



Wind Health Impacts Dismissed in Court

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Foreword

New technology has a long history of attracting small networks of people who believe that rapidly proliferating inventions are silently eroding people's health. Electric light and railway travel were early villains to those who saw such inventions as Mephistophelean artifice. On September 24, 1889, the British Medical Journal carried a report that the newly popular telephone could cause "telephone tinnitus" claiming that victims "suffered from nervous excitability, with buzzing noises in the ear, giddiness, and neuralgic pains".

In the 125 years since, televisions, electric blankets, microwave ovens, computer screens, mobile phones, and transmission towers, and most recently, Wi-Fi and smart meters are examples of technology where claims of potential calamitous consequences of biblical plague proportions have been made.

The idea that wind turbines might be harmful to people's health began to attract minor attention around 2002, when claims made in unpublished "research" by a British general practitioner was covered by a few news outlets. The 2009 publication of a self-published vanity press book, "Wind Turbine Syndrome", by a pediatrician, Nina Pierpont, acted like petrol thrown on a fire of anxiety in some communities where activists were doing their utmost to urge people to interpret common health problems found in any community as being caused by sub-audible infrasound emitted by wind turbines.

Since that time, a small number of anti-wind activists operating mainly in parts of Australia, Canada, Ireland, United Kingdom, and the United States made this their *cause celebre*. In some cases, these groups have documented links to climate change denial groups and fossil fuel interests. Without exception, they see themselves as contemporary Galileos, fearlessly holding aloft the truth in the face of doctrinaire denial from the scientific establishment, which has now published 21 evidence reviews since 2003, which dismiss claims of direct health effects from wind turbines. The groups point knowingly to the historical denials of harm by the asbestos and tobacco industries convinced that the pernicious "Big Wind" industry is reading from the very same playbook.

Legal action has emerged as a favored tactic of these groups. In this report, Mike Barnard, Senior Fellow at the Energy and Policy Institute, catalogues the outcomes of 49 attempts by wind farm opponents to use the courts or tribunals to stop developments. In all but one case, these attempts have failed. Barnard also profiles 16 alleged expert witnesses called by these opponents.

These forlorn actions will have caused many residents who were swept along by the emotive claims of often visiting anti wind activists, and then joined the legal actions to have lost substantial sums in legal costs.

Anyone curious about the track record, quality of the expertise enlisted, and arguments advanced by these litigants will find this publication indispensable. But, its most important readership will be anyone tempted to repeat this folly. Barnard's summaries and the links provided to the cases are more than sobering.

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Introduction

Global [installed capacity](#) of wind energy has increased 568 percent over the past ten years. This significant acceleration of wind energy development, while benefiting the health of humans and the environment, has drawn opposition. Individuals and local groups who are opposed to the construction of wind turbines have claimed health impacts in order to prevent the wind farms from being built. But, these efforts have not been successful, and for good reason: wind farms do not cause health problems.

Therefore, government entities at the local and state level, and developers should not expect to be held liable for health issues blamed upon wind energy, as the cases have been rejected time and time again.

This Energy and Policy Institute report assesses legal cases in five English-speaking countries pertaining to wind energy. The intent is to provide clarity in assessing potential legal liability, and to identify the weaknesses of evidence and expertise that are common in health-related suits against wind farms.

This report was designed as a resource for wind energy legal defense teams and expert witnesses in preparing for any future court proceedings. The precedence of past legal cases shows health claims against wind energy have not been substantiated in court.



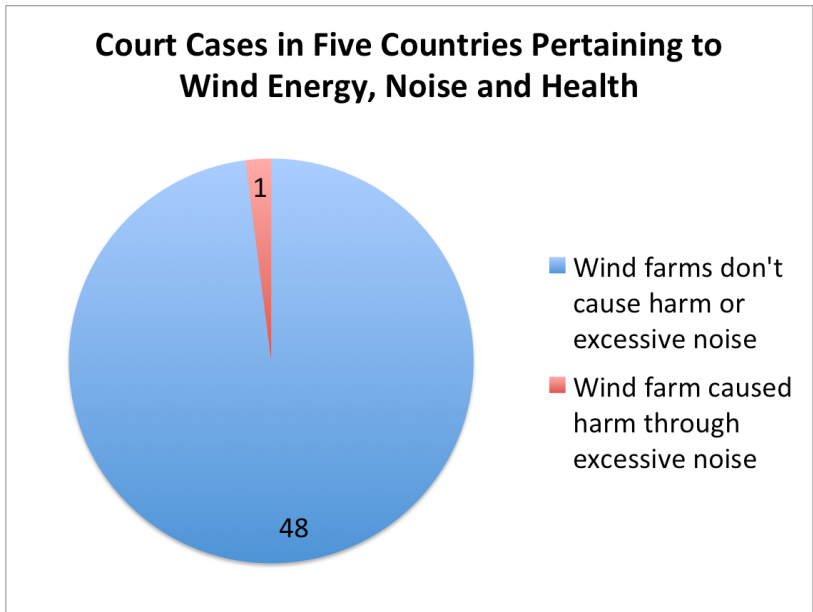
Acknowledgments

This report would not have been possible without the ongoing support and guidance of a worldwide collection of experts in wind farm noise and health with whom I communicate frequently and are regularly asked to provide evidence in different courts regarding wind farm noise and health concerns. These include but are not limited to Professor Simon Chapman, Dr. Geoffrey Leventhall, Professor Emerita Cecilia Barnes, Christophe Delaire, Fiona Crichton, Dr. David Perry, Loren Knopper, Dr. Norm Broner and Richard Mackie. Further, wind energy experts such as Paul Gipe, Malcolm Hamilton, Ketan Joshi, and Roger Short have provided excellent insights as I have been assessing wind energy court proceedings and health concerns worldwide.

Of course, the leadership and staff at the Energy and Policy Institute must be thanked, especially Gabe Elsner and Matt Kasper, without whom this report would not exist.

Overview of Court Cases

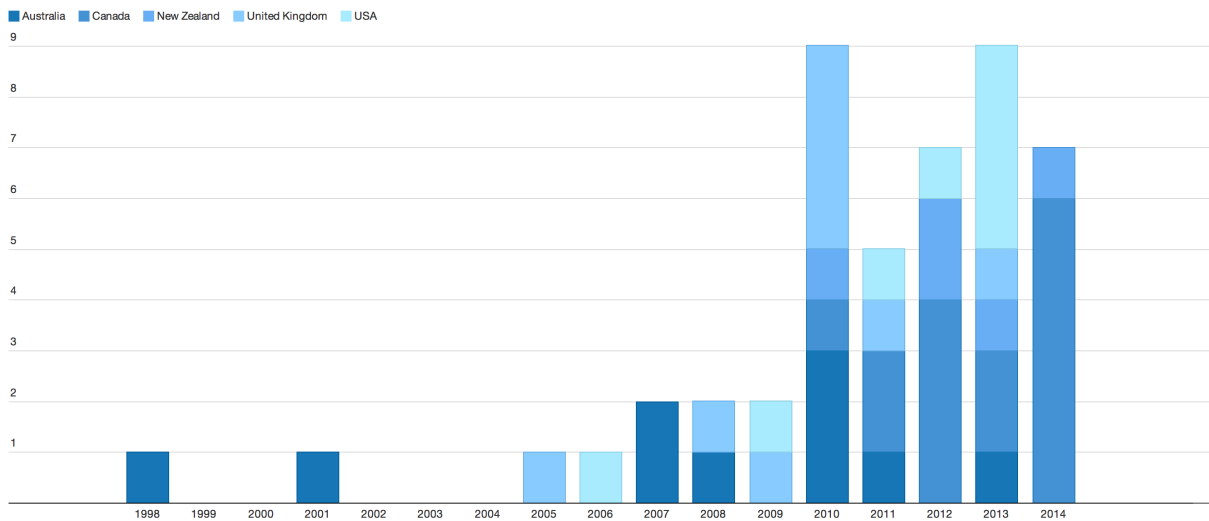
Since 1998, 49 hearings have been held under rules of legal evidence in at least five English-speaking countries and four types of courts regarding wind energy, noise, and health. Forty-eight assessed the evidence and found no potential for harm to human health. The sole outlier is an instructive but unique case.



To find the decisions, I searched legal databases of environmental, utility, civil, and higher courts in Canada, New Zealand, the United States of America (USA), the United Kingdom, and Australia. In the USA, this required state-by-state searches. I also searched anti-wind campaign sites for the Waubra Foundation and the US National Wind Watch for cited cases. I requested information from contacts

in the wind industry and wind advocacy organizations as well. While well over 150 potential decisions were found and assessed and 49 found that pertained to noise and health, this does not mean that every single case has been identified. Courts in Denmark, Germany and the Netherlands have also found no connection between wind turbines and health issues per reports, but the records are not in English.

Wind Energy Court Cases in Five English-Speaking Countries



Court cases jumped dramatically after Dr. Nina Pierpont, the pediatrician wife of an anti-wind activist, self-published a book alleging health risks from wind turbines based on phone interviews with a self-selected and very small number of people who blamed them for commonly experienced symptoms.



Canada is the center of wind farm health-related court challenges, with 17 separate hearings for its 7.8 GW of wind energy capacity and a population of 35 million.

This is mostly due to Ontario, with 14 Environmental Review Tribunals (ERT) testing the evidence and the relative experts, as well as two higher court cases. The mechanism of the ERT was specifically referenced in the Renewable Energy Act to provide recourse related to specific wind farms, and it's being heavily exercised.

The province of Alberta has seen two significant cases in its Alberta Utility Commission court, and the province of Saskatchewan saw a single civil suit related to wind energy and health.

All Canadian courts found that wind farms would not and do not cause health impacts with proper setbacks in place.



Next up is Australia with 10 cases over its 2.7 GW of capacity and a population of 23 million.

The state of Victoria appears to be the Ontario of Australia, with seven civil suits.

The states of South Australia and New South Wales saw three cases in their environment and resource courts.

All Australian cases found that wind farms would not cause health impacts with proper setbacks in place.



The United Kingdom has seen the next highest numbers of cases, with nine hearings over its more than 10 GW of wind energy capacity and a population of 63 million.

The county of Devon saw the most cases, with three bringing evidence related to wind energy, noise, and health. Denbighshire had two cases, and various other counties and Scotland each had one case.

All United Kingdom cases found that wind farms would not cause health impacts with proper setbacks in place.

In one outlier case in the UK, a wind farm complied fully with the noise standards, but the Inspector charged with assessing the wind farm siting felt the combination of wind farms in the area would cause discernible noise on more evenings in households than was acceptable; this was upheld as being within the authority of the Inspector upon appeal.

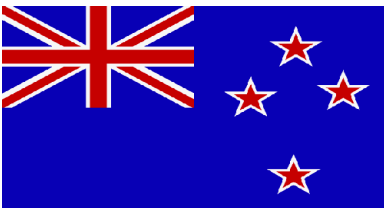


The United States saw eight court cases in total that pertained to wind energy, noise, and health concerns over its 61 GW of wind energy capacity and population of 314 million people.

States in the northeast represented five of the eight court cases with the other three taking place in the central United States.

Seven cases found no harm from wind energy with the proper setbacks currently in place.

The USA has the only case where a wind farm was considered to have caused harm. This case was brought by a single family near a pair of wind farms erected on the municipal wastewater treatment plant by the town of Falmouth, Massachusetts. The judgment includes the statement that dental harm occurred, along with other types of medical ailments. This single small wind farm is referenced worldwide by anti-wind advocacy groups as if it is representative of wind health court cases instead of a unique outlier.



New Zealand, somewhat surprisingly given its size, managed five environmental and civil hearings over wind energy, noise and health over 0.6 GW of wind energy capacity and population of 4.4 million people.

Only one case in New Zealand went against a wind farm, the Te Rere Hau wind project, and that was only because noise was greater than anticipated, not because the wind noise was above standards or harmful to human health. This case is widely misrepresented and selectively quoted by anti-wind campaigning organizations such as the Waubra Foundation and National Wind Watch.

The raw numbers become startling when compared to both capacity and population of each of the countries. The United States has, by far, the lowest incidence of litigation and legal procedures, while New Zealand has the most. This is over a very small number of cases, so not much can be inferred from this, but it is interesting nonetheless. All numbers in the table are as of July 2014. There is roughly one court case per 10 million people and for every two GW of wind energy to date for English speaking countries.

	Cases	GW of Wind Energy Capacity	Cases per GW	Populace (millions)	Cases per million populace
Canada	17	7.8	2.18	35.0	0.49
Australia	10	2.7	3.70	23.0	0.43
United Kingdom	9	10.0	0.90	63.0	0.14
United States	8	61.0	0.13	314.0	0.03
New Zealand	5	0.6	8.33	4.4	1.14
Summary	49	82.1	0.60	439.4	0.11

An important conclusion can be reached in reviewing the various courts' decisions - many people put forward as expert witnesses bring a great deal of passion against wind energy, but very little expertise. See the section on inexpert 'experts' brought against wind energy in court cases for additional details.

A complete list of cases that have been assessed and analyzed for this report can be found in the Addendum.

The Challenge of Inexpert Experts

Over the past several years, anti-wind campaigners without credentials or experience related to wind energy and its effects on humans have attempted to elevate themselves into the role of expert witnesses in civil suits, Environmental Review Tribunals (ERT) in Canada, and Environmental Resources and Development (ERD) proceedings in Australia. This report singles out 16 individuals based on the courts' dismissal of their expertise or evidence.

