

The 5G appeal

Scientists and doctors call for a moratorium on the roll-out of 5G. 5G will substantially increase exposure to radiofrequency electromagnetic fields RF-EMF, that has been proven to be harmful for humans and the environment.



To the EU Legislative bodies

12 January 2023

7th 5G Appeal The EU's illegal precedence of economy over health

On behalf of over 400 scientists and MDs ¹ we are sending the 5G appeal ² to the EU for the 7th time since 2017. We expect that EU decision makers will take the 5G Appeal and thousands of relevant scientific articles as indicative of what is now known about the harmful and energy wasting effects of wireless electromagnetic fields (EMF) and all forms of Non-Ionising Radiation (NIR). We expect the EU to take appropriate measures to protect EU citizens from these effects. We request a meeting with, as well as a direct, written response from the EU commissioners of Health, Environment and Competition and members of the Council of the Ministers.

1. The Charter of Fundamental Rights ³, primary law ⁴ as well as case law from the European Court of Justice make it mandatory for EU decision-makers to protect the EU population, especially children, from all kinds of harmful health effects of wireless technology. Article 168 of the consolidated version of the Treaty on the Functioning of the European Union (TFEU) reads as follows: *A high level of human **health protection** shall be ensured in the definition and implementation of all Union policies and activities.* ⁵ EU Case law ⁶ clearly states that: *The **protection of health** takes precedence over economic considerations.* We therefore expect protection of health to be the primary principle adopted by all decision-makers in the EU, including European commissioners, members of the European Parliament and the Council of Ministers.

2. Since 2017 we have not seen any proof of this ⁷. In the six replies we have received to earlier 5G Appeals there has not been any clear intention to prioritise health over economics. Instead, the EU continues to advocate the economic benefits of wireless (5G) communications more than health and to consider the inadequate ICNIRP ⁸ guidelines as protective of human and environmental health, including for children and the most vulnerable. The history of EU responses to consecutive 5G Appeals demonstrating an ongoing lack of attention to health concerns has been published in a recent review. ⁹

3. The EU continues to refer to the ICNIRP guidelines because ICNIRP has been endorsed by Council Recommendation 1999/519/EC ¹⁰ as the EU's main external advisory group concerning NIR protection. Even in the face of thousands of studies stating the contrary, ICNIRP and Council Recommendation 1999/519/EC continue to deny that there is scientific proof of non-thermal, biological effects far below current policy radiation guidelines. Given the state of play of independent science today, there are increasing questions concerning the continued legality of Council Recommendation 1999/519/EC and the EU EMF-health protection policy in general.

ICNIRP Guidelines are a grossly inadequate basis for EU policy

4. There is now clear evidence that ICNIRP guidelines are not an adequate scientific basis for EU's policy regarding wireless electromagnetic fields (EMF) policy. ICNIRP guidelines have been shown to be flawed by, amongst others, Cherry ¹¹, Favre ¹², Hansson Mild & Hardell ¹³, ORSAA ¹⁴, Redmayne ¹⁵, Nordhagen & Flydal ¹⁶ and recently the ICBE-EMF ¹⁷. On top of this, 256 Scientists in the EMF Scientists Appeal ¹⁸ attest that ICNIRP guidelines do not protect health. Over 400 scientists and medical doctors ¹ have endorsed the 5G Appeal. All have

asked the EU to apply the Precautionary Principle in such a way that EU policy takes not only heating (thermal) but also non-thermal effects into account. This is increasingly supported by a number of successful lawsuits in USA ¹⁹, Germany ²⁰, Italy ²¹ and elsewhere in the European Union, demonstrating that signals from mobile communications are seen to be the cause of several kinds of harmful effects such as acoustic neuroma (brain cancer) in people exposed to cell phones. The environment, including plants ²², trees ²³, bees ^{24,25}, insects, birds ^{26,27}, mammals ²⁸, rats ²⁹ and cows ³⁰ are also harmed by NIR far below the ICNIRP guidelines. Therefore, NIR poses a serious threat to not just humans, but also to the environment and to everything that lives.

