

Review of the Government's response to the Stakeholder Advisory Group on extremely low frequency electric and magnetic fields (SAGE) recommendations on ELF EMFs (Oct 16th).

Caroline Paterson, *Stirling Before Pylons*, Nov 5th 2009

The public is deeply concerned by the Government's failure to address the scientific evidence in their denial of an association between power line EMFs and adverse health effects. In 2004, based on an international acknowledgement that power line EMFs double the risk of childhood leukaemia for those in close proximity, the then NRPB called on the Government to consider the need for further precautionary measures (above & beyond the ICNIRP 100 microtesla limit). Since then the scientific evidence showing associated adverse health effects has escalated dramatically – and includes the UK's publicly funded Draper Report (2005), which not only confirmed the doubled risk of childhood leukaemia for those born within 100m of high-voltage overhead transmission lines (HVOTLs), but showed an increased risk extending to 600m. Furthermore, new studies have been published showing an association with conditions other than childhood leukaemia, including the Lowenthal study (2007) which shows a five-fold increased risk in certain adult leukaemias and lymphomas for those whose childhood was spent within 300m of HVOTLs. More recently (2008), two major studies reveal clear and quantifiable associations with Alzheimer's disease (Huss et al & Garcia et al). Much work has also been published on the mechanistic connection between power line EMFs and certain diseases.

In the light of this mass of evidence it is incredible that the Government has taken a backward step from its 2004 position by failing to recommend meaningful precautions. The charity and co-funders of the SAGE process *Children With Leukaemia* has condemned the Government's failure to act on the recommendations and advice of leading scientists, stating that it is failing to protect young lives and "sweeping the matter under the carpet". As a result of this failure many more of the most vulnerable in our society will suffer and die from such serious associated conditions as leukaemia, lymphoma, brain tumours, ALS, Alzheimer's disease, depression and miscarriage. The Government's failure to address the evidence and uphold the precautionary principle will result in power line EMFs being imposed on thousands of homes in the full knowledge of associated adverse health effects for generations to come.

(Numbering refers to the points used in the Government report)

1. As detailed in previous reports there were enormous problems with the SAGE process and its First Interim Assessment (2007), which several stakeholders refused to endorse.

The latest SCENIHR updated opinion actually dates from Feb 10th 2009. It confirms its 2007 opinion that ELF EMFs might contribute to childhood leukaemia and calls for the further investigation of two new epidemiological studies on Alzheimer's disease. There is no mention of the Garcia et al 2008 or Huss et al 2008 papers in this Government report and the Health Protection Agency (HPA) has not produced a review on either. An offer from SAGE (July 10th 2009) to update the Dept of Health on these and other important studies

published since the submission of the First Interim Assessment in 2007 was declined by the Dept of Health.

2, 77, 79 The low-cost options detailed here will do nothing to reduce public exposure to harmful EMFs. The point (iii) that the HPA keep this science “under review” creates a false sense of security, as the HPA has singularly failed to inform government of any of the critical scientific evidence currently available.

The HPA’s failure to deliver an accurate, evidence-based and informed message to government on the current state of the scientific evidence clearly negates any possibility (iv) of their compiling public messages providing “clear information about the risk....”. The public can do nothing to protect themselves from imposed exposure to ELF EMF from high-voltage power lines, so I strongly suspect that the HPA’s spirit of denial would also be adopted in any public information.

3, 24, 35 SAGE’s own cost benefit analysis (CBA) was much criticised within the SAGE process. Critical differences revolved around whether only the condition of childhood leukaemia was assessed and even then what the projected number of associated cases was – varying from c.1-2 cases pa to 60 cases pa. The CBA would alter radically if illnesses such as Alzheimer’s, adult cancers, depression and miscarriage were factored into the calculations. Moreover, costs of mitigation through undergrounding were hampered by SAGE’s over inflated costings (12-20 times that of an overhead line), whilst XLPE costings with lifetime costs of 3-5 times that of an overhead line were persistently ignored.

