

Agenda item VI progress report German Medical Association

Title: Increase of research on possible health effects from operation and expansion of wind power installations.

-Submitted to the executive board-

The application for resolution by Dr. Bernd Lücke (printed paper IV-106) is being transferred to the executive board for further discussion: Wind power as a renewable energy source will be used more in the future. This is the societal consensus after the nuclear phase-out that was decided upon in summer of 2011. The phasing-out of nuclear power shows that some aspects of the utilization (of nuclear power) have been postponed to some point in the future; up to this day the question of final depositing spent fuel has not been solved in a satisfactory way.

Therefore, when looking at renewable energies, the whole life-cycle, from the sourcing of raw materials to final dismantling should become an integral part of the planning and risk assessment of those technologies. It requires profound scientific knowledge of possible health-related effects to make a conscious assessment of reasonableness and benefit versus risks and validated impairments. Especially for the emissions of infrasound and low-frequency sound there are no reliable and independent studies that look at that frequency range and, by using a suitable methodology, investigate effects below the threshold of hearing. Consequently, there is no proof that these emissions are safe from a health perspective.

For that reason, the 118. Congress of the German Medical Association is calling upon the Federal Government to fill the knowledge gaps regarding infrasound- and low frequency noise-related health effects of wind farms through scientific research and to clarify open questions concerning sound measurement methods and, if necessary, to adjust standards so that operation as well as the expansion can follow the principles of caution, diligence, holistic expertise, sustainability and social responsibility.

Reasons:

In particular, there are open questions regarding the health impacts of infrasound (<20Hz) and low frequency sound (<100Hz) through emissions and immissions from wind turbines, especially concerning the effects of noise below the threshold of hearing and at low frequencies at an increased duration of exposure.

Furthermore, an assessment should be made concerning adjustment requirements of measuring standards and regulations, for example for the transferability of emission and propagation models from smaller wind turbines to large-scale installations as well as for mandatory rules for measurement and evaluation of low frequencies (0.1 – 20Hz).

Main objectives:

Systematic, transparent, open and empirical research on those low frequencies that can enter the human body; interlinking with international research groups that have been studying that field for a long time; continuous publication of results and methodology; a moratorium of wind power developments in close proximity to settlements until sufficiently robust data is available that excludes any hazards with a high probability.

Regarding the matter of distances, noise emissions and shadow flicker the height of the installation as well as the location of the turbine in relation to settlements have to be considered and topographical conditions as well as the position of the sun and the prevailing wind direction have to be taken into account. If, for example, a wind park is located in an upwind or sun-facing direction of a settlement, noise propagation and shadow flicker will be more interfering compared to a situation where the installation is sited behind that settlement.

The Technical Instructions on Noise Abatement (*TA Lärm*) that urgently require updating and that are incapable of delivering adequate protection, should not be used as a protective regulation on a continuing basis.

The thereby initiated research on noise will play an important, health-protecting role on all levels of noise pollution – not only for the emissions of wind turbines. It is also important to research structure-borne noise (low-frequency vibration of solids from 100 to 0.1Hz) as it is emitted at hazardous levels by modern wind turbines. Structure-borne noise is produced, even when the rotors of the wind turbines are not running, solely by flexural vibration of the extremely high towers. It is transmitted via the foundations into the ground. Depending on geological and geomorphic conditions (soil and rock structure) of the site, structural-borne sound can easily travel up to 10km and then result in immissions into residential buildings.

It is therefore not sufficient to look at and investigate only air-borne infrasound if one wants to obtain explicable and useable insights. This is why, in the future, outdoor measurements made to evaluate health risks should be complemented by measurements taken inside dwellings (as opposed to the current practice of acoustical calculations).

Interactions of structure-borne and air-borne noise can lower the perception threshold of exposed persons significantly. Health effects in those persons may occur at very low (LFN) levels.