

Secretary to the Aarhus Convention Compliance
Committee
Palais des Nations, Room 429-4
CH-1211 GENEVA 10
Switzerland

Reference: ACCC/C/2014/112

Amicus Brief

Dear Sir,

Please find attached an Amicus Brief with regard to inaccuracies and miss representations in the submission below from the Irish Government.

http://www.unece.org/fileadmin/DAM/env/pp/compliance/Communications/Ireland_European_Platform/Party_s_response_to_communication/frPartyC112_30.11.2015_response.pdf

In summary the Irish Government (the party concerned) have done nothing to protect the Citizens of Ireland with regard to wind farm noise and its associated health effects.

They continue to ignore their citizens' complaints about noise and its disturbing factors on their health.

Due to the complete failure to publish new guidelines based on a public consultation process they continue to use parameters which are now 10 years old – designed for wind turbines which were a fraction of the size and acoustical impact that they are today.

yours sincerely

Francis Clauson

Left intentionally blank

Reference: ACCC/C/2014/112

Amicus Brief By Francis Clauson

Dated: 30-Jan-2016

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Abbreviations:

The Party Concerned is the Irish Government.

1. Introduction

I wish to bring to the Committees attention some miss representation and inaccuracies in the Irish Governments submission who is the Party Concerned.

My Amicus Brief is made of two sections.

The first covers the Party's approach to the health impact of wind farms.

The second covers the Party's professional resources used in defining the (as yet unpublished) Irish wind farm planning guidelines.

1.1. Findings – Health impact of wind farms.

The Party have not received adequate guidance on the health impact of wind farms to enable them to make any form of well-informed judgment as to planning limits such as noise levels and separation distances which will protect the citizens of Ireland appropriately.

In the Party's submission they have substituted findings from the very respected Deputy Chief Medical Officer of the Irish Department of Health (the statutory health body of Ireland) with those from the Australian Government's NHMRC and have compounded this failing by abbreviating the content of those findings to fit the Party's needs so they can positioning that wind farms do not cause any adverse impacts on human health.

The committee should disregard any of the findings the Party have made in regards to health impacts.

1.2. Findings – resources used in defining guidelines.

When commenting on the Communicants ability to absorb the complexity of the issues around noise and acoustical impact the Party have made reference to their own external consultants, "Marshall Day" – who upon researching their website do not have the full canopy of skills such as health and medical knowledge to provide the comprehensive set of advice needed to formulate a complete view of the matters in hand.

The Party have gone as far as saying that

Of course one of the difficulties faced by those, such as the Communicants, fundamentally opposed in principle to wind farm development is that the technical evidence frequently does not support the stated basis for the public concern.

This demonstrates that the Party do not understand that behind the named Communicants there is a raft of specialist from acousticians, professors of health, professors of hearing, engineers, chemists, barristers, lawyers and well informed members of the public.

The Party make this statement while at the same time completely failing to understand or utilise effectively medical evidence from their own unbiased Department of Health (the statutory health body of Ireland) who have a statutory duty to look after the Irish people.

The committee should disregard any negative sentiment with the Party's submission who have an agenda to roll out windfarms across Ireland without any respect for those affected and the committee should acknowledge how well informed the Communicants and their supporters are in these matters.

2. Health Impacts – section 10.8

The following is an extract from the Party's submission (placed here for reference)

10.8 The Communicants allege that the public consultation process and the draft revised Guidelines do not address the issue of the effect that wind turbines have on public health. It is important to reiterate that the purpose of Wind Energy Development Guidelines is to provide advice to planning authorities on catering for wind energy through the development plan process. Therefore, the following statement in the draft revised Guidelines is accurate: "concerns of possible health impacts in respect of wind energy infrastructure are not matters which fall within the remit of these guidelines as they are more appropriately dealt with by health professionals. However, the Department of Health has been made aware of the on-going review of the Wind Guidelines and any perspectives that they may have, relevant to the planning process, will be taken into account in finalising the revisions to the guidelines". The Department of the Environment Community and Local Government has liaised with Department of Health inviting any input they may have on the health aspects, if any, of wind farms. The Department of Health has advised, based on peer reviewed articles and international research ⁽⁴¹⁾, that *'there is no reliable or consistent evidence that wind farms directly cause adverse health effects in humans.'*

Footnote 41 referenced above reads

Including the 2009 literature review conducted by the National Health and Medical Research Council of Australia. This review was subsequently updated in 2014 to confirm the previous advice that there was *"no reliable or consistent evidence that wind farms directly cause adverse health effects in humans"*.

