

15 July 2014

Minister of Health
Government of Canada
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Minister Ambrose,

This letter is to alert you to serious deficiencies in the health risk assessment regarding electromagnetic energy and its incorporation in Health Canada's Safety Code 6. Thank you for this opportunity to provide technical and scientific comments on the draft of Safety Code 6 (2014).

Attached is a 300+ page document prepared by the BioInitiative Working Group (BWG) which provides commentary and references to studies overlooked by both the Royal Society of Canada Report of 2014 (RSC (2014)) and the Scientific Committee on Emerging and Newly Identified Health Risks Opinion (European Commission Directorate General for Health and Consumers, Luxembourg) in its recent *Preliminary Opinion on Potential Health Effects of Exposure to Electromagnetic Fields (EMF) Report* (SCENIHR (2013)). While comments are specifically addressed to the SCENIHR (2013) report, they are relevant to the present situation because of its citation in the Safety Code 6 (2014) Draft (May 2014).

By way of background on the BWG, we prepared a comprehensive review of the EMF literature in 2007, much showing adverse biological effects well below the current and proposed Safety Code 6 levels. This was updated in 2012 with inclusion of a further 1,800 publications. The BioInitiative 2012 Report was prepared by 29 authors from ten countries, (Sweden (6), USA (10), India (2), Italy (2), Greece (2), Canada (2), Denmark (1), Austria (2), Slovak Republic (1), Russia (1)); ten holding medical degrees (MDs), 21 with PhDs, and three with an MSc, MA or MPH. Among the authors are three former presidents of the Bioelectromagnetics Society, and five full members of BEMS. One distinguished author is the Chair of the Russian National Committee on Non-Ionizing Radiation. Another is a Senior Advisor to the European Environmental Agency.

As you must be aware, the final SCENIHR report will be used to conclude whether changes in International Commission of Non-ionizing Radiation Protection (ICNIRP) standards are warranted. It is the ICNIRP standards with which Health Canada proposes to harmonize its guidelines. As you will see in the attached BWG 2014 response, prepared by 14 of our members, the SCENIHR report falls short in its intended purpose and either entirely fails to mention newer studies or misreads evidence such as that presented by De Iuliis *et al.* (2009) on DNA damage to sperm.

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Of special note is the inclusion in the attached document of the peer-reviewed studies by the Swedish research group lead by Dr. Hardell. Dr. Hardell's earlier work was key to the classification by the World Health Organization - International Agency for Research on Cancer (WHO/IARC) of wireless radiation in the radiofrequency/microwave range as a *possible carcinogen* (class 2B) in 2011. The IARC working group consisted of 30 scientists and the vote for a class 2B was almost unanimous. Dr. Hardell now believes the newer studies call for a class 1 *carcinogenic to humans*, classification. Dr. Hardell's recent studies were not included in the SCENIHR (2013) report or in the RSC (2014) report. Other overlooked high quality publications include studies with evidence for adverse effects on mitochondrial function and on electrophysiology which include blood-brain barrier changes. A full evaluation of the radiofrequency radiation health related scientific evidence is incomplete without full consideration of these studies.

Canadians will be well served by an objective, rigorous examination of the whole range of high quality studies included in the attached document and with a revision of Safety Code 6 accordingly.

I would appreciate a response to this submission which includes the evidence reviewed, what was included and excluded and why, and this submission can be found in the update to Safety Code 6.

Please contact me for further information or for clarification. Thank you for your consideration.

Yours sincerely,



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