5. In clear contradiction to the ICNIRP and EU positions, we have provided the European Commission with several thousand scientific studies revealing the harmful effects caused by wireless EMF far below ICNIRP guidelines. For example earlier 5G appeals have referred to at least 7000 peer-reviewed research reports ^{31,32,33,34,35}, the ORSAA Review ³⁶ and over 100 extensive research reviews ³⁷, showing harmful effects from wireless NIR well below ICNIRP limits. BioInitiative colour charts ³⁸ list harmful biological effects found at levels more than **one million times below** ICNIRP guidelines. However, all six replies 2017-2022 from the EU claim that **no studies** show harmful effects of EMF below the guidelines ^{7,9}. Will the EU a seventh time try to deny the existence of 7000 scientific reports proving health risks far below the flawed ICNIRP guidelines?

6. Given all the evidence presented to the European Commission since 2017, we now know beyond any doubt that radiofrequency EMF radiation not only causes "tissue" heating, as ICNIRP claims, but many other serious biological effects far below the heating thresholds set for ICNIRP's "testing tissue" (which is actually liquid; see Figure 1). Such harmful effects include oxidative stress, as demonstrated in 93 of 100 available studies reviewed by Yakymenko et al. ³⁹, damage to DNA ⁴⁰, blood ⁴¹, sperm ⁴², brain cells ⁴³ and cancer ^{44,45,46,47}. These effects have been explained by mechanisms other than heating, e.g., disruption of voltage gated calcium (and other) channels in cells (Panagopoulos ⁴⁸, Pall ⁴⁹), reactive oxygen species, and changes in cell signalling. All of these effects and mechanism were recently stressed in an article by the International Commission of Biological Effects of EMF (ICBE-EMF).¹⁷



*Figure 1 represents the standard testing procedure for harmful effects of wireless technology. To check for **only heating** effects, a phantom head filled with liquid is exposed to an active cell-phone 2-3 cm from the "ear" for six minutes. No other biological effects are considered than what can be "diagnosed" with a thermometer after **6 minutes** exposure. **Does the EU really trust** that such a test provides a clear understanding of **all** possible biological effects on living beings **in the short and the long term?***

7. Six earlier 5G Appeals since 2017 have consistently clarified how ICNIRP guidelines do not relate to everyday exposures as experienced by EU citizens. Real world radiofrequency signals are complex combinations of many simultaneous frequencies. They are pulsed, polarised and modulated at frequencies that have been shown to be extremely bioactive. None of these complexities are addressed by the ICNIRP guidelines. ICNIRP guidelines thus do not address long term exposure from childhood on, nor the real world scenarios from several simultaneously radiating gadgets experienced every day by the general public. For that reason, ICNIRP guidelines cannot be deemed relevant or protective of public health.

8. Earlier Appeals also laid bare the many ways in which ICNIRP and SCENIHR have been compromised towards promoting industry interests instead of the public interest. Two EU parliamentarians Rivasi & Buchner, 2020 ⁵⁰ have created a well documented account of how **ICNIRP is captured by industry** and therefore has a questionable ability to provide trusted leadership on wireless EMF and health issues. ICNIRP is a self-selected, industry supportive body comprised of only 14 persons with limited biophysics or medical training, and no industry-independent views. Its members elect like-minded colleagues ensuring the perpetuation of the wireless industry's need for maximum exposure guidelines.

9. Over the past five years, the EU has continued to rely on fraudulent, biased science from ICNIRP, SCHEER and SCENIHR.⁵¹ Faced with thousands of peer-reviewed articles of proof to the contrary, these groups continue to claim that no scientific research has proven harmful health effects below tissue **heating** power densities. Instead of protecting the public, the EU continues to follow the opinions of SCHEER and SCENIHR and the ICNIRP guidelines while dismissing the EU's own internally commissioned, important reports^{52,53,54}, and the advice of hundreds of independent scientists^{1,17} whenever they contradict the ICNIRP narrative.

10. This position has given operators and producers of digital equipment the right to expose all citizens, including children to continually increasing levels of harmful radiation, without being certain of the outcomes of this exposure. Without prior consent, this is equivalent to a mass experiment with serious health consequences. It represents a crime against the EU Charter of Fundamental Rights³ and the Nuremberg Code⁵⁵, which requires that, *before the acceptance decision by the experimental subject, there should be made known to him the nature...of the experiment...all inconveniences and hazards...and the effects upon his health or person, which may possibly come from his participation in the experiment.* That is, the EU's current position on NIR violates primary law and constitutes a serious crime against humanity.