2.1. The Irish Minister of Health position


The Irish Minister of Health, Dr Leo Varadkar, has stated on the record in the Irish Houses of the Oireachtas (the Irish Parliament) on the 13th May 2015 that his department has carried out no research into the health effects of windfarms on humans.

An extract from the record is shown below

Written answers
Wednesday, 13 May 2015

Department of Health
Public Health Policy

 **Anthony Lawlor** (Kildare North, Fine Gael)
Link to this: [Individually](#) | [In context](#)
162. To ask the Minister for Health further to Parliamentary Question No. 426 of 6 May 2015, if he will confirm with a "Yes" or "No" reply if his Department has undertaken any research to identify any possible negative effects of industrial wind turbines on human health. [18862/15]

 **Leo Varadkar** (Minister, Department of Transport, Tourism and Sport; Dublin West, Fine Gael)
Link to this: [Individually](#) | [In context](#)
As previously advised in my reply of 6 May 2015, policy responsibility with regard to planning and the legislative framework in relation to the siting of wind turbines rests with the Department of the Environment, Community and Local Government and my Department provides advice from time to time when requested by the above mentioned Department. My Department **has not carried out any research** into the effects of industrial wind turbines on human health.

2.2. Correspondence between the DECLG and Dept of Health

Following a number of Access to Environmental Information requests I made to both the Department of Health and the Department of the Environment I have the following to report.

2.2.1. October 2008

In October 2008 Deputy Chief Medical Officer of the Irish Department of Health, Dr Bonner wrote

Full copy in Appendix 1

In conclusion, wind turbines do not represent a threat to public health. However there is a consistent cluster of symptoms related to wind turbine syndrome which occurs in a number of people in the vicinity of industrial wind turbines. There are specific risk factors for this syndrome and people with these risk factors experience symptoms. These people must be treated appropriately and sensitively as these symptoms can be very debilitating.

2.2.2. 11-Nov-2013

In November 2013 the Dr Bonner wrote to the Frank Gallagher of the Irish Department of Environment and stated the same view she held in 2008

Full copy in Appendix 2

In conclusion, wind turbines do not represent a threat to public health. However there is a consistent cluster of symptoms related to wind turbine syndrome which occurs in a number of people in the vicinity of industrial wind turbines. There are specific risk factors for this syndrome and people with these risk factors experience symptoms. These people must be treated appropriately and sensitively as these symptoms can be very debilitating

2.2.3. 11-April-2014

In April 2014 Dr Bonner updated her comments with

Full copy in Appendix 3

The limited number of peer reviewed articles and research about the influence of wind turbines on human emotional and physical health requires to be addressed. It appears that the National Health and Medical Research Council in Australia [NHMRC] will recommend further high quality research in this area.

I think this is an important development and wish to bring your attention to it, as part of your consideration of the matter.

2.2.4. Summary

The Irish Department of Health does not conclude as the Party concerned implied in Point 10.8 of its Response

'there is no reliable or consistent evidence that wind farms directly cause adverse health effects in humans.'

For the Party concerned to make this assertion in the Response is completely unfounded.

2.3. Email to Francis Clauson 28-01-2016

In following up this matter in an email to myself the Irish Department of Environment they state

Full copy in Appendix 4

The statement ‘there is no reliable or consistent evidence that wind farms directly cause adverse health effects in humans.’ is correct.

It is supported by a reference to Australia’s National Health and Medical Research Council [NHMRC] which released a statement in February 2015 stating that ‘After careful consideration and deliberation of the body of evidence, NHMRC concludes that there is currently no consistent evidence that wind farms cause adverse health effects in humans.’

