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## REPORT

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**on health concerns associated with electromagnetic fields  
(2008/2211(INI))**

Committee on the Environment, Public Health and Food Safety  
Rapporteur: Frédérique Ries

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### ▶ MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION



**on health concerns associated with electromagnetic fields**

**(2008/2211(INI))**

*The European Parliament,*

- having regard to Articles 137, 152, and 174 of the EC Treaty, seeking to promote a high level of human health, environmental protection and workers' health and safety protection,
- having regard to Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields<sup>(1)</sup> and the related Commission implementation report of 1 September 2008 (**COM (2008)0532**),
- having regard to Directive 2004/40/EC of the European Parliament and of the Council of 29 April 2004 on the minimum health and safety requirements regarding exposure of workers to the risks arising from physical agents (electromagnetic fields)<sup>(2)</sup>,
- having regard to Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity<sup>(3)</sup> and to the respective harmonised safety standards for mobile phones and base stations,
- having regard to Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits<sup>(4)</sup>,
- having regard to its resolution of 4 September 2008 on the mid-term review of the European Environment and Health

Action Plan 2004-2010<sup>(5)</sup>,

- having regard to its resolution of 10 March 1999 on the proposal for a Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz – 300 GHz<sup>(6)</sup>,
  - having regard to Rule 45 of its Rules of Procedure,
  - having regard to the report of the Committee on the Environment, Public Health and Food Safety (A6-0089/2009),
- A. whereas electromagnetic fields (EMFs) exist in nature and have consequently always been present on earth; whereas, however, in recent decades, environmental exposure to man-made sources of EMFs has risen constantly, driven by demand for electricity, increasingly more specialised wireless technologies, and changes in the organisation of society; whereas the end effect is that every individual is now being exposed to a complex mixture of electric and magnetic fields of different frequencies, both at home and at work,
- B. whereas wireless technology (mobile phones, Wi-Fi/WiMAX, Bluetooth, DECT landline telephones) emits EMFs that may have adverse effects on human health,
- C. whereas most European citizens, especially young people aged from 10 to 20, use a mobile phone, an object serving a practical purpose and as a fashion accessory, and whereas there are continuing uncertainties about the possible health risks, particularly to young people whose brains are still developing,
- D. whereas the dispute within the scientific community regarding the potential health risks arising from EMFs has intensified since 12 July 1999, when exposure limits for fields in the 0 Hz to 300 GHz range were laid down in Recommendation 1999/519/EC,
- E. whereas the fact that the scientific community has reached no definite conclusions has not prevented some national or regional governments, in China, Switzerland, and Russia, as well as in at least nine EU Member States, from setting what are termed 'preventive' exposure limits, that is to say, lower than those advocated by the Commission and its independent scientific committee, the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR)<sup>(7)</sup>,
- F. whereas actions to limit the exposure of the general public to EMFs should be balanced against improvements to quality of life, in terms of safety and security, brought about by devices transmitting EMFs,
- G. whereas among the scientific projects arousing both interest and controversy is the Interphone epidemiological study, financed by an EU contribution of EUR 3 800 000, primarily under the Fifth RTD Framework Programme<sup>(8)</sup>, the findings of which have been awaited since 2006,
- H. whereas, however, there are some points that appear to be the subject of general agreement, in particular the idea that reactions to microwave exposure vary from one person to another, the need, as a matter of priority, to conduct exposure tests under actual conditions in order to assess the non-thermal effects associated with radio-frequency (RF) fields, and the fact that children exposed to EMFs are especially vulnerable<sup>(9)</sup>,
- I. whereas the EU has laid down exposure limits to protect workers from the effects of EMFs; whereas on the basis of the precautionary principle such measures should also be taken for the sections of population concerned, such as residents and consumers,
- J. whereas the Special Eurobarometer report on Electromagnetic Fields (No 272a of June 2007) indicates that the majority of citizens do not feel that the public authorities inform them adequately on measures to protect them from EMFs,
- K. whereas it is necessary to continue investigations into intermediate and very low frequencies so that conclusions can be drawn as to their effects on health,
- L. whereas the use of Magnetic Resonance Imaging (MRI) must not be threatened by Directive 2004/40/EC as MRI technology is at the cutting edge of research, diagnosis and treatment of life-threatening diseases for patients in Europe,

