



*European Economic and Social Committee*

**TEN/559**  
**Electromagnetic**  
**hypersensitivity**

Brussels, 19 December 2014

**DRAFT OPINION**

of the  
Section for Transport, Energy, Infrastructure and the Information Society  
on  
**Electromagnetic hypersensitivity**  
(own-initiative opinion)

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Rapporteur: **Bernardo Hernández Bataller**  
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To the members of the Section for Transport, Energy, Infrastructure and the Information Society

**N.B.:** This document will be discussed at the meeting on **7 January 2015** beginning at **10.30 a.m.**  
To allow time for translation, any **amendments** must be submitted in writing to the section  
secretariat ([ten@eesc.europa.eu](mailto:ten@eesc.europa.eu)) no later than **10 a.m. on Monday 22 December 2014**.

Document submitted for translation: 15 December 2014

Administrator: Martin Schneider

**Study Group on**  
Electromagnetic hypersensitivity

**President:** Mr Stantič (SI-I) (Rule 62 – Mr Csupt)

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**Members:** Mr Curtis (UK – II)  
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**Expert:**

Alejandro Salcedo (for the rapporteur)

On ... the ... decided to consult the European Economic and Social Committee, under Article ... of the Treaty on the Functioning of the European Union, on

*Electromagnetic hypersensitivity*  
(own-initiative opinion).

The Section for Transport, Energy, Infrastructure and the Information Society, which was responsible for preparing the Committee's work on the subject, adopted its opinion on ....

At its ... plenary session, held on ... (meeting of ...), the European Economic and Social Committee adopted the following opinion by ... votes to ... with ... abstentions.

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**1. Conclusions and recommendations**

- 1.1 More and more people suffer from electromagnetic hypersensitivity syndrome due to exposure to electromagnetic fields, following the expansion of technologies in recent years. In addition to their health problems, people in this growing group usually have limited access to many public or private facilities (libraries, hospitals or even public transport), especially in buildings where devices have been installed for transmitting wireless technology.
- 1.2 These people may sometimes suffer the incomprehension and scepticism of doctors who do not deal with this syndrome professionally and therefore fail to offer proper diagnosis and treatment. This is without considering all those other people who might be unaware of the possible reasons for their current health problems.
- 1.3 Due to the serious differences in scientific opinion, not to mention the possible existence of conflicts of interest among the members of the scientific bodies involved in establishing maximum exposure levels, the independence of these bodies must be reinforced.
- 1.4 Electromagnetic hypersensitivity syndrome is a complex problem which has to be solved through a combination of legislative and other measures. In terms of fundamental rights, there is a conflict between the rights of sufferers, their physical integrity and health, on the one hand, and the right to freedom of communication, on the other hand. These rights need to be taken into account before legislation can be adopted on this issue. The EESC advocates the adoption of protective and binding legislation that includes reducing and mitigating human exposure to electromagnetic fields, commensurate with the points made in this opinion, concerning labelling, insurance, advertising, improvements regarding occupational risks, product registration, disclosure and information on risks, as well as spatial planning and environmental matters.

- 1.5 The EU should assist currently affected groups and limit exposure fields in light of the recommendations set out in this opinion, especially with respect to recognising this exposure as a cause of functional disability and environmental illness. Steps should also be taken to prevent the number of sufferers from gradually increasing in the future due to the expansion of devices using these technologies.
- 1.6 The EESC emphasises the need to step up the application of the precautionary principle, bearing in mind the risk of non-thermal biological effects of electromagnetic emissions. In addition, it is important to facilitate research in this area, which is currently evolving as a result of advances that may have been made. The EESC is in favour of ensuring a high level of health protection for workers by applying improvements that are available at a reasonable cost and should include this principle in European legislation.