What they fail to quote is the whole of the findings which read (copy in the appendix)

Examining whether wind farm emissions may affect human health is complex, as both the character of the emissions and individual perceptions of them are highly variable.

After careful consideration and deliberation of the body of evidence, NHMRC concludes that there is currently no consistent evidence that wind farms cause adverse health effects in humans.

Given the poor quality of current direct evidence and the concern expressed by some members of the community, high quality research into possible health effects of wind farms, particularly within 1,500 metres (m), is warranted.

The Party is trying to position that there are no issues with wind farms but they are taking a very myopic view of the findings.

This conclusion is reached on the basis that no evidence in the numerous studies published on the subject is of sufficient scientific merit to be considered reliable and thus taken into account. Based on the evidence or supposed lack thereof, it would be equally valid to conclude (using a number of double negatives) that

there is no evidence that wind farms do not have a substantial impact on the health of some people who live in their vicinity.

However, this notion is never mentioned in the paper, which could lead to the conclusion that the paper is biased towards the interests of the wind farm industry.

Another unfortunate conclusion that one may reach on reading the NHMDC paper is that suggestions of associations between environmental noise and adverse health effects “*are based on limited evidence.*” This is in direct contravention of what is stated in the 2009 World Health Organisation (WHO) report titled, “Night Noise Guidelines for Europe”, which states,

“While noise-induced sleep disturbance is viewed as a health problem in itself (environmental insomnia), it also leads to further consequences for health and wellbeing”

and

“For the primary prevention of subclinical adverse health effects related to night noise in the population, it is recommended that the population should not be exposed to night noise levels greater than 40 dB of Lnight,outside during the part of the night when most people are in bed”.

2.3.1. Summary

The Party has selectively cherry picked the findings to suite its position in favour of deploying wind farms close to homes rather than taking an unbiased view to the information it has been provided with by the Irish Department of Health. It has miss represented the findings of the Irish Department of Health along with the summary results of the NHMRC study.

3. Resources used in defining guidelines - Section 10.4

The Party give great credibility to Marshall Day and their capabilities in their submission – section 10.4

10.4 In conjunction with this process the Sustainable Energy Authority of Ireland (SEAI), on behalf of DCENR, commissioned Marshall Day Acoustics(39) to complete a desk based study to review, and provide advice on, international best practice in relation to onshore wind farm noise which would be a key input into the review. A Report entitled “Examination of the Significance of Noise in Relation to Onshore Wind Farms” was produced in November 2013

The above mentioned Footnote 39 reads

(39) It is noted that the Communicants refer disparagingly to Marshall Day as “an obscure private company” (page 39 of the Communication). Apart from the fact that Marshall Day is an international company providing specialist acoustic services in Ireland, the UK, Australia and New Zealand, it is entirely appropriate in a review targeted at technical aspects of wind farm development that a specialist company with relevant expertise be engaged to provide this type of analysis. Of course one of the difficulties faced by those, such as the Communicants, fundamentally opposed in principle to wind farm development is that the technical evidence frequently does not support the stated basis for the public concern.

You could consider the footnote above as to being more than a little bit sarcastic, but the interesting thing is that one actually doesn't have to do much homework from the Marshall Day Website.

- a) They have less than 80 staff.
- b) They have no interdisciplinary team dealing medical or health impacts. They are in essence a company of 'sound engineers'. This is backed up by information from their own website

Sir Harold Marshall is an architect, engineer and physicist who is recognised internationally for his contribution to concert hall design. Formerly Professor of Architecture at the University of Auckland and Head of the Acoustics Research Centre, Dr Marshall has over 45 years experience in the acoustical design of auditoria and concert halls. His work is widely cited in technical literature and his interest in these fields has been sharpened by his active involvement in musical performance both as a chorister and as a bass-baritone. The composer with whom he feels the greatest affinity is J S Bach. His major discoveries were: the particular importance of lateral reflected sound and of the architectural means to achieve this in concert halls; the necessary and sufficient conditions for excellent ensemble for both instrumental groups and singers; and discussion of acoustical and architectural relationships in the design process.

