**Submission to the**

**Special Rapporteur on the issue of Human Rights**

**and the Environment**

**Call for Input: “Women,Girls**

**and the Right to a**

**Clean, Healthy and Sustainable Environment”**

*Contributors:*

Amanda la ROSA, a master’s candidate in Diplomacy and International Law at the American University of Paris. Contact: amanda.larosa@aup.edu

Dominic Spada, a master’s candidate in Human Rights and Data Science at the American University of Paris. Contact: dominic.spada@aup.edu

**Question 1:**

**What are the principal barriers facing these rightsholders realisation of the right to a clean, healthy, and sustainable environment; a right that includes clean air…**

The barrier for women’s realisation for the right to a clean, healthy and sustainable environment, specifically the right to clean air, is the refusal by state bodies to recognise electromagnetic field pollution in pollution reduction strategies. Currently, only seven countries, including solely Croatia, Germany, Greece and Hungary within the EU, have registered mandatory restrictions on EMFs at the state level. This comes in contrast to academic research whose results could not be clearer: there are possible risks to people from the long-term exposure to EMF radiation, even at low levels. There are also specific risks to women, notably to the reproductive system, including hormonal changes and infertility, with some models even showing that foetal development can be impacted by long-term EMF exposure.[[1]](#footnote-3) These and other risks to the general population in mind, a number of experts have called for further studies on the risks of EMFs to humans.[[2]](#footnote-4)

At neither international nor regional levels are there compulsory regulatory standards on EMF exposure.[[3]](#footnote-5) Not only are government and intergovernmental organisations hesitant to implement regulation, some make claims regarding EMF exposure that may simply not be true. For example, the EU Environmental Protection Agency has taken a hard-line stance against any measures restricting EMF pollution, stating “The current scientific evidence does not support long-term health effects, such as cancer due to exposure to EMF, of either low or high frequency. There is not enough evidence of harmful effects from low level, long-term exposure to EMF to establish limits”.[[4]](#footnote-6) Additionally, the funding that the EU has dedicated to health risks from EMFs makes a specific note that “Aspects such as gender… should be considered, where appropriate”.[[5]](#footnote-7)

A human rights based protection of the right to a healthy environment in consideration of EMF pollution starts with the Precautionary Principle. Article 15 of the 1992 Rio Declaration states that “Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing… measures to prevent environmental degradation.” Because of the lack of certainty that EMFs *do not* cause long-term health issues in humans, and in particular because of the rising evidence that EMFs do in fact cause long term health issues with specific concerns to women, it is our recommendation that EMF pollution take a frontline place in discussions on the right to a healthy environment. As freedom from discrimination is a non-derogable right, further protection for women from EMF pollution can be guaranteed through Article 12 of the Convention on the Elimination of all forms of Discrimination Against Women, which guarantees that all women be free from discrimination in their access to healthcare.[[6]](#footnote-8) This can be achieved by pushing for increased funding of research for gendered effects of EMF pollution.

**Question 2:**

**What are the specific obligations of States and responsibilities of businesses in terms of adopting a gender-responsive approach to protecting (for States) and respecting...**

UN Human Rights Council 48/13 establishes the importance of a sustainable environment to support human health. Considering that the term ‘environment’ encompasses “the totality of all external conditions affecting the life, development, and survival of an organism,”[[7]](#footnote-9) research linking low-frequency EMF exposure to breast cancer and other reproductive health system illnesses in girls and women must be recognised. Hence, between the intersection of EMF technology and human rights, lies an ever-increasing gender-based discriminatory practice prohibited by Article 12 of the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW).