## 2. **Introduction**

- 2.1 In recent years, adverse health effects have been attributed to growing exposure to electromagnetic waves in our daily life. In some ways, the current problem harks back to the question of asbestos and its use in building: initially, "irrefutable scientific evidence" was demanded, with serious scientific differences subsequently emerging, and the danger to health posed by the material eventually being recognised.
- 2.2 It is now believed that electromagnetic hypersensitivity syndrome, which is one aspect of what is known as Idiopathic Environmental Intolerance (IEI), attributed to electromagnetic fields (EMFs) from such everyday devices as mobile phones and Wi-Fi, can lead to permanent disability since there are reasonable indications that it could cause anatomical and functional disorders for sufferers to the point that it limits or prevents their capacity to work. The International Agency for Research on Cancer, a specialised WHO body, examined the potential carcinogenic risk of radiofrequency fields produced by mobile phones. Two international bodies have drawn up guidelines on exposure limits for workers and the general public (ICNIRO and IEZZ).
- 2.3 Through their recommendations, international organisations like the Council of Europe<sup>1</sup> or the WHO have established the existence of electromagnetic hypersensitivity as a health condition that can prevent people from exercising an occupational activity.
- 2.4 Since 1930, so many studies have been published by universities from across the world that in 2011 the WHO acknowledged high frequency electromagnetic fields as potential cancer risks, as it had already done for low frequency magnetic fields. However, there is still no scientific consensus on the matter.

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<sup>1</sup> Resolution 1815 of the Council of Europe's Parliamentary Assembly.

- 2.5 This is in spite of the fact that the European Parliament<sup>2</sup> addressed the problem in its resolutions of 2 April 2009 and 27 May 2011, calling for stronger protection measures than those currently in force.
- 2.6 There are court decisions in some Member States (Spain and Italy, for example) recognising electromagnetic and environmental hypersensitivity as grounds for declaring total and permanent work disability. Some countries consider it to be an occupational illness whereas others treat it as a functional disability.
- 2.7 Furthermore, on 3 March 2012, the Austrian Medical Association published guidelines for the diagnosis and treatment of electromagnetic hypersensitivity, in the context of "EMF-related health problems and illnesses".
- 2.8 There are more and more people suffering from electromagnetic and environmental hypersensitivity syndrome. In addition, these people may sometimes suffer the incomprehension and scepticism of doctors who do not deal with the problem professionally. That is why measures to stem the increase in the numbers of those affected and prevent those suffering becoming socially excluded are so important.

### 3. **Electromagnetic hypersensitivity as a symptomatic diagnosis of the syndrome**

- 3.1 The possible symptoms include headaches, chronic fatigue, recurring infections, difficulties concentrating, memory loss, inexplicable unhappiness, dermatological symptoms, irritability or sleeplessness, heart problems, poor blood circulation, disorientation, nasal congestion, reduced libido, thyroid disorders, eye discomfort, tinnitus, increased need to urinate, listlessness, capillary fragility, cold hands and feet, and stiff muscles. These may occur or get worse in the vicinity of electrical appliances, transformers, mobile phone antennas and other sources of radiation.
- 3.2 However, people affected by electromagnetic waves display no symptoms whatsoever when not exposed to electromagnetic fields. This leads to the conclusion that any recurring radiation-induced conditions that diminish or disappear when the sufferer moves away from the source constitute electromagnetic hypersensitivity, even when according to some doctors, scientific evidence of a direct causal link is lacking. The present opinion addresses the implications of their situation for those affected rather than its causes.
- 3.3 Electromagnetic hypersensitivity sufferers experience a serious deterioration in their quality of life, not only because of the physical symptoms it usually entails, but also because their lives are totally disrupted by the need to avoid exposure. In practice, it means that they not only have to avoid almost all public facilities such as transport, hospitals and libraries, but

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<sup>2</sup> Resolutions of 2 April 2009 and 27 May 2011.

even their own homes, in order to escape adverse health effects, which is a breach of rights that are enshrined in the EU Charter of Fundamental Rights.

#### **4. Sources of electromagnetic hypersensitivity**

4.1 It is important to take preventative action by identifying and minimising exposure at home and at work in order to move towards the objective of living in places that are free from electromagnetic pollution (white zones). The most common sources of electromagnetic pollution are mobile telephone masts, cordless phones and Wi-Fi routers, not to mention certain household appliances or devices (televisions, computers, etc.) in homes.