- M. whereas the MRI safety standard IEC/EN 60601-2-33 establishes limit values for EMFs which have been set so that any danger to patients and workers is excluded.
1. Urges the Commission to review the scientific basis and adequacy of the EMF limits as laid down in Recommendation 1999/519/EC and report to the Parliament. The review should be undertaken by SCENIHR;
  2. Calls for particular consideration of biological effects when assessing the potential health impact of electromagnetic radiation, especially given that some studies have found the most harmful effects at lowest levels; calls for active research to address potential health problems by developing solutions that negate or reduce the pulsating and amplitude modulation of the frequencies used for transmission;
  3. Maintains that as well as, or as an alternative to, amending European EMFs limits, the Commission, working in coordination with experts from Member States and the industries concerned (electricity companies, telephone operators and manufacturers of electrical appliances including mobile phones), should draw up a guide to available technology options serving to reduce exposure to EMFs;
  4. Notes that industry stakeholders as well as relevant infrastructure managers and competent authorities can already influence certain factors, for example setting provisions with regards to the distance between a given site and the transmitters, the height of the site in relation to the height of the base station, or the direction of a transmitting antenna in relation to living environments, and, indeed, should obviously do so in order to reassure, and afford better protection to, the people living close to such facilities; calls for optimal placement of masts and transmitters and further calls for the sharing of masts and transmitters placed in this way by providers so as to limit the proliferation of poorly positioned masts and transmitters; calls on the Commission and Member States to draw up appropriate guidance;
  5. Invites the Member States and local and regional authorities to create a one-stop shop for authorisation to install antennas and repeaters, and to include among their urban development plans a regional antenna plan
  6. Urges the authorities responsible for authorising the siting of mobile telephony antennas to reach agreement, jointly with the operators in that sector, on the sharing of infrastructure, in order to reduce the volume thereof and the exposure of the public to EMFs;
  7. Acknowledges the efforts of mobile communications and other EMFs-transmitting wireless technologies to avoid damaging the environment, and in particular to address climate change;
  8. Considers that, given the increasing numbers of legal actions and measures by public authorities having the effect of a moratorium on the installation of new EMF-transmitting equipment, it is in the general interest to encourage solutions based on negotiations involving industry stakeholders, public authorities, military authorities and residents' associations to determine the criteria for setting up new GSM antennas or high-voltage power lines, and to ensure at least that schools, crèches, retirement homes, and health care institutions are kept clear, within a specific distance determined by scientific criteria, of facilities of this type;
  9. Calls on the Member States to make available to the public, jointly with the operators in the sector, maps showing exposure to high-voltage power lines, radio frequencies and microwaves, and especially those generated by telecommunications masts, radio repeaters and telephone antennas. Calls for that information to be displayed on an internet page so that it can easily be consulted by the public, and for it to be disseminated in the media;
  10. Proposes that the Commission consider the possibility of using funding from the Trans-European Energy Networks to investigate the effects of EMFs at very low frequencies, and particularly in electrical power lines,
  11. Calls on the Commission, during the 2009-2014 parliamentary term, to launch an ambitious programme to gauge the electromagnetic compatibility between waves created artificially and those emitted naturally by the living human body with a view to determining whether microwaves might ultimately have undesirable consequences for human health;
  12. Calls on the Commission to present a yearly report on the level of electromagnetic radiation in the EU, its sources, and actions taken in the EU to better protect human health and the environment;
  13. Calls on the Commission to find a solution enabling Directive 2004/40/EC to be implemented more rapidly and thus ensure that workers are properly protected against EMFs, just as they are already protected under two other Community acts against noise<sup>(10)</sup> and vibration<sup>(11)</sup> and to introduce a derogation for MRI under Article 1 of that

Directive.

