

Appendix

Analysis of the WHO Environmental Noise Guidelines for the European Region 2018 and wind power noise effects on man and the environment

WHO Environmental Noise Guidelines for the European Region 2018, for the first time, also handle noise from wind power. This rule recommends the target value of 45 dB Lden, which is the mean value for 24 h, with penalty for night (10 dB) and evening time (5 dB). The penalties were introduced to compensate people's extra sensitivity to noise during evening and night. This is equivalent to 38.3 dBA according to current calculation method for audible disturbances. From a Swedish perspective, this is a tightening against the current "praxis" 40 dBA, which raises demands for revision of the regulations for acoustic disturbances.

But the new WHO Guidelines goes further

The regulations report a number of scientific reports that show that "**wind turbines can generate infrasound or lower frequencies than noise from traffic. But few studies that relate exposure to wind power noise to health effects are available**". Clear connections are presented between general environmental noise and serious health effects in a supplementary report **Biological Mechanisms Related to Cardiovascular and Metabolic Effects by Environmental Noise**, compiled by a Swedish expert group (Eriksson, Pershagen, Nilsson). Appendix 1. The general evidence is highly applicable to wind power noise, given its specific nature.

The report emphasizes that noise from wind turbines has other characteristics. The constant experience of rotating wings and varied amplitude-modulated sound, that occurs when the wings are loaded by heavy winds in a high position, creates extra irritation (Schäffer et al, 2016).

"This distinguishes the wind power noise from other noise sources and has not always been described correctly". "Standard methods for measuring sound, usually including A-weighting, do not capture low-frequency sound and amplitude modulation that is characteristic of wind power noise". (Council of Canadian Academies, 2015).

The WHO also notes that the acoustic description of wind power noise "**with the help of Lden or Lnigh, is an inappropriate method for describing wind power noise, which may limit the possibility of observing connections between wind power noise and health effects. There are serious problems when assessing noise exposure related to wind turbines**" (page 86).

Noise is considered to be an important public health issue. It has negative effects on human health and well-being and is a growing problem. The WHO's European Office states that the guidelines are based on the increasing knowledge of the health effects of exposure to environmental noise. The main purpose is to provide recommendations for protecting human health when exposed to noise from traffic (road, rail and air), wind turbines and leisure activities. They provide strong advice for public health supported by evidence, "**which is important for driving political measures that protect communities against the negative effects of noise**".

The report's recommendations have two classes for the strength of the limit value; "**Strong**" or "**Conventional**". The latter applies to wind power noise in the sense of "**conditional**", which can be interpreted as uncertainty about the health effects. Regarding average noise exposure is considered that wind noise over 45 dB Lden is associated with serious health effects. However, no recommendation is made for average night exposure (Lnigh) from wind turbines, as the quality of evidence is considered too low. This is a weakness, as it is well known that most of the complaints relate to disturbances in evenings and nights in areas with silent background noise.

The medical report also showed that the effects on the blood system were greater during night time,

even during sleep and at lower sound intensity. Rapid sound changes cause higher heart rate and blood pressure. Effects of calm sounds exposure decrease within minutes, as opposed to intermittent noise (wind power noise). Repeated stimulation of the sympathetic nervous system can contribute to arteriosclerosis and coagulation, which increases the risk of diseases such as stroke and heart attack. Furthermore, there are clear signs that sympathetic nerve activation contributes to high blood pressure. Road traffic noise during night time is associated with increased fatigue of the body artery. Prolonged overactivation of the stress axis¹⁾ causes hormone changes ('HPA = system of hormone glands that react to stress; the hypothalamus, pituitary gland and adrenal cortex').