4.1.1 These all emit microwaves on a permanent basis (24 hours a day and seven days a week) wherever they are installed. What is more, the current use of data transmission technologies through smart phones, Wi-Fi and Bluetooth leads to high levels of exposure to electromagnetic fields at all times.

#### **5. Effects of electromagnetic hypersensitivity**

5.1 There are different levels of electromagnetic hypersensitivity. The reversible forms are the mild forms of electrical sensitivity. Long-term exposure can increase people's sensitivity to the initial frequencies (e.g. telephone masts).

5.2 Subsequently, and as the syndrome develops, they also become sensitive to other sources of electromagnetic radiation (such as Wi-Fi routers, computers or fluorescent light tubes).

5.3 It is important to bear in mind that many cases are the result of continuous exposure to electromagnetic waves, with symptoms emerging over the long-term. This means that measures to counter these effects should be stepped up as studies and research may provide more certainty about the problem.

5.4 With regard to occupational health, it is important not to exclude any category of workers and the loopholes in EU legislation relating to occupational exposure to electromagnetic fields need to be closed. Groups who were not previously exposed to these risks are becoming increasingly concerned due to the increase in wireless installations in office buildings, making it necessary to adopt measures to mitigate the impact of continuous exposure. Most cases of electromagnetic hypersensitivity syndrome are work-related, although other trends are currently emerging due to the widespread introduction of mobile phones and Wi-Fi.

5.5 Protecting workers' health from the risk of long-term effects is a concern: given the lack of what is termed "conclusive scientific data" - although some scientific research confirms that EMFs have adverse biological effects on workers - the public authorities need to adopt

measures to avoid them. As the EESC has previously argued<sup>3</sup>, more transparency and independence is required concerning the activities of scientists belonging to the bodies responsible for setting maximum exposure levels in order to guarantee their objectivity.

## 6. **Electromagnetic fields in mobile telephony**

6.1 Mobile or cell phones are now an integral part of modern telecommunications. In many countries, over half the population use mobile phones and the market is growing rapidly. By the end of 2009, there were an estimated 6.9 billion mobile phone subscriptions globally. In some parts of the world, mobile phones are the most reliable or the only phones available.

6.2 Given the large number of mobile phone users, it is important to investigate, understand and monitor any potential impact on public health and on the social integration of those affected.

6.3 Mobile phones are low-powered radiofrequency transmitters, operating at frequencies between 450 and 2700 MHz with peak powers in the range of 0.1 to 2 watts.

6.3.1 In addition to using "hands-free" devices, which keep mobile phones away from the head and body during phone calls, exposure is also reduced by limiting the number and length of calls.

6.3.2 Other wireless networks that allow high-speed internet access and services, such as wireless local area networks (WLANs), are also increasingly common in homes, offices, and many public areas (Wi-Fi and WiMAX networks in airports, schools, residential and urban areas).

## 7. **Electromagnetic fields in the context of the EU legal framework**

At the EU level, the following legal instruments have been adopted in the area of electromagnetic fields.

7.1 Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields<sup>4</sup> is designed to complement national policies for improving health. Its purpose is to create a framework for limiting the general public's exposure to electromagnetic fields, based on the best scientific evidence available and to provide a basis for monitoring the situation.

7.2 The most important binding measures are set out below.

7.2.1 Directive 1999/5/EC<sup>5</sup>.

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<sup>3</sup> EESC opinion adopted at the plenary session of 8 November 2011, [OJ C 43, 15.2.2012](#).

<sup>4</sup> [OJ L 199, 30.7.1999, p. 59-70](#).

<sup>5</sup> Directive of the European Parliament and of the Council of 9 March 1999, [OJ L 91, 7.3.1999, p. 10](#).