Through established laws and protocols, States are obliged to protect girls' and women’s rights while businesses are responsible for respecting enacting measures. However, limited recognition of the impact of EMF radiation on women’s health creates a barrier between the two, resulting in States and businesses disregarding evidence under the impression that 5G technology and women’s health are not related to each other. The continuation of development of new generation equipment is a violation of the Precautionary Principle, particularly as it relates to the increase of breast cancer and reproductive health issues to EMF radiation.[[8]](#footnote-10) As well, Article 12 on the *International Covenant on Economic, Social and Cultural Right* (ICESCR) could be threatened by EMF pollution as State parties are to ensure “the highest attainable standard of physical and mental health.”[[9]](#footnote-11) Moreover, both CEDAW and ICESCR guarantee that sexual and reproductive health are components of women’s rights to health.[[10]](#footnote-12) Violations of these covenants would include both a lack of services and the denial of access to gender-specific services.

To protect the rights of girls and women to a healthy environment in relation to EMF, action needs to be taken by both states and businesses. Action starts with states since businesses follow national regulations, necessitating the modernisation of international guidelines and standards to guide states towards meeting their obligations. A starting point to meet these obligations is lowering the thresholds for EMF pollution to 5 volts per meter (v/m).

***Recommendations:***

We respectfully submit the following recommendations to the Special Rapporteur

1. Targeting EMF exposure research to effects on the female body through global partnerships

It is imperative for the wellness of girls and women that the global scientific community unite to further studies that highlight the impact of EMF technology in the female body. Over the years, the effects of EMF radiation have been highly contested by parties that suggest there is no harm and parties that argue the contrary. There is a vast discrepancy within studies, some show no harm, while others differ according to frequency and wave, strength, duration, and distance of exposure to the human body.[[11]](#footnote-13) Specifically, studies conducted with the purpose of identifying the possible health risks in the female body and the body of children.

Thus far, the research compiled by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) is based solely on Specific Absorption Rate (SAR) to establish the rate at which EMF is deadly,[[12]](#footnote-15) which does not satisfactorily predict the biological effects it has on the body.[[13]](#footnote-16) The “dearth of evidence establishing quantitative relationships between exposures to various forms of non-ionizing radiation and pathological implications on health of human beings,” [[14]](#footnote-17) is detrimental to girls' and women’s health as we begin to link the increase of reproductive health issues and cancer to the increase of EMF exposure.

It is crucial to the rights of girls and women that the global scientific community comes to an adequate conclusion on what effects EMF has in the female body, and most importantly at what range does the effects begin to take place via the mean of human and epidemiological studies (based on the female body).

1. Strengthening and modernising established guidelines to accurately represent current research studies that display long-term effects of EMFs

Telecommunication networks, amongst other businesses that work in relation to electromagnetic fields comply with the exposure level limits set by international bodies, particularly the World Health Organization (WHO) and the International Telecommunication Union (ITU). The guideline was first introduced in 1998 and has been updated twice, most recently in 2020 (ICNRP 2020). The publication’s main objective “is to establish guidelines for limiting exposure to EMFs that will provide a high level of protection for all people against substantiated adverse health effects from exposures…”[[15]](#footnote-18)

Noting that the ICNIRP bases its guideline on substantiated adverse health effects, “makes the difference between a biological and an adverse health effect an important distinction, where only adverse health effects require restrictions for the protection of humans.”[[16]](#footnote-19) This means that studies that stray from the ICNIRP’s thermal-only paradigm and argue that there are adverse sub-thermal bioeffects are deemed insufficient as they lack a “relationship between dose and effect”, contain “methodological weakness”, and have “no relevance to humans”. [[17]](#footnote-20)

Overall, we can assume that the guidelines offered by the ICNIRP 2020 are insufficient. In order to provide governments with thorough guidelines that accurately set EMFs exposure limits, we must consider research across a range of study types. As our starting point, we shall consider the conclusions reached by Seletun Scientific Panel Consensus Agreement (24), which, in general, recommends urgent preventative and precautionary actions.[[18]](#footnote-21) While EMF technology is considered ‘new’, the rollout of modern technology, each time more potent, can be potentially harmful. Now more than ever, before our actions are irreparable, the reconstruction of current guidelines is of utter importance to protect women’s and girls’ rights to a clean, healthy, and sustainable environment.