14. Deplores the fact that, as a result of repeated postponements since 2006, the findings of the Interphone study have yet to be published, the purpose of this international epidemiological study being to establish whether there is a link between use of mobile phones and certain types of cancer, including brain, auditory nerve, and parotid gland tumours;
15. Draws attention in this context to the appeal for caution from the coordinator of the Interphone study, Elisabeth Cardis, who, in the light of existing knowledge, recommends, as far as children are concerned, that mobile phones should not be used beyond reasonable limits and that landlines should be preferred;
16. Believes in any event that it is up to the Commission, which has an important contribution to the financing of this global study, to ask those in charge of the project why no definitive findings have been published and, should it receive an answer, to inform Parliament and the Member States without delay;
17. Also suggests to the Commission, to make for efficiency in policy and budget terms, that the Community funding earmarked for studies on EMFs be partly switched to finance a wide-ranging awareness campaign to familiarise young Europeans with good mobile phone techniques, such as the use of hands-free kits, keeping calls short, switching off phones when not in use (such as when in classes) and using phones in areas that have good reception;
18. Such awareness-raising campaigns should also familiarise young Europeans with the health risks associated with household devices and the importance of switching off devices rather than leaving them on stand-by;
19. Calls on the Commission and Member States to increase research and development (R&D) funding for the evaluation of potential long-term adverse effects of mobile telephony radio frequencies; Calls also for an increase in public calls for proposals for investigation of the harmful effects of multiple exposure to different sources of EMFs, particularly where children are concerned;
20. Proposes that the European Group on Ethics in Science and New Technologies (EGE) be given the additional task of assessing scientific integrity in order to help the Commission forestall possible cases of risk, conflict of interests, or even fraud that might arise now that competition for researchers has become keener;
21. Calls on the Commission, in recognition of the public concern in many Member States, to work with all relevant stakeholders, such as national experts, non-governmental organisations and industrial sectors, to improve the availability of, and access to, up-to-date information understandable to non-specialists on wireless technology and protection standards;
22. Calls on International Commission on Non-Ionising Radiation Protection and the World Health Organisation (WHO) to be more transparent and open to dialogue with all stakeholders in standard setting;
23. Condemns certain particularly aggressive marketing campaigns by telephone operators in the run-up to Christmas and other special occasions, including for example the sale of mobile phones designed solely for children or free call time packages aimed at teenagers;
24. Proposes that the EU's indoor air quality policy should encompass the study of 'wireless' domestic appliances, which, like Wi-Fi for Internet access and digital enhanced cordless telecommunications (DECT) telephones, have been widely adopted in recent years in public places and in the home, with the result that citizens are being continuously exposed to microwave emissions;
25. Calls, given its constant concern to improve consumer information, for the technical standards of the European Committee for Electrotechnical Standardisation to be amended with a view to imposing labelling requirements whereby the transmitting power would have to be specified and every wireless-operated device accompanied by an indication that it emitted microwaves;
26. Calls on the Council and Commission, in coordination with the Member States and the Committee of the Regions, to encourage the introduction of a single standard designed to ensure that local residents would be subjected to as low a degree of exposure as possible when high-voltage grids were being extended;
27. Is greatly concerned about the fact that insurance companies are tending to exclude coverage for the risks associated with EMFs from the scope of liability insurance policies, the implication clearly being that European insurers are

already enforcing their version of the precautionary principle;

28. Calls on Member States to follow the example of Sweden and to recognise persons that suffer from electrohypersensitivity as being disabled so as to grant them adequate protection as well as equal opportunities;
29. Instructs its President to forward this resolution to the Council, the Commission, the governments and parliaments of the Member States, the Committee of the Regions, and the WHO.

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- (1) OJ L 199, 30.7.1999, p. 59.
- (2) OJ L 159, 30.4.2004, p. 1.
- (3) OJ L 91, 7.4.1999, p. 10.
- (4) OJ L 374, 27.12.2006, p. 10.
- (5) Texts adopted, P6\_TA(2008)0410.
- (6) OJ C 175, 21.6.1999, p. 129.
- (7) Opinion of 21 March 2007 adopted at the 16<sup>th</sup> plenary meeting.
- (8) Quality of life programme, contract No QLK4-1999-01563.
- (9) March 2001 STOA study on 'The physiological and environmental effects of non-ionising EMR', PE297.574.
- (10) Directive 2003/10/EC of the European Parliament and of the Council of 6 February 2003 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise) (OJ L 42, 15.2.2003, p. 38).
- (11) Directive 2002/44/EC of the European Parliament and of the Council of 25 June 2002 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (vibration) (OJ L 177, 6.7.2002, p. 13).