Name	Specialty
1. Sarah Laurie	Formerly a general practitioner of medicine, but no longer allowed to use any medical title following an ethics investigation
2. Dr. Nina Pierpont	Pediatrician
3. Dr. Robert McMurtry	Orthopedic Surgeon
4. Dr. Michael Nissenbaum	Radiologist
5. Dr. Carl Phillips	Scientific Director of The Consumer Advocates for Smoke-Free Alternatives Association; Advisor to Society for Wind Vigilance
6. Dr. Daniel Shepherd	Psychoacoustics
7. Bill Palmer	Professional Engineer
8. Mike McCann	Property Appraiser
9. Ben Lansink	Property Appraiser
10. Richard James	Acoustician
11. Eric Erhard	Professional Engineer
12. Les Huson	Master of Science, Structural Engineering
13. Dr. Colin Hansen	Emeritus Professor; Mechanical Engineer
14. Dr. Adrian Upton	Emeritus Professor, Neurology
15. Debbie Shubat	Registered Nurse
16. Lori Davies	Masters Degree of Social Work

These 16 individuals and the lawyers who attempt to bring them into court have overstated the relevance of their credentials, as well as the depth and breadth of their expertise. Their claim that wind farms impact human health is dismissed in nearly every hearing, or given little weight by the judges. Additionally, these non-experts often introduce hundreds of pages of what they term evidence, but the vast majority of the documents are poorly constructed opinion pieces by other non-experts. The documents can usually be found on websites maintained by wind energy opponents. They often attempt to introduce “studies” that are methodologically and statistically weak. This evidence takes significant time and court resources to assess and discount; therefore, the trend to disqualify their evidence early in legal proceedings is important.

1. Sarah Laurie



In 2011, Ms. Sarah Laurie [attempted to testify](#) at an ERD proceeding in Australia. During the testimony, Laurie admitted she was not an expert in the subject matter she was called to testify on, and qualified experts in additional testimony discredited her submission. But, this did not stop Laurie from submitting future testimony.

In a judgment released in December 2013 from an ERT in Ontario, [Bovaird v. Director, Ministry of the Environment](#), Laurie’s evidence was rejected almost entirely. The remaining evidence was deemed biased and of low reliability.

Five pages in the judgment devoted to Laurie’s background determined:

1. Ms. Laurie is not a doctor and must stop referring to herself as one, as part of an agreement with the Australian Health Practitioner Regulation Agency (AHPRA), based on the outcome of an ethics complaint.
2. She is not licensed or permitted to diagnose patients because she is deregistered and non-practicing. However, she has continued to diagnose people.
3. Most of her planned testimony required her to diagnose patients.
4. Ms. Laurie has no training in research methodology and design.
5. Ms. Laurie is not a trained acoustician.
6. Ms. Laurie has not performed a comprehensive literature review related to wind farms.

In summary, the Ontario ERT considered her a biased witness, and gave less weight to the evidence she submitted.

Also in 2013, the Ontario ERT prohibited Laurie as an expert witness in a case regarding the [Adelaide](#) project proposed by NextEra Energy Resources. She was [rejected](#) as a witness very early in the proceedings, after she admitted that she could no longer call herself a doctor.

Months later, Laurie was allowed to testify in a hearing for the [BullCreek Wind Project](#) in Alberta, Canada. Despite her earlier admission, she portrayed herself as a doctor. However, the commission gave its opinion on her competence, skills, and testimony, stating:

Dr. Laurie's written evidence also included her interpretation and discussion of numerous published and unpublished epidemiological and acoustical reports and studies. In the Commission's view, Dr. Laurie lacks the necessary skills, experience and training to comment on the interpretation of epidemiologic studies or the interpretation of acoustical studies and reports. The Commission gave little weight to this aspect of Dr. Laurie's evidence.

2. Dr. Nina Pierpont



Dr. Nina Pierpont was a long-term campaigner against wind farms near her home who conducted a minor and very poorly constructed health survey. This survey was the basis for her [self-published book](#) which coined the phrase, “wind turbine syndrome.” This “syndrome” is widely referenced by people campaigning against wind turbines. Pierpont claims that wind turbines cause tinnitus, dizziness, heart-palpitations, nausea, tingling, and loss of sleep, among several other symptoms. However, the book is deeply flawed.

Pierpont interviewed 23 people by phone. They were chosen by advertising through anti-wind groups that blamed wind farms for their health issues. Pierpont also accepted statements about an additional 15 household members without speaking to them and did not assess health histories of the participants outside of verbal statements by people surveyed. She hypothesized a connection of infrasound and created 60 pages of charts, graphs, and tables, a level of statistical analysis far beyond anything supportable by the data. The symptoms she identified are very commonly found in the general populace.

There have been 22 literature reviews on wind turbine health and many point-specific

studies on wind turbine noise, vibration, infrasound, and shadow flicker, conducted by public health doctors and scientists, acousticians, epidemiologists, and related specialists. The studies considered Pierpont's book along with other published literature. In every case, they found that her work was lacking in credibility. Recent major reviews have been conducted in Ontario, Massachusetts, Oregon and Australia with the same results.

In October of 2013, Pierpont attempted to gain expert witness status at the [Adelaide ERT](#) wind farm hearing in Ontario. She wrote:

I will attempt to teach the representatives of NextEra and the Ontario Ministry of the Environment, as well as the members of the Tribunal, enough about brain and ear physiology and pathophysiology, population-level studies in free-living organisms, and medical interviewing that they can understand the wind turbine-associated health issues.

Pierpont has no expertise from education or experience in "brain and ear physiology and pathophysiology, population-level studies in free-living organisms, and medical interviewing." Her evidence included her self-published book, which along with her testimony, was dismissed.

3. Dr. Robert McMurtry



Dr. Robert McMurtry is an orthopedic surgeon, founder of the anti-wind [Society for Wind Vigilance](#), and long-serving Board Member of the anti-wind Association to Protect Prince Edward County (APPEC). McMurtry is also the owner of a rural retirement residence in Prince Edward County Ontario near proposed wind farms, and initiated, with his wife, a \$2.5 million lawsuit against a nearby wind farm.

McMurtry's main contribution to anti-wind literature is a draft case definition of impact from wind farms that he published in *Bulletin of Science, Technology, and Society*. The publication has been de-indexed since 1995, a sign that indexing services regard the journal to have fallen below acceptable academic standards.

There is little evidence of peer review of any substantive nature in the set of anti-wind articles published in the special edition in which McMurtry's [case definition](#) was published.

In 2011, McMurtry participated in a challenge to the regulated minimum 550 meter setbacks from wind turbines to homes in Ontario Superior Court [case](#), Hanna v. Ontario (Attorney General). McMurtry asserted that there was medical uncertainty and risk associated with the setback that had not been considered in establishing it. During the case, McMurtry was forced to admit that none of the evidence he brought to bear was new:

The applicant acknowledges that virtually all of the information relied on by Dr. McMurtry to form his assessment regarding the health impacts of industrial wind turbines was known to the ministry at the time the regulation was being considered.

In 2013, McMurtry [testified](#) in the Ostrander Point-related tribunal, Alliance to Protect Prince Edward County v. Director, Ministry of the Environment in 2013. While permitted to testify, his case definition was dismissed as evidence:

With respect to the proposed Case Definition of AHE/IWTs, the Tribunal finds that it is a work in progress. It is preliminary attempt to explain symptoms that appear to be suffered by people with whom Dr. McMurtry is familiar, who live in the environs of wind turbines. Dr. McMurtry's case definition has admittedly not been validated; thus there is currently no grouping of symptoms recognized by the medical profession as caused by wind turbines.

The Ostrander tribunal [ruled against](#) the wind farm based on impacts to the endangered Blanding's Turtle, that was overturned on appeal, and as of July 2014, the approval is stayed pending another appeal.

In the [Bovaird v. Director, Ministry of the Environment](#) Tribunal, McMurtry attempted to testify about concerns well outside the boundary's the ERT provided for him. The ERT found that McMurtry's affidavit discussing Ontario's energy mix and generating capacity were "clearly not within Dr. McMurtry's area of expertise." The Tribunal did not admit the testimony as evidence, and wrote that the testimony he was qualified to provide was of no value.

A more recent Tribunal [found](#):

Dr. McMurtry failed to provide any support for his proposition that a non-trivial percentage of persons who both live and work near turbines will be highly annoyed. ... Nor is there any evidence about how any of the subjective influencing factors that affected the response of residential dwellers...

Furthermore, the Director of the Ministry of the Environment questioned McMurtry's judgment regarding wind turbines:

The Director questions Dr. McMurtry's objectivity and is concerned that he is advocating on behalf of the Appellant. The Director submits that his evidence is largely improper reply evidence, and should be regarded with extreme caution and given little weight.

In February 2014, a Superior Court appeal of the Ostrander Point ERT decision was released. Judge Nordheimer, in rejecting appeals related to human health, had this to say about McMurtry's testimony:

[122] It is not sufficient for the purposes of relying on a novel scientific theory to simply conclude that the theory may be correct. In that situation, the theory will not have crossed the threshold of reliability for the purpose of establishing the necessary causal link between the activity in issue and the consequences said to arise from that activity. Rather, the party attempting to rely on a novel scientific theory must first establish threshold reliability before the fact finder may consider it.

[123] The Supreme Court of Canada has set out four factors to be considered in determining whether threshold reliability is met. In R. v. J.-L.J., [2000] 2 S.C.R. 600, the four factors were identified, at para. 33, as:

- (i) whether the theory or technique can be and has been tested;*
- (ii) whether the theory or technique has been subjected to peer review and publication;*
- (iii) the known or potential rate of error or the existence of standards;*
and,
- (iv) whether the theory or technique used has been generally accepted.*

[124] Viewed from the medical perspective, and that is the perspective that is relevant in this case since harm to human health is being asserted, the expert evidence offered by APPEC, through Dr. McMurtry, failed when tested against any of these factors. Dr. McMurtry's theory has not been tested, it has not been medically peer reviewed, it is not known what the error rate might be and the theory has not been generally accepted.

If Dr. McMurtry were not a long-serving and respected member of the Ontario medical establishment -- which I fully respect as well — there is little doubt that he would not be granted expert status in virtually any Ontario court due to obvious issues with bias and lack of actual expertise.

4. Dr. Michael Nissenbaum



Dr. Michael Nissenbaum is a radiologist, not a researcher, acoustician, epidemiologist or public health expert. Additionally, he is a [member](#) of the Advisory Board of the anti-wind group, Society for Wind Vigilance.

Nissenbaum performed a “health survey” of people near two wind farms in Maine, where he lives. The survey was deeply flawed because of the insignificant sample size and the low response rate. Health surveys require at least a 50 percent response rate to be considered useful. The survey identified that it was assessing wind energy noise and health problems, and the questions were leading and pushed desired responses upon the respondents.

McMurtry attempted to enter Nissenbaum’s study into evidence in the 2013 [Bovaird v. Director, Ministry of the Environment](#) ERT in Ontario. The evidence was dismissed.

Nissenbaum has also published a report regarding wind energy and health in a credible peer-reviewed and indexed journal *Noise and Health*. However, two separate [critiques](#) of his paper were published in the same journal pointing out significant errors and erroneous conclusions.

In 2010, Nissenbaum attempted to serve as an expert witness in an ERT in Saskatchewan, Canada. The case was over the [Red Lily](#) Wind Energy Corporation proposed wind farm near the townships of Martin and Moosomin, Saskatchewan. The Tribunal wrote:

Dr. Nissenbaum is a medical doctor. He has not had any specialized training in any of the issues I have identified that are required in order to provide opinion evidence to support the injunction application. Although he has some limited experience as a result of his survey on the Mars Hill project, the nature, size and methodology used in that survey is of no value to the current application...

Dr. Nissenbaum has obtained a great deal of information on this subject, but information is not knowledge, and Dr. Nissenbaum does not have the type of knowledge referred to in the court cases that makes him an expert in any of the areas that I have identified as necessary.

In 2011, Nissenbaum tried again in another Ontario ERT. The Tribunal [took the position](#) that most witnesses brought forward would be allowed to testify, but the areas where they were explicitly considered experts would be listed, and their testimony considered in that

light. The Tribunal allowed Nissenbaum to give his expert opinion in the areas of diagnostic imaging.

However, his entire testimony was outside of his area of expertise. The ERT found:

The Nissenbaum Study and Dr. Aramini's application of it, raise enough questions about the Study to suggest that its results do not meet the legal threshold that wind turbine noise will cause serious harm to human health at the 550 m setback at the Kent Breeze Project. These questions include issues pertaining to: study design, statistical analysis, causation analysis and the transferability of the findings, given the difference in wind turbine design and in the physical lay-out and topography between the study site and that at the Kent-Breeze Project.

Most recently, Nissenbaum's study was presented as evidence at the Bull Creek Wind Project siting in Alberta in 2013. The final [judgment](#) stated:

The Commission does not find the Nissenbaum study to be compelling evidence that wind turbine noise below 40 dBA will cause sleep disturbance or health effects. The Commission considers that the study's use of noise data from publicly available records and from a single day of measurements is not a sufficient basis for drawing conclusions about a dose-response relationship for wind turbine noise.

In February of 2014, the Australian National Health and Medical Research Council reviewed Nissenbaum's study as part of an exhaustive review of wind turbines and health concern studies. The council [classified](#) the quality of the study as "poor" because of the clear bias Nissenbaum demonstrated.

5. Dr. Carl V. Phillips



Before Dr. Carl V. Phillips was being presented as an expert witness at wind development planning hearings, he was a fixture in courtrooms [related](#) to tobacco health suits. His ties to the tobacco industry and acceptance of tobacco funding ultimately caused the end of his academic career. Phillips then set up his own research foundation and has come out against peer-reviewed research, specifically regarding wind turbines.

Phillips published a paper related to epidemiology and wind energy in the un-indexed *Bulletin of Science, Technology and Society*. He is also a

member of the Science Advisory Group of the Society for Wind Vigilance.

In late 2013, Phillips testified in an Alberta court related to the Bull Creek Wind Project. The final [judgment](#) stated:

The Commission carefully reviewed the evidence provided by Dr. Phillips and finds that his prediction that three per cent of area residents will experience severe health effects and approximately 50 per cent will experience some health effects is not supported by the evidence for the following reasons.

First, Dr. Phillips provided little rationale for his predictions regarding the number of people who would experience health effects from the project. Dr. Phillips stated he based his prediction that 50 per cent of nearby residents will experience health effects on “things like the Nissenbaum study” but did not elaborate further...

Second, Dr. Phillips confirmed that his conclusions were not based upon any particular adverse event reports and, in fact, he had not reviewed any adverse event reports in the preparation of his written evidence...