And about the people they employ

Our success and continued growth comes from the strength of our acoustic consultancy team who have been drawn from a myriad of engineering, architectural, musical and academic backgrounds with one common focus - to provide innovative acoustic solutions of the highest standard.

So clearly no mention of medical or health impact skills.

- c) I believe they have never worked on developing standards related to the health impacts of acoustic emissions. Certainly there is no evidence I can find for this.

3.1. Summary

The disregard for the skills and knowledge of the Communicants are clear and the reliance on a consultancy that do not provide the complete mix of skills to make an assessment on these matters undermines the findings.

Appendix 1 – Dr Bonner’s position in 2008

Noise Induced Respiratory Pathology

Noise induced respiratory pathology is not a new subject. In the 1960s, within the scope of North American and Soviet space programmes, the effects of noise on the respiratory system were studied in humans and in dogs. Vibroacoustic disease is the pathology that develops as a consequence of excessive infrasound and low frequency noise exposure.

Many of the human studies related to this condition have focused on a specific group, i.e. flight attendants. Most of the recent research has come from a specific team who are based in Portugal. The studies being described here are purely descriptive studies, no control group has been included to compare with the group studied. In addition, these studies take no account of confounding variables. Consequently it is not possible to draw any meaningful conclusions from these studies.

Wind turbine syndrome has been described in the literature. The symptoms include:

1. Sleep problems
2. Headaches
3. Dizziness
4. Exhaustion
5. Problems with concentration and learning
6. Tinnitus.

Not everyone living near wind turbines have these symptoms. Susceptibility to symptoms differs with individuals.

Sensitivity to low frequency vibration is a risk factor. Sensitivity to low frequency vibration in the body or ears is highly variable in people and, hence, poorly understood and the subject of much debate.

Another risk factor is a pre-existing migraine disorder. Other candidate risk factors for susceptibility to wind turbine syndrome are age related changes in the inner ear.

In conclusion, wind turbines do not represent a threat to public health. However there is a consistent cluster of symptoms related to wind turbine syndrome which occurs in a number of people in the vicinity of industrial wind turbines. There are specific risk factors for this syndrome and people with these risk factors experience symptoms. These people must be treated appropriately and sensitively as these symptoms can be very debilitating.

Dr Colette Bonner

Appendix 2 – Letter to The Party from Dr Bonner 2013



Fw: public health effects of wind turbines.
Colette Bonner to: Gregory Canning
Cc: Michael Murray

13/12/2013 13:44

4

As promised.

Dr Colette Bonner
Deputy C.M.O
Tel: 01 6353035
Fax: 01-6710148
Email: Colette_Bonner@health.irlgov.ie
MCRN03159

----- Forwarded by Colette Bonner/SLAINTE on 13/12/2013 13:43 -----

From: Colette Bonner/SLAINTE
To: frank.gallagher@environ.ie
Date: 11/11/2013 09:43
Subject: public health effects of wind turbines.

Dear Frank ; This request was sent to me last week by CMO . Due to work commitments I have been only able to do a brief overview of the literature Tis evidence is based on Australian government National Healthand Medical research council (2009). I will update this at a later stage.



heath effects of wid turbines.docx

Dr Colette Bonner
Deputy C.M.O
Tel: 01 6353035
Fax: 01-6710148
Email: Colette_Bonner@health.irlgov.ie
MCRN03159

Effects of Noise from Wind Turbines on Human Health

The health and well-being effects of noise on people can be classified into three broad categories:

1. subjective effects including annoyance, nuisance and dissatisfaction;
2. interference with activities such as speech, sleep and learning; and
3. physiological effects such as anxiety, tinnitus or hearing loss (Rogers, Manwell & Wright, 2006).