## ▶ EXPLANATORY STATEMENT



### The health impact of electromagnetic fields: what is the issue?

There are a number of surprising things about the human body, and one of the most peculiar is undoubtedly its ability to emit electric fields naturally, these being produced mainly by its biological functioning. So it is that the electrical activity of the heart and the brain can be recorded in the form of – respectively – an electrocardiogram and an electroencephalogram. Does this natural electrical activity interact with the electromagnetic fields generated by human activity? How does the human body absorb the electromagnetic fields emitted by devices as varied as radios, television sets, microwave ovens, mobile phones, base stations, and high-voltage power lines?

These questions all raise a great many scientific uncertainties which the powers-that-be have yet to fully appreciate. Therein lies the interest of this own-initiative report, which has been drawn up in complete independence, without taking sides in the current heated dispute on the subject of electromagnetic fields. The primary aim of the report, translated into ten or so specific proposals, is give answers to the citizens who merely use the devices concerned and/or live close to base stations or high-voltage power lines. They are increasingly expressing disquiet about how their health might be affected by this constant exposure to microwaves.

### European recommendations barely observed by Member States

Given that no powers have been conferred by the Treaties, there is no European law to make Member States act regarding low and very low frequency waves, those which today are emitted first and foremost by mobile telephony antennas and wireless technologies.

That being the case, the EU exposure standards are set out in a *Council recommendation of 12 July 1999 on the limitation of the exposure of the general public to electromagnetic fields (0 Hz to 300 GHz)*.

These are exactly in line with the standards advocated by the International Commission on Non-Ionising Radiation Protection (**ICNIRP**), a non-governmental organisation officially recognised by the World Health Organisation (WHO), which evaluates scientific findings from all over the world.

The above-mentioned Council recommendation specifies the following limit values:

1. GSM (900 MHz): 41.25 volts/metre

2. DCS (1 800 MHz): 58.33 volts/metre

3. UMTS (2 100 MHz): 61 volts/metre.

There is nothing, however, to prevent Member States from adopting tighter protection standards: no fewer than nine have already done so at national or regional level, including Greece, Poland, and, more recently, Belgium.

In Luxembourg, a country which the rapporteur knows well, the Government has opted since the end of 2000 to apply the precautionary principle: the maximum electric field value, if a transmitter is located in a place where people might be found, is thus 3 volts/metre. The Luxembourg population is protected almost 14 times more securely from electromagnetic fields than other EU citizens.

As far as the EU is concerned, the failure to coordinate national policies is hardly cheering. The rapporteur believes that it is up to the Commission to establish a clear-cut policy on electromagnetic fields (encompassing competitiveness, innovation, health, and consumer information aspects) that should not be confined to the present smattering of projects financed by the Research DG.

In the rapporteur's opinion there is one avenue that has to be explored at this stage: the right way is surely to adopt a political solution whereby the limit values would be regularly adjusted (in the light of new technologies put onto the market and the findings of new epidemiological studies) and make for a high degree of consumer protection, especially where children were concerned, without hampering the operation of mobile telephony networks.

This is the approach favoured by the Copenhagen-based European Environment Agency, which in September 2007 bravely called on the authorities in the 27 Member States to protect the public more effectively by taking '*Appropriate, precautionary and proportionate actions ... to avoid ... serious threats*'. It marks a significant step forward, amounting as it does to a call for action contrasting with the WHO's advocacy of the status quo. The WHO, indeed, appears to be playing for time: its target date for fully gauging the human health impact of electromagnetic fields is as late as 2015!

#### Votes of 10 March 1999 and 4 September 2008: Parliament is staying the course

As long as ten years ago Parliament sounded a note of caution regarding the European standards intended to protect citizens from microwaves. Its criticism of the Commission and Council was scarcely veiled: the rapporteur, Gianni Tamino, came out explicitly in favour of the precautionary principle and 'Alara', whereby radiation exposure has to be *as low as reasonably achievable*.

Parliament took the same clear stand on the sensitive issue of exposure limits when it voted on 4 September on the mid-term review of the European Environment and Health Action Plan 2004-2010.

On the strength of a near total consensus (the resolution was adopted by 522 votes to 16), Parliament called on the Council to '*amend its Recommendation 1999/519/EC in order to take into account the Member States' best practices and thus to set stricter exposure limits for all equipment which emits electromagnetic fields in the frequencies between 0.1 MHz and 300 GHz*'.

