**CONFIDENTIAL**

# Draft Proposal

# Researching Human Health and Industrial Wind Turbines:

# A Dose Response Relationship

**Prepared by Carmen Krogh**

**May 4, 2012**

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## Researching Human Health and Industrial Wind Turbines: A Dose Response Relationship

**Prepared by Carmen Krogh**

**May 4, 2012**

To:

Dr. Colin Carrie, M.P.
Ms Cheryl Gallant, M.P.
Ms Sylvie Boucher

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Mr. Scott Reid, M.P.
John Harrison, PhD
Ms Laurie Kilpatrick

**Issue:**

Industrial wind turbines are being sited in quiet rural areas in close proximity to rural residents. Some rural residents are reporting adverse health effects correlated with a change in their environment, i.e. the start of operations of an industrial wind energy facility, and have sought assistance from Federal Authorities.

In some cases, the adverse health effects are serious enough that some residents have moved from the environs of industrial wind turbines.

It is proposed that human health research be designed based on a dose response relationship to industrial wind turbines where the proxy for dose is the distance of the residence from one or more industrial wind turbines.

The proposed study on industrial wind turbines is analogous with early research for drug products e.g. clinical trials, which have explicit criteria that protect investigational subjects while considering dosage levels, side effects, ethics and other parameters:

> "Good Clinical Practice (GCP) is an international ethical and scientific quality standard for designing, conducting, recording and reporting trials that involve the participation of human subjects. Compliance with this standard provides public assurance that the rights, safety and well-being of trial subjects are protected, consistent with the principles that have their origin in the Declaration of Helsinki, and that the clinical trial data are credible."
>
> Reference: *International Conference on Harmonisation Of Technical Requirements for Registration of Pharmaceuticals for Human Use: ICH Harmonised Tripartite Guideline for Good Clinical Practice: E6(R1): Current Step 4 version: Dated 10 June 1996*

## Background

- Research conducted and published indicates a dose response relationship to industrial wind turbines where the distance is the proxy for the dose.

- Industrial wind turbine exposure involves more than wind turbine noise such as that of dBA (decibel), tonal, intermittent swishing and low frequency noise. Visual impacts are frequently reported including visual disturbances from the constantly moving blades and the blade-interaction with sunlight and moonlight and trees to create shadow flicker. Other issues include negative social affects on a rural community.

- The World Health 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" (World Health Organization 1948). Many jurisdictions, including the Canadian federal, provincial, and territorial governments and health officials have accepted WHO's definition of health.

Reference*: Canadian handbook on health impact assessment: Vol.1, p. 1-1. 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.htmlHealth*

- The installation and siting of wind turbines falls within the purview of the provincial and territorial governments. However, in the absence of provincial regulators ensuring resolution of problems, many Canadians are requesting the assistance of the Federal government to provide health protection based on the Canadian Charter of Rights and Freedoms.

- Adverse health effects (symptoms) are acknowledged through several means.
  - testimony under oath of Appellant and Respondent experts including those for the Ontario Ministry of Environment and Suncor developer and an Environmental Review Tribunal Decision;
  - an Ontario Freedom of Information request;
  - peer reviewed references; and
  - personal reports of residents living in the environs of wind turbines

- Lack of acknowledgement of the symptoms by authorities and health officials is enabling continued approval of projects in rural communities and a deterioration of confidence in the systems that constituents expected would protect them from risk of harm.

- Lack of input and / or meaningful consultation with those reporting adverse health effects, or who are at risk associated with pending projects, or with investigators who have conducted research has also contributed to the loss of confidence in the process.

- There are research requirements such as the mechanism of action and the incidence of adverse effects; however, the dose response relationship to industrial wind turbines is a critical requirement and should be resolved as soon as possible in order to protect human health.

- Ethical and legal considerations will affect the design and protocol for conducting human health research as a result of exposing residents without consent.

To address these and other complex issues, a multi-stage plan is proposed.

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## 1.0 Stage I – Expert Advisory Committee and Multidisciplinary Research Group

### 1.1 Expert Advisory Committee

- Convene an expert advisory committee to plan first steps including a set of criteria based on best in class, for selection of a multidisciplinary group which would lead the research

- It is encouraged to take the opportunity to draw from independent investigators who have conducted and published original research regarding industrial wind turbines and health

- Include several members of the public who are reporting adverse health effects which are correlated with the start of operations of the wind energy facility

### 1.2 Multidisciplinary Research Group

- Establish a multidisciplinary research group of experts including Federal authorities and independents based on criteria followed by an invitation to participate

- It is encouraged to take the opportunity to draw from independent investigators who have conducted and published original research regarding industrial wind turbines and health

- Include several members of the public who are reporting adverse health effects which are correlated with the start of operations of the wind energy facility

## 2.0 Stage II - Public Consultation

- Convene a public consultation process that is consistent with the principles of the *Health Canada Decision-Making Framework* to "Provide adequate opportunities for affected and interested parties to be involved in the risk management decision-making process.

  [Reference: http://www.hc-sc.gc.ca/ahc-asc/pubs/hpfb-dgpsa/risk-risques_tc-tm-eng.php]

## 3.0 Stage III – Project Plan

- Selection of an independent Project Manager/ Lead Investigator

- Preparation of a project plan including deliverables and timelines

## 4.0 Stage IV – Ethics and the Law

- Establish parameters and criteria to address issues such as ethics and the law

- Develop a research structure that accounts for confounding factors such as, but not limited to:
  - vulnerabilities of certain members of the population
  - pre-existing medical conditions and risk factors
  - contractual arrangements and financial settlements
  - physical and other characteristics of the residents' environment

## 5.0 Stage V – Funding a Foundation

- Provide seed funding to establish a research foundation
  - allows corporate and private contributions
  - is arms length for conducting research
  - could set an international research standard

## 6.0 Stage VI – Study design based on a dose response relationship to industrial wind turbines

- Field test the study design
- Launch the study

## 7.0 Stage VII – Post Construction and Operations Monitoring

- Establish a requirement that wind developers and authorities report all adverse events to Health Canada
- Establish a public vigilance monitoring system through self-reporting; anecdotal; healthcare professionals
- Establish a long term surveillance program in collaboration with physicians and medical/health care specialists

## 8.0 Stage VIII – Communications

- Develop a communications strategy for the public, authorities and other interested parties
- Communicate the multi-disciplinary team's composition to ensure transparency and to assist with restoring confidence in the process

## Considerations

International experts in the field of industrial wind research continue to carry out original research.

Evidence globally indicates that a carefully developed study created in Canada could result in a possible standard to establish criteria and consistency.

Researchers, those reporting adverse health effects, and those potentially at risk of being exposed would welcome such a study design.

An independent, well-constructed study into the impacts of wind projects on human health would demonstrate strong political leadership and concern for Canada's population.

**Rationale for Moving Forward**

This proposal:

Is consistent with Health Canada's long-standing role in funding national research

Is responsive to the increasing concerns of constituents

Will contribute to the restoration of the public's confidence in government

Is within Health Canada's mandate "to help Canadians maintain and improve their health"

Is proactive regarding a rapidly emerging health threat to Canadians

Utilizes the research tools and criteria established for dose response relationships already available at Health Canada

Demonstrates due diligence to assist Canadians maintain their health

Demonstrates the Minister's leadership regarding health and industrial wind turbines in Canada and internationally

Respectfully submitted,

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