**References**

Agency, E. P. (n.d.). EMF Guidelines. Retrieved October 14, 2022, from https://www.epa.ie/environment-and-you/radiation/emf/emf-and-your-health/emf-guidelines-/

Ahmadi SS, Khaki AA, Ainehchi N, Alihemmati A, Khatooni AA, Khaki A, Asghari A. Effect of non-ionizing electromagnetic field on the alteration of ovarian follicles in rats. Electron Physician. 2016 Mar 25;8(3):2168-74. doi: 10.19082/2168. PMID: 27123226; PMCID: PMC4844484.

Belyaev, I., Dean, A., Eger, H., Hubmann, G., Jandrisovits, R., Kern, M., Kundi, M., Moshammer, H., Lercher, P., Müller, K., Oberfeld, G., Ohnsorge, P., Pelzmann, P., Scheingraber, C., & Thill, R. (2016). EUROPAEM EMF Guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses. Reviews on Environmental Health, 31(3). <https://doi.org/10.1515/reveh-2016-0011>

Bushberg, J., Mettler, F., Vetter, R. (2020). Summary of NCRP 2019 Annual Meeting, NCRP Meeting the Challenge at 90: Providing Best Answers to Your Most Pressing Questions About Radiation. Health Physics. Volume 118, Issue 4. p 335-348 doi: 10.1097/HP.0000000000001239

Electromagnetic fields. (2021, August 24). Telefónica. <https://www.telefonica.com/en/sustainability-innovation/environment/electromagnetic-fields/>

Fragopoulou, A., Grigoriev, Y., Johansson, O., Margaritis, L., Morgan, L., Richter, E., & Sage, C. (2010). Scientific panel on electromagnetic field health risks: Consensus points, recommendations, and rationales. Reviews on Environmental Health, 25, 307–317.

Gye, M. C., & Park, C. J. (2012). Effect of electromagnetic field exposure on the reproductive system. Clinical and Experimental Reproductive Medicine, 39(1), 1–9. <https://doi.org/10.5653/cerm.2012.39.1.1>

Hardell, L., & Hardell, L. (2020). [Comment] Health risks from radiofrequency radiation, including 5G, should be assessed by experts with no conflicts of interest. Oncology Letters, 20, 15. <https://doi.org/10.3892/ol.2020.11876>

Horizon Europe Framework Programme (HORIZON). (2022, June 22). Exposure to electromagnetic fields (EMF) and health. Funding & tenders. Retrieved October 14, 2022, from https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-hlth-2021-envhlth-02-01;callCode=HORIZON-HLTH-2021-ENVHLTH-02;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1;statusCodes=31094501,31094502,31094503;programmePeriod=null;programCcm2Id=null;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=callTopicSearchTableState

INTERNATIONAL COMMISSION ON NON-IONIZING RADIATION PROTECTION. (2020). Guidelines for Limiting Exposure to Electromagnetic Fields (100 kHz to 300 GHz). Health Physics, 118(5), 483–524. <https://doi.org/10.1097/HP.0000000000001210>

International Covenant on Economic, Social and Cultural Rights. (n.d.). OHCHR. Retrieved October 8, 2022, from <https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-economic-social-and-cultural-rights>

Kostoff, R. N. (2020). THE LARGEST UNETHICAL MEDICAL EXPERIMENT IN HUMAN HISTORY. 1086.

Limit values compared internationally. EMF Portal. (n.d.). Retrieved October 14, 2022, from https://www.emf-portal.org/en/cms/page/home/more/limits/limit-values-compared-internationally

Nordhagen, E. K., & Flydal, E. (2022). Self-referencing authorships behind the ICNIRP 2020 radiation protection guidelines. Reviews on Environmental Health. <https://doi.org/10.1515/reveh-2022-0037>

OECD Glossary of Statistical Terms—Environment Definition. (n.d.). OECD. Retrieved October 2, 2022, from <https://stats.oecd.org/glossary/detail.asp?ID=813>

OHCHR | Sexual and reproductive health and rights. (n.d.). OHCHR. Retrieved October 8, 2022, from https://www.ohchr.org/en/node/3447/sexual-and-reproductive-health-and-rights

