



STOP SMART METERS AUSTRALIA INC

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Standing Committee on Communications and the Arts Secretariat
Parliament House
CANBERRA
By electronic lodgment

Dear Committee Members

Inquiry into 5G in Australia

Thank you for the opportunity to provide input to the House of Representatives Standing Committee on Communications and the Arts' inquiry and report on the deployment, adoption and application of 5G in Australia.

Stop Smart Meters Australia (SSMA) is a volunteer-based consumer advocacy group which incorporated as an Association in April 2013 in response to widespread community objection to Victoria's government-mandated rollout of electricity smart meters. Paramount within our legal purposes is providing support to Australians who have had their health adversely impacted by pulsed emissions from wireless smart meters. A significant portion of this cohort is also now sensitised to other sources of man-made electromagnetic radiation, including radiofrequencies from sources such as telecommunication towers.

In light of this, our submission focuses on the challenges of 5G deployment.

Electromagnetic hypersensitivity increasing in the population

It appears that smart meters may have unique characteristics that have lowered people's threshold for the symptom development of electromagnetic hypersensitivity syndrome (Lamech 2014, p. 1). A number of our 600+ members and 6000+ website followers experience distressing symptoms following exposure to artificial electromagnetic radiation (EMR). Growing electro-pollution has severely impacted on sufferers' right to freedom of movement, right to work, their standard of living and right to freely participate in the cultural life of the community due to the impact on people's health and the need to minimise exposure to man-made radiation sources. This has resulted in high personal costs for a number of people (loss of career, loss of income, loss of place in society, loss of access to public facilities, loss of friends and family) and their families as well as costs to the wider community.

Stories about the impact of being electrically sensitised, including from Australians, are available [here](#).

Estimations of the number of people who are currently electrically sensitive vary. According to a research paper titled 'The Prevalence of People with Restricted Access to Work in Manmade Electromagnetic Environments', between about 5.0 and 30 per cent of the general population have a mild form of this condition. Moderate cases represent between 1.5 and 5.0 per cent of the population with a prevalence of less than 1.5 per cent for severe cases (Bevington 2019, p. 1).

The rollout of 5G infrastructure, which necessitates the deployment of unprecedented numbers of EMF-emitters in close proximity to people, and utilises new beamforming technology, raises the likelihood that greater numbers of Australians will become sensitive to artificial electromagnetic fields (EMF). It also will make it exponentially more difficult for people who are already sensitised to participate in modern society. Ironically, the aspirational notion that 5G will provide near total connection for anything and anyone at anytime anywhere, is likely to lead to the opposite outcome for many Australians.

A number of Australians can no longer tolerate using a mobile phone, being exposed to WiFi or being in the proximity of telecommunication towers. Some people develop such acute symptoms that even exposure to AC electricity is challenging. These people effectively lose their voice in today's society. SSMA is aware of many Australians, from all walks of life, who have been forced to abandon their homes in an effort to escape the impact of EMF. A number of these people have been reduced to sleeping in their vehicle in national parks, living in remote areas that are not currently blanketed in electro-smog, or moving to countries that have more stringent emission controls.

A research paper titled *Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays*, which references a wide body of studies, concluded that although a number of variables need to be considered (height, frequencies deployed etc.), as a general guideline, base stations should be located at least 500 metres from the population (Levitt & Lai 2010, p. 389). Obviously, in the case of small cells – which raise new risks with their powerful beamforming technology along with the implementation of much shorter RF wavelengths – this advice is being ignored.

Irreversible long-term health impacts on the population

Exposure to man-made electromagnetic fields is also implicated in serious long-term health outcomes. A report by a UK charity established to support people who are electro-sensitive references a wide body of scientific studies giving evidence of adverse biological outcomes, including effects which carry down through generations (Electrosensitivity UK 2018).

A number of appeals highlight the extreme risk posed by wireless radiation. As of 15 October, 2019, 252 EMF scientists from 43 nations had signed an International EMF Scientist Appeal calling for greater health protection from electromagnetic field exposure (International EMF Scientist Appeal 2019).

The Appeal states that:

"Numerous recent scientific publications have shown that EMF affects living organisms at levels well below most international and national guidelines. Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plant and animal life."

In a [press release](#) this year, the advisors to this Appeal referred to 4G/5G antenna densification as escalating health risks and a global crisis.

Individuals should have the right to manage their own EMF exposure levels

The deployment of small cells in people's neighbourhoods and in front of their homes denies the right of individuals to make their own decisions about the level of EMF that they are exposed to within their gardens, homes and in public spaces. SSMA considers it extraordinary that the government has sanctioned the right of industry to install telecommunication infrastructure inside people's communities, whilst concurrently silencing people's ability to prevent these incursions. As stated by the Australian Communications and Media Authority (ACMA), providers are permitted to install and maintain certain types of equipment [without local council or government approval](#). It is incongruous that legislation refers to 'low-impact' facilities in terms of appearance, but fails to take into account adverse biological effects on humans and the environment.

