

PRE-COGNITION

Re: Planning Application Appeal Public Inquiry: WIN-370-2 Arecleoch Wind Power Plant Extension

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Background

My scientific credentials have already been put forth to the Reporters of this Planning Inquiry (**CD cv** and **CD publications list**).

My path began in 1988 when working for the Portuguese Air Force, under the Onsite Medical Center that had been investigating infrasound and low frequency noise (ILFN)-induced pathology among aeronautical workers since 1980. This investigation began after the observation that 10% of the aeronautical technicians had been diagnosed with late-onset epilepsy. Working with a multi-disciplinary group of medical doctors, headed by Col. Nuno Castelo Branco (MD, Pathologist), the relevant diagnostic tools for the proper clinical evaluation of this noise-induced pathology were identified.

Among the many awards received over the years by the team headed by Dr. Castelo Branco are: the Portuguese Ricardo Jorge National Public Health Award (in 1984 and again in 2002), the Schering Scientific Award (1988), the Ross McFarland Award attributed by the Aerospace Medical Association (USA) (1996), the Annual Award for Scientific Excellence attributed by the Portuguese Society of Electron Microscopy & Cell Biology (1998), the National Health and Environment Award (2002), the National Award of Occupational Medicine attributed by the Portuguese Society of Medical Sciences (2002), the Annual Portuguese Lung Society Award (2005), and the Award for Excellence in Scientific Research attributed by the National Institute for Occupational Medicine and Safety (2006).

Starting in the year 2000, an increasing number of members of the general public began to contact the team with complaints of ILFN in their homes. Since then, the number of these complaints has increased exponentially due to the proliferation of industrial complexes cumulatively generating ILFN into the environment. An example of such industrial complexes are wind power plants.

The 2007 paper presented at the 2nd International Meeting on Wind Turbine Noise compares two families residing in homes contaminated with artificial (or anthropogenic) ILFN, due to the installation of a wind power plant and of an industrial port facility in close proximity to their homes (**CD 2007 paper**). The 2015 paper, presented at EuroNoise, provides a clinical follow-up of the family that lived near the wind power station (**CD 2015 paper**). Both these papers also evidence the complementary medical diagnostic tests that are relevant for ILFN-exposed individuals.

Citizen Science Initiative – Acoustic Characterization of Human Environments

From 2016 onward, several international scientists have come together to create CSI-ACHE: Citizen Science Initiative for the Acoustic Characterization Human Environments. This Initiative allows scientists to enter contaminated homes at the request of their residents in order to obtain data that can be scientifically published, i.e., the methodologies applied comply with the axioms of the Scientific Method.

Within this context, I have personally met and interacted with Ms. Pat Spence, Ms. Rita Holmes, Ms. Karen Brodie, and others living in these residential areas. Also within the context of CSI-ACHE, I have personally conducted ILFN measurements in the home of Ms. Pat Spence. This project is ongoing and a report is expected to be completed by April 2021.

Similarly, I have personally conducted extensive interviews and/ or acoustical measurements in ILFN-contaminated homes in Portugal, Ireland, Northern Ireland, England, Scotland, Denmark, Norway, The Netherlands, France, Germany, Belgium, Slovenia, Canada, Australia and New Zealand. I have also been contacted by individuals complaining of ILFN in their homes in South Africa, Israel, Mexico and the United States of America. Some of these interactions have led to my providing testimony before several Committees, Commissions and Court Proceedings. As an example is the document number **CD119**, which is a transcript of my 2018 testimony to the South Dakota Public Utilities Commission in the United States.

Nature of my expert testimony

Given my academic background and my 30-year scientific experience with the multidisciplinary matter that is the biological response to ILFN exposure, my contribution to this Planning Inquiry is to assist with providing a scientific foundation to the matter at hand.

As indicated in both my Statement of Fact and in my South Dakota testimony, there are several scientific fallacies that are typically put forth in these types of venues (**CD Statement and CD South Dakota**). It is desired that the Reporters of this Planning Inquiry understand the scientific issues that are foundational to the matter at hand.