

**Under strict embargo until 1400 hours BST on Friday 27 April, 2007**

## **Powerline report fails to protect the public against health risks**

*A response to the report by a member of the Stakeholder Advisory Group on the effects of extremely low frequency electric and magnetic fields.*

Today sees publication of a report from the Government's Stakeholder Advisory Group on the effects of extremely low frequency electric and magnetic fields (ELF EMFs) on human health, (SAGE).

SAGE member Denis Henshaw, Professor of Human Radiation Effects at the University of Bristol, has criticised the report for failing to recommend sufficient measures to protect public exposure to EMFs near powerlines.

Professor Henshaw described the report as disappointing in view of the serious omission of meaningful discussion of the scientific evidence, as well as the failure to recommend strong precautionary action for new housing developments and no recommendations for existing powerlines over populated areas.

He said: "The overall weight of scientific evidence strongly supports a favourable cost-benefit analysis for the introduction of precautionary measures against EMF exposures, including a powerline corridor within which the building of new homes would not be permitted.

"While the report discusses a 60-metre avoidance corridor around powerlines, within which new houses would not be built, it falls short of recommending this option. In view of the extensive international evidence of adverse health effects across a wide range of illnesses, from both epidemiological studies and laboratory experiments, this lack of a clear recommendation for even this minimum distance is extremely disappointing."

There is compelling evidence from laboratory studies that low level magnetic fields enhance the effects of known cancer-causing agents on cells. The evidence supports the established

mechanism by which magnetic fields can increase the lifetime of free radicals in the body and hence their ability to damage DNA.

In addition, a major report by the California Department of Health that reviewed over 200 international epidemiological studies, concluded that there was a possible causal link with exposure to magnetic fields and increased risk of childhood leukaemia, adult leukaemia, adult brain cancer, amyotrophic lateral sclerosis (or motor neurone disease) and miscarriage.

People exposed to EMFs in and around their homes have been found to experience disruption of the nocturnal production of the important hormone and natural anti-cancer agent melatonin. This may provide a common link with the various reported health effects.

Where high magnetic fields as a result of house wiring are identified, the report recommends measures for remediating or removing exposure to such fields.

Cancer risk assessments from harmful agents are usually based on the assumption that the risk reduces to zero only when exposure to that agent is zero. Such an assumption would suggest that around 60 cases of childhood leukaemia annually are linked to EMFs in the UK. When other illnesses associated with EMFs are considered, the public health impact could be at least one hundred times greater. END

### **Notes to Editors**

Professor Denis Henshaw is a working member of SAGE. He is available for interview on 0117 9288705 or 0117 9260353, mobile 0777 3356442, email [D.L.Henshaw@bristol.ac.uk](mailto:D.L.Henshaw@bristol.ac.uk), or via the University of Bristol press office. Contact Cherry Lewis on 0117 928 8086 or 07729 421 885.

The SAGE report will be available from 1400 hours on Friday 27<sup>th</sup> April 2007 at this address: <http://www.electric-fields.bris.ac.uk/> Extensive information on the adverse health effects associated with powerlines and electric and magnetic fields generally may also be found there.

The 2002 report of California Department of Health Services may be access directly at:

<http://www.dhs.ca.gov/ehib/emf/RiskEvaluation/riskeval.html>

### **What is SAGE?**

In 2002 the International Agency for Research on Cancer (IARC) classified magnetic fields from the electricity supply as a possible carcinogen in view of an observed association with childhood leukaemia incidence. In response, in Autumn 2004, the Government set up the Stakeholder Advisory Group on ELF-EMFs (SAGE) to examine what precautionary measures might be introduced to limit public exposure to electric and magnetic fields associated with the electricity supply. Membership of SAGE was drawn from a wide range of interested parties, including Government Departments, industry, academics and members of the public. SAGE has been funded equally by the Department of Health, the Electricity Industry (National Grid and the Energy Network Association) and the charity CHILDREN WITH LEUKAEMIA, and employed R K Partnership Ltd as professional facilitators. The First Interim Report published today describes the deliberations of the first two working groups which were concerned with exposure from internal wiring in the home and domestic appliances and from exposures arising from high voltage powerlines.

### **What are ELF EMFs?**

The term “EMFs”, specifically “ELF EMFs”, refers to the electric and magnetic fields associated with the electricity supply, be it from high voltage powerlines or from wiring and the use of domestic appliances in the home. The vast body of research has concentrated on magnetic fields and their association with increased risk of a number of adverse health effects. While less research has been carried out on electric field effects, some scientists would also regard these as potentially harmful.

### **Further evidence of the dangers**

In June 2005 the results of the largest ever study of childhood leukaemia incidence in relation to high voltage powerlines was published in the British Medical Journal by Dr Gerald Draper and colleagues at the University of Oxford. The authors found increased risk of childhood leukaemia up to 600 metres from National Grid 275 and 400 kV powerlines in England and Wales. Distances beyond 200 metres from powerlines are beyond the range of the direct electric and magnetic fields. They are, however, within range of corona ions which are emitted from high voltage powerlines and can be carried considerable distances away by the wind. Corona ions attach themselves to small particles of air pollution in the atmosphere,

increasing the electric charge on these particles. When inhaled such air pollution particles have a much higher probability of becoming trapped in the lung.