Third, Dr. Phillips confirmed that the data he looked at was not organized in a systematic way and that he did not break down the data to determine a dose-response relationship between wind turbine operation and the symptoms he described. In other words, he did not correlate the prevalence or the intensity of the constellation of symptoms he identified with the sound levels at the persons’ residences or the distance between the person experiencing the symptoms and the turbine(s) in question.

Fourth, Dr. Phillips conceded that he had not specifically defined the population upon which his conclusions were based upon...

6. Dr. Daniel Shepherd



Dr. Daniel Shepherd received his PhD in psychoacoustics and is a Senior Lecturer at the Auckland University of Technology. He performed a study on the Makara Valley wind farm in New Zealand. It had a very small sample size of 39 participants, and a non-equivalent control group that found no self-reported variance in health or illness. Nonetheless, Shepherd asserted that setbacks of wind farms greater than two kilometers (1.2 miles) were required in hilly terrain. As with others on this list, he is a member of the Society for Wind Vigilance.

Shepherd has been granted expert witness status at several hearings in Canada and New Zealand. However, his testimony did not convince the review bodies that wind farms caused health problems, that setbacks should be changed, or that acoustics standards were inadequate.

And in 2011, he testified at a New Zealand Environment Court [hearing](#) for the Hurunui wind farm in Canterbury. Judge Melanie Harland, and Commissioners Marlene Oliver and Bruce Gollop wrote:

Dr. Shepherd referred to papers by Pierpont and Harry to support his theory that health effects can arise from turbine noise, but... Dr. Pierpont's work in this area has been criticized and should not be considered reliable.

Shepherd tried again at an Ontario [ERT](#) pertaining to the Suncor's Chatham Kent wind farm in 2013. According to the Tribunal, Dr. Kenneth Mundt, based on his 5 years of application of epidemiological concepts to potential environmental harm, said:

Dr. Mundt asserted that Dr. Shepherd does not provide scientific evidence to support his claims regarding stress related health effects caused by noise induced sleep deficits and annoyance. He stated that many of the references that Dr. Shepherd includes in his report are not peer reviewed published scientific research. Further, the interpretation of the results cited by Dr. Shepherd is severely limited due to the methodological issues in the designs and methods used in conducting these studies... Dr. Mundt stated that Dr. Shepherd did not explain how he identified and assessed the literature for quality and comparability, and therefore, it cannot be determined whether his conclusions are based on a thorough review of the literature or only a few selected studies... Dr. Mundt questioned the data presented in Dr. Shepherd's evidence, as he included no description of methodology for collecting or analyzing his data. Dr. Mundt stated that Dr. Shepherd fails to define "degradation of amenity" in his report and provides no scientific evidence to support his opinion that degradation of amenity at the Kent Breeze Wind Farms will cause serious adverse health effects.

Shepherd's testimony did not convince the judge in the Tribunal that wind turbines cause health problems.

7. Bill Palmer

[Mr. Bill Palmer](#) has a Bachelor of Science in Electrical Engineering, is a Professional Engineer, and worked for Bruce Nuclear, a Canadian nuclear power generating station, as a shift supervisor and trainer. He took early retirement to oppose wind energy development, and has been attempting to introduce evidence at Canadian ERTs with little success.



In a 2011, the Ontario [Erickson](#) ERT discussed his qualifications at length. In the end, the Tribunal said it did not matter if he were rendered expert status as his evidence was unconvincing and irrelevant compared to that of the acknowledged experts in his areas of concern:

It is quite clear that, even if the Tribunal were to accord Mr. Palmer's evidence full status as expert evidence, there is no question that the Tribunal heard much more detailed and convincing evidence on the issues raised by Mr. Palmer from the other relevant witnesses...

In sum, even if the Tribunal were to treat Mr. Palmer's evidence as expert evidence, the best that can be said of it is that Mr. Palmer provided evidence of some "risks" of harm that fall well below the statutory test applicable to this proceeding.

In October of 2013, Palmer attempted to serve as an expert witness again, this time at the Adelaide ERT in Ontario. This time he was [limited](#) in his testimony only to his areas of expertise, which ultimately eliminated most of his submitted evidence and testimony.

Palmer has often ignored the constraints. In this case, the Tribunal judgment stated:

...in his evidence, Mr. Palmer baldly states that shadow flicker will occur and states his opinion that it will distract drivers. However, Mr. Palmer was not qualified to give opinion evidence on the impact of shadow flicker.

Mr. Palmer does not provide any explanation, nor was he qualified to give opinion evidence, on how a driver might respond to such flicker, and, to the extent it caused distraction, whether the nature of the distraction could interfere with a driver's ability to safely drive the vehicle.

In light of the deficiency in Mr. Palmer's assessment and the un-contradicted opinion evidence of Mr. Dokouzian, the Tribunal finds that the Appellants have not established that shadow flicker will cause serious harm to drivers on Highway 402.

In summary, due to the numerous deficiencies in Mr. Palmer's assessment, and limitations respecting the evidence adduced in response to Mr. Palmer's evidence, the Tribunal finds that it has received insufficient evidence to make any definitive findings regarding the probability that blade throw, tower collapse, and damage resulting from a tower fire, would cause harm to human health.

Despite being told at least twice that he is not an expert and that his evidence failed every test of relevance applied to it, Palmer [attempted](#) to gain expert status on multiple subjects at the ERT in Ontario [regarding](#) the Arnow wind project.

Mr. Palmer gave evidence as a participant. He asked to be qualified to give opinion evidence as a professional engineer with expertise on acoustics and several matters related to public safety. Following submissions from the parties, the Tribunal qualified Mr. Palmer as a professional engineer with expertise in public safety risks due to turbine failure and some experience in the acoustics of wind turbines. The Tribunal directed Mr. Palmer to confine his testimony to public safety and acoustical assessment and to not speak to topics outside his area of qualification, such as health effects or shadow flicker along highways.

His evidence created conflicts, with actual experts pointing out numerous faults in the topics he was allowed to present to the Tribunal:

It was his [Mr. Dokouzian] position that Mr. Palmer selectively referred to a few statements in that study and used them out of context, while ignoring the overall conclusion of the study, that is, that the wakes of adjacent turbines did not increase the level of noise from a wind farm.

Mr. Dokouzian repeated the approach he used to calculate maximum sound power levels and took issue with Mr. Palmer's approach. He criticized him for "cherry-picking" the highest sound power level at each octave band, adding them and adjusting them to reach a figure that is higher than the maximum possible sound power level. He stated that such an approach is not indicated in any standard or guideline and is not justified with wind turbines. He explained that the specifications Mr. Palmer found for the Siemens models that were used in a wind farm in Nova Scotia were specifications from the 2009 models of those turbines, whereas for the Project, he used the specifications from the 2013 models, which indicate evolution in the certainty of their measurements, and somewhat lower sound levels as a result.

Mr. Coulson commented on the noise measurements undertaken by Mr. Palmer that were reported in the papers he has presented at conferences. Mr. Coulson identified a concern with the instrumentation used by Mr. Palmer as being not of high quality for acoustical measurements and having a large degree of noise associated with the equipment that Mr. Palmer did not account for. He also expressed concern about Mr. Palmer's lack of familiarity with the noise measurement standards and with some of the aspects of the locations he chose for carrying out his measurements.

Mr. Palmer was questioned about the papers he has prepared and presented at

conferences. These papers were largely based on noise measurements he carried out at existing wind farms in Ontario. He asserted that his measurements were conducted in accordance with international standards, but was unable to identify the particular standard to which they conform and was unable to state the confidence limits with his data, although he suggested it might be around +/- 1.5 dB.

Mr. Palmer identified his concern that the Project was within the minimum setback from 500 kV power lines established by Hydro One so that a turbine failure could lead to a failure in the electrical system corridor. When questioned, he admitted that he had never seen a Hydro One standard or technical guideline and did not know whether his concern was the basis for a setback between turbines and power lines.

Palmer has been accused of cherry-picking and using discredited data, using inaccurate instruments inappropriately, being unfamiliar with regulations, and not accepting the variance in amplitude modulation. Yet, he continues to attempt to testify against wind turbines. The Approval Holder noted:

Regarding the evidence of Mr. Palmer on the risk to public safety due to turbine collapse, blade failure, fire and ice throw, the Approval Holder submits that his evidence is unreliable, unscientific, provides no meaningful analysis of risk and is misleading.

8. Mike McCann



Mr. Mike McCann is a real estate appraiser from Chicago. He's a regular in anti-wind circles, constantly attempting to push his flawed case studies and statistical analyses to prove that wind farms cause property value harm. At present, he has conducted two small studies covering 81 property transactions, compared to the 10 major [studies](#) in North America and Europe covering 1.3 million property transactions. Using appropriate statistical methods, these studies show no damage to property values.

McCann was slated as a witness for the appellant at an ERT in Ontario regarding the Adelaide project in October 2013. He was slated to testify about habitat destruction from wind farms, a clear divergence from any expertise he might have. He was [rejected](#) as a witness before testifying:

Ben Lansink and Michael McCann, whom the Tribunal has ruled cannot testify in this proceeding.

9. Ben Lansink



Mr. Ben Lansink, like Mike McCann, is a property appraiser. Similarly to McCann, Lansink has a case study covering only 12 property transactions, which he claims, in the face of overwhelming evidence to the contrary, proves property value harm. For this, he is regularly cited and encouraged by anti-wind campaigners.

Also like McCann, Lansink was slated to testify on habitat destruction at an ERT regarding the Adelaide project in October 2013. Lansink was [rejected](#) as a witness before testifying:

Ben Lansink and Michael McCann, whom the Tribunal has ruled cannot testify in this proceeding.

10. Rick James



Mr. Rick James is a professional acoustician. When testifying or advocating against wind turbines, James has difficulty staying within the bounds of his actual expertise.

When he has attempted to testify at wind farm related lawsuits in the United States, his testimony has been [demonstrated](#) to be lacking in substance, his noise studies lacking in any rigor and his credentials and experience unrelated to measuring wind-related noise. He was slated to appear at the ERT in Ontario regarding the

Adelaide project and attempted to introduce testimony unrelated to acoustics. The ERT [restricted](#) his testimony strictly to matters of acoustics, eliminating most of his submission.

James also gave testimony at an [ERT](#) pertaining to the K2 Wind Huron County project. The council for the Ministry of the Environment noted:

The Approval Holder states that Mr. James has a bias against wind development and purported to give evidence beyond the scope of his expertise, and in so doing breached his obligations as an independent expert and the Tribunal's Practice Direction for Technical and Opinion Evidence ("Practice Direction for Opinion Evidence").

The ERT agreed:

[T]he Appellants had not established that the threshold to establish a deprivation or "serious psychological or physical harm" had been met.

James also appeared at the [Armow ERT](#), and his testimony included areas outside of his expertise and made substantial errors:

The Tribunal considered the submissions of the parties on this issue and qualified Mr. James to give opinion evidence on matters related to acoustics and noise control engineering and wind turbines. The Tribunal excluded from its consideration evidence provided by Mr. James concerning the health effects of wind turbines, and epidemiology.

He is a member of the Institute of Noise Control Engineers ("INCE"), but is not certified by the INCE as an acoustical engineer, nor is he a registered professional engineer in any jurisdiction.

He did concede that he is not an epidemiologist and was not aware of the limits of the Waterloo study identified by Dr. Bigelow. He also agreed that he did not include reference to epidemiological studies that came to differing conclusions in his witness statement.

James is not a certified acoustician or a registered professional engineer, but identifies himself and sells his services as both. He is prone to hyperbole while on the witness stand. He attempts to make erroneous claims despite having been corrected in exactly the same type of ERT proceedings previously. Yet, he continues to put himself forward as an expert.

11. Eric Erhard

Mr. Eric Erhard is a retired professional engineer who lives near a proposed wind farm in southern Ontario. He attempted to gain accreditation as an expert witness related to application of ISO standards on noise modeling to wind turbine noise specifically. He based his experience with the relevant ISO standard in his professional career for the Chatham-Kent Wind Action Inc. v. Director, Ministry of the Environment [tribunal](#).

The Tribunal was not convinced and stated:

In reviewing Mr. Erhard's submissions, the Tribunal finds that he does not have the specialized education, training or experience to qualify him to give expert evidence with respect to the application of ISO 9613-2 to noise from wind turbines. Mr. Erhard did not specifically submit that he had any specialized education or training with respect to the application of ISO 9613-2 to noise from wind turbines. Instead, he relied on his experience working for a company as an engineer and working with ISO 9613-2.

For the purpose of giving expert opinion evidence, the Tribunal finds that Mr. Erhard has failed to establish that the ISO standard can be applied to evaluate a project as complex as an industrial wind turbine facility by someone who does not have specialized knowledge and experience for this type of application.

The Tribunal agreed that he could speak to the ISO standard, but as he had no expertise on its application to wind farms and presented no evidence that his concerns related to application of the standard would have any impact on health, it was irrelevant testimony.

12. Les Huson

Mr. Les Huson is an engineer and acoustician running a small acoustics consultancy, L Huson and Associates Pty Ltd. This business is a member of the Association of Australian Acoustical Consultants. He regularly submits material against wind turbines and gains expert standing based on his credentials.

However, his testimonies often are disputed once submitted. During an [ERD](#) proceeding in 2011 related to the Allendale East wind farm, Huson attempted to bring evidence based on an alternative noise model to the standard ISO model more generally used. He then misused the model he was presenting and was forced to backpedal under cross-examination:

In cross-examination, Mr. Huson... was forced to concede that the authors of the ENM model had issued a Technical Note stating that the ENM had propensity to predict unusually high noise levels for this type of noise. In the Technical Note, the authors recommended that, when using the ENM, a correction needed to be applied to wind speeds for sources having a height greater than 10 meters.

In the circumstances, we reject the evidence of Mr. Huson.