- 7.2.2 Directive 2013/35/EU<sup>6</sup>.
- 7.2.3 Directive 2006/95/EC<sup>7</sup> ensures that the public, including workers, are not exposed to levels beyond those set by the 1999 recommendation.
- 7.2.4 Decision No 243/2012/EU<sup>8</sup> establishing a multiannual radio spectrum policy programme (RSPP).
- 7.3 With regard to research, the EU Programme for Social Change and Innovation (PSCI) integrates existing programmes with general objectives that are geared to promoting compliance with EU objectives for employment, social and labour conditions and to supporting the development of social protection and suitable, accessible and efficient labour markets.
- 7.4 This is without prejudice to the Eighth Research Framework Programme's instruments for research into electromagnetic fields, or the Horizon 2020 Programme. However, research should be encouraged and facilitated, so that both research centres and businesses can create high-quality jobs.
- 7.5 The EESC has stated its concerns regarding these issues and expressed its support for reducing exposure to non-ionising radiation in opinions<sup>9</sup> published on these rules while they were being prepared.
- 7.6 In Spain, there is a campaign pushing for the presentation of a European Citizens' Initiative (ECI) calling on the EU to take a legislative approach to the protection of people with electromagnetic hypersensitivity syndrome, allowing them to be recognised as having a functional disability and environmental illnesses. The EESC looks forward to the presentation of this ECI and urges civil society groups to use it as a means of participation.

## 8. General comments

- 8.1 Electromagnetic hypersensitivity syndrome is a complex problem which has to be solved through a combination of legislative and other measures. In terms of fundamental rights, there is a conflict between human dignity and physical integrity and the right to freedom and safety, on the one hand, which also affect the right to work, occupational freedom, and the right to non-discrimination and health protection of people with this syndrome and, on the other hand,

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<sup>6</sup> Directive of the European Parliament and of the Council of 26 June 2013, [OJ L 179, 29.6.2013, p. 1](#).

<sup>7</sup> Directive of the European Parliament and of the Council of 12 December 2006, [OJ L 374, 27.12.2006, p. 10](#).

<sup>8</sup> Decision of the European Parliament and of the Council of 14 March 2012, [OJ L 81, 21.3.2012, p. 7](#).

<sup>9</sup> See, inter alia, opinion TEN/308 and opinion TEN434-435 (CES 362-2011), adopted at the plenary session of 16 February 2011, [OJ C 107, 6.4.2011, p. 53](#), or the EESC opinion published in [OJ C 43, 15.2.2012, p. 47](#).

the freedom of communication and to conduct a business. A balance needs to be found between these two sets of rights, depending on their relative importance to society.

- 8.1.1 The EESC believes that the EU should assist current sufferers and take steps to limit exposure fields in order to prevent the number of sufferers from gradually increasing in the future due to the expansion of devices using these technologies. It also supports the creation of white zones as an emergency measures for people worst affected by this syndrome.
- 8.1.2 From a legal perspective, the TFEU provides for the EU to complement national policies in the area of public health by facilitating their coordination since, in accordance with Article 168, it is not possible to adopt binding legislation as a general rule. Nevertheless, if the political will existed and all the Member States were convinced of the need for EU action to ensure a high level of health protection, prevent human diseases and avoid sources of physical health hazards, it would even be possible to go as far as adopting a regulation on the basis of Article 352 of the TFEU.
- 8.1.3 Other EU policies such as environmental or consumer protection policies, which are fully consolidated today, were founded under such provisions. In view of current problems (potential spread of diseases such as Ebola, etc.), the possibility of adopting certain types of public health measures should be considered during the next review of the Treaties.
- 8.1.4 All EU legislation should include the following principle:
- the ALARA principle, as suggested by the Council of Europe, whereby the thermal effects and the athermic or biological effects of electromagnetic emissions or radiation are kept As Low As Reasonably Achievable. This is a variant of the precautionary principle<sup>10</sup>, which makes it possible to adopt effective preventative measures and to review current limits without having to wait for total scientific and technical consensus, which is important for the most vulnerable groups.
- 8.2 Since public health is a cross-cutting value, EU measures could also be adopted on the basis of internal market rules (Article 114(3) of the TFEU), human health as an objective of environmental policy (Article 174) and other policies which include measures that could have repercussions in this area (such as consumer policy, economic and social cohesion policy, etc.). Examples of these measures are set out below.
- 8.2.1 A clear and graduated labelling system – similar to the one for energy efficiency – could be created, warning of the presence of microwaves or electromagnetic fields, the device's transmitting power, specific absorption rate and any health risks connected with its use.

