

Open Submission: Industrial Wind Turbines can Harm Humans

Health and Social-economic impacts

Submitted by Carmen Krogh, BS cPharm

May 6, 2013

To:

The Honourable Leona Aglukkaq
Minister of Health
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The Right Honourable Stephen Harper
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May 6, 2013

Dear Minister Aglukkaq,

Re: Wind turbines can harm humans: health and social-economic impacts

1 Background

This submission is being made on request and on behalf of the Yeats family from Wareham, Ontario.

The project has been operational for over a year.

Documentation regarding this submission has been verified by the family.

2 Disclaimer

I declare no potential conflicts of interest and have received no financial support with respect to the research and authorship of this overview.

3 Background

As some Health Canada representatives are aware, I am frequently in contact with those reporting the serious health and social-economic consequences that are occurring with the start-up of an industrial wind facility in a quiet rural area and in close proximity to residents.

The harm reported is in conflict with the World Health Organisation's definition of health:

“Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”¹

Many jurisdictions, including the Canadian federal, provincial, and territorial governments and health officials have accepted WHO's definition of health (Health Canada, 2004, vol. 1, p. 1-1).”²

The harm reported appears in conflict with Health Canada's “Mission and Vision” and “Objectives”³

4 Particulars

The family reports:

“My family and I have been living on a small rural acreage near Wareham, ON since August 1997.

This small community is located in the township of Grey Highlands near the town of Maxwell.

We moved here because of the affordable housing and quiet rural lifestyle.

In early 2012 four Plateau Energy wind turbines were built within 2000 metres SW, SE, and NE of my home.

Since then my family and I have been experiencing constant ear ringing, severe migraine headaches, constant fatigue, nausea, nosebleeds, earaches, sleeplessness, and depression.

As a result we have become irritable and angry over the littlest issues due to the lack of sleep caused by the constant humming noise on any day where there is even the slightest breeze in any direction.

The turbines are also affecting the behaviour of my family pets. My cats and dogs are always covering their ears with their paws when laying down inside or outside my house on windy days.

These health problems only started occurring after the turbines were built and became operational in 2012.

James Yeats”

5 Closing comments:

The health effects reported by the Yeats family are consistent with those reported globally. I have provided references in other submission regarding the impairment of health being reported.

As an example, sleep disturbance can lead to serious medical conditions. The World Health Organization (WHO) acknowledges that “self-reported sleep disturbance” is easily measured.

Please consider the Yate’s family report of sleep disturbance as a valid self-report under the WHO principle for reporting this effect.

The World Health Organization states:⁴

Sleep disturbance

Sleep disturbance can be measured electro-physiologically or by self-reporting in epidemiological studies using survey questionnaires. In epidemiological studies, “self-reported sleep disturbance” is the most easily measurable outcome indicator, because electro physiological measurements are costly and difficult to carry out on large samples and may themselves influence sleep.

Sleep disturbance is one of the most common complaints raised by noise-exposed populations, and it can have a major impact on health and quality of life. Studies have shown that noise affects sleep in terms of immediate effects (e.g. arousal responses, sleep stage changes, awakenings, body movements, total wake time, autonomic responses), after-effects (e.g. sleepiness, daytime performance, cognitive function deterioration) and long-term effects (e.g. self-reported chronic sleep disturbance).

The serious effect of sleep deprivation was recently forwarded to Health Canada. The message was entitled "*March 9 2013 Research Update - Wind Turbine Noise Study and sleep deprivation*" and it advised about the Möller-Levet et al (2013) study.

Abstract

Insufficient sleep and circadian rhythm disruption are associated with negative health outcomes, including obesity, cardiovascular disease, and cognitive impairment, but the mechanisms involved remain largely unexplored. Twenty-six participants were exposed to 1 wk of insufficient sleep (sleep-restriction condition 5.70 h, SEM = 0.03 sleep per 24 h) and 1 wk of sufficient sleep (control condition 8.50 h sleep, SEM = 0.11). Immediately following each condition, 10 whole-blood RNA samples were collected from each participant, while controlling for the effects of light, activity, and food, during a period of total sleep deprivation. Transcriptome analysis revealed that 711 genes were up- or down-regulated by insufficient sleep. Insufficient sleep also reduced the number of genes with a circadian expression profile from 1,855 to 1,481, reduced the circadian amplitude of these genes, and led to an increase in the number of genes that responded to subsequent total sleep deprivation from 122 to 856. Genes affected by insufficient sleep were associated with circadian rhythms (PER1, PER2, PER3, CRY2, CLOCK, NR1D1, NR1D2, RORA, DEC1, CSNK1E), sleep homeostasis (IL6, STAT3, KCNV2, CAMK2D), oxidative stress (PRDX2, PRDX5), and metabolism (SLC2A3, SLC2A5, GHRL, ABCA1). Biological processes affected included chromatin modification, gene-expression regulation, macromolecular metabolism, and inflammatory, immune and stress responses. Thus, insufficient sleep affects the human blood transcriptome, disrupts its circadian regulation, and intensifies the effects of acute total sleep deprivation. The identified biological processes may be involved with the negative effects of sleep loss on health, and highlight the interrelatedness of sleep homeostasis, circadian rhythmicity, and metabolism.⁵

A second document by Bernert and Joiner on suicidal risks associated with sleep disturbances was also provided.

