

Interagency Committee on the Health Effects of Non-Ionising Fields

Draft Notes from the Zoom Meeting held on 16 February 2023

Present

Richard Jaine (Manatū Haoura - Ministry of Health – Chair), Peter Berry (Electricity Engineer's Assoc.), Veerendra Bhim (Energy Safety Group, WorkSafe NZ), Brendon Hickey (Telecommunication Carriers Forum), John Dockerty (University of Otago), Martin Gledhill (Te Whatu Ora – Acting Secretary), Ken Karipidis (ARPANSA), Jeremy Logan (Radio Spectrum Management), Andrea t'Mannetje (Massey University), Jesse Beatty-Ward (Ministry of Education), Matthew Walker (Transpower New Zealand Ltd).

Apologies

Sally Gilbert (Te Whatu Ora), Isobel Stout (local government), Lucy Knowles (Ministry for the Environment), Sarah McCarthy (Ministry for the Environment), Michael Tucker (Ministry for the Environment), Sarah Loughran (ARPANSA), Adam Tommy (Kordia), Pip Parkin (Te Whatu Ora – Heath New Zealand National Public Health Service), Helen van Mil (Te Whatu Ora – Heath New Zealand National Public Health Service), Kimbal McHugo (Ministry of Education)

Welcome

Richard Jaine took the chair and welcomed everyone to the meeting.

Finalise the agenda

The agenda was confirmed.

Minutes of the previous meeting

The minutes of the meeting held on 22 September 2022 were confirmed as an accurate record of the meeting.

Matters arising

1. Sally Gilbert asked new members to send their contact details for inclusion at the end of the meeting notes, and existing members to check that their details are up to date.
2. All members will send meeting reports to send any meeting reports to sally.gilbert@health.govt.nz..

New Zealand Information on ELF and RF

Local government

No update received.

National Public Health Service update

No update received.

Ministry of Education

Nothing new to report.

Ministry for the Environment

Briefing notes covering Resource Management reform and transitioning existing national direction to the National Policy Framework were circulated to the meeting.

Manatū Hauora

Nothing new to report.

Energy Safety Service/Worksafe

There have been no queries received.

MOBI-Kids study

There has been no further reaction to the MOBI-Kids study

Update on Standards

Martin Gledhill noted that a working group has been set up by the joint Standards Australia/Standards NZ TE-007 committee human exposure to electromagnetic fields to come up with recommendations on how spatial averaging of exposures should be undertaken. Some good progress has been made, but there is a lot of work still to do. Ken Karipidis said that ARPANSA will soon be issuing an advisory note on the subject for RPS S-1.

Industry Update on Engineering and Technical Developments

Brendon Hickey reported that all three mobile operators have now chosen to sell their passive tower assets to "TowerCos". This will probably result in more co-locations. RMA compliance will continue to be the responsibility of the operators.

Matthew Walker said there was nothing new from Transpower to report. Work to increase capacity is accelerating.

Peter Berry commented that there had been few EMF queries to distribution companies. There has been a large growth of interest in solar power generation. A recent survey found that 50% of respondents thought that their next vehicle would be electric.

Australian Information on ELF and RF

Ken Karipidis highlighted the opening of ARPANSA's new anechoic chamber, which will allow equipment to be calibrated at frequencies up to 40 GHz, and to carry out research at up to 100 GHz. A second call for research proposals has been made. Research at the higher frequencies to be used in 5G networks is of particular interest.

ARPANSA staff are involved in several international projects, including the WHO Task Group that will review RF research, the systematic reviews to be reviewed by the Task group, and ICNIRP. Two of the systematic reviews are close to publication but others are delayed.

The Talk To A Scientist programme has shown a steady decrease in queries between 2019 and 2022. Closer examination of the data showed that a large part of this was due to a sharp drop in queries about 5G. Queries about other subjects had remained fairly steady.

International Information on ELF and RF*WHO International EMF Project Task Group*

A WHO announcement of proposed members of the Task Group that will prepare the RF Environmental Health Criteria monograph on RF fields was circulated before the meeting. Martin Gledhill commented that the expectation that the work would be finished by the end of 2023 was optimistic. Ken Karipidis noted that many of the people who might be expected to be on the Task Group were not eligible as they were involved in the systematic reviews.

