in Canada, the U.S.A., Mexico and the Caribbean are granting approvals and- / -or consent to industrial wind energy developers to establish industrial wind energy facilities in close proximity to residences. This is occurring in spite of the evidence that some residents will suffer injury to health and can be harmed as a result.

Our client wishes to advise the recipients of this letter that evidence and expert testimony under oath provided during an Environmental Review Tribunal (“ERT”) in Ontario, Canada (2011) confirmed wind turbines can harm human health. The Decision (July 18, 2011) states:

This case has successfully shown that the debate should not be simplified to one about whether wind turbines can cause harm to humans. The evidence presented to the Tribunal demonstrates that they can, if facilities are placed too close to residents. The debate has now evolved to one of degree.<sup>102</sup>

During the Ontario, Canada ERT hearings:<sup>103</sup>

- Expert witnesses for both the Respondents (Ministry of Environment, Suncor Energy Services Inc.) and the Appellants provided evidence and- / -or testimony which acknowledged wind turbines in Ontario “will” cause annoyance, which is expected to result in stress related health impacts in some individuals.
- A witness testifying for Suncor, the wind energy developer stated: “What is clear is that some people living near wind turbines experience annoyance due to wind turbines. Swishing, whistling, resounding and pulsating/throbbing were the sound characteristics that were most highly correlated with annoyance by wind turbine noise among respondents who noticed the noise outside their dwellings. Some people are also disturbed in their sleep by wind turbines.”<sup>104</sup>
- A witness testifying for the Suncor, the wind energy developer provided evidence that wind turbine induced annoyance and sleep disturbance occur at sound pressure levels above and below 40 dBA.<sup>105</sup>
- Expert witnesses for both the Respondents and the Appellants provided evidence and- / -or testimony which acknowledged annoyance, stress and sleep disturbance to be adverse health effects.
- A witness testifying for Suncor, the wind energy developer stated that “annoyance is a health effect.”<sup>106</sup>

<sup>102</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122. Retrieved from <http://www.ert.gov.on.ca/english/decisions/index.htm>

<sup>103</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122. Retrieved from <http://www.ert.gov.on.ca/english/decisions/index.htm>

<sup>104</sup> Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122, Witness Statement of Dr. Christopher Ollson, January 17, 2011

<sup>105</sup> Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122, Witness Statement of Dr. Christopher Ollson, January 17, 2011

- Expert witnesses for both the Respondents and the Appellants provided evidence and / - or testimony which acknowledged there will be some people who will evaluate themselves as annoyed or disturbed by wind turbine noise.
- In reference to people who subjectively evaluated themselves as disturbed by noise a witness testifying Suncor, for the wind energy developer provided evidence which stated, “Regardless of whether the perceived impacts by affected individuals are physiological or psychological in nature, they are a serious matter and are considered as adverse health effects.”<sup>107</sup>,<sup>108</sup> Under oath these statements were reaffirmed during testimony.<sup>109</sup>
- A witness testifying for Suncor, the wind energy developer provided evidence suggesting some individuals may require clinical treatment stating “...health effects from annoyance can be mitigated through behavioural and cognitive behavioural interventions.”<sup>110</sup>

Furthermore the Ministry of Environment (Ontario, Canada) commissioned and released a report which states:

The audible sound from wind turbines, at the levels experienced at typical receptor distances in Ontario, is nonetheless expected to result in a nontrivial percentage of persons being highly annoyed. As with sounds from many sources, research has shown that annoyance associated with sound from wind turbines can be expected to contribute to stress related health impacts in some persons.<sup>111</sup>

The report went on to say:

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<sup>106</sup> Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122, Transcript of Dr. C. Ollson, Mar, 22, 2011

<sup>107</sup> Jacques Whitford Stantec Limited, Byran Wind Project Environmental Review Report, Prepared for SkyPower Corp., August 25, 2009, Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122 Exhibit 74 p. 7-68

<sup>108</sup> Stantec Consulting Ltd., Ostrander Point Wind Energy Design and Operations Report, Prepared for:

Gilead Power Corporation, September 2010, Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122 Exhibit 75 p. 5.18