Many factors can influence the way noise from wind turbines is perceived. The aforementioned study also found that being able to see wind turbines from one's residence increased not just the odds of perceiving the sound, but also the odds of being annoyed, suggesting a multimodal effect of the audible and visual exposure from the same source leading to an enhancement of the negative appraisal of the noise by the visual stimuli (Pedersen & Persson Waye, 2007). Another study of residents living in the vicinity of wind farms in the Netherlands found that annoyance was strongly correlated with a negative attitude toward the visual impact of wind turbines on the landscape. The study also concluded that people who benefit economically from wind turbines were less likely to report noise annoyance, despite exposure to similar sound levels as those people who were not economically benefiting (Pedersen et al, 2009).

In addition to audible noise, concerns have been raised about infrasound from wind farms and health effects. It has been noted that the effects of low frequency infrasound (less than 20Hz) on humans are not well understood (NRC, 2007). However, as discussed above, several authors have suggested that low level frequency noise or infrasound emitted by wind turbines is minimal and of no consequence (Leventhall, 2006; Jakobsen, 2005). Further, numerous reports have concluded that there is no evidence of health effects arising from infrasound or low frequency noise generated by wind turbines (DTI, 2006; CanWEA, 2009; Chatham-Kent Public Health Unit, 2008; WHO, 2004; EPHC, 2009; HGC Engineering, 2007). In summary:

- 'There is no reliable evidence that infrasounds below the hearing threshold produce physiological or psychological effects' (Berglund & Lindvall 1995).
- Infrasound associated with modern wind turbines is not a source which will result in noise levels which may be injurious to the health of a wind farm neighbour (DTI, 2006).
- Findings clearly show that there is no peer-reviewed scientific evidence indicating that wind turbines have an adverse impact on human health (CanWEA, 2009).
- Sound from wind turbines does not pose a risk of hearing loss or any other adverse health effects in humans. Subaudible, low frequency sounds and infrasound from wind turbines do not present a risk to human health (Colby, et al 2009).
- The Chatham-Kent Public Health Unit (Ontario, Canada) reviewed the current literature regarding the known health impacts of wind turbines in order to make an evidence-based decision. Their report concluded that current evidence failed to demonstrate a health concern associated with wind turbines. 'In summary, as long as the Ministry of Environment Guidelines for location criteria of wind farms are followed ... there will be negligible adverse health impacts on Chatham-Kent citizens. Although opposition to wind farms on aesthetic grounds is a legitimate point of view, opposition to wind farms on the basis of potential adverse health consequences is not justified by the evidence' (Chatham-Kent Public Health Unit, 2008).
- Wind energy is associated with fewer health effects than other forms of traditional energy generation and in fact will have positive health benefits (WHO, 2004).

- 'There are, at present, very few published and scientifically-validated cases of an SACs of wind farm noise emission being problematic ... the extent of reliable published material does not, at this stage, warrant inclusion of SACs ... into the noise impact assessment planning stage (EPHC, 2009).
- While a great deal of discussion about infrasound in connection with wind turbine generators exists in the media there is no verifiable evidence for infrasound and production by modern turbines (HGC Engineering, 2007).

The opposing view is that noise from wind turbines produces a cluster of symptoms which has been termed Wind Turbine Syndrome (WTS). The main proponent of WTS is a US based paediatrician, Dr Pierpont, who has released a book 'Wind Turbine Syndrome: A report on a Natural Experiment, presents case studies explaining WTS symptoms in relation to infrasound and low frequency noise. Dr Pierpont's assertions are yet to be published in a peer-reviewed journal, and have been heavily criticised by acoustic specialists. Based on current evidence, it can be concluded that wind turbines do not pose a threat to health if planning guidelines are followed.

Effects of Shadow Flicker and Blade Glint on Human Health

Shadow flicker from wind turbines that interrupts sunlight at flash frequencies greater than 3Hz has the potential to provoke photosensitive seizures (Harding, Harding & Wilkins, 2008). As such it is recommended that to circumvent potential health effects of shadow flicker wind turbines should only be installed if flicker frequency remains below 2.5 Hz under all conditions (Harding, Harding & Wilkins, 2008).

