

# OPEN LETTER

## **Big Wind turbines, health and disease – a Danish perspective**

The history of wind turbines in Denmark started back in the 1970's with very small but gradually bigger wind turbines which were mostly owned by local farmers.<sup>1</sup> The big wind turbines (> 1 MW) came in the late 2000's but at a rather slow pace.

Documents based on the right of access in environmental and other Danish authorities have shown that already in the late 1980's there were complaints about the noise, but local as well as central authorities generally refused to investigate, and did not involve medical expertise. This happens also today.

Despite these complaints for over 20 years, unfortunately no medically based research has ever been conducted in Denmark, even not as a base for "safe" distances and noise limitations. The only research has been engineer-performed noise measurements and calculations. This ignores the human physiological impact of the wind turbine noise, previously shown in research into the impacts of other noise sources. Engineers are not physicians, and therefore cannot assess the impact on human health. Furthermore, those acoustic engineers closely connected with the wind industry have an obvious yet rarely acknowledged financial conflict of interest.

Unfortunately, the formal Danish statutory orders relating to wind turbine noise pollution have been exported internationally, together with the turbines. This is even more problematic now, because of the increasing size of the wind turbines.

With the giant wind turbines (>1MW) the relative amount of low frequency noise, which is very intrusive and easily spreads far away, is increasing. This has been shown in independent research at Aalborg University, Acoustics, Professor Henrik Moeller.<sup>2</sup> Comments recently from Australian Emeritus Professor Colin Hansen have indicated that the same intrusive health and sleep damaging wind turbine noise is occurring in Australia at Waterloo wind development (37 Danish VESTAS V90 3MW wind turbines), under certain meteorological conditions, at distances out to 10km.<sup>3</sup>

Unfortunately in Denmark there has been no systematic registration of complaints, or follow up for the people whose health and sleep have been affected by the noise. No information about risks for illness has ever been sent to GP's or the hospital system. So in fact in Denmark we have no idea of the real numbers, and most farmers are uneasy to speak up about their health/illness problems. Speaking up also risks falling house and land prices or may even totally prohibit their sale.

There is no doubt, however, that the number of complaints of sleep and health problems from Danish residents is increasing. A few residents have had relevant medical examinations and among

those who have, the causality of their symptoms from wind turbine noise has been confirmed on an individual, clinical level in a small number of cases.

Epidemiological research is totally lacking, and studies over longer time periods, too.

When the Danish statutory order for low frequency noise was renewed during 2011, after considerable pressure from the public, a senior civil servant from the Environment Authority responsible for noise pollution regulation had a meeting with wind turbine industry officials in March 2011, where it was privately mutually agreed that the new order would NOT result in greater safety distances or higher requirements for protection from the low frequency noise than the existing inadequate statutory order. This is exactly what subsequently happened, and resulted in strong protests from the Danish acousticians<sup>4</sup> and physicians<sup>5</sup> familiar with the reported health and sleep problems. The responsible authorities have continued to ignore those protests.

The CEO of Vestas, Ditlev Engel, in June 2011 sent a letter<sup>6</sup> to the then Minister of Environment to reinforce that no changes to the existing state of affairs could be acceptable, **because of the risk to Danish exports and Danish jobs**. The motivations of VESTAS and others involved in the wind industry are therefore made very clear. Their stated corporate values do not match their actions.<sup>7</sup>

The ongoing denials by VESTAS of health and sleep problems including their latest global “Act on Facts” campaign launched recently in Australia<sup>8</sup> to be rolled out globally, are further evidence of their true intentions to maximize profits and grow their company and their business, at the direct expense of the health of citizens around the world.

There are no independent epidemiological studies, which show their product (wind turbines) is safe and does not cause the sleep deprivation and adverse health effects reported by the neighbours.

On the contrary, there are a growing number of peer reviewed published studies, which show that there is considerable human distress, sleep deprivation and consequent impaired health and quality of life when wind turbines are installed as neighbours<sup>9</sup>. A number of these studies were conducted in Sweden on smaller wind turbines almost 10 years ago<sup>10</sup> confirming this problem is not new. Nor are the reported sleep and health problems caused by “scaremongering” or “the nocebo effect” in English speaking countries, as some public health advocates for the wind industry such as Professor Simon Chapman, a sociologist from Sydney University in Australia, are apparently alleging.<sup>11</sup>

So please, do not continue to misinform the public outside of Denmark about the true situation for the increasing number of Danish citizens whose health and sleep is badly affected by low frequency noise from wind turbines. The language barrier between English and Danish will not hide the truth.

These health and sleep problems are identical to those being reported around the world by wind turbine neighbours, and also by others affected by other sources of industrial low frequency noise.

The ongoing denial of FACTS about the existence of serious sleep and health problems in wind turbine neighbours is unforgiveable. So too is the refusal by authorities to properly measure the noise inside people’s homes, and the refusal to conduct the multidisciplinary medical research.

The comments made by retired Danish High Court judge Peter Roerdam in the Copenhagen Post on 16<sup>th</sup> November, 2012<sup>12</sup> that wind power is “an industry which has thoroughly corrupted the political system” is all too true, in my experience, and comes at the direct expense of the health of Danish people.

It is clear the institutional political corruption, and the lack of professional ethics on the part of wind industry acousticians and public health researchers, who ignore or deny the existence of the sleep and health problems and the consequent serious longterm damage to health, is not limited to Denmark.

Yours sincerely,

Mauri Johansson, MD, MHH  
Specialist in Community and Occupational Medicine  
Denmark, July 6<sup>th</sup>, 2013

## REFERENCES

1. <http://theenergycollective.com/greenwell-future/230046/denmark-s-community-wind-power-movement-retreat>
2. <http://vbn.aau.dk/en/publications/lowfrequency-noise-from-large-wind-turbines--additional-data-and-assessment-of-new-danish-regulations%288aaf8aba-7a7a-4e4e-a7f1-742b06f95aec%29.html>
3. <https://www.wind-watch.org/documents/letter-to-victoria-dept-of-health-re-acoustics-of-wind-turbine-noise/>
4. <http://www.epaw.org/media.php?lang=en&article=pr11>
5. <https://www.wind-watch.org/documents/statement-on-the-revision-of-the-executive-order-on-noise-from-wind-turbines/>
6. <http://www.wind-watch.org/documents/letter-from-vestas-worried-about-regulation-of-low-frequency-noise/>
7. <http://www.windturbinesyndrome.com/2012/gutsy-doc-gives-vestas-hell-denmark/>
8. <http://www.vestas.com/en/pages/act-on-facts.aspx>
9. <https://www.wind-watch.org/documents/association-between-wind-turbine-noise-and-human-distress-literature-review/>
10. <https://www.wind-watch.org/documents/association-between-wind-turbine-noise-and-human-distress-literature-review/> page 22
11. <https://www.wind-watch.org/documents/tag/nocebo/?titles=on> for critiques of the “nocebo” research from Australia and New Zealand, which purports to provide support the scaremongering hypothesis. Notably the peer reviewed published research by Danish Acoustician Professor Moeller above (ref # 2) on the effect of the increased size of the wind turbines on increased low frequency noise is ignored by Professor Chapman.
12. <http://www.windturbinesyndrome.com/2012/wind-power-has-thoroughly-corrupted-the-political-system-says-retired-high-court-justice-denmark/>