



**association to protect  
AMHERST ISLAND**

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September 15, 2014

WITHOUT PREJUDICE TO ALL OF OUR RIGHTS

Hon. Glen Murray  
Minister of the Environment and Climate Change  
Ferguson Block  
11th Flr  
77 Wellesley St W  
Toronto ON M7A2T5

Dear Honourable Minister,

I am writing to you with a follow-up to my letter of September 5<sup>th</sup> with a further response to the letter dated August 28<sup>th</sup> from the Director of the Environmental Approvals Branch, Ms. Agatha Garcia-Wright. This letter and its attachment is a technical justification for the request to overturn Ms. Garcia-Wright's decision concerning the Napanee Generating Station. Specifically, it addresses the Ministry's Review of Issues Raised by the Association to Protect Amherst Island.

By way of background you must know that the Napanee Generating Station is located in the Township of Greater Napanee on the north shore of Lake Ontario. At its closest, Amherst Island lies to the south-east of the generating Station, separated by 3 km of water – the North Channel. There are homes along the north shore of the island. Amherst Island is a quiet peaceful place. There is no industry, very little traffic and very little modern farming. It is a class 3 (rural) area.

You will almost certainly be aware that sound propagates readily across water, channeled by the acoustically hard surface of the water and the nature of the atmosphere above the water.

Sound propagation predictions using standard models for industrial noise across land understate the noise across water. We challenged the sound modelling based upon propagation over land used by TransCanada to predict sound levels on the north shore of Amherst Island. We note that TransCanada knew that it needed to make some allowance

for propagation over water and so they chose an allowance small enough to satisfy the MOECC noise limit for receptors in a class 3 (rural) area.

There has been government-funded research in Europe on sound propagation over water. This research was motivated by the development of off-shore wind energy. The research used literature searches to develop a protocol for predicting noise and experimental validation to support the protocol. The experimental work was impressive: sending acoustic signals through the air across 9 km of ocean.

When off-shore turbines were first proposed for Lake Ontario Dr. John Harrison, Professor Emeritus at Queen's University and a member of APAI, applied the European protocol to predictions of the off-shore distance that would be required to meet the Ontario noise guidelines. This report was submitted to your Ministry, although it was never acknowledged.

Understandably, APAI used the protocol to predict the sound pressure level at positions along the north shore of Amherst Island resulting from operation of the Napanee Generating Station. The results were summarized in the following table, submitted to your Ministry:

Table 1: Average and worst case sound pressure levels<sup>1</sup> for predicted sound generated by the proposed NGS for receptors 3, 4, 5 and 6 km from the generating station and sited along the north shore of Amherst Island.

Distance from NGS (km)	Average SPL (dBA)	Worst Case SPL (dBA)
3	40.9	46.4
4	38.4	43.5
5	36.3	41.7
6	34.5	39.9

It is clear that out to 6 km from the proposed Generating Station, along the north shore of Amherst Island, the sound power level will be out of compliance with the 40 dBA noise guideline for a class-3 environment, under the worst case scenario.

Despite the European research, Ms. Garcia-Wright writes that "MOECC noise engineers are satisfied with the modelling done and state that sound propagation over water was accounted for with the ISO-9613-2 model". Most assuredly the engineers should not be satisfied.

First, MOECC is not satisfied with the use of ISO-9613-2. A Request for Proposal has just (Sept 5<sup>th</sup>, 2014) been issued by the Ontario Government for predicting noise propagation over water<sup>2</sup>.

<sup>1</sup> The average sound pressure level is the level expected to be exceeded 50% of the time. The worst case is the level expected to be exceeded 10% of the time. The Ontario guidelines are based upon the worst case scenario.

<sup>2</sup> <http://www.canadasbiz.net/bid-opportunities/2014/09/05/province/56/5848850-RFP--Technical-Evaluation-To-Predict-Offshore-Wind-Farm-Noise-Impacts-in-Ontario.html>

Secondly, the UK Institute of Acoustics, in December 2013, issued Supplementary Guidance Note 6: Noise Propagation over Water for On-Shore Wind Turbines. The recommendations of this group are word for word extracted from the report that Dr. Harrison wrote for the Ontario Ministry of the Environment. The Working Group consisted of named acoustics engineers from 5 UK consulting companies that work alongside the wind energy industry; the report was peer-reviewed by another un-named consultant. The UK Institute of Acoustics knows that ISO-9613-2 cannot be used to predict sound propagation over water.

The only difference is that Dr. Harrison, based upon the Swedish experimental work, proposed two prediction formulae, one for the average noise at a receptor and one for the worst case (noise to be exceeded 10% of the time). The Working Group recommends only the average noise case. However, the Ontario noise guidelines refer to the worst case scenario.

A second major criticism that APAI had with the TransCanada noise assessment is that the measurement of the so-called background noise level on Amherst Island does not reflect the quiet ambience that the island enjoys. The measurements were made during one of the windiest months over the past 5 years, probably with the measuring instrument close to vegetation and close to the lakeshore. The measurements claim to show that the background noise on the island is over 50 decibels, up to at least 30 decibels higher than makes sense for class 3 rural environments such as Amherst Island.

The attached detailed response gives our reasons for rejecting the Director's decisions firstly to forgo a full environmental review of the noise assessment of the Napanee Generating Station and secondly for rejecting our request that there must be a full cumulative impact assessment of the sum total impact of the proposed Windlectric turbine project, the Lennox Generating Station, the proposed TransCanada Napanee Generating Station and the Lafarge Cement 2020 expansion.

To this sum total impact your Ministry must also consider the potential impact of offshore wind energy projects if the Ontario government is again seriously considering them. As you know projects have been proposed for Lake Ontario near Main Duck Island southwest of Amherst Island and for the Shoals south of Amherst Island.

Honourable Minister, we ask that you repeal the Director's decisions. Please ask your staff to suggest a time when we may meet to discuss this important matter.

Yours faithfully,

Peter Large, P. Eng., President of APAI

CC

Premier Kathleen Wynne

Hon. Bob Chiarelli, Minister of Energy  
Mr. Paul Evans, Deputy Minister, MOECC  
Mr. Serge Imbrogno, Deputy Minister, ME  
Ms. Doris Dumais, Director, MOECC  
Ms. Agatha Garcia-Wright, Director, MOECC  
Mr. Vic Schroter, MOECC  
Mr. Randy Hillier, MPP  
Mayor Bill Lowry and Members of Council, Loyalist Township  
Warden Gordon Schermerhorn, Lennox and Addington County, and Mayor of Greater Napanee  
Ms. Christine Cinnamon, TransCanada  
Mr. Peter Webster, TransCanada Napanee Generating Station Project  
Mr. James Hinds, Chair and Members of the Board of Directors, OPA  
Ms. Susan Kennedy, Associate General Counsel, OPA