11. The six earlier Appeals have also provided recommendations for alternative and accessible technologies such as the use of cable and fiber connections. Such innovations are readily available and provide far superior speed, reliability, health protection and data security. Wired internet speeds are about 100 times faster⁵⁶ than typical wireless connections, and are also much more energy efficient. According to Huawei, a typical 5G base station takes 68% more energy or even *"up to twice or more the power of a 4G base station"*⁵⁷ and additionally 5G needs three times more base stations. According to the IEEE, 5G will need over 20% of the total global energy consumption by 2030. In short, far from being a 'Green Deal'⁵⁸ [which the EU Council strives for], wireless connections are a senseless waste of energy.

The best alternative is Passive Optical Networks (PON) which are the fastest and least energy consuming technology available today. They consume nearly 50 times less energy than UMTS/3G^{56,59} and about 10 times less energy than LTE/4G⁶⁰. PONs are safer for humans, the environment and data security. They provide a vastly superior alternative to continuously increasing levels of wireless planetary electromagnetic pollution⁶¹ in the environment.

12. According to the EU Directive 2018/2002⁶² remotely readable utility meters for water and electricity consumption are required in all apartments. They can be wired or wireless. Some wireless meters send series of pulses every second (83.100 series per day, which means 27.7 minutes every day⁶³ signals which are proven to be harmful for health.⁶⁴ One single smart meter can radiate as much as 100-160 cell phones⁶⁵. Thus, a full apartment house set of 80-200 wireless smart meters produces immense harmful NIR⁶⁶. Therefore, all **utility meters should be required to be wired** so as to: (a) save energy, b) protect health, and to (c) prevent data from being misused, as Directive (EU) 2018/2002⁶¹ demands: *promote cybersecurity and ensure the **privacy and data protection** of final users in accordance with applicable Union law.* The EU's GDPR⁶⁷ lays down that sending *any information relating to an identifiable ... natural person* can infringe the data protection of the individual⁶⁸ when sending wireless in all directions. Service providers *must secure their services by at least – ensuring that personal data are accessed by **authorized persons only*** (EU directive 2002/58/EC⁶⁹). That is **possible only by using wired communication**.

13. As a result of the increased consumption of energy, the harm to people and the environment, and the potential misuse of data, we consider current EU policy to grossly infringe EU primary law, the EU Charter of Fundamental Rights³, and Children's Fundamental rights⁷⁰. It also infringes EU promises of energy savings as well as the EU Council's Green Deal⁵⁸ ambitions. In order to avoid legal action we invite EU institutions to immediately take measures to make sure that EU policy fully takes all long term non-thermal, biological effects into account by drastically reducing the exposure of plants, insects, animals, humans – especially children – to wireless EMF. This involves notably the following actions:

1. Basing policy on truly industry-independent science and scientists;
2. Establishing EU scientific (advisory) committees that are fully independent from industry;
3. Revoking Council Recommendation 1999/519/EC⁹ and replacing it with a new legal instrument that fully takes into account all long term, non-thermal, biological effects of wireless EMF, as stressed in Resolution 1815 of the Council of Europe and numerous other recommendations by various international governing bodies and hundreds of independent scientists;

4. Drastically sharpening both the meaning and the application of the Precautionary Principle to wireless EMF so as to arrive at EU guidelines that are health- and environment-centred, with primary consideration for the wellbeing of insects, animals and humans – especially children;
5. Re-interpreting Directive EU 2018/172 to include full and real-life protection of humans, especially children against all long-term biological effects from wireless EMF and, thus, bringing it in line with EU primary law ^{7,9}, EU Charter of fundamental rights ³, Children's fundamental rights ⁶⁸ and the Nuremberg Code ⁵⁵;
6. Stipulating that data transmission from utility meters (i.e., water, gas and electricity) must be wired and transmissions allowed only when necessary for the billing (max. 1 x per month);
7. In order to protect EU citizens' health and environment demand wired connections where possible and less wireless according to Schoechele's ⁷¹ recommendations (p. 122 ff).