Poddar, A., Rana, S., Mittal, V., Sabath, S. K., & Mahmood, D. (2013). Change in pulse rate with Enviro Chip and dummy chip fixed on radiation emitting devices like mobile phones/computers/laptops of users—A double blind crossover study. Journal of Biomedical Science and Engineering, 2013. <https://doi.org/10.4236/jbise.2013.68098>

The precautionary principle: Definitions, applications and governance: Think tank: European parliament. Think Tank | European Parliament. (n.d.). Retrieved October 14, 2022, from https://www.europarl.europa.eu/thinktank/en/document/EPRS\_IDA(2015)573876

Roda, C., & Perry, S. (2014). Mobile phone infrastructure regulation in Europe: Scientific challenges and human rights protection. Environmental Science & Policy, 37, 204–214. https://doi.org/10.1016/j.envsci.2013.09.009

Teplan, M., Bereta, M., Bajla, I., Bartosova, K., Dermek, T., Haba, Y., & Cifra, M. (2018). Measurement of Weak Low Frequency Electromagnetic Field Effects on Cells (p. 2). <https://doi.org/10.23919/EMF-MED.2018.8526049>

UN General Assembly, Convention on the Elimination of All Forms of Discrimination Against Women, 18 December 1979, United Nations, Treaty Series, vol. 1249, p. 13, available at: https://www.refworld.org/docid/3ae6b3970.html [accessed 14 October 2022]