The government’s failure to recommend a building moratorium on CBA grounds is therefore deeply flawed. Also deeply flawed is its denial of the EMF childhood leukaemia association. This association has held an (WHO) IARC 2B classification (possibly carcinogenic to humans) since 2002, since when peer reviewed scientific studies including the UK’s Draper Report (2005) and the 2008 Yang et al report have refined research revealing diminishing risk with distance from HVOTLs and clear mechanistic connections for genetically susceptible children. The HPA’s dismissal of the EMF/childhood leukaemia association as “weak and unproven” is at odds with all the scientific evidence available.

5, 6, 28, 29, 40, 41, 42 Compliance with the ICNIRP 1999 guidelines is largely meaningless, as its limit of 100 microtesla is also the maximum exposure reading possible under a 400kV line, so compliance still allows for lines to pass directly over homes. It is internationally acknowledged that the risk of childhood leukaemia doubles at exposure levels above 0.4 microtesla (a factor of 250 below the ICNIRP guideline). The failure to recommend a building moratorium on account of “scientific uncertainty” shows the Government’s failure to properly consider the precautionary principle – as outlined in the Rio Declaration and Maastricht Treaty of 1992, to which the UK was a signatory.

Moreover, the 1999 ICNIRP levels have now been superseded by the European Parliament’s Resolution of April 2009 calling for stricter regulation and protection of citizens from EMFs. The Commission is currently reviewing “the scientific basis and adequacy of the EMF limits as laid down in Recommendation 1999/519/EC”.

5. No one in SAGE has ever claimed that ELF EMFs are the sole cause of childhood leukaemia.

The HPA has been entrusted with keeping the Government informed of new scientific findings. Yet in its Nov 2007 letter of advice to Government it failed to refer to any studies post-dating 2004, with the exception of an indirect reference to the Draper Report (2005). I am not aware of any updates to the Government on other significant papers published in the intervening 5 years, and that, despite an unprecedented increase in the number of studies showing serious adverse health effects for those living in close proximity to power lines. Moreover, the Department of Health stated in writing and then at the July 2009 SAGE meeting, that it had no intention of reviewing the 2008 Alzheimer's papers (Huss & Garcia et al). This throws into serious doubt the claim that policies will be "informed by new scientific findings as soon as they arise".

6. "Acute" effects fails to address the long-term, or chronic biological effects of power line EMFs such as cancers, which are also *well established* with a *substantial database...built up over many decades of scientific research*. This includes the internationally acknowledged doubled risk of childhood leukaemia with exposure above 0.4 microtesla.

13. In 2004 precaution was considered **because of** "uncertainty in the science" in direct contradiction with points 5 & 32, which ruled out the corridor option on account of "scientific uncertainty". The UK Government's approach to precaution is inconsistent and appears to be regressing at a time when other countries are legislating serious precautions based on the scientific evidence, which in the case of the Draper Report was funded by UK tax payers.

17. Both the SAGE First Interim Assessment and the HPA's advice to Government have been deeply criticised by members of SAGE, several of whom feel disenfranchised by the whole process (see point 3 about conditions other than childhood leukaemia and flawed CBA).

The HPA does not actively research in this field and rather than referring to scientific evidence it defers to the WHO (31, 32, 40), a body which has come under intense criticism for drawing conclusions without an evidence base, perhaps partly as a result of its business associations (Oxman, Fretheim & Lavis, *The Lancet* 2007).

33. The sums involved for mitigation have been exaggerated (see 3.) and a *Children With Leukaemia* survey showed consumer willingness to pay considerable sums to protect lives.

34. Does this line imply that Ofgem's remit now covers public health? Has the HPA abdicated all responsibility for public health on grounds of cost and who pays? What of the concept of the polluter pays as agreed at Maastricht?

As a bottom line it should not be our children paying with their lives.