The rapid proliferation of wireless technology in Australia has given rise to many unintended consequences. There has been no requirement for industry to adopt a precautionary approach and no onus on industry to prove that emissions are safe prior to the rollout of new technology. The only proviso is that individual EMF sources comply with the ACMA's *Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard* which, being based on a diluted version of the *Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency Fields — 3 kHz to 300 GHz* set by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), is based on outdated theory. There is also no recognition of the fact that people are now being exposed concurrently to multiple sources of EMF, thereby increasing overall exposure levels. ACMA's standard also does not take into account the cumulative effects of exposure to wireless frequencies. Please see this [post](#) for a comprehensive analysis of why ARPANSA's 'safety' standard, which forms the basis for ACMA's standard, is not fit for purpose.

ARPANSA's standard for radiofrequency radiation is aimed at guarding against gross thermal effects resulting from an increase in the temperature of body tissue. It does not provide protection against the many, and varied, biological effects – as shown in thousands of studies – which occur at levels that can be significantly below the limits set by the standard.

Effects include alteration of heart rhythm, altered gene expression, altered metabolism, altered stem cell development, cancers, cardiovascular disease, cognitive impairment, DNA damage, impacts on general well-being, increased free radicals, learning and memory deficits, impaired sperm function and quality, miscarriage, neurological damage, obesity and diabetes and oxidative stress. Effects in children include autism, attention deficit hyperactivity disorder (ADHD) and asthma. References for each of the aforementioned effects is available at the [International Appeal to Stop 5G on Earth and in Space](#), which had more than 172,000 signatories, from 203 nations and territories, as of 31st October 2019.

Trees – collateral damage in the push for 5G?

Trees both absorb and scatter radiofrequency signals; these phenomena are more pronounced, the higher the frequency. According to a 5G whitepaper from the University of Surrey, coverage from masts can be reduced by as much as 70% by adjacent trees and buildings (Brown *et al.* 2016). This presents a challenge for 5G's very short range, which requires the embedding of innumerable radiofrequency transmitters into the fabric of community infrastructure. This means that radiofrequency waves will often be on a collision course with trees. How much worse will this effect be when millimetre waves, which are even more susceptible than microwaves, underpin 5G technology?

Given that there already exists in Australia the ludicrous situation that – even with supporting medical documentation from a doctor – people are not able to prevent installation of radiofrequency-emitters in close proximity to their homes, how will trees, with their proclivity to block signals, be viewed? Will we find ourselves in the situation that trees are being pruned or cut down, not with regard to safety, but in order to facilitate wireless communications?

Increased levels of EMF threaten the environment

It is also important that the Committee considers the effects of emissions from 5G infrastructure on the environment, including on insects, birds, wildlife and trees. Impacts of both individual small cells and the cumulative effects of all 5G infrastructure should be assessed. There are a substantial number of studies pointing to adverse effects on the environment as a result of emissions from telecommunications infrastructure. In a US briefing memorandum it was concluded that given the rapidly growing database of peer-reviewed, published scientific studies it is time that the United States of America Federal Communications Commission 'considers thermal and **non-thermal** effects from EMR' (SSMA emphasis) when approving communication

towers and that rules should take into account ‘the effects of communication towers on migratory birds’ (Manville 2016, p. 9).

A small sample of some of the research in regard to the environment is available [here](#). A post that SSMA published on the devastating effects of telecommunications infrastructure within one of Australia’s own UNESCO World Heritage Sites can be viewed at this [link](#).

The ACMA does not have legislative responsibility to consider the effects of EMF on the environment. The ACMA’s Technical Regulation Development Section confirmed by email on 23 April 2014 that ‘The ACMA can only make standards under section 162 of the Act in relation to ARPANSA’s standard that relate to those things mentioned under section 162(3) (f) of the Act. These things relate to the health and safety of specified persons and these things do not have general application to “the environment”.’ This begs the question: which regulatory authority in Australia might be monitoring the impact of 5G emissions on insects, birds, wildlife and trees?

Wisdom of government facilitating what appears to be doomed technology

The International Agency for Research on Cancer (IARC), which is part of the World Health Organization, classified radiofrequency electromagnetic fields as possibly carcinogenic to humans (Group 2B) in 2011. It appears that this classification is the start of a trajectory which will result in radiofrequency radiation receiving the most stringent possible categorisation. More recent research has seen scientists conclude that [‘RF radiation should be classified as carcinogenic to humans, Group 1’](#).

It should be noted that progress towards this classification would undoubtedly have been much faster, if it were not for the vested interests of the trillion-dollar telecommunications market. Independently funded electromagnetic radiation field research finds adverse health effects in the majority of scientific studies, whereas the reverse (not surprisingly) occurs in industry-funded research.

The Oceania Radiofrequency Scientific Advisory Association (ORSAA), which is an Australian not-for-profit organisation of scientists and professionals, has done exhaustive analysis of peer-reviewed studies, including all of the studies considered in ARPANSA’s Technical Report No. 164, *Review of Radiofrequency Health Effects Research – Scientific Literature 2000-2012*.

