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(Via: [SecretaryStop5GPerth@gmail.com](mailto:SecretaryStop5GPerth@gmail.com))

**Re: The role of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and the health impacts of millimetre waves.**

Dear Ms Price et al

Thank you for your letter dated 10 November 2018, received by the Minister for Health (The Hon Greg Hunt MP) and the Minister for Environment (The Hon Melissa Price MP), regarding the role of ARPANSA and the health impacts of millimetre wave (5G) technology. Your letter has been referred to ARPANSA for response.

***Australian Government independence and regulatory effectiveness***

As you may be aware, there are a number of Commonwealth bodies charged with the protection of people and the environment from radiation from telecommunications sources:

- Department of Health – lead policy department for health related initiatives and programs from the Australian Government.
- Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) – provides expert advice on radiation protection and nuclear safety matters to the Australian Government.
- Department of Communications and the Arts – lead policy department for communications infrastructure and technology in Australia.
- Australian Communications and Media Authority (ACMA) – regulates radiofrequency (RF) electromagnetic energy (EME) emissions from smart meters and other wireless devices used for communication

The ACMA's regulatory arrangements require wireless devices to comply with the exposure limits in ARPANSA's publication Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency Fields - 3 kHz to 300 GHz", known as the 'ARPANSA RF Standard'

The ARPANSA RF Standard is based on scientific research that shows the levels at which harmful effects occur and it sets limits well below these harmful levels, with various elements of precaution, based on international guidelines.

The ARPANSA RF Standard is designed to protect people of all ages and health status against all known adverse health effects from exposure to RF EME.

### ***Independence of ARPANSA***

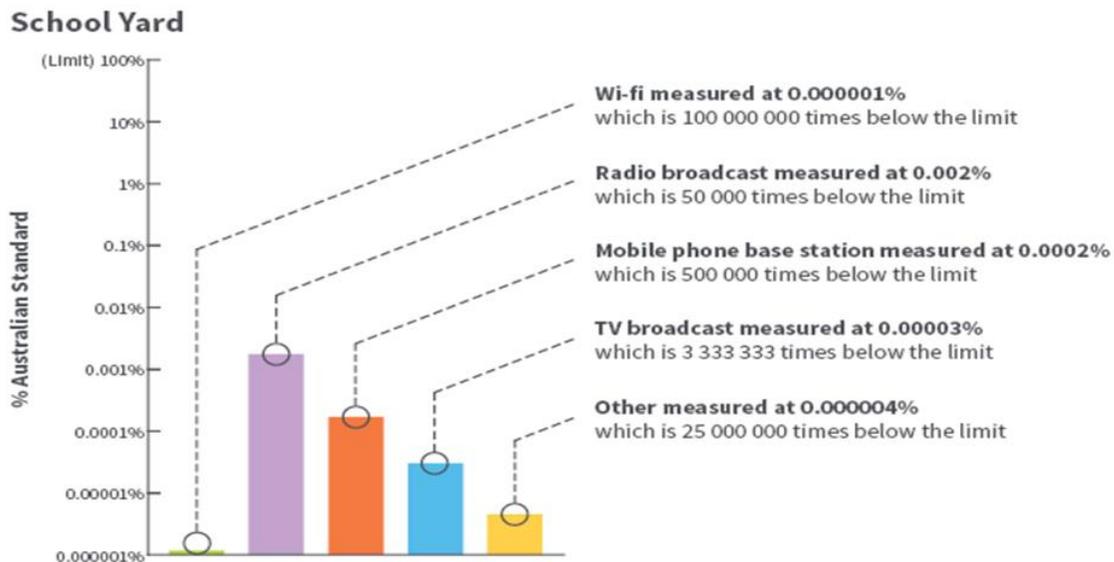
The CEO of ARPANSA is an independent statutory authority, separate from any other government body. As a Health portfolio agency ARPANSA acts autonomously and is independent of commercial interests across wider government or industry.

To maintain an informed view and awareness of recent developments in public concerns, technological changes and research, ARPANSA regularly engages a wide range of public, industry and academic stakeholders in relation to all kinds of radiation, including RF EME. For example, you will also be aware of the Electromagnetic Energy Reference Group (EMERG) which ARPANSA established and meets regularly. This group has a range of lobbyist, academic, school community, industry, medical, international standard-setting, government, and concerned-individual representatives (including Mr Steven Weller). It also includes a representative of the Chief Medical Officer of Australia. More details about EMERG are available at: <https://www.arpansa.gov.au/about-us/what-we-do/national-collaboration/emerg>.

### ***Exposure to electromagnetic energy (EME), including millimetre waves (5G)***

Exposure levels to EME from communications antennas are very low and typically much lower than the limits of the Australian RF Standard. Various environmental factors, including objects, material types and height, also influence the level of exposure for EME.