Abstract

A growing body of research indicates that sleep disturbances are associated with

suicidal ideation and behaviors. This article (1) provides a critical review of the extant literature on sleep and suicidality and (2) addresses shared underlying neurobiological factors, biological and social zeitgebers, treatment implications, and future directions for research. Findings indicate that suicidal ideation and behaviors are closely associated with sleep complaints, and in some cases, this association exists above and beyond depression. Several cross-sectional investigations indicate a unique association between nightmares and suicidal ideation, whereas the relationship between insomnia and suicidality requires further study. Underlying neurobiological factors may, in part, account for the relationship between sleep and suicide. Serotonergic neurotransmission appears to play a critical role in both sleep and suicide. Finally, it remains unclear whether or not sleep-oriented interventions may reduce risk for suicidal behaviors. Unlike other suicide risk factors, sleep complaints may be particularly amenable to treatment. As a warning sign, disturbances in sleep may thus be especially useful to research and may serve as an important clinical target for future suicide intervention efforts.⁶

On May 5, 2013, ShanghaiDaily.com reports that:

“Canadian Prime Minister Stephen Harper announced Friday 82 million Canadian dollars in funding for 55 new clean-energy projects, ranging from electric vehicles to wind power.

Of the 55 projects that are part of the Canadian government's ecoENERGY Innovation Initiative and which are spread across seven provinces and two territories, 15 will be pre-commercialization demonstration projects to test the feasibility of various technologies.

According to Harper's office, the Canadian government has invested more than 10 billion dollars in green infrastructure, energy efficiency, clean-energy technologies, and the production of cleaner energy and fuels since his Conservative Party came to power in 2006.”⁷

The article reports that 10 Billion dollars has been invested in a green concept and more investment is pending.

Despite appeals from many rural families, some with babies and children, some elderly, some with pre-existing medical conditions, the Canadian government continues to ignore the people who have been harmed and will be harmed in the future.

There has been limited investment on the wind turbine health file with the exception of a \$1.8 million dollar investment in a Wind Turbine noise study that will be completed in 2014 and will not be definitive.

As the result of the anticipated proliferation in the future⁸ of industrial wind turbine facilities in Canada, it is expected more Canadians will be at risk of harm.

The family's living environment has been altered by the imposition of an industrial wind energy facility in proximity to their home. This was done without their consent. Within a short period of time, family members are reporting serious health effects and there is no remedy except to remove the source by leaving their home. This would seem to violate ethical and human rights which are expected in our Canadian democratic society.

Until guidelines are established that protect human health and social-economic viability, no further development of wind energy facilities should occur and existing sites reporting health issues should be resolved to the satisfaction of the New Experts.

In the meantime, on behalf of the Yeats family, I am requesting that emergency funding be considered to relocate the family to restore their physical, mental and social well-being until resolution has been achieved to their satisfaction.

Respectfully submitted on behalf of the Yeats family, from Wareham, Ontario,

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¹ 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. Cited 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>

² 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. Cited 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>

³ Health Canada, About Health Canada, About Mission, Values, Activities, Retrieved from <http://www.hc-sc.gc.ca/ahc-asc/activit/about-apropos/index-eng.php>, Cited August 24, 2012

⁴ World Health Organization (2011) Burden of Disease from Environmental Noise

⁵ Carla S. Möller-Levet, Simon N. Archer, Giselda Bucca, Emma E. Laing, Ana Slak, Renata Kabiljo, June C. Y. Lo, Nayantara Santhi, Malcolm von Schantz, Colin P. Smith, and Derk-Jan Dijk Effects of insufficient sleep on circadian rhythmicity and expression amplitude of the human blood transcriptome Published online before print February 25, 2013, doi:10.1073/pnas.1217154110 PNAS (Proceedings of the National Academy of Sciences) February 25, 2013 201217154 <http://www.pnas.org/content/early/2013/02/20/1217154110>

⁶ Rebecca A Bemert and Thomas E Joiner Sleep disturbances and suicide risk: A review of the literature Neuropsychiatr Dis Treat. 2007 December; 3(6): 735–743. PMID: PMC2656315

⁷ Canada announces major funding for clean energy projects, May 3 (Xinhua)

http://www.shanghaidaily.com/article/article_xinhua.asp?id=140262

⁸ Science Advisory Board Meeting, Proceedings - Science Advisory Board (SAB), February 1-2, 2012