<sup>109</sup> Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122, Transcript of Dr. C. Ollson, Mar, 22, 2011

<sup>110</sup> Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122, Witness Statement of Dr. Christopher Ollson, January 17, 2011

<sup>111</sup> Howe Gastmeier Chapnik Limited. (2010, December). Low frequency noise and infrasound associated with wind turbine generator systems: A literature review, Rfp No. Oss-078696). Mississauga, Ontario, Canada: Ontario Ministry of Environment



Stress symptoms associated with noise annoyance, and in particular low frequency annoyance, include sleep interference, headaches, poor concentration, mood swings...<sup>112</sup>

A 2009 American Wind Energy Association and Canadian Wind Energy Wind Energy sponsored panel review, Colby et al (2009) acknowledges wind turbine sound may cause annoyance which may result in sleep disturbance and stress. The report attributes reported wind turbine symptoms (sleep disturbance, headache, tinnitus, ear pressure, dizziness, vertigo, nausea, visual blurring, tachycardia, irritability, problems with concentration and memory, and panic attack episodes associated with sensations of internal pulsation or quivering when awake or asleep) to be the “well-known stress effects of exposure to noise.”<sup>113</sup>

Expert witnesses drawn from the international community including Canada, UK, New Zealand, Australia and the U.S. confirmed the symptoms acknowledged in Colby et al (2009). For example, an expert witness testifying for the wind energy developer agreed with the above symptoms and provided evidence that he was “...happy to accept these symptoms, as they have been known to me for many years as the symptoms of extreme psychological stress from environmental noise, particularly low frequency noise.”<sup>114</sup> The expert noted the above symptoms are “...effects of annoyance by noise—a stress effect.”<sup>115</sup>

The same expert witness also testified that some people *will be* annoyed by the sound of wind turbines at sound pressure levels permitted in Ontario wind turbine projects. (emphasis added)<sup>116</sup>

In reference to 2009 American Wind Energy Association and Canadian Wind Energy Wind Energy panel review, the President of the Canadian Wind Energy Association stated: “The study does acknowledge that wind turbines can be annoying, the sound of wind turbines can be annoying for some individuals and that may cause them to feel some stress etcetera.”<sup>117</sup>

<sup>112</sup> Howe Gastmeier Chapnik Limited. (2010, December 10). Low frequency noise and infrasound associated with wind turbine generator systems: A literature review (Rfp No. Oss-078696). Mississauga, Ontario, Canada: Ministry of the Environment.

<sup>113</sup> Colby, W. D., Dobie, R., Leventhall, G., Lipscomb, D. M., McCunney, R. J., Seilo, M. T., & Søndergaard, B. (2009, December). Wind turbine sound and health effects: An expert panel review. Washington, DC: American Wind Energy Association and Canadian Wind Energy Association. [p. 4-3, 4-9, 4-10, 5-3] Ontario Ministry of Environment Disclosure Document # 23 - Erickson v. Director, Ministry of the Environment (10-121 and 10-122)

<sup>114</sup> Dr. Leventhall, (2009), “Wind Turbine Syndrome, an Appraisal,” Erickson v. Director, Ministry of the Environment (10-121 and 10-122) Exhibit 55 submitted by Suncor Energy Services Inc.

<sup>115</sup> Dr. Leventhall, (2009), “Wind Turbine Syndrome, an Appraisal,” Erickson v. Director, Ministry of the Environment (10-121 and 10-122) Exhibit 55 submitted by Suncor Energy Services Inc.

<sup>116</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122, Transcript of Dr. G. Leventhall, Mar, 11, 2011

<sup>117</sup> Hornung, R. (2010, March 4). Interview on Business News Network (Video). Retrieved from <http://watch.bnn.ca/clip272347>

During these ERT hearings, expert witnesses for both the Respondents and the Appellants provided evidence and- / -or testimony, including evidence from peer-reviewed published journals,<sup>118</sup> which acknowledged wind turbine sound is perceived to be more annoying than transportation noise or industrial noise at comparable sound pressure levels.