Chronic health effects of noise can also occur in sleep disorders. Effects of sounds in sleep include activity in the cerebral cortex, awakening, altered sleep stages (decreased deep sleep) and autonomic cardiovascular reactions. There are also secondary "*next day*" effects, such as fatigue, sleepiness and impaired performance. Autonomous (uncontrolled) reactions are thought to be the leading causes of chronic health effects of noise. Thus, long-term exposure during the night can be more important than daytime exposure. Connections between sleep disorder and disease development includes effects on metabolism, appetite and immune system function. Likewise, impaired glucose tolerance, decreased insulin sensitivity, and increased risks for type 2 diabetes, increased body mass index and increased levels of inflammation markers.

It can be noted that only 5 out of 92 references were dated after 2013. Thus, the WHO report confirms all the evidence already presented in the Swedish environmental testing processes, but cynically and unanimously omitted more recent references, without the authorities fulfilling the requirements for scientific assessment and applying the Environmental Code's precautionary principle. This is contrary to the expert hearings performed by the Australian Appeal Court, which led to the finding of disease association and failure of the dBA application (2017).

WHO's factual data ends in 2014 and lacks later scientific studies that report serious effects of soil vibrations and inaudible "*infrasound*" (<20 Hz). These inaudible and pulsating air shocks have negative effects on heart, lungs, blood vessels, brain and body organs.

- Wind Turbine Syndrome: The Impact of Windfarms on Suicide. Eric Zou. October 2017. American interconnection of public databases for causes of death and start-up of industrial wind power plants in 828 counties in 39 states in the US, shows significant connections between suicide frequency and wind power establishment up to 25 km. Relationships were also found for older individuals and for those who lived in the prevailing wind direction. Interconnection with the official large-scale health examination also indicated increased sleep disability next to new wind turbines.
- C. Kasprzak et al, 2014. The Influence of Infrasound Noise from Wind Turbines on EEG Signal Patterns in Humans. EEG measurement at infrasound exposure. Subjects were exposed to wind noise for 20 minutes, which was recorded from one wind turbine at a distance of 750 m. The activity of the brain was suppressed and the respiratory center in the rear part adjacent to the brain stem was affected. Long-term reduced breathing has been affected by other health effects in other studies.
- Branco, Alves-Pereira, Euronoise 2015. Clinical Protocol for Evaluating Pathology Induced by Low Frequency Noise Exposure. Image material showing pathological changes (thickened tissue) in pericarda (heart bag) and lungs. In addition, well-documented general Portuguese long-term studies suggesting degenerative effects on the brain, head lobe changes such as at high age, malformations of the trachea, abnormal hemostasis, coagulation and immunological parameters.
- reports from the German specialist medical group **Ärzte für Immissionsschutz**, which states that the limit for health effects at infrasound exposure is at 60 dBZ, and that this level is measured at about 10 km, from one single wind turbine.
- Christian-Friedrich Vahl et al, 2018-03. Are There Harmful Effects Caused by the Silent Noise of Infrasound Produced by Windparks? Infrasound decrease the heart muscle capacity by 20 %.

- Bauer, Sander-Thömmes, Ihlenfeld, Kühn, Kühler, Koch, 2015. Investigation of perception at infrasound frequencies by functional magnetic resonance imaging (fMRI) and magnetoencephalography. EU-supported investigation showing the reaction in the brain down to 8 Hz.
- Kelley, Cooper, Salt / Hullar. Definition of new "**sensation and experience threshold**" at 50-60 dBZ, which records low-frequency sounds and inaudible pulsing infrastructure energy pulses through other organs. 30 – 40 dBZ under the hearing threshold.

Other researchers argue that the continuous pulses can affect the cell structure and get genetic effects ("genetic chaos").

WHO also could not consider a later report on the ground vibrations interaction with infrasound, which gives enhanced effects indoors (about 2 dBA):

- Gortsas, Triantafyllidisa, Chrisopoulou, 2017. Numerical modeling of microseismic and infrasound noise radiated by a wind turbine.
- Scientific reports also recommend seismological analysis in areas with earthquake risk:
- Sigurðsson, 2015. Seismic response of wind turbine structures in the near-fault region.
 - Katsanos, Thöns, Georgakis, 2018. Wind turbines and seismic hazard: a state-of-the-art review.