Huson also submitted a lengthy set of material to the Victoria VCAT case related to the Cherry Tree wind farm in 2013. His testimony was referenced in the decision as being accepted over objections, and the Cherry Tree [decision](#) ruled in

favor of the wind farm. Huson gave evidence the same year at an Environment Court in New Zealand for the Hurunui wind farm proposal. Again he attempted to discredit an existing standard with inadequate understanding of it, and his evidence was dismissed.

Huson has a several year history of submitting material that does not bear scrutiny, yet continues to be brought forward as an expert witness.

13. Dr. Colin Hansen



Professor Hansen is an [Emeritus Professor](#) of the School of Mechanical Engineering at the University of Adelaide. He received his PhD in Mechanical Engineering.

In 2010, he testified in an ERD proceeding for a wind project:

Hansen gave evidence in the appellants' case. Hansen is highly qualified and an expert acoustic engineer, but he has very little experience with wind farms. Professor Hansen's brief from the appellants was basically to provide a critique of Mr Turnbull's evidence and other information about the acoustic properties of the proposed wind farm. He was not, therefore, in a position to

put a prediction of his own up against Mr Turnbull's. Professor Hansen was concerned that, at higher wind speeds, the wind may exceed Mr Turnbull's predictions. Part of the basis for this was a desire for proof beyond the manufacturer's assurance that the noise level would not increase at wind speeds over 12 m/s. No factual basis was provided for Professor Hansen's concern. Mr Knill's explanation of the manufacturer's assurance was provided in his statement at para 42:

[...]

92. We accept Mr Knill and Mr Turnbull's evidence on this point.

Hansen continues to provide submissions to wind siting proposals.

14. Dr. Adrian Upton



Dr. Adrian Upton, [Emeritus Professor](#) of McMaster University, is a relatively new addition to the ranks of purported experts called against wind farms. Last year, he submitted testimony regarding the Bull Creek Wind Project. The [judgment](#) by the Alberta Utilities Commission stated:

In the Commission's view, Dr. Upton did not appear to have specialized knowledge or experience specifically with respect to wind turbines and their health effects (other than epilepsy). Dr. Upton appeared to be unfamiliar with the qualifications of some of the authors of the reports he relied upon in forming his opinion on the health impacts of wind turbines or whether the reports he referenced were published or peer

reviewed. The Commission took this apparent unfamiliarity with the subject into account when it weighed Dr. Upton's evidence regarding the general health impacts of wind turbines on nearby residents.

It's likely that courts will be seeing more of this Dr. Upton in the next couple of years, as he testifies on his actual area of expertise, agreeing that wind turbines will not cause epileptics any problems, but then proceeds to submit unsupported testimony in unfamiliar areas.

15. Debbie Shubat



Ms. Debbie Shubat is a Registered Nurse and teaches nursing at Sault College in Sault St. Marie in northern Ontario. As pictured, she has been protesting plans for a local wind farm near Bow Lake.

The Environmental Review Tribunal appeal related to the wind farm differed in their [decision](#) released July 9, 2014:

[28] Ms. Shubat asked to be qualified to give opinion evidence as an expert in public health nursing and the interactions between wind turbines and human and community health. She has a Master of Science in Nursing degree, and was qualified as an expert community health nurse in a previous REA appeal, *Moseley v. Director (Ministry of the Environment)*, [2014] O.E.R.T.D. No. 23 (“Moseley”). The Approval Holder and Director opposed her qualification on the basis that her expertise does not extend to the impact of wind turbines on human health.

[29] The Tribunal declined to qualify Ms. Shubat as an expert, ruling that the subject matter of her expertise, that being nursing and community health nursing, does not qualify her to give expert opinion evidence on the impact of wind turbines on human health. As outlined by the Supreme Court of Canada in *R. v Mohan*, [1994] 2 S.C.R. 9 (“Mohan”), the field of expertise must be relevant to the issue to be decided, in order for the Tribunal to receive opinion evidence. The Tribunal reviewed Ms. Shubat’s witness statement and found that all of the opinions she expressed were related to the impact of wind turbines on human health. She testified that any expertise she possesses in this regard comes from self-study. Ms. Shubat was clear that, as a nurse, she is not qualified to diagnose medical conditions and would not purport to do so. Ms. Shubat proceeded to give her evidence as a lay (fact) witness.

[30] A number of documents about the impact of wind turbines on human health were attached to Ms. Shubat’s witness statement as documents that she wished to rely upon. However, as Ms. Shubat was found not to have the qualifications to interpret and explain them for the Tribunal, or to put them into context within the existing scientific debate around wind turbines and human health, the articles could not be accepted for the truth of their contents and were not admitted into evidence.

16. Lori Davies



Ms. Lori Davies is a registered social worker who operates a small therapy business after having held various formal positions in social work. As with Shubat, Davies attempted to gain accreditation as an expert witness in the Bow Lake ERT and was rejected as documented in their July 9, 2014 decision:

[34] Ms. Davies requested designation by the Tribunal as an expert in social work. Ms. Davies has a Masters Degree in social work and

considerable professional experience. The Approval Holder and Director had no issue with her professional qualifications as a social worker, but objected to the Tribunal qualifying her to give expert opinion evidence in the hearing on the basis that her qualification does not extend to the impacts of wind turbines on human health.

[35] The Tribunal ruled that Ms. Davies' expertise as a social worker is not sufficiently related to wind turbines and harm to human health to give the opinions she is purporting to give, and declined to designate her as an expert. In this respect the Tribunal relies on Mohan, as above. As with Ms. Shubat, the Tribunal also did not allow into evidence the documents Ms. Davies wished to rely on in forming her opinion, which were all outside of her area of expertise. Ms. Davies therefore gave her evidence as a lay witness.

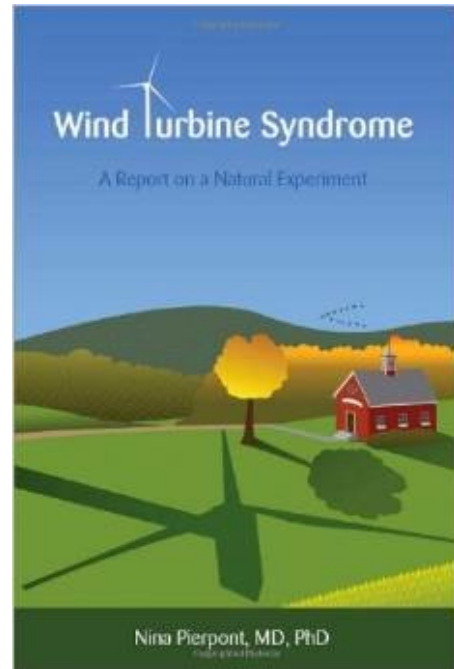
Summary

At present, 16 individuals, with varying degrees of expertise, have attempted to gain status as expert witnesses related to negative impacts of wind turbines under rules of legal evidence. These individuals lacked expertise and substantial evidence as detailed by courts around the world. However, this has not prevented the testimony from being submitted. As more anti-wind experts continue to appear, often pushing the same material, we expect more testimony from anti-wind “experts” will be rejected. The trend to disqualify these witnesses early in wind energy court cases is necessary to avoid wasting further taxpayer resources.

Wind Health Expert Ethics Challenges

There are at least three former and current medical professionals who are leveraging no-longer-active or irrelevant medical credentials to lend weight to campaigns against wind energy, and are performing research without oversight. Medical ethics watchdogs are beginning to take note.

Perhaps the most prominent is [Nina Pierpont](#), a pediatrician who sought to recruit anti-wind activists for a study via anti-wind groups who blamed wind farms for their health conditions. Pierpont interviewed 23 people by phone, accepted hearsay evidence on a further 15 people, and performed no direct examinations or medical histories. Yet, she self-published a [294-page book](#). As a result, she coined a “new medical condition” called Wind Turbine Syndrome. Along with her husband, she presides over a website of the same name where dissenting opinions are not welcome, and comparisons of wind energy supporters to [Hitler](#) and [Nazis](#) are regular features.



In Canada, [Carmen Krogh](#), retired pharmacist and member of the Advisory Group of the anti-wind energy campaigning organization, the Society for Wind Vigilance, regularly speaks to [media](#) and [groups](#), and regularly [submits](#) to wind farm siting cases. She has been fighting a wind farm in their retirement community along with her husband. She also has [published](#) error-filled attacks against wind energy and turbines. Recently, Krogh presented a paper at the 5th Annual Wind Turbine Noise 2013 Conference, where she was corrected by an audience member for misrepresenting and misquoting others.



In Australia, [Sarah Laurie](#) is a former general practitioner who is now unregistered and the CEO of the [Waubra Foundation](#), an [anti-wind lobbyist group](#) with [strong fossil fuel ties](#). Ms. Laurie's ethics infractions have become the formal subject of complaints and ethics investigations.

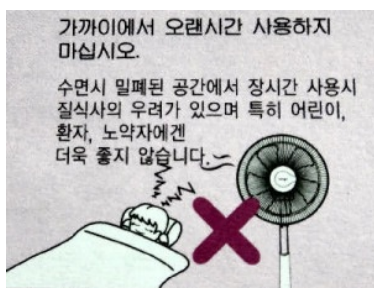
A primary principle of medical ethics is "First, do no harm." An outcome of that principle



Image Courtesy of Independent Australia

is that medical professionals must take care when doing any research or asserting any health implications that they do not cause worse problems than they are researching. As such, any medical research, especially that involving direct contact with a study group, involves a medical ethics assessment by a group set up for that purpose.

Since 2009, a hypothesis for increasing health complaints near a subset of wind farms in English-speaking countries has been that they are caused by the nocebo effect, but “wind turbine syndrome” is in fact a psychogenic or communicated disease.



The [nocebo effect](#), first named by WP Kennedy in 1961, is the negative side of the placebo effect. Instead of suggestions leading to positive health outcomes, suggestions lead to negative health outcomes. The nocebo effect causes health issues in psychogenic health hysterias such as “[fan death](#),” where people believe that a fan in a closed room chops oxygen molecules in two, causing them to be unable to breathe. The nocebo effect causes some [side effects](#) of medicine, creating a

challenge for the ethical disclosure of potential side effects of medication. As a result, the nocebo effect is a [confounding factor](#) in clinical trials of medication and treatment techniques. Direct studies into the nocebo effect have been banned due to medical ethics concerns since roughly the 1970s.

Researchers are now assessing the nocebo and psychogenic hypotheses, finding strong evidence that they are the cause of the majority of complaints and are responsible for significant increases in numbers and severity of complaints. Professor Simon Chapman and a team of researchers at the Public Health Faculty of the University of Sydney of Australia found strong supporting evidence that the [psychogenic hypothesis was the dominant factor in wind farm health complaints](#) in a recently published study undergoing formal peer review and publication.

Ms. Fiona Crichton and along with researchers from the University of Auckland in New Zealand found strong supporting evidence for the [nocebo effect being the cause of significantly increased numbers and severity of symptoms attributed to infrasound](#) (noise below the frequency which humans can hear, typically zero to twenty Hertz).

Studies such as Crichton's that assess the nocebo effect are required to ensure that larger goals of the study are expected to have positive health outcomes, and that negative

impacts of the nocebo effect are monitored during the study and the study terminated if they become too severe. Further, study participants are informed after the study was over that the goal was to assess the nocebo effect and that symptoms that they experienced were not due to infrasound, following standard practice.

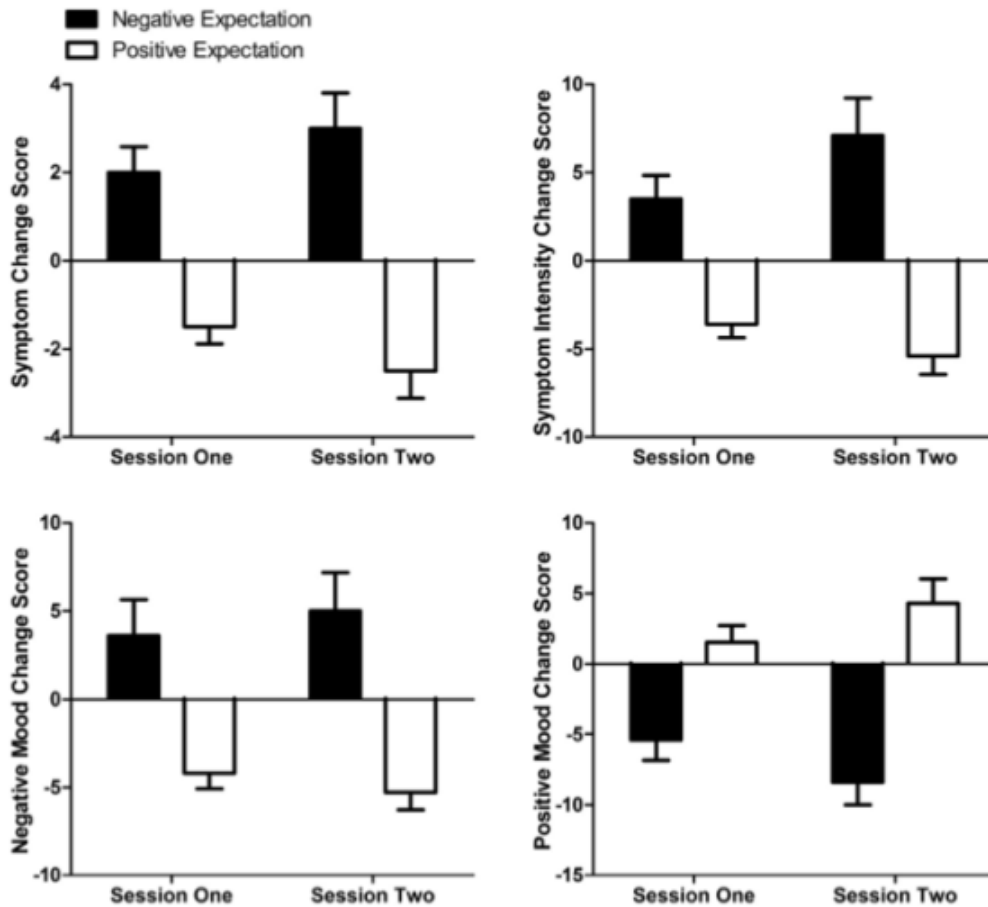


Figure 1. Changes in symptoms, symptom intensity, and mood in negative and positive expectation groups.