An international post-conference 2011 report, which included presentations from Canada and the U.S. states:

The main effect of daytime wind turbine noise is annoyance. The night time effect is sleep disturbance. These may lead to stress related illness in some people. Work is required in understanding why low levels of wind turbine noise may produce affects which are greater than might be expected from their levels.”<sup>119</sup>

During these Ontario, Canada ERT hearings witnesses for both the Respondents and- / -or the Appellants provided evidence and- / -or testimony which indicate plausible causes of wind turbine health effects include: amplitude modulation and- / -or audible low frequency sound and- / -or infrasound and- / -or tonality and- / -or lack of night time abatement and- / -or shadow flicker and- / -or visual impact and- / -or economic impacts.<sup>120, 121, 122, 123, 124, 125</sup>

During 2011 - 2012, a number of relevant articles from the international community were published in peer reviewed journals.<sup>126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141</sup>

<sup>118</sup> Pedersen, E., Bakker, R., Bouma, J., & van den Berg, F. (2009), Response to noise from modern wind farms in the Netherlands, *Journal of the Acoustical Society of America*, 126, 634-643.

<sup>119</sup> Wind Turbine Noise. (April 12 – 14, 2011). Post conference report. Retrieved from [http://www.confweb.org/wtn2011/index.php?option=com\\_content&view=article&id=70:report&catid=35:information](http://www.confweb.org/wtn2011/index.php?option=com_content&view=article&id=70:report&catid=35:information)

<sup>120</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122, Transcript of Dr. G. Rachamin, Mar, 4, 2011

<sup>121</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122, Dr. Colby's presentation to Nova Scotia Department of Energy on March 4, 2010, Exhibit 90, p.9 p. 18, p. 29

<sup>122</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122, Transcript of Dr. K. Mundt, Mar, 22, 2011

<sup>123</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122, Transcript of Dr. C. Ollson, Mar, 22, 2011

<sup>124</sup> Howe Gastmeier Chapnik Limited. (2010, December). Low frequency noise and infrasound associated with wind turbine generator systems: A literature review Rfp No. Oss-078696). Mississauga, Ontario, Canada: Ontario Ministry of Environment

<sup>125</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122, Witness Statement of Dr. R. McMurtry, January 16, 2011

<sup>126</sup> McMurtry, RY, Toward a Case Definition of Adverse Health Effects in the Environs of Industrial Wind Turbines: Facilitating a Clinical Diagnosis, *Bulletin of Science Technology &*

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<sup>127</sup> Salt, AN, and Kaltenbach, JA, (2011) Infrasound From Wind Turbines Could Affect Humans, Bulletin of Science Technology & Society 2011 31: 296, DOI: 10.1177/0270467611412555,

<http://bst.sagepub.com/content/31/4/296>

<sup>128</sup> Shain, M, (2011), Public Health Ethics, Legitimacy, and the Challenges of Industrial Wind Turbines: The Case of Ontario, Canada, Bulletin of Science Technology & Society, 2011 31:

256, DOI: 10.1177/0270467611412552, <http://bst.sagepub.com/content/31/4/346>

<sup>129</sup> Bronzaft, AL, (2011) The Noise From Wind Turbines: Potential Adverse Impacts on Children's Well-Being, Bulletin of Science Technology & Society 2011 31: 256,

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<sup>130</sup> Harrison, JP, (2011), Wind Turbine Noise, Bulletin of Science Technology & Society 2011 31: 256, DOI: 10.1177/0270467611412549, <http://bst.sagepub.com/content/31/4/256>

<sup>131</sup> Phillips, CV, (2011), Properly Interpreting the Epidemiologic Evidence About the Health Effects of Industrial Wind Turbines on Nearby Residents, Bulletin of Science Technology & Society 2011 31: 303, DOI: 10.1177/0270467611412554,

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<sup>132</sup> Thorne, B, (2011), The Problems With "Noise Numbers" for Wind Farm Noise Assessment, Bulletin of Science Technology & Society 2011 31: 262, DOI: 10.1177/0270467611412557,

<http://bst.sagepub.com/content/31/4/262>

<sup>133</sup> Daniel Shepherd, David McBride, David Welch, Kim N. Dirks, Erin M. Hill, Evaluating the impact of wind turbine noise on health related quality of life by Noise & Health, September-October 2011, 13:54,333-9, DOI: 10.4103/1463-1741.85502.