Aware that thresholds are a matter entirely for the Member States and regional authorities, the rapporteur thinks it better in this instance to focus on the alternatives that industry could employ to avert any form of health risk: it might be possible to follow the example of, say, the Austrian authorities, which have installed base stations above ground level so as to enable the emission frequency to be shared more equally.

It is impossible to ignore that the everyday environment for European citizens has greatly altered since wireless technologies (DECT landline telephones, mobile phones, UMTS/WiFi/WiMAX/Bluetooth emissions, baby-phones, etc.) have come into widespread use. Recognising the contribution that these new technologies can make, and their omnipresence at work, in libraries, and in the home, also implies acceptance of the need for the devices concerned to be assessed before they are put on the market and, more generally, for thresholds to limit the degree of household exposure to microwaves. The end result might otherwise be tantamount to denying assistance to consumers in danger!

The necessary climate of trust is currently lacking and will need to be restored in the years ahead, in relation to consumers and residents as well as within the scientific community proper. The rapporteur has deliberately chosen not to quote from any study or document already published, other than those originating from Parliament, the reason being that the continuing disagreement within the scientific community on the subject of electromagnetic fields and possible health risks is plain for all to see.

The Interphone study: a textbook case

The rapporteur knows full well that disputes can arise in the normal course of scientific investigation: the long-running controversy over climate change and the contributory causes serves only to highlight the point!

On the other hand, it is hard to accept, especially when European public money is at stake, that studies should be placed 'on the back burner' just because experts are incapable of agreeing on a conclusion.

The Interphone study is, to that extent, an out-and-out textbook case. Having been first mooted in 1998, it was begun in 2000; above all, it was hailed as the widest ranging scientific project, given that it was to benefit from the involvement of no less than 12 countries from all over the world and from an exemplary protocol, and was thus considered most likely to ascertain what risks were posed by specific types of cancer. However, the findings have yet to be produced and have been awaited since 2006. It is therefore legitimate to ask whether any clear answer will emerge one day.

The rapporteur is aware of the extreme pressure being brought to bear on scientists and accordingly wishes to support them at a time when competition has become keener and a discovery is worth nothing unless it is turned into an innovation and published in the foremost scientific journals. She believes that new working methods need to be devised for the scientific committees advising the Commission.

There are two simple ways of doing so: the first is to ensure that all stakeholders, and hence NGOs and consumer associations, are fairly represented. Secondly, to make for transparency and effective oversight, it should be proposed that the EGE be given the additional task of assessing scientific integrity. Supervision of this kind, which has already been established within national scientific institutions, would be invaluable to the extent that it would help the Commission to completely rule out the possibility of risk, conflict of interests, or fraud in the research sector.

One final point that the rapporteur wishes to make relates to the substantial documentary evidence which she has had the opportunity to inspect and to the implication that insurance companies generally refuse to include electromagnetic fields within the scope of liability insurance. Given that insurers have the ability to evaluate risk of every description and to bank on the future, there is good reason to ask why they are seeing fit to apply the precautionary principle in their own way.

## RESULT OF FINAL VOTE IN COMMITTEE



<b>Date adopted</b>	17.2.2009
<b>Result of final vote</b>	+: 43 -: 1 0: 3
<b>Members present for the final vote</b>	Adamos Adamou, Margrete Auken, Liam Aylward, Irena Belohorská, Maria Berger, John Bowis, Hiltrud Breyer, Martin Callanan, Dorette Corbey, Magor Imre Csibi, Avril Doyle, Mojca Drčar Murko, Jill Evans, Christofer Fjellner, Elisabetta Gardini, Matthias Groote, Satu Hassi, Christa Kläß, Holger Kraemer, Urszula Krupa, Peter Liese, Marios Matsakis, Linda McAvan, Roberto Musacchio, Miroslav Ouzký, Vladko Todorov Panayotov, Vittorio Prodi, Frédérique Ries, Dagmar Roth-Behrendt, Guido Sacconi, María Sornosa Martínez, Thomas Ulmer, Anja Weisgerber, Åsa Westlund, Anders Wijkman, Glenis Willmott
<b>Substitute(s) present for the final vote</b>	Inés Ayala Sender, Kathalijne Maria Buitenweg, Philip Bushill-Matthews, Jutta Haug, Johannes Lebech, Caroline Lucas, Hartmut Nassauer, Justas Vincas Paleckis, Alojz Peterle, Lambert van Nistelrooij

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