



Australian Government
Australian Radiation Protection
and Nuclear Safety Agency



Australian Government Electromagnetic Energy (EME) Program

Sarah Loughran



**We are the Australian Government's
primary authority on radiation
protection and nuclear safety**

Presentation overview

ARPANSA's EME program

- Assess EME exposure in the community
- Conduct research on EME and health
- EME laboratory
- Engage with international health authorities
- Develop national EME safety standards
- Provide information on EME and health

Assess EME exposure in the community



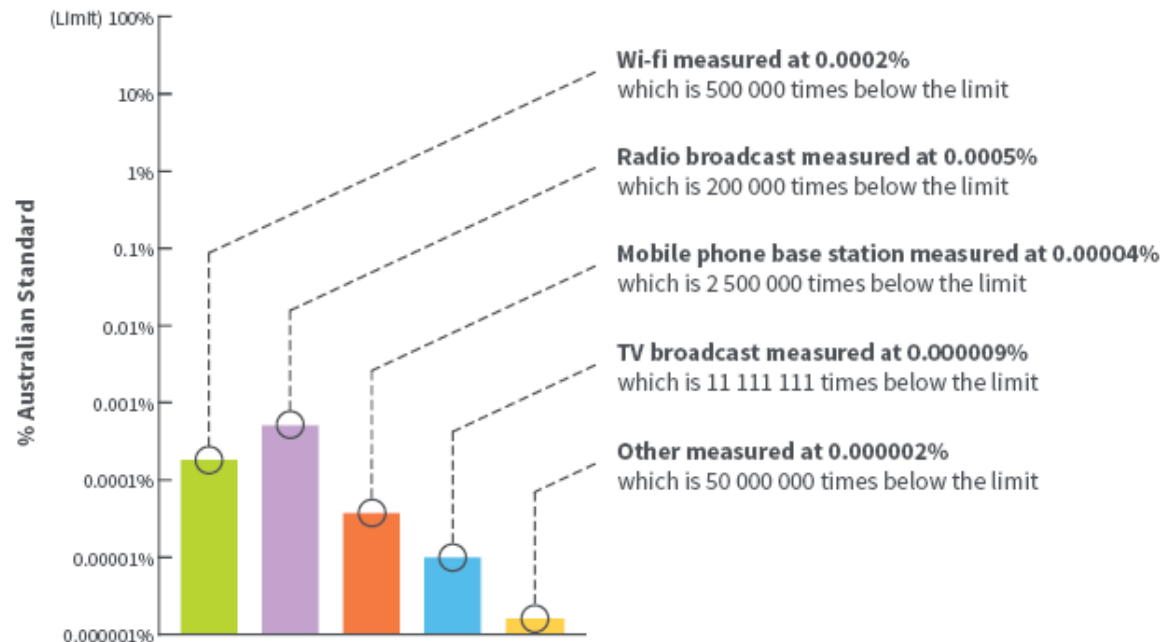
Assess EME exposure in the community

- What is the typical EME exposure in the everyday environment?
- What is the cumulative exposure from different telecommunications sources (mobile phone networks, TV, radio, Wi-Fi, etc)?
- How does the EME exposure change over time (e.g. has the introduction of 5G increased the exposure)?