<sup>134</sup> Daniel Shepherd and Rex Billington, Mitigating the Acoustic Impacts of Modern Technologies: Acoustic, Health, and Psychosocial Factors Informing Wind Farm Placement Bulletin of Science Technology & Society 2011 31: 389, DOI: 10.1177/0270467611417841

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<sup>135</sup> Alec N. Salt and James A. Kaltenbach. Infrasound From Wind Turbines Could Affect Humans Infrasound

Bulletin of Science Technology & Society 2011 31: 296, DOI: 10.1177/0270467611412555,

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<sup>136</sup> Alec N. Salt and T.E. Hullar. Responses of the ear to low frequency sounds, infrasound and wind turbines.

Department of Otolaryngology, Washington University School of Medicine, St. Louis, MO, 63110, USA.

Hearing Research 2010 Sep 1; 268(1-2):12-21. Epub 2010 Jun 16

<sup>137</sup> Robert W. Rand, Stephen E. Ambrose, and Carmen M. E. Krogh, Occupational Health and Industrial Wind Turbines: A Case Study Bulletin of Science Technology & Society 2011 31:

359 DOI: 10.1177/0270467611417849 <http://bst.sagepub.com/content/31/5/359>

<sup>138</sup> Henrik Møller and Christian Sejer Pedersen, Low-frequency noise from large wind turbines Section of Acoustics, Aalborg University, Fredrik Bajers Vej 7-B5, DK-9220 Aalborg Ø,

Denmark, Acoustical Society of America [DOI: 10.1121/1.3543957] J. Acoust. Soc. Am. 129

(6), June 2011 PACS number(s): 43.50.Rq, 43.28.Hr, 43.50.Cb, 43.50.Sr [ADP] Pages: 3727–3744

Peer reviewed articles document some individuals living in the environs of wind turbines report reduced quality of life.<sup>142, 143</sup>

Shepherd et al note:

... residents living within 2 km of a turbine installation reporting lower overall quality of life, physical quality of life, and environmental quality of life. Those exposed to turbine noise also reported significantly lower sleep quality ...<sup>144</sup>

Peer reviewed findings that wind turbines in close proximity can lower quality of life of individuals is supported by a Canadian Wind Energy Association media release. The October 14, 2011 media release acknowledges wind turbines in the vicinity can cause annoyance for some individuals. The media release acknowledges annoyance can have “a significant impact on an individual's quality of life”. The media release further advises affected individuals that “it is important” they obtain the services of medical professionals (i.e. consult their doctor).<sup>145</sup>

An Ontario, Canada 2011 ERT Decision states:

The Tribunal has found above that “serious harm to human health” includes both direct impacts (e.g., a passer-by being injured by a falling turbine blade or a person losing hearing) or indirect impacts (e.g., a person being exposed to noise and then exhibiting

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<sup>139</sup> Brett Horner, Roy D. Jeffery and Carmen M. E. Krogh, Literature Reviews on Wind Turbines and Health : Are They Enough? *Bulletin of Science Technology & Society* 2011 31: 399. DOI: 10.1177/0270467611421849

<http://bst.sagepub.com/content/31/5/399>

<sup>140</sup> Magda Havas and David Colling, Wind Turbines Make Waves: Why Some Residents Near Wind Turbines Become Ill *Bulletin of Science Technology & Society* 2011 31: 414. DOI: 0.1177/0270467611417852

<http://bst.sagepub.com/content/31/5/369>

<sup>141</sup> Christopher D Hanning and Alun Evans, Wind turbine noise, *British Medical Journal*, BM J2 012;344d oi: 10.1136/ bmj.e1527 (8 March 2012) Retrieved from

<http://www.windvigilance.com/about-adverse-health-effects/wind-turbine-noise-sleep-and-health-by-dr-hanning>

<sup>142</sup> Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? *Bulletin of Science Technology & Society* 2011 31: 321, DOI: 10.1177/0270467611412550, <http://bst.sagepub.com/content/31/4/321>

