

21 Feb 2015

Re: Cape Bridgewater noise study

Mr. Steven Cooper, INCE, AAS, ASA
The Acoustics Group Pty Ltd
20-22 Fred Street
Lilyfield, 2040, NSW, Australia

Dear Steven Cooper,

I am a professor at the University of Waterloo in Ontario, Canada. Since August 2013 I have been working with a colleague to research methods for measuring infra sound emitted by wind turbines.

I commend you on your excellent research on wind turbine noise. Your “On”/”Off” curves clearly show the low frequency noise and vibration that Wind Turbines produce.

The focus of our research has been to quantify/measure infra sound. To do this we needed to separate turbine generated noise from wind noise. We also needed to isolate a single wind turbine from nearby turbines and other sources of noise. My colleague and I have developed a method to do this. We will present our results at Wind Turbine Noise 2015 in Glasgow Scotland, in April of this year. A draft of this paper is available online at:
https://uwaterloo.ca/audio-research-group/sites/ca.audio-research-group/files/uploads/files/coherent_wt_measurement_0.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 acoustic pulse (air pressure change) that repeats with every blade passage. We report pressure changes of approximately 0.1 Pa (Pascals, peak to peak levels) with one turbine reaching 0.3 Pa. We present results from six different wind farms in Ontario, where we have isolated noise from a single turbine.

My personal opinion is that governments and the wind industry have failed to address infra sound from Wind Turbines. They are remiss in claiming no harm to health when they only measure audible sound and ignore the infra sound.

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.

I welcome contact from yourself and other interested researchers and will be happy to answer any questions, to assist others in replicate our results, and therefore contribute the common knowledge base.

Richard Mann, Associate Professor
School of Computer Science
Faculty of Mathematics
University of Waterloo
200 University Avenue West
Waterloo, Ontario, Canada