

SUBMISSION FROM V. C. K. METCALFE

The UK Energy Policy North & South of the border is now in danger of causing the country to be plunged into the kind of chaos resulting from an obsession with subsidised and intermittent forms of energy production. The most damaging being that of wind power.

That security of supply issues will be affected by the following issues is beyond doubt.

1. Together with adverse health issues attached to the installation of wind power being a world wide problem seriously affected by the right of manufacturers to keep the accident and component failure incidents from being reported, compounds effects of security of supply. Large conventional turbines are breaking under too much stress, and their pieces can be blown around and turned into unguided missiles during a storm, In some quarters this is quaintly termed 'component liberation.' The result is not 'quaint' being potentially lethal, as has already been reported. E.g. Considering that complete 50 metre blades can travel up to 200 metres, with larger and heavier pieces likely to travel well over 300m, and smaller pieces flying out to distances of up to 1,600m (i.e. for 10% blade fragments from 5m long blade sections) wind farm neighbours everywhere - and their stock, are clearly at risk within the throwing zones.

2. The problem of access to important information is compounded by the fact that engineers are noting metal fatigue as being the cause of tower collapse, gear box bearing and other component failures, including those of blades. To my knowledge, this has not been denied by major turbine manufacturers. It is believed to be Siemens' biggest problem, even though they claim to be the best. Another report involved Enercon where apparently a 40 tonne blade fell off their large 7.5 megawatt machine - and that they still do not know how it happened, despite having a new plant with superior design and manufacturing facilities to build the blade. An example of once again, too much emphasis being placed on computer simulation. Opinion is that because these blades are made from cheap composites, they therefore operate in an indefinable and non quantifiable environment. Also that a sequence of random unexpected events could destroy a blade in moderate wind conditions, and that worryingly, aviation type quality or testing is unaffordable as the product is too cheap and increasing the price would reduce sales.

A further observation made during discussions concerning the effectiveness from wind turbines, also cited the subject of material fatigue.

I.e. A wind turbine has dynamic changing forces and pressures in just about any direction and any axis. Opposing stresses lead to fatigue - especially when blades have to spin some dozens of millions of times in two decades. If you realize what opposing stress does to material, answers to the 'why' question are provided by sources too numerous to mention here, likely all due to material fatigue to be more severe than anticipated. Links to reports can be provided upon request.

In existing fatigue studies for wind turbines, in general they missed or underestimated two factors, that is gravitational load, especially on the blades as they alternately hang and stand on the axis, but perhaps more importantly, induced

friction turbulence from the adjacent wind turbines. It appears that wind turbines, using renewable energy, need to be renewed far too often to get out of the red figures.

So, the fatigue problem will almost certainly prevent most if not all modern wind turbines making it all the way to any life expectancy of 30-20-15 years without major overhauls requiring replacement of most if not all moving parts. With this in mind, and it is a fraction of the information available, ***it is clear that the general public and politicians must be fully informed about what is going on with these high-risk machines and when to stop the most risky wind turbines (see the EU Machinery Directive that so clearly describes that process (see MD, 2006, Annex I, attached).*** Constantly and predictably there is a failure to mention that hidden from the majority of the power-consuming public, have been the *adverse health effects* now so well understood by acousticians and health professionals around the world. Engineers and experts in the UK are successfully pointing to flaws in energy policy, including Grid effects, bringing government decisions into disrepute. E.g. the report by Stuart Young 'Britain's energy policy went from weird to bizarre.' Also attached. Furthermore, it's important to recognise the valid calls for an "evidence-based approach" to assessing the carbon impact of wind farms around the world. Although Aberdeen University academics designed and built a "carbon calculator" for calculating carbon savings from wind farm developments, that the results from this work are a material consideration for Scottish ministers in determining whether a wind farm is consented, demonstrates a flawed decision for the following reasons:

1. The Aberdeen University "carbon calculator" document is primarily directed at proposing various formulas for assessing the consequences (added CO2 emissions) of building turbines in peat lands and the consequences of deforestation (reduction in carbon sinks). The issue however, of base carbon emission savings is still based on the age old DEFRA calculations of assuming a direct replacement of a fossil generated MWh with a wind turbine generated MWh. There is though, an acknowledgement of the impact of backup fossil generation.

2. The bottom line is that there is ***no actual assessment/data of emissions reductions as a consequence of thousands of Industrial Wind Turbines.***

Therefore the overall damage from the huge number of speculative applications being lodged at home and globally, become increasingly vital to assess. Of additional importance to take into the equation is the poorly perceived fact that wind farms equal ***more pylons, transmission lines and substations.*** Therefore observations made in a report produced by the Independent EU scientific committee on health risks are of particular relevance. The findings were that children living close to extremely low-frequency powerlines are more likely to develop leukaemia. The committee states that research prior to 2000 showed a two-fold increase in the risk of developing childhood leukaemia when living, long term, close to certain pylons.

Conclusion.

There is a clear obligation to invoke the ***precautionary principle*** until the provable assessment of emissions reductions (if indeed they exist) as a consequence of wind

power is available. Constantly and predictably there is a failure to mention that, hidden from the majority of the power-consuming public, have been the adverse health effects now so well understood by acousticians and health professionals around the world. A list of 76 of these eminent people contributing thus far, is attached. The 2015 report of Steven Cooper being the most recent and widely supported. Together with wholesale failures to recognise or monitor for wind power's adverse health impacts, Governments, their agencies and departments everywhere deserve to be indicted for putting lives and the environment at risk.

I should be grateful for acknowledgement of receipt of this submission.

Yours sincerely,

Mrs. V.C.K. Metcalfe.