<sup>143</sup> Krogh, CME, Gillis, L, Kouwen, N, and Aramini, J, (2011), 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, DOI: 10.1177/0270467611412551, <http://bst.sagepub.com/content/31/4/334>

<sup>144</sup> Shepherd D, McBride D, Welch D, Dirks KN, Hill EM. Evaluating the impact of wind turbine noise on health-related quality of life. *Noise Health* 2011;13:333-9

<sup>145</sup> The Canadian Wind Energy Association, October 14, 2011, The Canadian Wind Energy Association responds to October 14, 2011 statement by Wind Concerns Ontario, Retrieved from [http://www.canwea.ca/media/release/release\\_e.php?newsId=133](http://www.canwea.ca/media/release/release_e.php?newsId=133)

stress and developing other related symptoms). This approach is consistent with both the WHO definition of health and Canadian jurisprudence on the topic.<sup>146</sup>

The Ontario, Canada ERT witnesses for both the Respondents and the Appellants provided evidence and- / -or testimony which acknowledge the reported wind turbine symptoms can be expected to be created via *indirect* pathways.<sup>147, 148, 149</sup>

The following peer reviewed noise effects reaction scheme which illustrates the “direct” and “indirect” pathways was submitted into evidence during an ERT hearing.<sup>150</sup>

An Ontario, Canada ERT witness and lead author of the Chief Medical Officer of Health of Ontario report “*The Potential Health Impact of Wind Turbines*”<sup>151</sup> testified she was familiar; and agreed in principle; with the noise effects reaction scheme.<sup>152</sup> The witness explicitly acknowledged under oath that CMOH (2010) looked *only* at direct links to human health.<sup>153</sup> [emphasis added]

Based in part on the shortcomings of CMOH (2010), the ERT Decision expressed concern “...about the Director’s apparent lack of consideration of indirect health effects and the need for further work on the MOE’s practice of precaution...”<sup>154</sup>

Horner et al (2012) note:

Failure to carefully evaluate potential indirect causal pathways and the psychological harm of IWT exposure represent errors of omission.<sup>155</sup>

<sup>146</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122. p. 190 Retrieved from <http://www.ert.gov.on.ca/english/decisions/index.htm>

<sup>147</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122, Supplementary Witness Statement of William David Colby, MSc, MD, FRCP(C), Exhibit 52,

<sup>148</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122, Witness Statement of Dr. R. McMurtry, January 16, 2011

<sup>149</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122. Transcript of Mr. B. Howe, March 30, 2011

<sup>150</sup> World Health Organization, Night Noise Guidelines for Europe, 2009 Retrieved from [http://www.euro.who.int/data/assets/pdf\\_file/0017/43316/E92845.pdf](http://www.euro.who.int/data/assets/pdf_file/0017/43316/E92845.pdf)

<sup>151</sup> Chief Medical Officer of Health. (2010, May). Report: The potential health impact of wind turbines. Retrieved from [http://www.health.gov.on.ca/en/public/publications/ministry\\_reports/wind\\_turbine/wind\\_turbine.pdf](http://www.health.gov.on.ca/en/public/publications/ministry_reports/wind_turbine/wind_turbine.pdf)

<sup>152</sup> Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122. Transcript of Dr. G. Rachamin, Mar, 4, 2011

<sup>153</sup> Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122. Transcript of Dr. G. Rachamin, Mar, 4, 2011

<sup>154</sup> Erickson v. Director, Ministry of the Environment, Environmental Decision Case Nos. 10-121 and 10-122. Retrieved from <http://www.ert.gov.on.ca/english/decisions/index.htm>

Internal Ontario, Canada Ministry of Environment correspondence obtained through a Freedom of Information request; describe low frequency noise from wind turbine projects in Ontario resulting in annoyance, uninhabitable living conditions, “sleep deprivation” and in some cases individuals abandoning their homes.<sup>156</sup> Some individuals in Ontario reporting adverse health effects have reached financial agreements with the wind energy developer.<sup>157</sup>

Annoyance is acknowledged to be an adverse health effect. Annoyance by noise is acknowledged to be an adverse health effect<sup>158, 159, 160, 161</sup> and chronic severe noise annoyance must be classified as a serious health risk.<sup>162</sup>