There is no discussion on the effect of exposure time (dose rate). The concept of "half-level" of the occupational safety legislation means that the exposure time is halved at each increase of 3 dBA. Based on the conditions of the Working Environment Act of no more than 8 hours at 85 dBA, unhealthy levels of low-frequency sound and infrastructure energy can be achieved within a few years. The dose level effects should be evaluated as soon as possible by medical competence.

Consistent research, reports large individual differences and increased sensitivity after 50 years.

The burden on the children's brain, hearing system and body organs during adolescence causes risks, since these functions are not developed until at the age of 12. Negative cognitive ability has been observed in noisy environments. Risks during pregnancy have been discussed. Animals are also affected. Polish studies show negative weight gain for pigs (10 kg) and geese adjacent to wind turbines. Wild animals (badgers) that lived 1 km from wind turbines had 2.6 times higher cortisol values than those who lived 10 km from the turbines.

Leading researchers and representatives of wind power-affected citizens, in an Open Letter (2016) to the WHO expert panel, have emphasized the serious health effects, especially with "respect to sound below 200 Hz". The WHO expert panel is well aware that dBA filtering excludes about 60 % of the sound energy (<200 Hz), and that most of the sound energy consists of heavy inaudible pulses <5Hz. EU-Environment focuses on the health risks of infrasound and has on its website, presented a very clear warning for "**the invisible enemy**", the infrasound (2017-06-02).

Infrasounds are generated both by natural sound sources and by man-made technical systems in housing, energy and transport sectors. Noise from wind turbines has a specific character through the constant powerful pulsating sound energy waves and turbulence that exceeds the quieter natural sinusoidal infrasounds. Infranoise also occurs in the turbulence that arises behind the turbines when the air is pressed down at the towers. Infrastructure waves and low frequency sound propagate very far, since the attenuation is only 3 dBA / doubled distance to normally 6 dBA.

Two reports (Japan and Iran) show that maintenance personnel in wind farms have poorer health conditions, which demands a cut of the turbines while being maintained.

Based on the German Medical Experts' recommendation 60 dBZ for long-term exposure and the US database study, safety distances of 10-25 km apply. The depressive and somatic effects accumulate over time and are difficult to observe in normal health care.

This means that the health hazardous effects now not only affect marginalized sparsely populated areas, but **can also reach far into urban areas and cities**. In the worst case, these noise "carpets"

can cover half of the country's surface and affect one third of the population. The land-based project Markbygden (Piteå, Sweden, 1101 turbines), with the closest housing within 8 km, can then be considered as a **huge uncontrolled medical clinical experiment**.

A Finnish pilot study shows that symptoms caused by infrasound from wind turbines first decrease 15 km from the turbines. The base was about 50 families with symptoms in each family member. In total, about 200 people were involved in the study. (Finland's environmental health OY, spring 2016). *"It has been noted that local residents began to experience a variety of symptoms after the construction of wind turbines, usually within a few months. Night disturbance is a typical symptom. Harmful or severe symptoms were three times more common near wind turbines (</ = about 15 km from wind turbines). Previously, it has been assumed that the symptoms decrease within 10 km. However, it is known that the symptoms of sensitive people usually do not decrease at this distance. The study meets the requirements for statistical security. If the pilot study is representative, about 400 000 Finns are suffering from symptoms due to wind turbines and only about 10 000 of them relate the symptoms to wind turbines".*

More and more facts about the wind power industrial plants' serious health effects are now undermining confidence in the Swedish exercise of authority. The timing of an official apology to the public is approaching.

All renewable energy is not sustainable

The wind turbines' emission of ground vibrations and infrasound causes negative effects on climate, ecosystems and biodiversity. This has a dampening effect on forestry and other local business. The destroyed districts cause social disarmament, lowered property values, unprofitable property maintenance, slumbering and escape for those who can. The phrase "**wind power refugees**" is being used.

The victims are subjected to intrusion right into the bedrooms, and the private financial losses can destroy entire life-works.