According to the EPHC (2009) there is negligible risk of seizures being caused by modern wind turbines for the following reasons:

- less than 0.5% of the population are subject to epilepsy at any one time, and of these, approximately 5% are susceptible to strobing light;
- Most commonly (96% of the time), those that are susceptible to strobe lighting are affected by frequencies in excess of 8 Hz and the remainder are affected by frequencies in excess of 2.5 Hz. Conventional horizontal axis wind turbines cause shadow flicker at frequencies of around 1 Hz or less;
- alignment of three or more conventional horizontal axis wind turbines could cause shadow flicker frequencies in excess of 2.5 Hz; however, this would require a particularly unlikely turbine configuration.

In summary, the evidence on shadow flicker does not support a health concern (Chatham-Kent Public Health Unit, 2008) as the chance of conventional horizontal axis wind turbines causing an epileptic seizure for an individual experiencing shadow flicker is less than 1 in 10 million (EPHC, 2009). As with noise, the main impact associated with shadow flicker from wind turbines is annoyance.

In regards to blade glint, manufacturers of all major wind turbine blades coat their blades with a low reflectivity treatment which prevents reflective glint from the surface of the blade. According to the Environment Protection and Heritage Council (EPHC) the risk of blade glint from modern wind turbines is considered to be very low (EPHC, 2009).

In conclusion, wind turbines do not represent a threat to public health. However there is a consistent cluster of symptoms related to wind turbine syndrome which occurs in a number of people in the vicinity of industrial wind turbines. There are specific risk factors for this

syndrome and people with these risk factors experience symptoms. These people must be treated appropriately and sensitively as these symptoms can be very debilitating.

Dr. Colette Bonner
November 2013

Appendix 3 – Letter to The Party from Dr Bonner 2014

April 2014

Mr Frank Gallagher
Planning Section
Dept Environment, Community & Local Government
Custom House
Dublin 1

Dear Mr. Gallagher,

I wish to update you on advices regarding the health effects of wind turbines which were forwarded to you in November 2013. As you are aware the advices were based mainly on the Australian National Health and Medical Research Council's 2010 review.

The Australian review noted that concerns regarding the adverse health impacts of wind turbines focus on noise, electromagnetic interference, shadow flicker and blade glint produced by wind turbines. While a range of effects such as annoyance, anxiety, hearing loss and interference with sleep, speech and learning have been reported, the review noted there is no published scientific evidence to support direct adverse effects of wind turbines on health.

The Australian National Health and Medical Research Council's public statement at that time concludes that:

1. There is currently insufficient published scientific evidence to positively link wind turbines with adverse health effects.
2. Relevant authorities should take a precautionary approach.
3. People who believe they are experiencing any health problems should consult their GP promptly.

The National Health and Medical Research Council in Australia have recently updated the evidence in relation to this issue which is currently a matter for public consultation. This new review looks at the area of noise, shadow flicker and electromagnetic radiation from wind turbines and their effect on human health. Of the studies included in this review, only one was conducted in Australia. The remaining studies were conducted in the Netherlands, Canada, the United States of America and Sweden.

This review again supports previous advice that there is no reliable or consistent evidence that wind farms directly cause adverse health effects in humans. This review does point out the methodological limitations of many of the studies in this area and cites the lack of well-designed case control or cohort studies which could help inform evidence based medical policy advice.

International expertise in this area suggests that the ideal type of research would be a retrospective observation of a particular group of residents before and after the wind farm construction, case-control studies or cohort studies with control groups matched in respect of socio-economic factors, predisposition for chronic disease, exposure to environmental risk factors and only one variable which would differentiate cases from controls i.e. the distance between place of residence and a wind farm.

The limited number of peer reviewed articles and research about the influence of wind turbines on human emotional and physical health requires to be addressed. It appears that the National Health and Medical Research Council in Australia will recommend further high quality research in this area.

I think this is an important development and wish to bring your attention to it, as part of your consideration of the matter.

Yours sincerely

A handwritten signature in cursive script that reads "Colette Bonner".