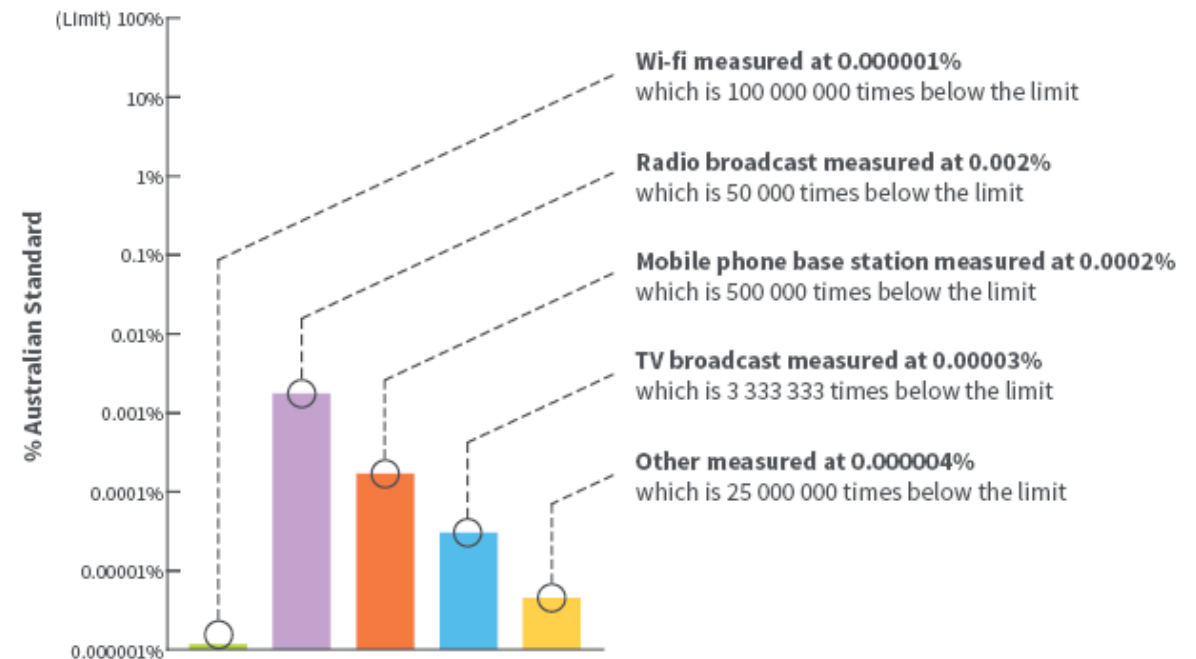


Wifi in Schools Study

Classroom



School Yard



A photograph of two men in a laboratory or industrial setting. The man on the left is wearing a dark shirt and is looking down at a black tray with several white circular samples. The man on the right is wearing a light-colored shirt, a wide-brimmed hat, and sunglasses, and is also looking at the tray. The background shows a large, curved structure, possibly part of a vehicle or a large piece of equipment. The image has a purple and green color overlay.

**Conduct research on
EME and health**

Conduct research on EME and health

- Since our EME action plan commenced in 2020, we have published several peer-reviewed journals on EME which have received attention on an international scale.
- In May 2023, an ARPANSA-led research team published a systematic map of research into effects of EME on plants and animals in the environment. The systematic map, published in peer-reviewed journal Environmental Evidence, identified areas where further research is required, including gaps in knowledge on the effects of EME from emerging technologies on plants and animals. ARPANSA is currently working on a paper to fill some of these knowledge gaps
- ARPANSA researchers have contributed to several of the World Health Organization systematic reviews of RF EME and health which are expected to be published in 2024



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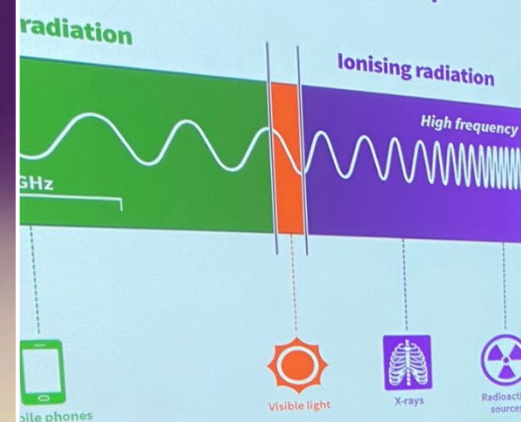


A Review of the research into the effects of radiofrequency fields on animals and plants in the environment

Ken Karipidis, Chris Brzozek, Rohan Mate, Chhavi Bhatt, Sarah Loughran, Andrew Wood