Climate and forestry

- Ground vibrations compress the peat layers in wetlands and cause leakage of contaminated groundwater. Then oxygen oxidizes the biologically stored carbon (20 %), and emit the greenhouse gases carbon dioxide and methane (Scotland).
- Ground vibrations block the ecosystem services. The low frequency sound of the wind turbines disturbs the vibrational communication systems of the smaller insects within a radius of 2 meters (20-40 Hz). In forest land, important microorganisms that live in symbiosis with fungi, plants and trees are affected. This ecosystem service is responsible for the absorption of carbon dioxide from the air and conversion to carbonates. The vibrations rage the porous humus layer, which blocks water supply, carbon dioxide uptake and new nutrient supply. Woodland can contain 30 % of the biologically bound carbon.
- Soil vibrations shake the trees and stimulate biomass to be redeployed to strengthen the root system at the expense of normal growth in stem and foliage, which results in lower carbon uptake.
- A Chinese study based on satellite monitoring shows that the vegetation index is reduced by about 15 % up to 9 km. The turbines press dry and warmer air to the ground, which increases the night temperature and causes no dew point and dehydration. The vegetation is not restored after the construction phase, which indicates that the wind turbines change the growth environment.
- During the day, the turbulence behind the turbines, means that colder air is pressed against the ground surface. Cooling of damp air can cause icing, cracked branches, frozen top shots and turbulence swirls that hit the trees obliquely from above and increase the risk of storm damage.
- Areal losses. Felling trees for roads and foundations (5-10 ha/turbines) results in reduced forest production and absorption of carbon dioxide, segmentation of forests and mountains.

- Bioenergy is counterproductive. Carbon dioxide has the same climate effect regardless of fuel. Land allocated for the cultivation of bioenergy is needed for food production. The forest is not used optimally for long-term binding of coal in timber products.
- Increased insect damage poses a serious threat to the climate and the forest industry. Predator elimination, plus new invasive insects and dual swarms, increases damage. Insect-damaged conifers emit turpentine which is converted into corrosive ozone. This penetrates into the spruce needles and leaves' openings and destroys photosynthesis (the Ozolyte process). There is less absorption of carbon dioxide.
- Segmentation of forest land is contrary to EU's policy for conservation of the last forests.

Ecosystems and Biodiversity

- German wind turbines are estimated to crush 1 200 tonnes of insects each year. Flying Insects and Wind Parks (Franz Trieb, 2018-10-18, Deutsches Zentrum Luft und Raumfahrt). The total insect pulp has decreased from 9 kg/km³ to 3 kg/km³ in 15 years. Other causes also contribute. This is a very serious survival issue for both civilians and their environment. Germany alone has 30 000 wind turbines.
- A Dutch report showed that three quarters of all flying insects in 60 nature reserves in Germany have disappeared over the last 27 years (Oct-2017). The researchers warn that all life on earth risks being affected by the dramatic decline.
- There is exclusion of habitat and vulnerable bird species. There is Global threat to migratory species. Specifically, species are at enormous risk migrating to the southern hemisphere, where they are also threatened by wind power. Tower sails, swallows, ospreys. Great barrier effects. Turbines are frequently located at heights and along shores in the birds migration routes. The passage over the Strait of Gibraltar causes massive bird kills.
- The threats to biodiversity are greatly underestimated. An Indian investigation showed that the birds of prey decreased by 75% and species that constituted base food (lizards) grew explosively.
- Of HUGE importance is the elimination of important natural predators, such as bats. Operational restrictions are required at night time. The German scientist Christian Voigth already in 2010, showed that German wind turbines kill about 300 000 bats each year and warned of an ecologic crash. Through isotope analysis, the researchers found that turbines killed migrating species such as the common noctule, (Nyctalus noctula), pipistrell (Pipistrellus nathusii) and Leisler's bat (Nyctalus leisleri) which originated from Scandinavia. A French report showed that a specific species has decreased by 13% each year. The EU demands for stricter regulations for the protection of bats before 2024 require coordinated European solution for the migrating species.
- Implementation of the EU Birds Directive - Annex I, II & III, Tetrao urogallus. (Capercaillie). Requires restrictions on large areas. Norm: approximately 450 individuals within 250 km². Not yet implemented in Sweden.