Most of the research done by anti-wind campaigners has been conducted outside of the ethical framework to which registered practitioners are expected to submit. Dr. Amanda Harry's [surveys of health complaints](#) in the United Kingdom contained leading questions and framing that were likely to increase negative impacts. [Dr. Michael Nissenbaum](#), also of the Society for Wind Vigilance, performed similarly challenged surveys in Maine. He then collected more data from the same people in whom he had likely introduced bias and symptoms, and wrote a report on the results, one of many challenges with his report (see two [critical reports](#) in the same journal).

However, these biased researchers have operated without ethical oversight from medical oversight organizations. That is starting to change.

On April 23, 2013, Amber Jamieson at Crikey [reported](#) that the National Health and Medical Research Council of Australia was investigating Sarah Laurie for medical ethics violations. If found guilty, Laurie could face a fine of up to \$30,000 AUD. Laurie could also be the subject of lawsuits charging that additional harm. Both Sarah Laurie and Carmen Krogh have [ignored direct requests](#) to stop spreading unfounded health fears which are likely to be causing health issues.



The Waubra Foundation responded with a media release on [May 9, 2013](#). The organization states that there is an effort to denigrate and distract from the Waubra Foundation's campaign against wind energy and declares that an Independent Commission Against Corruption or Royal Commission

should be struck to determine who is commencing the attack. They do not provide any explanation as to why Laurie's public record statements regarding research she is undertaking without oversight and people she is providing health guidance to while unregistered were misinterpreted, they merely deny the charges and claim they are malicious.

They state that these accusations will damage Ms. Laurie's reputation. However, Laurie is already listed on Australia's [Quack Watch](#) site and was a nominee for the Australian Skeptic's association's [Bent Spoon Award](#) for 2013, and has been referenced in the same sentences as Australia's dangerously [deluded anti-vaccination campaigners](#).

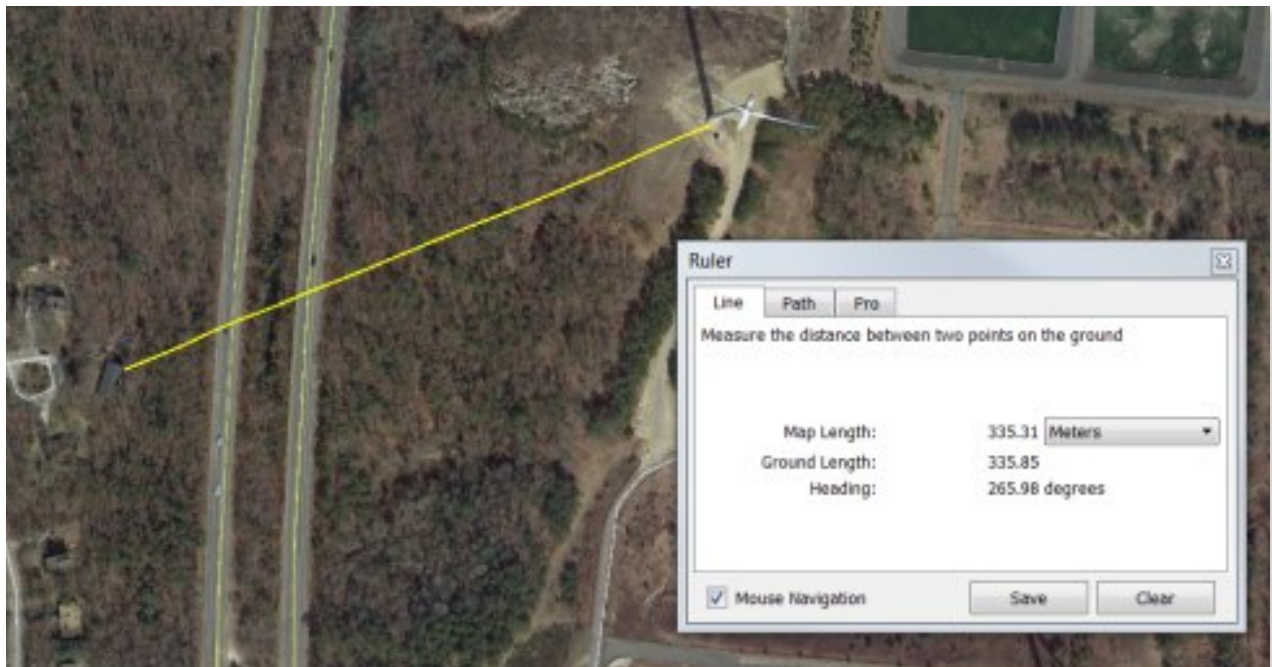
The outcome to date of the ethics complaint is that Ms. Laurie must stop referring to herself as doctor based on an agreement with the Australian Health Practitioner Regulation Agency (AHPRA). Despite this, she continues to refer to herself as Dr. Sarah Laurie in court proceedings she engages in. And a key director of the Waubra Foundation, Michael Wooldridge, is facing an [Australian ban](#) of up to ten years on being a Director of a company based on his part in the collapse of Prime Trust and an illegal \$33 million AUD offer to a businessman.

Another ethics-challenged anti-wind medical professional is [Dr. Bill Studzienny](#), a rural dentist in the Manitoulin Island region of Ontario. Studzienny is actively refusing to serve long-time patients who support a local wind farm. Because the local First Nations tribe is building the wind farm on their land, Studzienny is almost entirely stopping service to native Canadians. The Human Rights Tribunal and the Royal College of Dental Surgeons have received complaints and are investigating Studzienny's actions. The Royal College of Dental Surgeons recently charged Studzienny with four allegations of disgraceful, dishonourable or unethical conduct.

Falmouth Wind Farm Case: The Outlier

In 2010, the town of Falmouth, Massachusetts constructed a pair of Vestas V82 1.65 MW wind turbines on their waste water treatment plant. After the first wind turbine became operational, nearby residents started complaining about noise. There are a few interesting circumstances related to the wind turbines in Falmouth.

Most of the closest homes are on the other side of a divided highway, Route 28, and when the highway is busy there is considerably more ambient noise in the area.



Falmouth turbine showing the closest home located across a divided highway.

As can be seen from the Google maps image, the closest home is 335 meters or 1099 feet from the wind turbine. Given that there is a divided highway which provides much higher levels of ambient noise much of the time, the distance seems potentially reasonable. This isn't a quiet area most of the time and wind energy noise is typically highest when wind noise itself masks it.

The turbines were originally [intended](#) for another site. They were purchased by the Massachusetts Technology Collaborative for a site in Orleans, Massachusetts. That project didn't go ahead and the turbines were sold to two different organizations for deployment in Falmouth, which had been considering 1.5 MW wind turbines.

There was a specific noise complaint related to a "[bong](#)" sound that was traced to a misaligned inertial damper and corrected by Vestas. There are occasional mechanical

challenges in wind farms as with any large piece of machinery which can lead to it being noisier than expected until corrected. This occurred in Falmouth and was corrected.

Massachusetts and Falmouth combined have three provisions in their noise guidelines and statutes. Falmouth required that wind farms meet the 40 decibels A-weighting (dBA) limit which is in agreement with World Health Organization guidance for environmental noise of an annual average of 40 dBA outside homes (dBA indicates decibels in the A-filtered scale which is what humans hear best and is agreed time-and-again to be the appropriate choice for wind noise assessments). The Massachusetts Department of Environmental Protection (DEP) requires that there be no more than a 10 dBA increase in a specific standard of averaged noise and that there be no 'pure tone' conditions which cause specific spikes in specific frequencies which are disruptive.

Noise modeling [projections](#) after the first turbine was constructed, including a ten-day noise testing period by HMMH, found that under certain circumstances the combination of the two turbines might occasionally exceed the 10 dBA increase limit at two homes on the other side of the highway. Noise modeling standards assume that the wind moves directly through each turbine to the receptors.

In May 2012, additional sound [testing](#) was performed by the DEP (This was done using non-standard approaches it appears, including a noise averaging approach which is not aligned with acoustic's industry standards and would tend to skew results high, and a peak noise determination approach which is also not aligned to industry standards). The complainants selected the wind conditions under which the greatest noise was experienced, and that became the basis for testing.

It determined that the wind turbines did exceed the 10 dBA threshold at night at just one home. Interestingly, this home is not one of the closest homes across the highway, but a home to the south at 211 Blacksmith Shop Road. Averaged noise calculations using the non-standard approach when turbines were operating were not included in documentation, but ambient noise approached 40 dBA without turbines so it can be assumed that under the worst circumstances noise outside of some homes with turbines exceeded an average of 40 dBA.

The 10 dBA guidelines have a solid rationale, because as the WHO guideline documents, if maximum noise inside a bedroom exceeds 45 dBA maximum more than 10-15 times in a night, sleep can be sufficiently disrupted to cause concern. The WHO guidelines point out that partially closing windows can reduce noise inside bedrooms by 10-15 dBA. So does the empirical evidence show that noise inside bedrooms was outside of WHO standards? No, it doesn't. The worst noise was around 50 dBA outside of homes and with partially closed windows that would likely have been 40 dBA or lower inside bedrooms. And given that the testing was only done under conditions identified as worst by the

complainants, it's unlikely that the World Health Organization guideline of 40 dBA annual average outside of homes was exceeded either.

The final circumstance that is interesting about this case is that Massachusetts (and New England in general) is a locale where anti-wind campaigners have created health scares in residents related to wind energy. Dr. Nina Pierpont, who is at the epicenter of the psychogenic ailments related to wind energy, is a resident in the region, and in fact [interviewed](#) Neil Andersen regarding his symptoms in 2011. As has become clear from other court cases, the evidence presented, and further studies in Australia and New Zealand, Dr. Pierpont creates symptoms in those near wind turbines by raising health fears and triggering the nocebo effect in them.



In 2013, the town of Falmouth had reduced the turbine operating hours to 16 hours per day, eliminating noise from the turbines at night. However, Neil and Elizabeth Andersen, who lived at 211 Blacksmith Shop Road, did not consider that adequate and brought a civil [action](#) to have the turbines shut off for twelve hours a day instead of eight and they won. Pertinent quotes from the decision include the following:

The Andersens have submitted affidavits and medical records supporting their claim that the nuisance produced by the turbines has resulted in substantial and continuous insomnia, headaches, psychological disturbances, dental injuries, and other forms of malaise. The court finds the Andersens' claims that they did not experience such symptoms prior to the construction and operation of the turbines, and that each day of operation produces further injury, to be credible.

Thus, a turbine schedule of 7am to 7pm, Monday through Saturday, would provide seventy-two operational hours per week and provide substantial mitigation of the proven (at this point) harm, with no irreparable harm to the Town. While the Town may suffer some financial penalties for reduced REC production and a decrease in expected revenue generation, the risk of major default on various financing agreements or damage to the equipment from prolonged shut down is likely avoided. [the judge adds some holidays later in the decision]

In this case, according to the data, there was a noise problem with one of the turbines that was fixed. The turbines operated within World Health Organization guidelines for community noise requirements but were perceived to be noisy especially under certain

wind conditions. A single judge out of the 49 cases that considered medical information found the wind health impact claims to be credible, although there is no documentation I was able to find that medical experts were brought in as witnesses in this case.

Of course, anti-wind campaigners such as [Sarah Laurie](#) of Australia and [Carmen Krogh](#) of Canada now reference this decision in their submissions to wind farm siting bodies around the world as if it is proof, as opposed to an interesting outlier.

Conclusion

Wind energy has been in court for health-related complaints at least 49 times in five English-speaking countries. The courts have dismissed all but one of the cases and that case is clearly an outlier and circumstantial.

Municipalities and other levels of government involved in wind farm siting can rest assured that citizens are not put at risk by wind farms, and further, that vexatious cases brought by those opposed to wind farms will not succeed on health grounds. In civil cases, judges have typically awarded costs to the defending organizations, so while court cases are time consuming, organizations will typically not find them costly otherwise.

Court cases often occur after anti-wind campaigners travel to potential wind farm sites to spread health and other scares. Municipalities, companies, and organizations considering wind farms would benefit by working to establish good consultative relationships early with future wind farm neighbors, providing them with clear and accurate information about impacts and benefits. This will assist in making the citizens relatively immune to the hyperbole of anti-wind groups, and prevent frivolous court cases.

The courts have spoken. Wind farms do not cause health problems.

Addendum: 49 Cases Related to Wind Farms and Health

This addendum contains the full set of 49 cases which were found to have heard evidence pertaining to wind farms and health. To aid in preparation of legal defenses, a link to the decision is provided as well as the indexed name for the case used in the legal system. Almost all referenced links point to decision databases in the jurisdictions, but some point to decision documents maintained on other sites. See the next page for the full list of wind health cases.