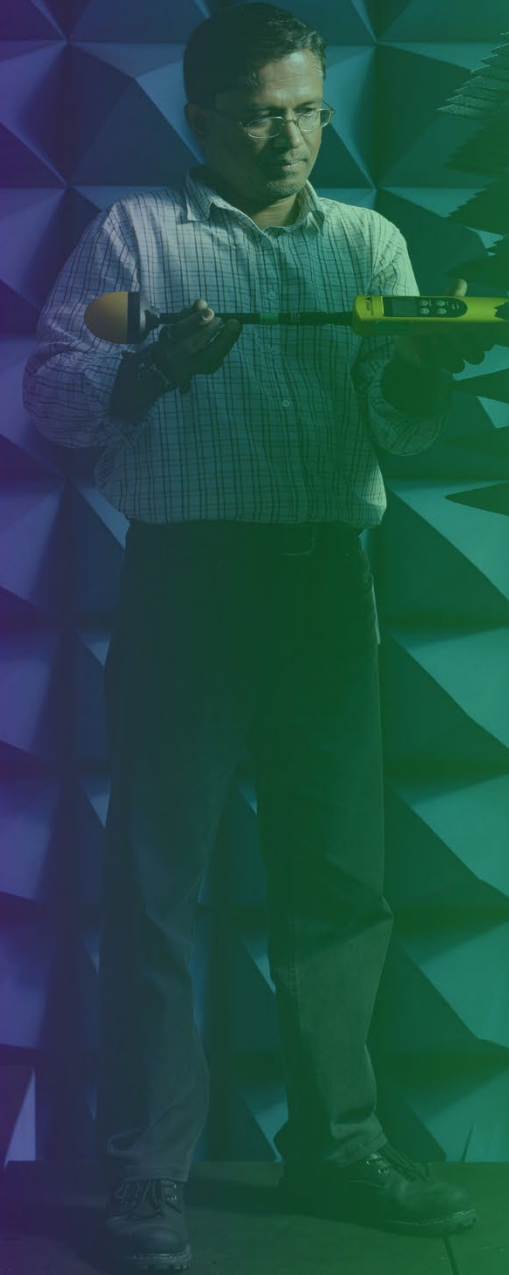
communications such as radio, television also called radiofrequency



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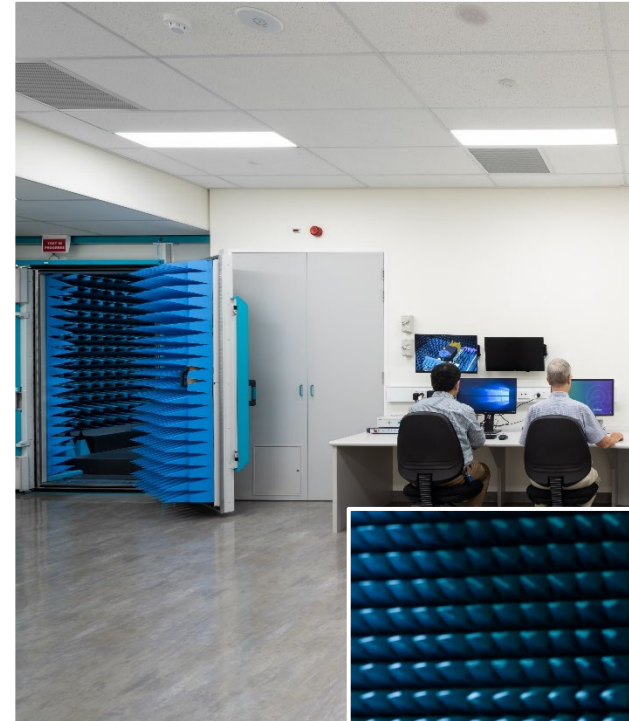


EME laboratory



EME laboratory

- We officially opened our new anechoic chamber in November 2022
- This upgrade has extended the capability of our anechoic chamber to higher EME frequencies, which are related to 5G and future telecommunications, allowing us to perform EME measurements, calibrations and conduct research across an extended frequency range
- The anechoic chamber was constructed so that ARPANSA could continue providing science-based health advice to the Australian community on wireless-technology now and into the future.