Self-destructive policy - all renewable energy does not bring sustainable future

Scientific research and citizens' "truth documents" show that Europe is already exposed to extreme depressive burden with land-based wind power.

Evaluation of the serious health, climate and environmental problems has long been blocked by the Union's authorities and political systems. The injuries are already partially irreparable and complaints and public health effects cynically abducted. Citizens who are exposed to major health risks and private-financial losses are denied the right to speak up to the Supreme Court, while international companies are given the right to make incorrect decision-making documents without the intervention of the authorities. Legal certainty is questioned by large groups of citizens. It is no longer about marginal electoral groups in sparsely populated areas, but now also touches people in the larger central cities. The parties behind the energy policy maintain the conditions and policies, and the population's sense of exclusion is increasing.

Applied "dBA practice" is obsolete and unscientific and finally confirmed by the WHO as a technocratic scam, which in the long run has been defended by government agencies and company consultants.

The regulations do not even meet the EU's EIA directive, which requires the participation of "the public" and expertise.

EU Structural Funds reinforce unfair, climate-threatening and self-destructive implementation through subsidized loans to finance companies. The European landscape including its inhabitants has become international investment objects and global commodity. International land grabbing of the landscape. 95% of investments in Sweden are made with international capital.

Europe's leadership lacks insight into both the destructive and invaluable effects on people and the environment, but also contributes to the private and national economic effects through subsidies, taxes, restructuring, dual energy systems, high electricity prices for households and industries. There is a risk of a future imposition of the health and financial systems.

The political agenda must focus on the climate threat

The IPCC report 2018 for policy makers, reports 4 options for reaching the 1.5 degree target (Figure SPM.3b). All alternatives show that the climatic objectives cannot be reached with renewable energy. All options are based on the fact that nuclear power increases by 59% in 2010 (P1 2030) compared to 106% (P4 2050).

Duke University has estimated (2017) that the spread of clean energy technologies globally would need to increase tenfold in order to meet the goals agreed upon in the Paris climate agreement.

It would put the globe in an unsustainable situation for a growing population of several billion people. The IPCC report states that the area for bioenergy cultivation 2050 may vary between 0.2 and 7.2 million km². This surface needs to be secured for food production in a drier climate.

The report sets requirements for halving the greenhouse gases by 50% every ten years. Even from bioenergy. The IPCC includes the effects of CCS (Coal-Carbon Storage) to achieve the climate goals. The IPCC expert believes that this is not enough, but that we must also capture 100-1000 billion tonnes directly from the air. These needs of electricity and costs must also be covered.

Flinders University in Australia (2019-03) has also presented a report, which shows that ultra-small particles from the modern coal-fired power plants, can have a big impact on the climate risks of lung and cardiovascular diseases. The small condensation cores are a prerequisite for the formation of cloud droplets and contribute to unnatural changes in cloud formation and extreme weather events that include extreme rainfall or drought in other places.

Europe's politicians must accept the facts. Other countries do.

- Can we develop technology for utilizing nuclear fuel waste? Are "traveling wave reactors" (TWR) that can be driven by waste nuclear fuel realistic? Bill Gates Terrapower, supports development of reactors that are charged with spent nuclear fuel and started with enriched uranium. Claims are that this can operate for a hundred years without reloading.
- Will the Russian nuclear catch technology be commercialized on a large scale? The Russian Rosatom started the country's first VVER-1200 (2017) reactor. The reactor fulfills the requirements of the International Atomic Energy Agency for post-Fukushima plants (meltdown protection/nuclear catcher). The reactor has a net capacity of 1114 MW. China has been licensed for the development of reactors with three times more power.
- Can residual heat be used in the cooling water of the reactors?
- Is there potential in thorium-based technology (Norway)?
- When does the ITER project reach its goals?