An Ontario, Canada ERT witness agreed “annoyance is a health effect.”<sup>163</sup> In reference to people who subjectively evaluated themselves as disturbed by noise the witness provided evidence which stated “Regardless of whether the perceived impacts by affected individuals are physiological or psychological in nature, they are a serious matter and are considered as adverse health effects.”<sup>164, 165</sup> These statements were reaffirmed under oath during testimony.<sup>166</sup>

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<sup>155</sup> Brett Horner, Roy D. Jeffery and Carmen M. E. Krogh, Literature Reviews on Wind Turbines and Health : Are They Enough? Bulletin of Science Technology & Society 2011 31: 399. DOI: 10.1177/0270467611421849

<http://bst.sagepub.com/content/31/5/399>

<sup>156</sup> Brett Horner, Roy D. Jeffery and Carmen M. E. Krogh, Literature Reviews on Wind Turbines and Health : Are They Enough? Bulletin of Science Technology & Society 2011 31: 399. DOI: 10.1177/0270467611421849

<http://bst.sagepub.com/content/31/5/399>

<sup>157</sup> Krogh, CME, (2011), Industrial Wind Turbine Development and Loss of Social Justice? Bulletin of Science Technology & Society 2011 31: 321, DOI: 10.1177/0270467611412550, Retrieved from <http://bst.sagepub.com/content/31/4/321>

<sup>158</sup> Health Canada. (2005). Community noise annoyance. Retrieved from

<http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/life-vie/communityurbain-eng.php#he>

<sup>159</sup> Suter, A. H. (1991). Noise and its effects. Washington, DC: Administrative Conference of the United States. Retrieved from <http://www.nonoise.org/library/suter/suter.htm>

<sup>160</sup> Michaud, D. S., Keith, S. E., & McMurchy, D. (2005). Noise annoyance in Canada. *Noise Health*, 7, 39-47.

<sup>161</sup> Pedersen, E., & Persson Waye, K. (2007). Wind turbine noise, annoyance and self-reported health and well being in different living environments. *Occupational and Environmental Medicine*, 64, 480-486. doi:10.1136/oem.2006.031039

<sup>162</sup> Maschke, C., & Niemann, A. (2007). Health effects of annoyance induced by neighbour noise. *Noise Control Engineering Journal*, 55, 348-356.

<sup>163</sup> Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122, Transcript of Dr. C. Ollson, Mar, 22, 2011

<sup>164</sup> Jacques Whitford Stantec Limited, Byran Wind Project Environmental Review Report, Prepared for SkyPower Corp., August 25, 2009, Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122 Exhibit 74 p. 7-68

<sup>165</sup> Stantec Consulting Ltd., Ostrander Point Wind Energy Design and Operations Report, Prepared for:

Gilead Power Corporation, September 2010, Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122 Exhibit 75 p. 5.18

IWT amplitude modulation <sup>167</sup>, <sup>168</sup> and- / -or low frequency noise <sup>169</sup>, <sup>170</sup> are plausible causes of adverse effects. Currently most jurisdictions do not have regulations to protect individuals from the effects of wind turbine amplitude modulation and- / -or low frequency noise.

A consultant for the MOE states:

Sound emissions from operating wind farms frequently give rise to noise complaints. Most compliance-based noise audits measure hourly “A”-weighted Leq, thereby removing the low-frequency contents of the wind turbine sound. The metric is also insensitive to amplitude modulation and is unsatisfactory when sensitive receptor (sic) are annoyed by the low frequency sound and amplitude modulation. <sup>171</sup>

## Conclusion

The erosion of *Human Rights*, rights of *Persons with Disabilities* and rights of *Children* can be dramatic and sudden or gradual and nearly imperceptible.

