October 15, 1999

To: The Clerk to the Transport and the Environment Committee
The Scottish Parliament
Room 2.7 Committee Chambers
George IV Bridge
Edinburgh
EH9 1SP

From: Cindy Sage
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Dear Members of the Telecommunications Inquiry Committee,

Thank you for the opportunity to submit written evidence on possible health effects of wireless communications, addressing the "state of the science" on what is known and not known. Further, my comments will speak to what information the Committee should consider in formulating "advice based on the present state of knowledge".

Comments

The weight of the evidence that bioeffects occur with RFR exposure is beyond argument and some of the evidence suggests that serious health effects may result, particularly from cumulative or chronic exposure. Scientific study on cumulative effects is very incomplete, and some studies report that low-intensity chronic exposure may be deleterious. The Commmittee should advise "public health precaution" and urge population exposures worldwide be kept to a minimum until further research can clarify risks.

Public exposure to electromagnetic radiation (radiofrequency and microwave) is growing exponentially worldwide with the introduction and use of cordless phones, cellular phones, pagers and antennas in communities designed to transmit their RF signals.

Long-term and cumulative exposure to such massively increased RF has no precedent in history. There are no conclusive studies on the safety of such exposures, and the growing body of scientific evidence reports such bioeffects and adverse health effects are possible, if not probable. The Committee should advise that involuntary, public exposure to low-level cumulative RFR may be potentially harmful, based on the weight of the existing scientific evidence.

Public policies to address the issue of decision making in the face of this scientific uncertainty are evolving. The precautionary principle (erring on the side of conservatism) is frequently promoted by public health advocates given the massive public health risk that is possible if such exposure is carcinogenic or has other adverse bioeffects. Even if the risk to an individual is slight (which is at present unknown), the sheer number of people around the globe who may be at risk makes this policy choice of utmost importance. The virtual revolution in science taking place now is based on a growing recognition that non-thermal or low intensity RF exposure can be detected in living tissues and result in well-defined bioeffects. Bioeffects that are reported to result from RF exposure include changes in cell membrane function, metabolism, cellular signal communication, activation of proto-oncogenes, and cell death. Resulting effects which are reported in the scientific literature include DNA breaks and chromosome aberrations, increased free radical production, cell stress and premature aging, changes in brain function including memory loss, learning impairment, headaches and fatigue, sleep disorders, neurodegenerative conditions, reduction in melatonin secretion, and