Dr Colette Bonner
Deputy Chief Medical Officer

Appendix 4 – Email from The Party to F.Clauson

Francis Clauson

From: Marguerite Ryan - (DECLG) <Marguerite.Ryan@environ.ie>
Sent: 28 January 2016 09:32
To: Francis Clauson
Cc: pat.swords.chemeng@gmail.com; Terry Dunne - (DECLG)
Subject: RE: Wind farm health and your UNECE submission
Attachments: eh57_nhmrc_statement_wind_farms_human_health_0.pdf; Untitled attachment 00461.txt

Good morning Francis,

I refer to your emails of December 8th 2015 and January 7th 2016. Your concerns in relation to the Irish written response to the UNECE in Case ACCC/C/2014/112 have been relayed to the relevant officials for consideration. As you are aware, the particular matter involves a number of Government Departments including this Department, the Department of Health and the Department of Communications, Energy and Natural Resources.

Having reviewed the matter I confirm that the position as follows:

You quote the following sentence from the State's reply with which you take issue :

"The Department of Health has advised, based on peer reviewed articles and international research, that 'there is no reliable or consistent evidence that wind farms directly cause adverse health effects in humans.'

and you imply that this is incorrect.

We cannot agree that this is the case. The statement is correct. It is supported by a reference to Australia's National Health and Medical Research Council which released a statement in February 2015 stating that 'After careful consideration and deliberation of the body of evidence, NHMRC concludes that there is currently no consistent evidence that wind farms cause adverse health effects in humans.' (Copy attached.)

Obviously as further research is conducted in due course the matter will be held under review but for the present the State remains of the view that the sentence is a correct statement of the current state of knowledge regarding wind farms.

Kind regards,

**Marguerite Ryan | Assistant Principal Officer | Environment Policy and Awareness |
Department of the Environment, Community & Local Government | Newtown Road | Wexford**

.....
**Marguerite Ní Riain | Príomhoifigeach Cúnta | Polasaí Comhshaol & Feasacht |
An Roinn Comhshaoil, Pobail agus Rialtais Áitiúil | Bóthar an Bhaile Nua | Loch Garman |**

Ph: 053 911 7480



Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

From: Francis Clauson
Sent: 24 January 2016 10:08
To: Marguerite Ryan - (DECLG)
Cc: pat.swords.chemeng@gmail.com; Terry Dunne - (DECLG)
Subject: RE: Wind farm health and your UNECE submission

Marguerite

It's been a week and a half and still no response

Could you get me some sort of time line as to when this will be looked at

Many Thanks

Francis Clauson

From: Marguerite Ryan - (DECLG) [<mailto:Marguerite.Ryan@environ.ie>]
Sent: 13 January 2016 15:59
To: Francis Clauson
Cc: pat.swords.chemeng@gmail.com; Terry Dunne - (DECLG)
Subject: RE: Wind farm health and your UNECE submission

Apologies for the delay in this Francis, I am following up on same with relevant people and a response will be forthcoming as soon as possible

Kind regards

Marguerite

From: Francis Clauson
Sent: 13 January 2016 15:55
To: 'Francis Clauson'; Marguerite Ryan - (DECLG)
Cc: pat.swords.chemeng@gmail.com; Terry Dunne - (DECLG)
Subject: RE: Wind farm health and your UNECE submission

Any News on this ?

Many thanks

Francis Clauson

From: Francis Clauson
Sent: 07 January 2016 03:54
To: 'Marguerite Ryan - (DECLG)'
Cc: pat.swords.chemeng@gmail.com; 'Terry Dunne - (DECLG)'
Subject: RE: Wind farm health and your UNECE submission

Marguerite

Happy New year

When can I expect a response on this ?

Many thanks

Francis Clauson

From: Marguerite Ryan - (DECLG) [<mailto:Marguerite.Ryan@environ.ie>]
Sent: 09 December 2015 09:25
To: Francis Clauson
Cc: pat.swords.chemeng@gmail.com; Terry Dunne - (DECLG)
Subject: RE: Wind farm health and your UNECE submission

Good morning Francis,

My role in relation to this case as National Focal Point was to co-ordinate the National Response so I will need to refer your concern to the relevant section for consideration. I will revert as soon as possible.