Shain (2011) states:

While industrial wind turbines (IWTs) clearly raise issues concerning threats to the health of a few in contrast to claimed health benefits to many, the trade-off has not been fully considered in a public health framework. This article reviews public health ethics justifications for the licensing and installation of IWTs. It concludes that the current methods used by government to evaluate licensing applications for IWTs do not meet most public health ethical criteria. Furthermore, these methods are contrary to widely held fundamental principles of administrative law and governmental legitimacy. A set of decision-making principles are suggested to address this situation that are derived from existing and emerging legal principles in Canada and elsewhere. These include the

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<sup>166</sup> Erickson v. Director, Ministry of the Environment, Environmental Case Nos. 10-121 and 10-122, Transcript of Dr. C. Ollson, Mar, 22, 2011

<sup>167</sup> “Infrasound from Wind Turbines: Fact, Fiction or Deception?” by Dr. Leventhall, Exhibit 54, p. 34, para. 4

<sup>168</sup> Dr. Colby’s presentation to Nova Scotia Department of Energy on March 4, 2010, Exhibit 90, p. 18 and p. 29

<sup>169</sup> Møller, H., & Pedersen, C. S. (2011). Low-frequency noise from large wind turbines. *Journal of the Acoustical Society of America*, 129, 3727-3744.

<sup>170</sup> Minnesota Department of Health. (2009, May). Public health impacts of wind turbines. Retrieved from <http://www.health.state.mn.us/divs/eh/hazardous/topics/windturbines.pdf>

<sup>171</sup> Richarz, W., Richarz, H., and Gambino, T., (2011), Correlating very low frequency sound pulse to audible wind turbine sound, Aercoustice Engineering Limited, Ontario, Canada, Rome Conference Fourth International Meeting on Wind Turbine Noise Rome Italy 12-14 April 2011

Precautionary Principle, the Least Impactful Means (Proportionality) Test, and the Neighbor Principle.<sup>172</sup>

The desire for rapid deployment of wind energy facilities appears to violate numerous **Articles** of *The Universal Declaration of Human Rights* and *United Nations Convention for the Rights of Persons with Disabilities (UNCRPD)* and *the United Nations Convention on the Rights of the Child*.

**Whereas, our client states:**

State and country decision-making processes for locating and operating industrial wind energy facilities are being driven by economic and political objectives.

The health of individuals living in close proximity to industrial wind turbines is being compromised and the ability of families to care for their children and elders is being seriously undermined.

The public lacks confidence that the science advice of state and country health authorities is credible; and further that this advice is based on a rigorous and objective assessment of all available information.

The lack of full scientific certainty is being used as a reason not to take preventive measures.

We conclude that the fundamental human rights of individuals living in close proximity to industrial wind turbines are not being protected, and further that the dignity and worth of the human person are not being upheld.

**Be It Therefore Resolved:**

that immediate and careful objective study be undertaken with respect to wind energy's economic benefits, which our client believes are net zero, and objective study of the impacts to human health also be simultaneously initiated

that the protection of human health be restored as primary, in all energy policy henceforth, and

that the need for restitution and compensation be incorporated into the studies of the above two obligations, for those who have abandoned homes, lost income, property, and/or health,

**We respectfully request:**

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<sup>172</sup> Martin Shain (2011), Public Health Ethics, Legitimacy, and the Challenges of Industrial Wind Turbines: The Case of Ontario, *Canada Bulletin of Science Technology & Society*, 2011 31: 256, DOI: 10.1177/0270467611412552, <http://bst.sagepub.com/content/31/4/346>



- *a complete and immediate moratorium* on the new construction and placement of industrial wind turbines;
- an investigation regarding the apparent violations of the **Articles** detailed in this letter;
- *protection of the population* from the imposed intrusions;
- *the restoration of democratic rights*;
- National, State and Provincial Attorneys General investigations regarding the economic damages including net job losses, environmental damages, and societal and community degradation;
- *remediation be established* for the economic and social damages to humans, including loss of homes and jobs, future economic consequences such as decreased pensions and other negative impacts, and environmental damages.

Failing this, we reserve the right to further legal inquiry including the UN Conventions and all local and national laws to protect life, property, liberty and rights.

Kindly reply by May 1, 2012.

Yours very truly,

**ERIC K. GILLESPIE**  
**PROFESSIONAL CORPORATION**



**Eric K. Gillespie**  
EKG/am

cc: Members of Parliament of Canada