Conversion to more solar energy, geothermal energy, efficiency enhancement etc. requires great resources.

Offshore wind power is developed towards >20 MW. But that can also have harmful ecological effects. It cannot be ruled out that the sharp decline of the eels in Europe may be due to the fact that eel fries are susceptible to interference from the electrical cables.

There is no honor in building large industrial plants with rotating machines that emit ground vibrations and infrasound, 500-700 meters from buildings and urban areas. Many older turbines are outdated and unprofitable. These can be phased out gradually according to the “Denmark model”, whose parliament has decided to phase out 2 450 land-based wind turbines (Total 4 500) to invest in offshore wind power. Other misplaced turbines can be down-regulated or closed at night. Compensation for power loss can be made through extended time for subsidies. Review of regulations and strategies must be initiated immediately and require time for analysis of wind power risks for sustainable development.

Against the background of available massive facts, it can be questioned whether all countries in the EU Union live up to:

- EU Directive 2001/42/EC, regarding the assessment of the environmental impact of certain plans and programs:
 - Article 3, paragraphs 1-2, which states that environmental assessment must be carried out for plans and programs that include: refers to agriculture and forestry, fishing, energy, etc.
 - Article 6, concerning "public" participation.

For example, the entire Swedish wind power expansion is based on a rigid application of "praxis", which does not meet the requirements for "strategic document". Authorities and courts have consistently rejected well-documented evidence, now confirmed in the WHO report.

- The European Court of Justice has in the so-called the “Weser judgment” reformat this which clarified the force of law in these documents.
- International law. The preamble to the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, signed at Aarhus on 25 June 1998 and approved by the European Community by Council Decision 2005/370/EC of 17 February 2005 (OJ 2005 L 124, p. 1, “Aarhus Convention”), states:
 - Recognizing so that every person has the right to live in an environment adequate to his or her health and well-being, and the duty, both individually and in association with others, to protect and improve the environment for the benefit of present and future generations
 - Considering that, to be able to assert this right and observe this duty, citizens must have access to information, be entitled to participate in decision-making and have access to justice in environmental matters and acknowledging in this regard that citizens may need assistance in order to exercise their rights.

National claims that an energy form is environmentally friendly are unacceptable according to UNECE (the Aarhus Convention). Evidence must be reported.

- ECHR 8. European Convention on Human Rights, Article 8 - requires right to respect for private and family life
- The Swedish Environmental Code's chapter. 1, the Portal paragraph and chapter. 2, The principles of prudence, localization and final consideration, have weak legal force.

Consciousness issue 1. Can the EU Union live up to Agenda 2030 for the implementation of 17 global goals and the specific requirements of Objective 15?

Protect, restore and promote the sustainable use of land-based ecosystems, sustainably utilize forests, combat desertification, halt and reverse land degradation and halt the loss of biodiversity.

Or can we live up to sub-goals 15.5 and 15.9 regarding immediate and significant measures to reduce the destruction of natural habitats, halt the loss of biodiversity and, by 2020, integrate ecosystems and biodiversity?

Consciousness issue 2. Can the EU Union live up to Agenda 2030 for the implementation of 17 global targets and the specific requirements of European biodiversity strategy to 2020, paragraphs 1b and 7b, to prevent the fragmentation of green infrastructure. EU Commission's Green Infrastructure Guidelines. Sub-goals 1-3 / 6.

Interim goals 1. More habitat and species assessments according to the Birds and Habitats Directives.

Sub-goals 2 - 7b. *No net loss of ecosystems. Compensation and equalization systems.*

Sub-goal 3. Increase the contribution of agriculture and forestry to the conservation and improvement of biodiversity. By 2020, introduce forestry plans or equivalent instruments in line with sustainable forestry, for all forests that are publicly owned and for rural development, which will receive support within the framework of EU policy for rural development and to measurably improve the conservation status of species and habitats as is dependent on or influenced by forestry and several EU directives with targets for emergency measures.