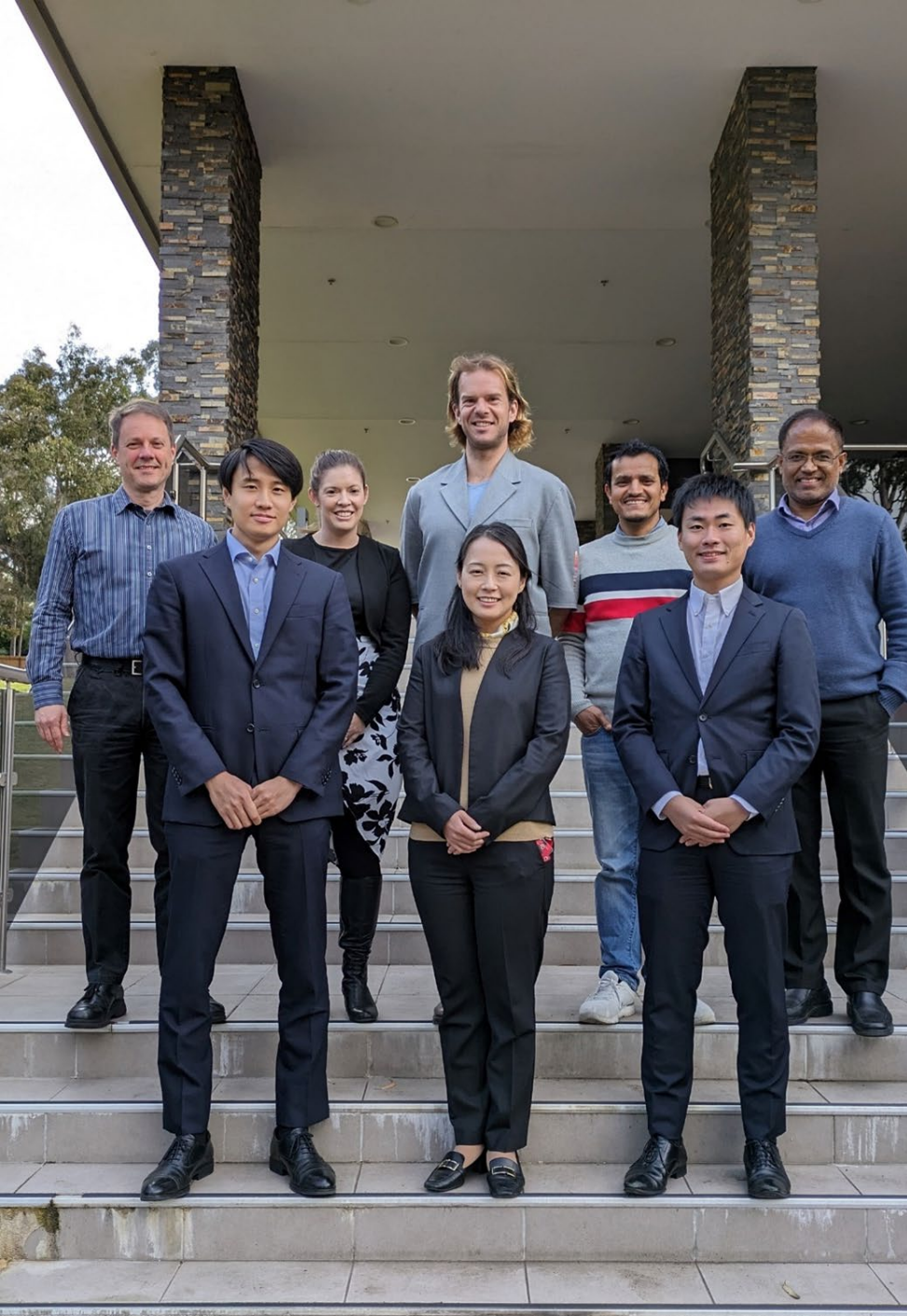




**Engage with
international health
authorities**

Engage with international health authorities

- To provide the best protection for Australia, our scientists engage extensively at the national and international level by contributing to different standards committees, working groups and research consortiums
- We have been building connections with government, industry, and academics throughout Australia and Internationally to ensure that our science and public health advice remains accurate, up-to-date, and consistent with other important bodies in this field
- We are a WHO collaborating centre for radiation protection



Develop EME safety standards



Standard for Limiting Exposure to Radiofrequency Fields – 100 kHz to 300 GHz

- In 2021, ARPANSA updated Australia's safety limit based on ICNIRP's guidelines
- The safety limits are conservative and have been set well below the level at which harm may occur
- There is no established scientific evidence that exposure to wireless technology below internationally recognised safety limits, such as ARPANSA's, cause health effects
- Every mobile phone base station, including 4G and 5G base stations, must meet Australian standards designed to protect people against EME exposure
- We continue to conduct research and review the science



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Provide information on EME and health

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- Through our Talk to a Scientist program, the public can speak directly to a radiation expert
- The program receives approximately 800 enquiries each year
- Allows us to monitor change in public concerns
- TTAS complements our other communication activities:
 - Social media
 - Traditional media
 - Public engagement





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Thank you

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