ORSAA categorised biological effects (e.g. altered gene expression, altered enzyme activity, oxidative stress etc.), as well as matching bio-effect findings with the study’s funding source. A search of its comprehensive, multi-categorised database of papers clearly shows that funding source is a critical factor in research findings (Leach, Weller & Redmayne 2018, Abstract).

Given the wide-reaching consequences of a stricter rating of radiofrequency EMF by the World Health Organization/IARC, the question must be asked as to why government is persisting in

facilitating and financially benefiting from increased use of radiofrequency spectrum? What risks does this position represent to the government in terms of legal liability? How is the government going to fund increasing healthcare costs for a population impacted by EMF? How much financial and psychological trauma will Australians using 5G bear, due to the inherent increased vulnerability of a wireless-connected world? A recent article published in the Financial Times, entitled '[A hacker's paradise? 5G and cyber security](#)' refers to the possibility of cyber attacks which 'could include artificial-intelligence powered "robocallers", which can convincingly mimic family or friends; large-scale denial of service attacks capable of taking down a mobile network; and manipulated videos known as "deepfakes".'

Surely, it would make more sense to support investment in wired telecommunications infrastructure. Although necessitating higher initial costs, wired systems (e.g. Ethernet in homes and businesses and fibre optic over distances) are more robust, faster and more secure.

Concluding comments

SSMA considers that an immediate halt to the deployment of 5G is warranted. Despite the massive pushback that this move would garner from industry, the Committee has a responsibility to weigh up all the drawbacks and benefits associated with the rollout of 5G infrastructure in its recommendations.

Recent [research](#) from Roy Morgan, Australia's largest independent research company, revealed that over 26% of Australians are concerned about the health risks of 5G technology, with over 20% worried about data security. It is likely that these figures would be considerably higher if the public had a better understanding of the seriously flawed mechanisms in place within Australia to protect their interests with regard to exposure to EMF, and the inherent vulnerabilities of a wireless-connected world.

SSMA has no doubt that a full cost benefit analysis of 5G deployment, that takes into account the likelihood of serious adverse health effects on humans and the environment as well as impacts on the privacy and security of Australians, would demonstrate convincing proof that continuing further down this particular technological pathway is not justified.

Yours sincerely,



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REFERENCES

- Bevington, M. 2019, The Prevalence of People with Restricted Access to Work in Manmade Electromagnetic Environments, (2019) *J Environ Health Sci* 5(1): 1-12, Available: https://www.omegaonline.org/download.php?download_file=articles/publishimages/16093-The-%20Prevalence-%20of-%20People-%20With-%20Restricted%20Access-%20to-%20Work.pdf
- Brown, T., Fitch, M., Owens, D., Saunders, S., Sutton, A. & Temple, S. 2016, *5G Whitepaper: Meeting the Challenge of “Universal” Coverage, Reach and Reliability in the Coming 5G Era*, Institute for Communication Systems, 5G Innovation Centre, University of Surrey, Available: <https://www.surrey.ac.uk/sites/default/files/2018-03/white-paper-rural-5G-vision.pdf>
- Electrosensitivity UK. 2018, *Selected Studies on Electrosensitivity (Es) and Electromagnetic Hypersensitivity (EHS)*, 4th edn, by M. Bevington, Available: <http://www.es-uk.info/wp-content/uploads/2018/05/Selected%20ES%20and%20EHS%20studies.pdf>
- International EMF Scientist Appeal 2019, *International Appeal: Scientists call for Protection from Non-ionizing Electromagnetic Field Exposure*, Available: <http://emfscientist.org/index.php/emf-scientist-appeal>. See <https://emfscientist.org/> for information about the appeal.
- Lamech, F. 2014, Self-reporting of Symptom Development from Exposure to Radiofrequency Fields of Wireless Smart Meters in Victoria, Australia: A Case Series, *Altern Ther Health Med*. 2014 Nov;20(6):28-39, Available: <http://www.ncbi.nlm.nih.gov/pubmed/25478801>
- Leach, V., Weller, S. & Redmayne, M. 2018, A novel database of bio-effects from non-ionizing radiation, *Reviews on Environmental Health*, 33(3), pp. 273-280, Available: <https://www.degruyter.com/view/j/reveh.2018.33.issue-3/reveh-2018-0017/reveh-2018-0017.xml>
- Levitt, B. & Lai, H. 2010, Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays, *Environmental Reviews*, 18. 369-395. 10.1139/a10-903, Available: https://www.researchgate.net/publication/233593841_Biological_effects_from_exposure_to_electromagnetic_radiation_emitted_by_cell_tower_base_stations_and_other_antenna_arrays
- Manville, A. 2016, A BRIEFING MEMORANDUM: What We Know, Can Infer, and Don't Yet Know about Impacts from Thermal and Non-thermal Non-ionizing Radiation to Birds and Other Wildlife — for Public Release, Available: <https://ehtrust.org/wp-content/uploads/wildlife-RF-effects-Manville-7-14-2016-Briefing-Memo.pdf>