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Powerwatch comments on SAGE matters for consideration by the UK Parliamentary Commission on Childhood Leukaemia and EMFs

(i) The household wiring recommendations in the SAGE Report

The best data available in the UK [1] suggest that, of the 0.4% of homes (80,000 homes) where magnetic fields are greater than 0.4 μT , perhaps a quarter of these are due to faulty house wiring. This is in line with my experience of measuring magnetic fields in homes over the last 20 years.

We agreed that the primary focus should be to reduce magnetic fields, because it is these which are most strongly associated with childhood leukaemia and other adverse health effects. For electric fields, we considered more research would be desirable before recommending that everybody used screened cable, although we would like the information that it is legal to use mains-voltage screened cables to be made more widely known.

The vast majority of faults causing elevated magnetic fields are due to faulty final circuit “ring-wiring”, a technique primarily only used in the UK and parts of Germany. Such circuits can have serious wiring faults and yet everything appears to continue to work correctly while, at the same time, the magnetic fields within the house rise many-fold. Such faults are only detected by a major electrical test and measuring exercise or, more easily, by measuring the magnetic fields in the house while a high load (such as a fan heater) is applied to the final circuits.

The Institution of Electrical Engineers (IEE) (now the Institution of Engineering and Technology, IET) has never really approved of “ring wiring”. It is not completely clear why it was introduced as a wiring technique after the Second World War. The most likely reason is thought to be that it was to allow for large loads to be carried with minimum use of copper in the cabling.

For magnetic fields only, the cost of changing to radial wiring and always ensuring that “go” (phase) and “return” (neutral) currents were kept together will be trivial. The other actions SAGE is recommending (re. RCDs and electricity meters) are already likely to happen.

To apply our package of options to reduce magnetic fields to a new home or when completely rewiring an existing home would, we estimate, cost an additional £20. There were no vocal dissenting voices in the working group to recommending this precautionary course of action to be considered for implementation as changes to the IET “On Site Guide”.

SAGE also recommended that where high magnetic fields as a result of house wiring are identified in an existing home, the source of those fields should be removed by remedial actions. This would require at least some electricians and surveyors to be suitably trained and equipped. SAGE considered that the proposed measures for homes should also be applied to schools resulting in a precautionary approach due to good engineering practice.

For electric fields, at present there is a less strong scientific case for reduction, and we recommended that our option of using screened mains cable should be used by those householders or developers who wish to use it. Powerwatch recommend it for people who believe that they may be electrically hyper-sensitive. [2, 3]

(ii) EMF levels in homes for sale w.r.t. future Home Information Packs (HIPs)

As house sales now already require an up-to-date Part P Building Regulations Certificate, Powerwatch strongly recommends that a magnetic field test should be added to the existing mandatory tests required. This would both easy and cheap to add.

Powerwatch also recommends that the magnetic field measurements are collected and collated with limited Post Code information (to limit identification of the actual property) in order to help obtain a better overall estimate of UK residential power-frequency magnetic fields.

SAGE discussions regarding Part P requirements were severely limited by the ODPM and their successors the CLG being unable, or unwilling, despite repeated requests to provide anyone with technical competence to attend the SAGE Working Group meetings. Indeed, it became all too clear, that the ODPM had effectively forced the Part P regulations through without the full and willing agreement of the IET and had also somehow side-stepped the DTI. Powerwatch consider the apparent behaviour of the ODPM in all these matters to be unacceptable behaviour by professional UK legislators and civil servants, which has made it difficult to provide “joined up thinking” in these matters.

(iii) Legal comments

A large review document “**Further legal considerations in relation to EMFs, powerlines and a precautionary approach, following the SAGE report published April 2007**” has been written by Brenda Short, Powerwatch’s legal advisor. This will be freely available on the Powerwatch website and is also hereby submitted to the Parliamentary Commission for consideration and for posting to their website.

[1] http://www.hpa.org.uk/radiation/publications/hpa_rpd_reports/2005/hpa_rpd_005.htm

[2] http://www.powerwatch.org.uk/news/20060224_es_response.asp

[3] http://www.hpa.org.uk/radiation/publications/hpa_rpd_reports/2005/hpa_rpd_010.htm

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