Sub-goal 6. Contribute to counteract the loss of biodiversity on a global level.

EPAW, European Platform Against Windpower, represents 1 470 local organizations of affected citizens who have had enough. About 20 from Sweden.

The website <http://www.epaw.org/> describes the international organization and connected countries and local organizations. Recurring reports are provided on how affected people suffer from wind power and must leave their homes.

Sandra Weesers' (FDP) speech in the Deutsche Bundestag is powerful proof that an increasing number of political parties have seen through the "cold hand" of wind power over European landscapes, citizens and future developments.

German organizations are working to sue the German state and demand down regulation at night.

French organizations are pushing the state to account for the total costs of wind power and demanding responsible recycling of old wind turbines and epoxy materials which are today swept "under the carpet".

In France, 18 of the country's leading scientists, experts, economists and environmental managers have taken the initiative to **Collectif Énergie & Vérité** (Energy and Truth, 2019-02-22) to influence the energy debate. These people share the same values about the truth of energy, and the importance of development in France. The group is determined to present arguments, without ideological basis, to analyze the published studies and sort the truth. And to publish this.

The group believes that the program for energy conversion only benefits the wind industry. It is on this issue that the collective wants to focus its recommendations on the French government. In order to reduce greenhouse gas emissions, the collective calls on the financial resources allocated to the wind power industry to be redistributed in favor of the purchasing power of the French people, primarily to extensive programs for thermal insulation and renovation of buildings, and secondly to examine energy savings and alternative renewable energy sources.

The collective wants to draw the French government's attention to the consequences of the development of wind power. This energy that never has provided evidence of its effectiveness,

- has no impact on the reduction of greenhouse gas emissions
- weakening the French economy by increasing public deficit and destroying employment
- jeopardizes biodiversity by killing wild life and polluting our land
- impair the quality of life of the local population, even harmful health
- depreciates personal properties and houses while being destroyed by landscapes and historic buildings, the natural and cultural heritage.

This is a wise and courageous initiative, which must be followed by other countries and supported by the European Parliament.

A first step must be a moratorium on the planning of land-based wind power and on the construction of which have been approved and stop for subsidization through the EU structural funds.

2019-03-26

Ove Björklund

The association God Livsmiljö Hylte, Sweden (God Living Environment)

Member of EPAW - European Platform Against Windpower

Appendix 1: Biological Mechanisms Related to Cardiovascular and Metabolic Effects by Environmental Noise. WHO Environmental Noise Guidelines for the European Region 2018.

References:

- On infrasound generated by wind farms and its propagation in low-altitude tropospheric waveguides. Marcillo, Arrowsmith, Blom, Jones. 2014. Infrasound over 90 km.
<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2014JD022821>
- Infrasound caused by Industrial Wind Turbines. <http://en.friends-against-wind.org/films/infrasound-caused-by-iwt#top>. Hidden knowledge of interacting "peaks" and ground vibrations. Unacceptable unhealthy effects.
- Sandra Weeser, FDP, Germany. Speech in Deutsche Bundestag.
<http://www.epaw.org/echoes.php?lang=en&article=n685>
- Too Much Power One Day, None the Next. <https://stopthesethings.com/2017/05/12/germanys-wind-power-debacle-worsens-too-much-power-one-day-none-the-next/>
- Geopferte landschaften, Germany. Sacrificed landscapes. <http://www.epaw.org/echoes.php?lang=en&article=n573>
- A reality check on renewables - David MacKay. <https://www.youtube.com/watch?v=E0W1ZZYIV8o>. Stop shouting – Start talking.
- Infrasound caused by Industrial Wind Turbines. <https://www.youtube.com/watch?v=ywWNx3OJyuo&feature=youtu.be>
- Interview med dr Mariana Alves-Pereira, september 2018. Finland TV.
<https://syte.fi/2018/09/11/melualistus-aiheuttaa-terveysongelmia/>
- <http://www.epaw.org/>