Wind Farm Health Decisions from Courts

As of July 2014

Year	Geography	Wind Farm	Type*	Indexed Name	Link	Decision	Key Quote
2014	Ontario, Canada	Bow Lake	Environment	Fata v. Director, Ministry of the Environment	https://www.ert.gov.on.ca/files/201407/00000300-FA2A333E0026-69942695850026.pdf	In favour of wind farm	[93] For the above-noted reasons, the Tribunal has not established that the Project, operating in accordance with the REA, will cause serious harm to human health due to emissions of sound or vibrations, visual or social impacts, interference with access to or enjoyment of property, or fire. The evidence on annoyance caused by visual impacts amounts to an expression of concern, which is insufficient to meet the test in s. 145.2.1 of the EPA. In addition, the Appellant has not established any breach of the Charter, as a result. Mr. Fata's appeal is dismissed.
2014	Ontario, Canada	Arrow	Environment	13-124 (KROEPLIN V. MOE)	https://www.ert.gov.on.ca/english/decisions/in dex.htm	In favour of wind farm	[81] Dr. [Kerwin] Moore gave evidence that annoyance is not a medical condition or diagnosis, but is a psychological state that is under the control of an individual, noting that it is up to an individual to have coping mechanisms to deal with annoyance. He stated that many new technologies can cause annoyance or fear, including wifi, immunization and fluoridated water, in spite of a lack of scientific documentation of population harm. [207] The evidence regarding health effects from other Ontario wind energy projects was provided by the post-turbine witnesses. The Appellants did not call any medical experts to address either the generic case linking wind turbines and harm to health or the specific issue of the cause of the symptoms and conditions experienced by these post-turbine witnesses. The medical records put into evidence from these witnesses in some cases confirmed serious medical conditions, but none of their records included a physician's note stating an opinion that the cause, or the worsening, of their conditions was due to exposure to wind turbines. [209] Therefore, the only evidence before the Tribunal that the post-turbine witnesses suffered harm as a result of exposure to wind turbine emissions was the personal assessment of each of those witnesses. The Tribunal finds that there was no credible evidence of cumulative or additive effects from the noise of the wind turbines, or that there is a +/- 5 dBA margin for error. [...] The Tribunal accepts the evidence of Dr. McConney that the predicted sound levels in the bunkhouse and the greenhouses attributable to noise from the wind turbines P038 and P039 will not cause serious harm to the Appellant's employees. The Appellants had not established that the threshold to establish a deprivation or "serious psychological or physical harm" had been met.
2014	Ontario, Canada	South Kent	Environment	8/7/20148/7/2014	http://www.ert.gov.on.ca/files/201401/00000300-DG52F50A0026-ES5449407E0026.pdf	In favour of wind farm	This judgment set aside the ruling of the 2013 Ostrander Point ERT ruling related to harm to the Bannings' Turtle, upheld the rejection of medical harm, upheld the rejection of harm to birds and upheld the rejection of harm to alvar (plant life). Related solely to the health aspect: [120] APPEC says that the Tribunal erred in this conclusion because it subjected their evidence to a standard of scientific certainty rather than deciding it on balance of probabilities. I do not agree. In my view, the core problem with APPEC's submission is that it confuses the standard for admissible evidence with the standard to be applied in deciding the ultimate issue, that is, whether the test under s. 145.2(2) has been met. [121] [...] For a court to conclude that a novel scientific theory is reliable, there must be more than a finding that the theory is more probable or more likely than not. Rather, it requires the fact finder to be satisfied that the theory is, in fact, a reliable one. [123] The Supreme Court of Canada has set out four factors to be considered in determining whether the threshold reliability is met: In R. v. J.-L.J., [2002] 2 S.C.R. 600, the four factors were identified, at para. 33, as: (i) whether the theory or technique has been tested; (ii) whether the theory or technique has been subjected to peer review and publication; (iii) the known or potential rate of error or the existence of standards; and, (iv) whether the theory or technique used has been generally accepted.
2014	Ontario, Canada	K2 Wind Huron County	Environment	Dennan v. Director, Ministry of the Environment	http://www.ert.gov.on.ca/files/201402/00000300-DH740414310026-ES64ED4690026.pdf	In favour of wind farm	[124] Viewed from the medical perspective, and that is the perspective that is relevant in this case since harm to human health is being asserted, the expert evidence offered by APPEC, through Dr. McMurtry, failed when tested against any of these factors. [128] The Tribunal's conclusion on this issue is a reasonable one. Consequently, there is no basis for this court to interfere with that conclusion.
2014	Ontario, Canada	Ostrander Point	Higher	Ostrander Point Gr Inc. and another v. Prince Ed	http://www.ontariocourts.ca/sj/decisions/	For the wind farm	

2014 Alberta, Canada	Ball Creek	Utility	1646658 Alberta Ltd., Ball Creek Wind Project	http://www.auc.ca/applications/decisions/D00-DH65AB711H0026-EBK496720W0026.pdf	For the wind farm	This is the first wind farm approval which saw substantial submissions by an international group of non-expert 'experts' opposed to wind energy. They have previously been active in Australia and Ontario, but never in Alberta.
2014 Ontario, Canada	Adelaide	Environment	Wrightman v. Director, Ministry of the Environment	http://www.ert.gov.on.ca/files/2013/02/000003-00-DH65AB711H0026-EBK496720W0026.pdf	For the wind farm	435. The Commission has carefully reviewed the evidence filed in this proceeding regarding the health effects of wind turbines. In the Commission's view, the evidence filed in the proceeding does not support the proposition that the audible and inaudible (low frequency noise and infrasound) that would be produced by the project would result in health effects for area residents. The Commission recognizes that operation of the project may result in annoyance for some area residents and that the more subjective elements of this annoyance may not be mitigated for all residents. Notwithstanding the potential for annoyance, the Commission is satisfied that adherence to AUC Rule 012, and the project's 40 dBA Leq nighttime PSL will protect nearby residents, including children, the chronically ill and the elderly from sleep disturbance and other health effects related to turbine noise. In making this decision, the Commission specifically had regard to pre-existing medical conditions of J.B., C.H. and H.B. and their congenital medical evidence. To ensure compliance with AUC Rule 012 and the PSL, the Commission would include the conditions described in the previous section for noise monitoring that would include monitoring for low frequency noise at various locations, including the residences of J.B., C.H. and H.B.
2014 Ontario, Canada	Ernestown Wind Farm	Environment	Bear v. Director, Ministry of the Environment	http://www.differentwindspower.ca/Portal/23/Download/Final/ERT%20decision%20DWP%20dec%2023-13.pdf	For the wind farm	[210] The Tribunal finds that the Appellants have not established that engaging in the Project as approved will cause serious and irreversible harm to plant life, animal life or the natural environment. [211] The Tribunal finds that the Appellants have not established that engaging in the Project as approved will cause serious harm to human health. [212] The Tribunal dismisses the constitutional challenge to s. 142.1 of the EPA on the basis that the Appellants did not proceed with this issue in their appeal. [24] The Tribunal finds that the Appellants and the presenters have not established that engaging in the Project in accordance with the REA will cause serious harm to human health. The evidence in this proceeding does not establish a causal link between wind turbines and either direct or indirect serious harm to human health under the conditions imposed in the REA requiring a setback distance of 550 m, and a maximum noise level of 40 dBA.
2013 Ontario, Canada	Melancthon Extension	Environment	Board v. Director, Ministry of the Environment	http://www.newswatchcanada.ca/30022d1.pdf	Against wind farm due endangered turtle	The views of NSW Health as reported in the Bodogora determination and the Victorian Department of Health publication, expressly state that there is no scientific evidence to link wind turbines with adverse health effects. These are the views of State authorities charged by statute with the protection of public health. - the tribunal wisely defers to public health authorities And interestingly: The respondents have been unable to refer the Tribunal to any judgment or decision of an environmental court or tribunal which has found that there is a causal link between emissions from a wind farm and adverse health effects on nearby residents.
2013 Ontario, Canada	Cherry Tree	Civil	Cherry Tree Farm Pty Ltd v Mitchell Shire Council	http://www.vcat.vic.gov.au/sites/default/files/cherry_tree_wind_farm_pty_ltd_v_mitchell_shire_council_interim_decision.pdf	In favour of wind farm	The Andersen's have submitted affidavits and medical records supporting their claim that the nuisance produced by the turbines has resulted in substantial and continuous insomnia, headaches, psychological disturbances, dental injuries, and other forms of malaise. The court finds the Andersen's claims that they did not experience such symptoms prior to the construction and operation of the turbines, and that each day of operation produces further injury, to be credible. Taking this evidence of irreparable harm in conjunction with the moving parties' substantial likelihood on the merits of their claim to uphold the ZBA's finding of an ongoing nuisance created by daily 7am to 7pm turbine operation, the court finds there is a substantial risk that the Andersen's will suffer irreparable physical and psychological harm if the injunction is not granted. See <i>Packaging Indus. Group</i> , 380 Mass. at 617.3
2013 Massachusetts, USA	Falmouth	Higher	TOWN OF FALMOUTH vs. TOWN OF FALMOUTH ZONING BOARD OF APPEALS & others	http://wambudafoundation.org.au/wp-content/uploads/2013/11/11-22-13-FalmouthZBApreliminaryjunctiondecisionandorder.pdf	Against wind farm	As previously articulated in this court's Interim Order of Decision, the Andersen's have a substantial likelihood of success on the merits of their position that the ZBA's decision that both turbines created a nuisance prohibited by Code of Falmouth §240-110 at the property in question, and its direction that the "Building Commissioner" take all necessary steps to eliminate the nuisance caused by the operation of the wind turbines", was based on a legally reasonable ground that was sufficiently supported by facts contained within the record. 240-110 - No use shall be permitted which would be offensive because of injurious or obnoxious noise, vibration, smoke, gas, fumes, odors, dust or other objectionable features, or be hazardous to the community on account of fire or explosion or any other cause. No permit shall be granted for any use which would prove injurious to the safety or welfare of the neighborhood into which it proposes to go, and destructive of property values, because of any excessive nuisance qualities. [3] There is no proof that specific noise levels in the consent conditions were, or are being breached. Monitoring is ongoing to determine the question. The appellant accepts however, that noise generated by the wind farm is greater than was predicted in the application and that residents are also affected to a greater degree than predicted. [30] It is not yet known if the condition 4 upper limit of 40dBA or background and 5dBA is being breached. Initial calculations by Mr. Holstead, the current acoustic engineer for NZWL, suggested that some downwind conditions (i.e. wind blowing from an SSE direction) did produce breaches of that standard at one property, but subsequent corrections by NZWL suggested that may have been wrong. Monitoring continues. [73] The appellant's appeal is allowed. Declaration 1.9 is set aside. The respondent's cross-appeal is overruled by the result.
2013 New Zealand	Te Reo Hau	Higher	New Zealand Wind Farms Limited vs Palmerston North City Council		For the wind farm	

2013	New Zealand	Hurunui	Environment	Meridian Energy Limited vs Hurunui District and Canterbury Regional Councils	http://www.nzlii.org/sg/bn/download.cgi/nz/cases/NZEnvC2013/59	Farm	<p>[289] [...] rural environments are far from quiet in the sense of there being no sound. The sounds in a rural environment can be "natural" in the sense of arising from nature (e.g. birdsong, the sound of animals), but they can also be "unnatural" in the sense of being manmade (e.g. the sound of tractors and farm machinery). Whilst Mr. Carr talked about "hearing the silence" of his property, there are times when the functions of his property, even if they are within his resource consent provisions, may produce sound which could be viewed by some as unnatural and unnatural in this environment.</p> <p>[290] [...] there is no legal right for an existing and tranquil environment to remain so.</p> <p>[248] With the amendments we have suggested, we are satisfied that these conditions will adequately mitigate any potentially adverse noise effects and will ensure that amenity values as they relate to noise, are maintained.</p> <p>[269] [...] We have concluded that, of the reviews done, the current weight of scientific opinion indicates that there is no link between wind turbine noise and adverse health effects. Dr. Shepherd challenges this but we are not satisfied that Dr. Shepherd's critique of the reviews (as presented to us) is sufficiently robust to outweigh their conclusions. Neither are we satisfied that the Madarov study is sufficiently robust in its methodology for us to give it the kind of weight that would be required to counterbalance the weight of the other scientific opinion expressed in the reviews.</p> <p>[270] Overall we are satisfied that the research establishes that adverse health effects are not likely to arise from the operation of the wind farm.</p>
2013	New York, USA	Monticello Winds	Higher	Lawrence J. FRIGALTI et al., Respondents–Appellants, v. TOWN OF RICHFIELD PLANNING BOARD et al., Appellants–Respondents, et al., Respondent.	http://caselaw.findlaw.com/ny-supreme-court/1636558.html	For the wind farm	<p>The Board engaged in a lengthy SEQRA review process, which included hiring an outside consulting firm and conducting no less than 11 Board meetings between the time the permit application was filed in March 2011 and the issuance of the negative declaration in November 2011. The full EAF was republished with studies on environmental issues, including the project's impact on bats and birds, "shadow flicker," noise, cultural resources and visual effects, and the Board afforded members of the public an opportunity to voice their concerns with respect to the project. In addition, the Board received input as to the project's environmental impacts from various state agencies, including the Office of Parks, Recreation and Historic Preservation, the Department of Environmental Conservation, the Department of Transportation, and the Department of Agriculture and Markets.</p> <p>At the conclusion of the environmental review process, the Board issued a thorough and reasoned analysis addressing the areas of relevant environmental concern—land, water, air, plants and animals, agricultural land resources, aesthetic resources, historic and archeological resources, open space and recreation, noise and odor, among others—which, in our view, demonstrates that the Board took the requisite hard look at those concerns.</p> <p>The ODEC staff report recommended that the council decline to find that a setback of less than two miles posed a significant threat to public health and safety. First, the report explained that the council previously had determined—in an unrelated proceeding—that a 1/4 mile setback was sufficient and that the council since had applied that smaller setback to other wind energy facilities. Second, the report explained that ODEC noise regulations established a "public health setback" that may exceed 1/4 mile depending on certain circumstances and that the council applied those regulations to oil energy facilities. The report therefore recommended that the council follow its own previously established 1/4-mile setback or a setback that otherwise complied with ODEC regulations, whichever was greater.</p>
2013	Oregon, USA	Helix Wind Power Facility	Higher	IN RE: the Request for Amendment # 2 of the Site Certificate for the Helix Wind Power Facility; The BLUE MOUNTAIN ALLIANCE; Morm Karaman; Richard Jolly; Dave Price; Robin Severe; and Cindy Severe; Petitioners, v. ENERGY FACILITY SITING COUNCIL, and Site Certificate Holder Helix Windpower Facility, LLC, Respondents.	http://caselaw.findlaw.com/or-supreme-court/1628675.html	For the wind farm	<p>One of five claims was accepted, that the Inspector needed to assert priority of the Local Plan and didn't.</p>
2013	Northamptonshire, United Kingdom	Spring Farm Ridge	Higher	South Northamptonshire Council & Anor v Secretary of State for Communities and Local Government & Anor [2013]	http://www.bailii.org/ew/cases/EWHC/Admin/2013/013/11.html	Against the wind farm	<p>On the subject of noise: As I see it this Ground was raised and decided at the inquiry and is not for this Court. The fact that the law recognises that in some cases an Inspector can validly decide to take factors other than ETSU into account does not mean that in other situations an Inspector may not lawfully conclude that ETSU compliance is the right measure. In this case the Inspector considered the matter with care and then decided, unsurprisingly perhaps given the natural guidance, to apply ETSU and attach a condition. This was a matter for her to decide and she did so lawfully.</p> <p>The Tribunal finds that the Appellant has not established that the Project as approved will cause serious harm to human health, or serious and irreversible harm to plant life, animal life or the natural environment, and therefore dismisses the appeal.</p>
2012	Ontario, Canada	Haldimand Summerhaze n Project	Environment	Monture v. Director, Ministry of the Environment	http://www.ert.gov.on.ca/files/201212/000003-00-CC73541344D026-CL1379458R0026.pdf	In favour of wind farm	<p>most of the documentary evidence was obtained from internet sources, prepared by authors not available for cross-examination and not peer-reviewed. As a result, the Tribunal finds that much of this evidence is of limited weight.</p>
2012	Ontario, Canada	Haldimand Grand Renewable Wind	Environment	Monture v. Director, Ministry of the Environment (Monture 2)	http://www.ert.gov.on.ca/files/201212/000003-00-CG3442105-0026-CLV325E1E10026.pdf	In favour of wind farm	<p>The belief and truths of the person with respect to their mental or physical health is again acquired through response to the object, not caused by the object. - participant's attempt to say that the nocebo effect is true and a reason to forbid wind farms, rejected by the Tribunal</p>
2012	Ontario, Canada	South Kent Wind	Environment	Chatham Kent Wind Action Inc. v. Director, Ministry of the Environment	http://www.ert.gov.on.ca/files/201212/000003-00-CG3442105-0026-CLV325E1E10026.pdf	In favour of wind farm	<p>The belief and truths of the person with respect to their mental or physical health is again acquired through response to the object, not caused by the object. - participant's attempt to say that the nocebo effect is true and a reason to forbid wind farms, rejected by the Tribunal</p>