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<sup>10</sup> COM(2000) 1.

- 8.2.2 Insurance policies often include a clause excluding these risks. As a result, the law should either be amended to prevent this exclusion or the appropriate competition law proceedings should be initiated to find out whether there is a cartel in the sector.
- 8.2.3 Advertising and consumer information rules should be adopted to provide better protection for groups that might be more vulnerable. These measures could:
- restrict advertising messages and ban adverts for mobile phones that feature young people or minors;
  - prohibit all publicity, irrespective of the medium used, that is directly intended to market or make mobile telephones available to under fourteens;
  - prohibit free toys or gadgets for under fourteens that resemble mobile telephones;
  - restrict the use of wireless technologies in educational establishments (Wi-Fi, mobile phones, DECT, etc.) via steps such as cable internet connections and banning the use of mobile phones during lessons and in any areas designated by each establishment;
  - require each mobile phone sold to come with an accessory that protects the user's head from exposure to electromagnetic emissions during calls.
- 8.2.4 Particular attention should be paid to "electrosensitive" persons suffering from an EMF or environmental intolerance syndrome and specific measures should be introduced to protect them, such as recognition of the illness in various sectors, namely:
- health sector: recognition of the illness of electromagnetic hypersensitivity as an EMF intolerance syndrome;
  - employment sector: recognition of hypersensitivity as an illness and adaptation measures;
  - social sector: recognition of the functional disability.
- 8.2.5 Studies and research in this area could be promoted. Research on new types of antenna, mobile phones and devices must be prioritised in order to reduce costs, save energy and protect the environment and human health, and research should be encouraged to develop telecommunications based on other technologies which are just as efficient but have fewer negative environmental and health effects. For instance, monitoring and dosimetry systems could be developed for a more accurate understanding of possible adverse effects. It is to be noted, in this regard, that research into safer technologies has a positive economic impact and offers a major opportunity to create jobs.
- 8.2.6 Systems for evaluating, preventing and managing risks in the workplace due to electromagnetic pollution also need to be improved through the proactive adoption of appropriate measures to mitigate, neutralise or eradicate it wherever necessary.
- 8.2.7 Information and dissemination measures for the general public could include:

- establishing a register of products entailing electromagnetic risks, given their potential for causing electromagnetic hypersensitivity;
  - designing information and awareness-raising campaigns on the prevention and management of problems associated with this condition that mainly target people with compatible profiles and particular long-term vulnerability to electromagnetic fields and which explain the potential negative long-term biological risks for the environment and human health, with particular reference to children;
  - raising awareness of the potential health risks of DECT wireless phones, baby monitors, and other household appliances that continually emit microwave pulses, such as electrical equipment that is left permanently on standby, and recommending the use of fixed corded telephones at home.
- 8.3 Best practice guidelines should be drawn up in the business sector on mitigating the emission of electromagnetic waves and on taking measures to prevent, manage or neutralise any health impacts.
- 8.4 Access to exposure maps identifying the relevant installations and emissions levels should be facilitated and promoted, offering easy access to the databases of these maps.
- 8.5 Electromagnetic safety thresholds for the use of products should be regulated and rules concerning the planning of electric power lines and relay antenna base stations should be established by adopting legislation on:
- a safe distance between high-voltage power lines and other electrical installations and homes;
  - maximum permissible exposure levels and effective and transparent control mechanisms;
  - requirement for spatial planning tools to include public and private EMF-free zones (i.e. "white" zones, which would have to include housing, and public spaces that were free of electromagnetic pollution, such as health centres, hospitals, libraries, workspaces, etc.).
- 8.6 Adequate protocols for prevention, early diagnosis and treatment should be established to minimise healthcare and related labour costs, in particular by using biocompatible technologies.
- 8.7 Measures are needed to address the private use of mobile phones, DECT-type cordless phones that are not Full Eco, Wi-Fi systems, WLAN and WiMAX for computers and other wireless devices such as baby monitors. It should also be ensured that the default mode on devices for wireless systems is "off".