Sunday May 3, 2015.

Dear Senators,

I am a professor at the University of Waterloo in Canada. I have been working on Wind turbine noise since 2013.

Infrasound measurement is challenging because wind turbines do not operate at a fixed speed. Further, we need a way to isolate a single wind turbine from other turbines and from (random) wind noise.

My colleague and I have developed a method to do this, and have just presented our research in Glasgow, Scotland. The citation is:

J. Vanderkooy and R. Mann. “Measuring Wind Turbine Coherent Infrasound”. Wind Turbine Noise 2015, INCE/EUROPE, Monday 20th April to Thursday 23rd April 2015. Glasgow, Scotland. Link: http://www.cs.uwaterloo.ca/~mannr/WTN2015.pdf

We use an optical telescope fitted with a photodetector, aimed at the turbine. Each time a blade passes through the field of view, brightness changes are detected, and recorded along with the input sound. Infra sound is found by averaging the input sound over repeated blade passes, thereby identifying infra sound from an individual turbine.

Wind turbines emit a characteristic infra sound pulse (air pressure change) that repeats with every blade passage. Infra sound was first reported for wind turbines, as early as 1979. Some people claim that newer turbine designs removed the infra sound problems of the older designs. Our measurements show that is not true. Infra sound pulses are still present in modern turbines.

Numerous researchers report infra sound disturbances from wind turbines, including the "infra sound signature" recently reported by Steven Cooper at Cape Bridgewater. I also note that two other papers presented in Glasgow, working independently, reported similar infra sound.

There appear to be no government regulations on infra sound. Further, governments are not even measuring infra sound levels. I am advocating that governments and wind companies acknowledge the known health impacts of infra sound, determine safe exposure levels, and establish proper measurement standards.

Additional information:

I recently learned that Health Canada has collected extensive measurements of wind turbine noise, including infra sound, as well as wind turbine operational data, Link: https://www.wind-watch.org/documents/analysis-modeling-and-prediction-of-infrasound-and-low-frequency-noise-from-wind-turbine-installations/

Repeated requests to Health Canada, either to work together, or to study the data independently, have been denied. Accordingly, I have filed an “access to information” request, listed below.

A-2015-00042: Wind Turbine Noise and Health Study. MG Acoustics was contracted by HC to study infra sound. Request all correspondence between HC and MG. Also request all raw data collected by MG for this contract. This includes all microphone, microbarometer, vibration, weather station, and turbine operational data (turbine orientation, RPM, power output, wind speed at turbine, etc). Note: Informal request made to David Michaud (March 2, 2015), redirected to Stephen Bly (March 9, 2015), and ultimately rejected by Stephen Bly (March 24, 2015)

Sincerely,

Richard Mann
Associate Professor (Computer Science)
University of Waterloo
Waterloo Ontario
Canada