2012 New Zealand	Te Rere Hau	Environment	Palmerston North City Council vs. New Zealand Windfarms Limited	http://www.nzlii.org/nz/cases/NZEnvC/2012/133.pdf	Against wind farm	Net: no health impacts or health evidence. Context: the Te Rere Hau wind farm used the Windflow 500 turbine, a unique two-bladed turbine manufactured in New Zealand. Noise modeling was based on a prototype and was found to be inaccurate in production models, as noise as wind turbines with six times the capacity and with some special tonal characteristics of concern only at 50 meters from the turbines. This is an isolated incident involving an unproven wind turbine which is not used elsewhere. In the initial approval per NZ standards: - WTG sound levels shall not exceed: - the best fit regression curve of the A-weighted background sound level (L95) plus 5 dB; and - 40dB(A) Whichever is higher. (outside the residence) In the judgment: Noise levels measured at the residences for the SSE winds are in the range of 33 - 41 dBA compared to the AEE predictions of 23-26 dBA. Conclusion: That the acoustic information supplied in the AEE by the Respondent and the evidence of the Respondent was inaccurate to such an extent that Palmerston North City Council may rely on s128(1)(c) RMA to conduct a review of the noise consent conditions applicable to the Te Rere Hau wind farm. The wind farm was approved under previously existing 45 db night time noise limit, but during the ongoing process the night time noise limit was decided to more appropriately be 42 db, and while the wind farm noise modeling was conservative and under 45 db, it was not shown to meet the 42 db limit, so the approval was sent back.
2012 Maine, USA	Saddleback Ridge	Higher	FRIENDS OF MAINE MOUNTAINS v. BOARD OF ENVIRONMENTAL PROTECTION	http://caselaw.findlaw.com/me-supreme-judicial-court/1524887.html	Against the wind farm	[¶ 17] Because the Board is responsible for regulating sound levels in order to minimize health impacts—and because when doing so it determined that the appropriate nighttime sound level limit to minimize health impacts is 42 dBA—the Board abused its discretion by approving Saddleback's permit applications.¶ Although the project's models predict nighttime sound levels slightly below 45 dBA, the Board failed to give the nearby residents the acknowledged protection of the amended rules. We vacate the Board's order and remand for further review using the 42 dBA nighttime sound level limit as introduced in 2 C.M.R. 06.096 375-15 § 101(2)(b)(2012). Heritage requested revision of wording of an approval paragraph to indicate higher cut in to allow for wind masking and removal of potential night time shut down of wind turbines to achieve noise plan. This was refused, as shut down of wind turbines may be required to achieve noise limits. Most of this work, as far as we can discern, has not been the subject of any peer review and none of the witnesses were called to give evidence - regarding Sarah Laurie's submission
2012 Alberta, Canada	Heritage Wind Farm	Utility	Heritage Wind Farm Development Inc., Decision on Preliminary Question, Decision 2011-239.	http://www.auc.ab.ca/applications/decisions/Decision%2012/2012-029.pdf	Against the wind farm	
2011 South Australia, Australia	Allendale East	Environment	Patridge and Ors v District Council of Grant and Anor	http://www.janining.nsw.gov.au/LinkClick.aspx?fileticket=5DDyqudGUk530&tabid=205&mid=1081&lang=en-US	Against wind farm (visual amenity)	[142] On the issues of noise and health, we accept the evidence and assessments of Acciona's expert witnesses and where there is any conflict between them and the applicant's expert witnesses we prefer the evidence given by Acciona's experts. The Tribunal finds decades-old attitudes to cigarettes to be a poor analogy to wind turbines. This is because Ontario already recognizes that there are some risks with respect to wind turbines. That is why there are setbacks. Cognizant of the possible health concerns, the minister decided the minimum 550-metre setback was adequate.
2011 Ontario, Canada	Chatham Kent Suncoke	Environment	Erickson v. Director, Ministry of the Environment	http://www.nrc.ca/wp-content/uploads/2012/05/00000300-AKT5757C7C0026-86154ED1980026.pdf	In favour of wind farm	
2011 Ontario, Canada	Wind farm enabling legislation	Higher	Hanna v. Ontario (Attorney General)	http://sanli.ca/env/on/nscdc/doc/2011/20110nsc609/20110nsc609.html	In favour of wind farm	
2011 New Zealand	Mt. Cass	Environment	Mainpower NZ Limited v Hurunui District Council	http://www.nzlii.org/eng/bn/sindosp/nz/cases/NZEnvC/2011/384.html?query=winds&zdalarm	For the wind farm	[450] In response to a question from Mrs McLachlan as to how her autistic child might be affected by the predicted maximum 42 db noise level at the boundary of the McLachlan 3 farm, Dr Black responded that he would be very surprised if the child was adversely affected through exposure to what he described as 42 db of broad spectrum noise: 314 He amplified this further when he said:315 It's not a matter of level of noise and it's far from certain that the nature of the noise would be of a type that would upset [the child]. In fact with modern wind turbines, the tonal component to the noise is largely eliminated. In some earlier turbines there could, at times, be quite a tonal component. The broad spectrum white noise which is typical of turbines once you get more than a few hundred metres away from them, is a noise of natural character and one which is generally readily accommodated by people because it becomes indistinguishable from natural noises which people are accustomed. I've had quite a lot of people in communities who were concerned about turbines say to me that after a while they really can't discriminate between the sound to the extent that they do hear it and the wind and if they want to really establish whether it is the wind or the turbine, they really have to face it with both ears facing it and really listen and think about it. (our emphasis)
						[450] A number of submitters expressed concern that the noise from the wind farm could adversely affect children at the Omihai School. The predicted noise level at the McLachlan's dwelling which is 2.3 km from the wind farm is only 25 dBA. As the school is around 4 km from the wind farm, it is Dr Black's opinion that wind farm noise there will be barely audible and that it will have no effect on the pupils.323 Dr Black's opinion was not disputed.

2011 Maine, USA	Record Hill	Higher	CONCERNED CITIZENS TO SAVE ROXBURY et al. v. BOARD OF ENVIRONMENTAL PROTECTION et al.	http://caselaw.findlaw.com/me-supreme-judicial-court/1560730.html	Farm	<p>[¶ 7] As part of its review of Record Hill's application, the Department consulted with the Maine Center for Disease Control (MCDC), which issued a report in June of 2009 on the potential health effects from noise produced by wind turbines. The MCDC "found no evidence in peer-reviewed medical and public health literature of adverse health effects from the kinds of noise and vibrations [emitted] by wind turbines other than occasional reports of annoyances, and these are mitigated or disappear with proper placement of the turbines from nearby residences." Although the MCDC's report stated that exposure to high levels of low frequency noise could "be annoying and may adversely affect overall health," the MCDC determined that these levels appear to be more intense than what is measured from modern wind turbines. The MCDC concluded that there was no reliable evidence that low frequency noise produced by wind turbines would cause significant adverse health effects, and that "[t]here are tremendous potential health benefits to wind turbines, including reductions in deaths, disability, and disease due to asthma, other lung diseases, heart disease, and cancer."</p> <p>[¶ 27] We conclude that the Board's findings concerning the health effects of wind turbine noise are supported by substantial evidence in the record. The report of the MCDC and the noise control consultant's opinion both support the finding that the Record Hill Wind Project will not generate unreasonable adverse health effects. Although CSR submitted contrary evidence, "We cannot reflect the Board's finding on the ground that other evidence in the record supports a different factual finding." See <i>Friends of Lincoln Lakes</i>, 2010 ME 18, ¶ 20, 989 A.2d at 1135. In addition, although CSR contends that the Board failed to impose further conditions on Record Hill, the Board was not required to do so given its finding relating to the health effects associated with the project. Provisions for testing for and complying with amplitude modulation stood.</p>
2011 Devon, United Kingdom	Den Brook	Higher	Hume v Secretary of State for Communities and Local Government & Anor [2011]	http://www.bailii.org/ew/cases/ewCA/Cv/2011/638.html	Farm	<p>The plaintiff has not shown that (reparable) harm will occur in my opinion [Judge J. Mills], and clearly has not shown that there is a high degree of probability that injury will in fact occur.</p>
2010 Saskatchewan, Canada	Red Lily	Civil	Mckinnon vs RMs Martin and Moosomin, Red Lily Wind	http://www.canlii.org/en/sk/skqb/doc/2010/2010skqb374/2010skqb374.html	In favour of wind farm	<p>[207] The wind farm operational noise levels are to comply with the limits set out in NZS6808:1998 Acoustics – The Assessment and Measurement of Sound from Wind Turbine Generators and an updated Standard (which is in the course of review) once it is published. Further, the Rangitikei District Plan noise rules specifically reference this as the standard to be used for the assessment of noise from wind turbines, although the Rangitikei District Plan predates both this standard and the current version of NZS6803.</p> <p>[208] NZS6808:1998 sets the limit for a wind farm noise at a level of 40 dBA L95 or 5 dBA above the background, whichever is the greater. The updated Standard would not be adopted [its criteria are less stringent than the 1998 version of NZS6808 (on Aupurri condition on the consent)].</p> <p>[209] Mr Bottha observed that the maximum predicted noise levels would be well below the limits set out in NZS6808:1998. He said that noise would not be an issue for the Moowhango School, located 3.3km away from the closest turbine, with day time noise levels below those permitted by the Rangitikei District Plan.</p>
2010 New Zealand	Central Wind	Environment	Rangitikei Guardians Society Inc v Manawatu-Wanganui Regional Council	http://www.nzlii.org/sg/bn/sinodisp/nz/cases/NZEnvC/2010/14.html?q=very-wind%20farm	Farm	<p>[216] We conclude from the evidence of Dr Black that there would be no health effects of concern arising from the establishment of Project Central Wind.</p>
2010 South Australia, Australia	Hallett	Environment	QUINN & ORS v REGIONAL COUNCIL OF GOVDER & ANOR	http://www.austlii.edu.au/au/other/sinodisp/au/cases/sa/SAERDC/2010/63.html?system=0&synonymns=0&query=winds%20urbane	In favour of wind farm	<p>[253] The Council's decision in respect of the Meridion wind farm application is confined and consent is granted for the proposal as presented to us.</p> <p>[106] In relation to noise, we accept the evidence of Mr Turnbull that the proposed wind farm will comply sufficiently with the relevant standards. Professor Hansen criticised those standards. He wished for more rigorous methods for noise prediction and compliance testing. Those are largely matters for those bodies which generate the policies and standards, and for the framers of the policy documents which adopt them. Generally, it is our task to apply the policies and standards as they exist.</p> <p>[107] It is implicit in the Development Plan that the establishment of a wind farm will result in the introduction of a new noise source in the locality of that wind farm. That is unavoidable with the present state of the technology. The establishment of wind farms is, nevertheless, sought. The Development Plan seeks the avoidance or minimisation of nuisance from excessive noise. The levels ascertained by Mr Turnbull are not excessive in terms of volume. There was no evidence to suggest that a different siting layout, or any other measures, would reduce the noise from the proposed wind farm.</p> <p>[154] Inserting subjectively consent requirements based on an individual's or a group of individuals' reaction to the noise from the wind farm, based on their opposition to the development, is entirely alien to the planning system. While, in some cases such as streetscape impact, individual aesthetic considerations may arise and judgments made upon them, we are unaware of any authority to support the proposition that, where there is a rationally scientifically measurable empirical standard against which any impact can be measured and determined to be acceptable at a particular empirically determined level, that there should be some allowance made for a subjective response to the particular impact. Mr Griffiths was unable to cite any authority in support of such a proposition.</p>
2010 New South Wales, Australia	Gullen Range	Environment	King & Anor v Minister for Planning, Parkesbourne-Mummal Landscape Guardians Inc v Minister for Planning, Gullen Range Wind Farm Pty Limited v Minister for Planning	http://www.austlii.edu.au/other/sinodisp/au/cases/nsw/NSWLEC/2010/1102.html?system=0&synonymns=0&query=winds%20farm	In favour of wind farm	<p>[253] The Council's decision in respect of the Meridion wind farm application is confined and consent is granted for the proposal as presented to us.</p>