EME measurements taken in school yards as part of another Australian (ARPANSA) study clearly demonstrate that the largest typical source of EME in the general environment is from radio broadcasts, with EME from mobile phone base stations coming in typically 10 times lower than radio broadcasts at 500,000 times below ARPANSA's recommended limit (see graph on next page).



EME from 5G technology will penetrate the skin less than EME from current technology.

Millimetre wave technology is common place in the Australian community. Examples include speed radar guns, radar communication systems, security screening, remote environmental sensing and as human medicine for the treatment of diseases.

### ***Evidence on health effects***

ARPANSA has found that the difference between biological effects and adverse health effects are often conflated in public arguments presented on RF EME.

A number of studies into RF EME have reported biological effects (or bio-effects), which can be described as physiological responses to exposure. On the other hand, a 'health effect' can be described differently as being a state outside the normal range of physiological compensation that is detrimental to health or wellbeing.

Biological effects occur for a broad range of reasons, and are different to actual 'health effects' because biological effects do not necessary translate to medical conditions. For example, the temperature on any given day can causes people's bodies to respond in compensation, which is a 'biological effect', but this does not necessarily create a 'health effect' that becomes an illness.

Even DNA damage, as a biological effect, occurs on a regular basis from different types of radiation from a range of sources. However DNA-repair is also a key characteristic of cell biology, which means that the bio-effect of DNA damage often does not translate into a detrimental health effect.

Where RF EME exposure exceeds protection guidelines, it can heat the human body with a risk of permanent damage (known as a thermal effect). It is the assessment of ARPANSA, the WHO and other international health authorities that there are no established health effects from RF EME at levels below current protection guidelines.

### ***Health reactions (EHS)***

ARPANSA recognises that there are anecdotal reports of potential health effects (or reactions) from exposure to RF EME from various wireless technologies claiming a variety of ill effects that have been generally termed 'electromagnetic hypersensitivity' or EHS.

ARPANSA and the World Health Organization (WHO) are not aware of any well-conducted scientific investigations where EHS symptoms were confirmed as a result of RF EME exposure. Several studies have indicated a nocebo effect – that is, an adverse effect due to the belief that something is harmful.

However ARPANSA acknowledges that the health symptoms experienced by the affected individuals are real and can be a disabling problem, and advise those affected to seek medical advice from a qualified medical professional.

### ***Epidemiological studies on links to cancer***

A major ARPANSA-led epidemiological study has recently been published with the British Medical Journal Open, which found no link between the use of mobile phones in Australia and incidence of brain cancers.

The study compared the incidences of brain cancer in Australia from 1982 to 2013, to mobile phone use during the same period. The study found that there was no increase in brain tumours that can be attributed to mobile phone use.

This study was completed in conjunction with The University of Wollongong, Monash University and the University of Auckland, and is available online at <https://bmjopen.bmj.com/content/8/12/e024489.full>.

With regard to the recent study by the US National Toxicology Program, this study investigated RF EME at high levels (mostly above current standards) that are not relevant to mobile phone base stations which emit RF EME at a fraction of the ARPANSA RF standard.

### ***Huygenspark bird deaths, The Hague***

ARPANSA is not aware of any scientific evidence linking bird deaths at Huygenspark in The Hague to RF EME emissions. Following reports of bird deaths at Huygenspark, the local municipality has issued a notice stating “there were no 5G tests conducted for a new network for mobile telephones around Huygenspark” (see media release at <https://www.denhaag.nl/en/in-the-city/news/huygenspark-ban-on-dogs-lifted.htm>).

### ***Carcinogen classification and informed consent principle***

The decision in May 2011 by the International Agency for Research on Cancer (IARC) to classify RF EME as a ‘possible human carcinogen’ was based on limited evidence from human epidemiology of an increased risk of brain tumours among heavy mobile phone users. IARC noted at the time of the decision that the evidence from occupational and environmental exposures was inadequate.

More rigorous long-term studies are being coordinated by the World Health Organization and Australia is taking part in this research program.

It is not expected that the ‘informed consent’ principle, an international convention for medical experiments established in the Nuremberg Code (1947), would apply to non-experimental activities such as the deployment of technology infrastructure within appropriate regulatory requirements.

### ***More information***

Further information on RF EME, EHS and other topics is available on the ARPANSA website at [www.arpansa.gov.au/understanding-radiation/radiation-sources](http://www.arpansa.gov.au/understanding-radiation/radiation-sources).

Should you have any further questions, please do not hesitate to contact the ARPANSA Talk to a Scientist hotline on freecall 1800 022 333 from 11:00 am to 12:30 pm on Tuesdays and Thursdays (Melbourne AEST), except during public holidays.

Yours sincerely

Talk to a Scientist Program  
Australian Radiation Protection and Nuclear Safety Agency