International Reports (ELF)

John Dockerty gave an overview of the recent papers that he had selected. He prefaced his review with a comment that much of the research now published appears to be less directly relevant to human health.

- Emeksiz – Measured 1 Hz – 400 kHz electric and magnetic fields in a shopping mall and claimed to find SARs of 0.763 and 0.39 W/kg. Martin Gledhill said he thought they must have made a big error somewhere as that seemed highly unlikely. John Dockerty drew attention to the somewhat emotional language in the abstract.

- Vasta – Electromagnetic fields did not appear to affect onset age or symptom progression in ALS patients.
- Teixido – A useful application of EMFs to improve safety near power tools.
- Dong – Theoretical analysis of EMFs in an electric vehicle showed passenger exposures were all below recommended limits.
- Zagar – 0.5% of children and adolescents in Slovenia are exposed to magnetic fields from transmission lines $>0.1 \mu\text{T}$. Their cancer risk does not differ from others of the same age.
- Ohtani – high intensity, intermittent IF magnetic fields had no genotoxic effect on somatic or germ cells.
- Chen – Strong 50 Hz magnetic fields enhanced the infection ability of *Magnaporthe oryzae*. John said he had not been able to access the full paper and do a quality analysis.
- Gholamian-Hamadan – 50 Hz magnetic fields affected some immune system cells. However, John said he had not been able to access the full paper and assess the study quality and relevance.
- Pagliaccio - meta-analysis of experimental studies on animals exposed to MRI fields showed no prenatal risks.
- Pophof – More research is needed on the effects of EMFs of all frequencies on flora and fauna.
- Levitt - an opinion piece stating that wildlife may not have sufficient protection from EMFs.
- Chou – An overview of controversies on EMF safety and why they might exist.
- Bainbridge – Staff exposures to EMFs from MRI equipment, even at levels above limit values, do not appear to have deleterious long term effects.
- Leszczynski – Opinion piece advocating more research on EHS.
- Zastko – Reports window effects of ELF magnetic fields on umbilical cord blood lymphocytes. Martin commented that window effects (in frequency and amplitude) were often reported in earlier days of bioelectromagnetics research, and wondered whether they just reflected random variability of results.
- Belpomme – A somewhat long-winded discussion of EHS that contains erroneous analogies.

International Reports (RF)

- SSM annual report – Concludes that no new causal relationships between EMF exposure and health risk have been established. Ken commented how the SSM reports take a very systematic approach to their work, both in selection of literature and their appraisal of it.
- ICBE-EMF – Very selective in choice of literature cited so as to support their opinions.
- Hinrikus – Builds on previous work by the same author that “coherent” RF fields can have effects at very low exposures, and to protect against these exposures should be limited to levels currently found in the environment. Martin noted that the proposed interaction mechanism was not supported by other reviews of possible mechanisms.
- de Vocht – Analysis of reviews, commentaries and opinion pieces on 5G and the nature of the authors (industry, activist or independent). Noted that “activist” authors were much less likely to consider study quality when drawing conclusions.
- Lin – Opinion piece wide open to debate.
- Traini – Found that over a 10 year period there was a high chance that people believing themselves to be EHS would change their minds, and vice-versa, suggesting that EHS is a transient condition.
- Iakovidis – Data from publicly available RF monitoring networks shows low exposures that have not changed significantly over time.
- Ramirez-Vazquez – Most studies found low personal RF exposures, but those looking specifically at levels near base stations found much higher values.
- Pinto – Careful and thorough review of in vivo studies of cancer, finding low or inadequate evidence for an effect of RF fields. Useful discussion of the NTP and Falcioni studies.
- Chartres – Looks at how scientific evidence can be used to produce more timely information about potential health risks.

- Bouisset – Did not find an effect of strong ELF fields on vestibular function.
- Pawelek – Reviewing evidence of effects of static and alternating fields on crops. Ken commented that the ARPANSA work on RF fields and flora/fauna was almost complete.

Other business

There was no other business

Conclusions

The Committee noted the reports received and advised that there was nothing in the research considered at the meeting that would lead the Committee to consider that any change in current policy was required.

Next meeting

The next Committee meeting is proposed for Thursday 21 September 2023 at 1 pm. Committee members expressed interest in having a face-to-face meeting.

Martin Gledhill
Acting Secretary

16 February 2023

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