Conclusion: Towards an EU policy that protects health and is mindful of energy

14. Because **health must have precedence over economy** ⁶, we urgently ask the EU to take the above actions to protect humans, children, animals and insects. To establish such policy, the EU needs new committees, comprised of qualified, truly industry-independent scientists from i.e the International Commission of Biological Effects of EMF (ICBE-EMF) ¹⁷ and/or four other groups of scientists ⁷². They suggest guidelines ranging from **0,1 $\mu\text{W}/\text{m}^2$ to 100 $\mu\text{W}/\text{m}^2$** which are thus a million times stricter than ICNIRPs industry-friendly (heating only) guidelines ⁸ being **10.000.000 – 400.000.000 $\mu\text{W}/\text{m}^2$ ***.

15. Based on a correct reading of the Precautionary principle ³¹ and other principles of EU law we ask the EU to impose a moratorium on the 5G roll-out to avoid dramatic additions to existing planetary electromagnetic pollution ³⁵.

16. Finally, we request a meeting between lawyers, independent scientists in this research field and:
- the EU Commissioner of Health and Food Safety, Stella Kyriakides;
 - the EU Commissioner of Competition ("A Europe Fit for the Digital Age") Margrethe Vestager;
 - the EU Commissioner of Environment, Virginijus Sinkevičius;

as well as a direct, written response from the European Commission and the EU Council confirming that – in order to **stop infringements of the EU Treaty** ⁵, **EU laws** ⁶ and **the EU Charter of Fundamental Rights** ³ – the Recommendation 1999/519/EC ⁹ will be replaced with far lower guidelines as suggested in point 14 above.

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Attachments:

1. List of scientists, MDs and lawyers who endorse this 7th Appeal Cover letter. (**See after the References!**)
2. See also the 5G Appeal sent six times to EU since 2017. Available from: www.5gappeal.eu, and
3. 420+ scientists and MDs who endorse the 5G appeal: www.5gappeal.eu/signatories-to-scientists-5g-appeal

*) Quote from ICNIRP guidelines ⁸ (p. 490): "ICNIRP has set the absorbed power density value for local **heating**, averaged over 6 min and a square 4-cm² region, at **200 W m⁻²**; this will also **restrict temperature rise** in Type-2 tissue to below the operational adverse health effect threshold of 2°C. An additional specification of **400 W m⁻²** has been set for... square 1-cm² regions, for frequencies >30 GHz." [This means **200.000.000 $\mu\text{W}/\text{m}^2$ or 400.000.000 $\mu\text{W}/\text{m}^2$** . **NOTE!** The reason for the ICNIRP guidelines is that **ICNIRP is captured by the industry and considers only heating** ⁵⁰. See pt 8 above and the reference 50.]

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Compare the guidelines below to ICNIRP/EU guidelines 10.000.000 – 400.000.000 $\mu\text{W}/\text{m}^2$ which consider only heating!
- (a) Building Biology Institute. Building biology evaluation guidelines for sleeping area. In: Supplement to the standard of building biology testing methods SBM; 2008. Available from: <https://www.baubiologie.de/downloads/building-biology-guidelines-english.pdf> [0,1 $\mu\text{W}/\text{m}^2$] *(these guidelines consider all biological effects)*
- (b) Belyaev E et al. EuropaEM EMF guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses. Revh. Available from: <https://europaem.eu/en/library/articles/europaem-emf-guideline-2016> [night:1 $\mu\text{W}/\text{m}^2$, daytime: 10 $\mu\text{W}/\text{m}^2$] *(consider all biological effects)*
- (c) BioInitiative Report. Available from: <https://www.bioinitiative.org> Suggests guidelines based on all kinds of biological effects, not only heating: [3–6 $\mu\text{W}/\text{m}^2$]
- (d) Council of Europe, Resolution 1815. Available from: <https://assembly.coe.int/nw/xml/XRef/Xref-XML-12HTML-en.asp?fileid=17994> [100 $\mu\text{W}/\text{m}^2$] *(these guidelines consider all biological effects - not only heating!)*

See endorsements of the ”7th EU 5G Appeal” in Attachment 1 on the next page →