2010/Victoria, Australia	Sisters Wind Farm	Civil	The Sisters Wind Farm Pty Ltd v Moyne SC	http://www.austlii.edu.au/other/sydney/au/cases/nc/CAT/2010/719.html http://sindrii.org.au/cases/nc/CAT/2010/719.html http://www.sindrii.org.au/cases/nc/CAT/2010/719.html	Against wind farm (exceeds updated noise standards)	Standard changed after initial approval, VCAT ruled that new standards should be applied, wind farm did not meet new standard, but this was overturned on appeal to the Supreme Court. New formal standards were adopted for wind farms, and the Tribunal and the Supreme Court agreed in the end that the new standards should be applied.
2010/Ohio, USA	Champaign County	Higher	IN RE: Application of BUCKEYE WIND L.L.C., for a Certificate to Construct Wind-Powered Electric Generation Facilities in Champaign County, Ohio; Union Neighbors United et al., Appellants; Power Siting Board et al., Appellees.	http://caselaw.findlaw.com/oh-supreme-court/1609087.html	For the wind farm	[¶ 33] The neighbors' first three propositions of law assert that the operational noise limits set by the board are either vague or unenforceable. To the contrary, the orders sets discernible noise limits. That the standard is flexible poses no legal problem—an agency, particularly when facing new issues, may proceed on an incremental, case-by-case basis. See <i>Securities & Exchange Comm. v. Chenery Corp.</i> , 332 U.S. 194, 202–203, 67 S.Ct. 1575, 91 L.Ed. 1995 (1947) (an agency may not have had sufficient experience with a particular problem to warrant rigidifying its tentative judgment into a hard and fast rule," and thus the agency must retain power to deal with the problems on a case-by-case basis if the administrative process is to be effective"). As for the neighbors' proposed standards, the testimony of Buckeye's acoustic consultant showed that they were unworkable and would effectively prohibit the development of wind energy in Ohio. Thus, the board properly rejected applicants' proposals.
2010/Cumbria, United Kingdom	Crosslands Farm	Higher	Barnes & Anor v Secretary of State for Communities and Local Government [2010]	http://www.bailii.org/ew/cases/EWHC/Admin/2010/1712.html	For the wind farm	The judge rejected all of the noise-related claims for appeal, as well as all of the other claims as well.
2010/Dorset, United Kingdom	Gooseed Bran	Higher	Tegrii Cymru Gyf v The Welsh Ministers & Anor [2010]	http://www.bailii.org/ew/cases/EWHC/Admin/2010/1106.html	For the wind farm	As I pointed out in paragraph 17 of this judgment the First Defendants accept that if the Claimant establishes any of its main grounds of challenge the inspector's decision should be quashed with the consequence that the Claimant's planning appeal should be reconsidered. I have reached the conclusion that the inspector erred in law in at least one important respect. In my judgment, he failed to provide adequate reasons for his conclusion that the noise impact of the proposed development was unacceptable; his reasoning gives rise to a substantial doubt, at the very least, as to whether he erred in law when reaching his conclusion upon the issue of noise impact.
2010/Devon, United Kingdom	Den Brook	Higher	Hume, R (on the application of) v Secretary of State for Communities & Local Government [2010]	http://www.bailii.org/ew/cases/EWHC/Admin/2010/2386.html	For the wind farm	The judge rejected all of the noise-related claims for appeal, as well as all of the other claims as well.
2010/Pembrokeshire, United Kingdom	Gooseed Bran	Higher	Tegrii Cymru Gyf v The Welsh Ministers & Anor [2010]	http://www.bailii.org/ew/cases/EWHC/Civ/2010/1693.html	Against the wind farm	There was no indication of health concerns, just nuisance due to more evenings when wind turbines would be audible.
2009/Pennsylvania, USA	Laurel Ridge	Higher	Arthur and Elke PLAXTON, Appellants v LYCOMING COUNTY ZONING HEARING BOARD and Laurel Hill Wind Energy, LLC.	http://caselaw.findlaw.com/pa-commonwealth-court/1493562.html	For the wind farm	Mr. Morris QC submits that this involved an error of law. The volume of noise did not increase, merely the frequency. He contended, as I think he had to do, that the increase in the frequency of noise was not a material factor for the inspector to consider. Furthermore, he said it would undermine the consistency which the guideline is intended to provide. If in effect an inspector could depart from it in this way, the guidelines were grounded in an objective analysis of noise levels, and it was not appropriate to depart from a guideline merely as a consequence of his consideration of the subjective perceptions of the residents. I disagree. As my Lord, Lord Justice Pitchford, has indicated, it seems to me that the duration of an interference is plainly a material consideration when determining whether the level of noise is acceptable. I see the force of Mr. Morris QC's submission that there is a degree of uncertainty and inconsistency if guidelines such as those enunciated in ETSU 97, based on objective evidence, are departed from too readily; but as Cranworth J, as he then was, pointed out in the <i>Filton</i> case to which Pritchford LJ has referred, ultimately the legal position is that it is for the planning inspector to exercise his judgment. Provided he has had regard to material considerations and has not reached perverse conclusions, then it is not for the court to interfere.

2009] Norfolk, United Kingdom	Lotus Cars	Higher	The Friends of Hethel Ltd. R (on the application of) v Electricity [2009]	http://www.bailii.org/ew/cases/EWHC/Admin/2/009/2856.html	Farm	Notwithstanding para 22, and these important decisions by inspectors, in my view the challenge in this case on noise gets nowhere. The choice of locations for measuring noise was agreed between the council's environmental services department and Electricity's noise consultants. Officers from that department considered Chapter 11 of the Environmental Statement and concluded that the noise measurements were in compliance with ETSU-R-97. (The environmental expert, Dr Turner, employed by Mr and Mrs Watson, of East Carleton, reached a similar conclusion). The committee report provided sufficient information and guidance to enable the committee's members to reach a decision on noise impact, applying the relevant considerations. It summarised the noise measurements, the expert opinion and the objections of residents. It noted that full copies of all comments could be viewed on the council's website. The non-technical summary of the Environmental Assessment, which was with the report, provided more detail. At the committee meeting residents raised concerns directly with members before the decision was taken.
2008] Victoria, Australia	Newfield	Civil	Actiona Energy Oceania Pty Ltd v Corangamite SC	http://www.austlii.edu.au/other/sinodisp/au/cases/vic/CAT/2008/1617.htm http://www.austlii.edu.au/other/sinodisp/au/cases/vic/CAT/2007/1309.htm	For the wind farm	[73] Having carefully reviewed the material, we are satisfied that the outcome of Mr DeLore's analysis shows the noise impacts upon dwellings within range of the proposed wind farm would or could comply with NZS6808. Compliance testing can ensure that outcome. We are not persuaded that some of the uncertainties referred to by Dr Bonner are valid given Mr DeLore's responses nor do we find it appropriate to require a Sdiba allowance to be required "up front" when the standard we are obliged to apply operates differently. Micro-siting could alter the results but assessment in considering any shift of the turbines and their compliance testing can ensure the required standards are met.
2008] Devon, United Kingdom	Fullbrook Down	Higher	North Devon District Council. R (on the application of) v Secretary of State for Business, Enterprise & Regulatory Reform & Anor [2008]	http://www.bailii.org/ew/cases/EWHC/Admin/2/008/1700.html	Farm	[103] There is no evidence of health impacts that persuades us that rejection of the permit application is warranted given the proposal's compliance with the applicable standards. If there are significant issues arising then there needs to be some independent assessment and documentation leading, if required, to variations in the standards applied in Victoria.
2007] Victoria, Australia	Hepburn Wind	Civil	Perry v Hepburn SC	http://www.austlii.edu.au/other/sinodisp/au/cases/vic/CAT/2007/1309.htm http://www.austlii.edu.au/other/sinodisp/au/cases/vic/CAT/2007/1309.htm	In favour of wind farm	Thus, there was no change in policy which might have made it only fair to invite further representations. The department did not, as the claimant submits, rely on the sifford report as a justification for the use of the ETSU methodology. The department's position was consistently that noise assessments of wind farms should be carried out in accordance with the ETSU report, and the sifford report did not cause the department to alter that position. In any event, the department's approach to this issue in paragraph 4.12 of the decision letter merely echoed the statement that had been issued on 1st August 2007. It had been open to the claimant to make further submissions, or to ask for an opportunity to make further submissions, to the defendant after the commencement on 1st August 2007. But for whatever reason it did not do so, perhaps because it recognised that the position as it had existed at the inquiry had not been altered in any way. For these reasons, I reject the claimant's noise challenge.
2007] Victoria, Australia	Yarram	Civil	Synergy Wind Pty Ltd v Wellington SC	http://www.austlii.edu.au/other/sinodisp/au/cases/vic/CAT/2007/12454.htm http://www.austlii.edu.au/other/sinodisp/au/cases/vic/CAT/2007/12454.htm	For the wind farm	The noise criteria are not designed to achieve inaudibility. Turbine noise may be audible on adjacent properties even if the proposal complies with the applicable standard.
2006] Wisconsin, USA	Twin Creeks Wind Park	Higher	ROBERTS v. MAINTOWOC COUNTY BOARD OF ADJUSTMENT	http://caselaw.litdlaw.com/vt-court-of-appeal/1303962.html	For the wind farm	76. The assessment and impact of noise is perhaps the most contentious matter for WEF's. There appears to be much misconception and misunderstanding of the potential impacts from noise. [39] We do not intend to deal with what can only be described as 'red herrings', unsubstantiated narratives and disinformation.
2006] Scotland, United Kingdom	Borrowston Mains	Higher	CRE Energy Ltd Re: A Decision Of The Scottish Ministers [2006] Scottish CSOH_131 [29 August 2006]	http://www.bailii.org/scot/cases/ScottCS/2006/CSOH_131.html	Against the wind farm	[39] This included matters relating to wind shear effects, infra-sound (low frequency sound), intermittent effects and sensitivity of residents.

81 A summary of wind directions monitored for the site[42] indicates that the dominant wind directions (for 60-70% of the period from 1 July 2005 to 1 July 2006) are in an arc of WNW to SWW. Having regard to this fact, we deduce that those dwellings lying in the lee of these wind directions (i.e. to the NNE to ESE) are those that will most often be exposed to wind turbine generated noise. These include the Stoner, Lynch and Demister/Meyer dwellings, the some dwellings in the Marshall Day assessment selected as being representative for these areas. It is the evidence of Mr Marks that the sound levels at these locations will be within acceptable limits. Despite Mr Harding's protestations about the inadequacies of the NZS6808:1998 standard, his own calculations also indicate that the noise levels at these locations will also be below the acceptable limits set under the WEF guidelines.[43]

82 In the absence of evidence to the contrary, we find that the assessment of noise impacts has been undertaken in an appropriate manner and that there is no basis for refusal in relation to acoustic noise impacts.

¶ 28 Roberts also contends that evidence presented in opposition to the wind energy park was disregarded by the board. Roberts laments, "that the Board been willing to show even the least bit of open-mindedness or curiosity. They would have discovered substantial concerns" supported by evidence in the Record which clouded the purported virtues of wind power[44]. However, it is not "substantial concerns" that will overcome the Board's decision, but rather the absence of substantial supporting evidence. The Board must make its decision based on substantial evidence, which is defined as "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." Story v. Ashland County Dept. of Public Welfare, 39 Wis.2d 595, 603, 159 N.W.2d 630 (1968) (citations omitted).

¶ 29 Roberts specifically contends that the Board did not consider the hazards of ice-icing, the impact of ambient noise and shadow flicker, or the dangers to wildlife. Our review of the record indicates otherwise.

The Judge upheld the refusal of granting an application for the wind farm based on visual impact, but agreed with the appellant and others that the previous decision had been error-riddled regarding wind farm noise.

2001 Victoria, Australia	Toora	Civil	Thackeray v Shire of South Gippsland	http://www.austlii.edu.au/cgi-bin/sinodisp/au/cases/vic/CAT/2001/739.html?item=0&synonym=0&query=win%20farm	For the wind farm	7.11 Further, the Tribunal gains confidence that the modelling results are more likely to be an overprediction rather than an underestimate as all experts agree the turbine is conservative. When predicting the noise level at a point away from the wind turbine, the model assumes the wind is blowing from the turbine to the point of interest, this is because noise transmits better downwind than upwind. When the model is calculating the total noise at a site due to all of the turbines, it is consequently assuming that the wind is blowing towards the point of interest from every turbine. This obviously is incorrect and as the wind can come from one direction only the actual noise due to the wind turbines must be less than the model predicts. Mr Goddard in cross examination considered that if an allowance was made for the wind blowing away from the measured site, there would be an up to 3dB(A) drop in the noise levels from those predicted by the model.
1998 Victoria, Australia	Cape Bridgewater	Civil	Hislop & Ors v Glenelg SC Hislop & Ors v Glenelg SC	http://www.austlii.edu.au/cgi-bin/sinodisp/au/cases/vic/CAT/1998/1138.html?item=0&synonym=0&query=wind%20farm	For the wind farm	7.18 The Tribunal considers it more appropriate to use a standard specific to a use, as opposed to a general standard which is a guideline under review at this time. Further the New Zealand standard is designed to cater for the control of a dynamic system taking account of the varying wind speeds, it has a well thought out and clearly set down system of compliance testing after installation. It also clearly enunciates the effect on the allowable limits where special audible characteristics such as tones, impulses or modulation are apparent. The Tribunal consider the New Zealand standard is the more appropriate acoustic standard for use in the operational control of windfarms and will allow its use for this purpose.

Type of Court Case

Environment - A court dedicated to assessing environmental, land and resource usage issues - ERT in Ontario, ERD in South Australia, Environment in NZ

Civil - Civil case in general civil courts including VCAT in Victoria, Australia

Higher - High, Superior or Supreme courts which have general competence and typically unlimited jurisdiction with regard to civil and criminal legal cases.

Utility - utility regulatory panels

Other references

<http://envirolaw.com/artwind- litigation-sight/>