1. Ahmadi SS, Khaki AA, Ainehchi N, Alihemmati A, Khatooni AA, Khaki A, Asghari A. Effect of non-ionizing electromagnetic field on the alteration of ovarian follicles in rats. Electron Physician. 2016 Mar 25;8(3):2168-74. doi: 10.19082/2168. PMID: 27123226; PMCID: PMC4844484. [↑](#footnote-ref-3)
2. Hardell, L., & Hardell, L. (2020). [Comment] Health risks from radiofrequency radiation, including 5G, should be assessed by experts with no conflicts of interest. Oncology Letters, 20, 15. <https://doi.org/10.3892/ol.2020.11876>; Roda, C., & Perry, S. (2014). Mobile phone infrastructure regulation in Europe: Scientific challenges and human rights protection. Environmental Science & Policy, 37, 204–214. https://doi.org/10.1016/j.envsci.2013.09.009; Bushberg, J., Mettler, F., Vetter, R. (2020). Summary of NCRP 2019 Annual Meeting, NCRP Meeting the Challenge at 90: Providing Best Answers to Your Most Pressing Questions About Radiation. Health Physics. Volume 118, Issue 4. p 335-348 doi: 10.1097/HP.0000000000001239; Kostoff, R. N. (2020). THE LARGEST UNETHICAL MEDICAL EXPERIMENT IN HUMAN HISTORY. 1086.; Teplan, M., Bereta, M., Bajla, I., Bartosova, K., Dermek, T., Haba, Y., & Cifra, M. (2018). Measurement of Weak Low Frequency Electromagnetic Field Effects on Cells (p. 2). https://doi.org/10.23919/EMF-MED.2018.8526049 [↑](#footnote-ref-4)
3. Limit values compared internationally. EMF Portal. (n.d.). Retrieved October 14, 2022, from https://www.emf-portal.org/en/cms/page/home/more/limits/limit-values-compared-internationally [↑](#footnote-ref-5)
4. Agency, E. P. (n.d.). EMF Guidelines. Retrieved October 14, 2022, from https://www.epa.ie/environment-and-you/radiation/emf/emf-and-your-health/emf-guidelines-/ [↑](#footnote-ref-6)
5. Horizon Europe Framework Programme (HORIZON). (2022, June 22). Exposure to electromagnetic fields (EMF) and health. Funding & tenders. Retrieved October 14, 2022, from https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-hlth-2021-envhlth-02-01;callCode=HORIZON-HLTH-2021-ENVHLTH-02;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1;statusCodes=31094501,31094502,31094503;programmePeriod=null;programCcm2Id=null;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=callTopicSearchTableState [↑](#footnote-ref-7)
6. UN General Assembly, Convention on the Elimination of All Forms of Discrimination Against Women, 18 December 1979, United Nations, Treaty Series, vol. 1249, p. 13, available at: https://www.refworld.org/docid/3ae6b3970.html [accessed 14 October 2022] [↑](#footnote-ref-8)
7. OECD Glossary of Statistical Terms—Environment Definition. (n.d.). OECD. Retrieved October 2, 2022, from<https://stats.oecd.org/glossary/detail.asp?ID=813> [↑](#footnote-ref-9)
8. The precautionary principle: Definitions, applications and governance: Think tank: European parliament. Think Tank | European Parliament. (n.d.). Retrieved October 14, 2022, from https://www.europarl.europa.eu/thinktank/en/document/EPRS\_IDA(2015)573876 [↑](#footnote-ref-10)
9. International Covenant on Economic, Social and Cultural Rights. (1996.). OHCHR. Retrieved October 8, 2022, from <https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-economic-social-and-cultural-rights> [↑](#footnote-ref-11)
10. OHCHR | Sexual and reproductive health and rights. (n.d.). OHCHR. Retrieved October 8, 2022, from <https://www.ohchr.org/en/node/3447/sexual-and-reproductive-health-and-rights> [↑](#footnote-ref-12)
11. Gye, M. C., & Park, C. J. (2012). Effect of electromagnetic field exposure on the reproductive system. Clinical and experimental reproductive medicine, 39(1), 1–9. https://doi.org/10.5653/cerm.2012.39.1.1 [↑](#footnote-ref-13)
12. Belyaev, I., Dean, A., Eger, H., Hubmann, G., Jandrisovits, R., Kern, M., Kundi, M., Moshammer, H., Lercher, P., Müller, K., Oberfeld, G., Ohnsorge, P., Pelzmann, P., Scheingraber, C., & Thill, R. (2016). EUROPAEM EMF Guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses. Reviews on Environmental Health, 31(3). <https://doi.org/10.1515/reveh-2016-0011> [↑](#footnote-ref-15)
13. Fragopoulou, A., Grigoriev, Y., Johansson, O., Margaritis, L., Morgan, L., Richter, E., & Sage, C. (2010). Scientific panel on electromagnetic field health risks: Consensus points, recommendations, and rationales. Reviews on Environmental Health, 25, 307–317. [↑](#footnote-ref-16)
14. Poddar, A., Rana, S., Mittal, V., Sabath, S. K., & Mahmood, D. (2013). Change in pulse rate with Enviro Chip and dummy chip fixed on radiation emitting devices like mobile phones/computers/laptops of users—A double blind crossover study. Journal of Biomedical Science and Engineering, 2013. <https://doi.org/10.4236/jbise.2013.68098> [↑](#footnote-ref-17)
15. ICNIRP. (2020). Guidelines for Limiting Exposure to Electromagnetic Fields (100 kHz to 300 GHz). Health Physics, 118(5), 483–524. <https://doi.org/10.1097/HP.0000000000001210> [↑](#footnote-ref-18)
16. Ibid. [↑](#footnote-ref-19)
17. Nordhagen, E. K., & Flydal, E. (2022). Self-referencing authorships behind the ICNIRP 2020 radiation protection guidelines. Reviews on Environmental Health. <https://doi.org/10.1515/reveh-2022-0037> [↑](#footnote-ref-20)
18. Belyaev, I., Dean, A., Eger, H., Hubmann, G., Jandrisovits, R., Kern, M., Kundi, M., Moshammer, H., Lercher, P., Müller, K., Oberfeld, G., Ohnsorge, P., Pelzmann, P., Scheingraber, C., & Thill, R. (2016). EUROPAEM EMF Guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses. Reviews on Environmental Health, 31(3). <https://doi.org/10.1515/reveh-2016-0011> [↑](#footnote-ref-21)