Kind regards,

Marguerite

From: Francis Clauson
Sent: 08 December 2015 22:14
To: Marguerite Ryan - (DECLG)
Cc: pat.swords.chemeng@gmail.com
Subject: Wind farm health and your UNECE submission

Marguerite

I have just read your submission to the UNECE and take issues with para 10.8 where you state

The Department of Health has advised, based on peer reviewed articles and international research, that 'there is no reliable or consistent evidence that wind farms directly cause adverse health effects in humans.'

This is a serious out of context quote from what Ms Bonner DCMO actually stated

I made an AIE request AIE/2014/15 and received a number of records – the most relevant of which are attached.

I look forward to you issuing an amendment to the UNECE that you quote is only a narrow quote from Dr Bonner's letters to Frank Gallagher (Record 8)

I would suggest you submit all of Record 8 along with an explanation that her conclusion is that:

Many Thanks

Francis Clauson

Appendix 5 – NHMRC updated report



NHMRC Statement: Evidence on Wind Farms and Human Health

Examining whether wind farm emissions may affect human health is complex, as both the character of the emissions and individual perceptions of them are highly variable.

After careful consideration and deliberation of the body of evidence, NHMRC concludes that there is currently no consistent evidence that wind farms cause adverse health effects in humans.

Given the poor quality of current direct evidence and the concern expressed by some members of the community, high quality research into possible health effects of wind farms, particularly within 1,500 metres (m), is warranted.

This Statement updates previous work by NHMRC and is based on the findings of a comprehensive independent assessment of the scientific evidence on wind farms and human health, which is summarised in the *NHMRC Information Paper: Evidence on Wind Farms and Human Health*.

The Statement reflects the results and limitations of the studies that considered the possible relationships between wind farm emissions and health outcomes (direct evidence) and also takes into account evidence on the health effects of similar emissions from other sources (parallel evidence).

There is no direct evidence that exposure to wind farm noise affects physical or mental health. While exposure to environmental noise is associated with health effects, these effects occur at much higher levels of noise than are likely to be perceived by people living in close proximity to wind farms in Australia. The parallel evidence assessed suggests that there are unlikely to be any significant effects on physical or mental health at distances greater than 1,500 m from wind farms.

There is consistent but poor quality direct evidence that wind farm noise is associated with annoyance. While the parallel evidence suggests that prolonged noise-related annoyance may result in stress, which may be a risk factor for cardiovascular disease, annoyance was not consistently defined in the studies and a range of other factors are possible explanations for the association observed.

There is less consistent, poor quality direct evidence of an association between sleep disturbance and wind farm noise. However, sleep disturbance was not objectively measured in the studies and a range of other factors are possible explanations for the association observed. While chronic sleep disturbance is known to affect health, the parallel evidence suggests that wind farm noise is unlikely to disturb sleep at distances of more than 1,500 m from wind farms.

There is no direct evidence that considered the possible effects on health of infrasound or low frequency noise from wind farms. Exposure to infrasound and low-frequency noise in a laboratory setting has few, if any, effects on body functions. However, this exposure did not replicate all of the characteristics of wind farm noise as it has generally been at much higher levels and of short duration.

Although individuals may perceive aspects of wind farm noise at greater distances, it is unlikely that it will be disturbing at distances of more than 1,500 m. Noise from wind farms, including its content of low-frequency noise and infrasound, is similar to noise from many other natural and human-made sources.

NHMRC urges authorities with responsibility for regulating wind farms to undertake appropriate planning, in consultation with communities, and be cognisant of evidence emerging from research.

Although it is unlikely that there are significant health effects at a distance of more than 1,500 m from wind farms, concern has been expressed by people living near wind farms about perceived impacts on their health. NHMRC recommends that any person experiencing health problems consult their General Practitioner.

Given these reported experiences and the limited reliable evidence, NHMRC considers that further, higher quality, research is warranted. NHMRC will issue a Targeted Call for Research into wind farms and human health to encourage Australia's best researchers to undertake independent, high quality research investigating possible health effects and their causes, particularly within 1,500 m from a wind farm.

Further information can be found in the NHMRC Information Paper and on the NHMRC website at: www.nhmrc.gov.au/your-health/wind-farms-and-human-health.