Submission 033
Received 10/11/11

Ms Sharon Bird MP
Chair House of Representatives Standing Committee,
Infrastructure and Communications
Telecommunications Amendment (Enhancing Community Consultation) Bill 2011

Dear Ms Bird,

Submission: Telecommunication Amendment (Enhancing Community Consultation) Bill 2011

Thank you for the opportunity to make comment on this draft Bill.

At the moment, the Telecommunications Act (1977) differentiates between 'Low Impact' and 'High Impact'. This difference pertains to visual amenity only, not the number of antennae, or the strength of their emissions. 'Low Impact' facilities are those mounted on existing structures (such as commercial buildings, home units, etc) and are presently subject to substantially lower approval regulation than those mounted on purpose-built 'towers'. **It is strongly recommended this differentiation be removed and that all (a) telecommunication infrastructure installations required developmental approval by elected local authorities, and (b) be subject to full community consultation processes (see below).**

At the moment, 'community consultation' for proposed telecommunications infrastructure installation consists of 'notification' of the proposal to a small number of immediately adjacent neighbours. That 'notification' is presently not an invitation by the telco to enter into dialogue over the proposal, to seek community input or negotiate the most beneficial outcome. The present notification is solely to 'tell' a small number of people what is about to happen. There is, in fact, no 'consultation' at all. Further, that notification is issued by organizations who work as subcontractors to the primary telecommunications provider, thereby deliberately obfuscating the apparent responsibility and consequences. **It is strongly recommended that (a) notification of any proposed telecommunications facility be issued under the name of the telco, not under the name of some unknown subcontracting company; (b) that notification must go to every resident, owner or occupier within 500 metres of the proposed facility and be advertised in all local print and radio media as well as being advertised through Council-issued digital media; and (c) that 30 days notice to be followed by a minimum further 30 days of genuine dialogue and negotiation between those within the 500 metre zone and/or whose properties and lives may be materially or otherwise affected, where all options are tabled and investigated, and where the final arbiter is the local council authority.**

Telecommunication facilities are not presently subject to site restrictions. Yet there is an emerging body of evidence that long-term exposure to electro-magnetic radiation can be injurious to health. This is particularly the case for fetuses, infants and children whose smaller bodies serve to receive a relatively higher proportion of EMR. Further, unlike solar radiation, or

radio waves, the current Gen 3 and Gen 4 emissions have no prior history and the negative effects of this more complex radiation on human neurology and general health are just starting to emerge. Whilst the use of mobile phones is voluntary, exposure by the young, frail and vulnerable to constant bombardment of EMR from transmission facilities is involuntary. (See attached extracts from scientific paper published by the Academy of Management in 2008). **Therefore it is strongly recommended that the precautionary principle be adopted and that no telecommunications transmission facilities be permitted within 500 metres of any pre-existing child-care, pre-school, school or aged care facility.**

There is emerging concern about the strength of EMR emissions for telecommunications. Australia uses the International Commission for Non-Ionising Radiation Protection (ICNIRP) guidelines which are 4,500 times greater than those used in Salzburg, Austria. These ICNIRP guidelines were established in 1998, long before the introduction of Gen 3 and Gen 4 telecommunications which issue a far more complex electromagnetic radiation. Austria has an effective telecommunications system, leading to the question as to why Australia's emissions need to be that powerful. **It is strongly recommended that the Australian Government commission an independent study looking at functional emission strength in other nations, with a view to adopting emission guidelines based on current emission complexity and necessary strength.**

Ian Plowman,

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Extracts from

IDENTIFICATION OF RESEARCH NEEDS RELATING TO POTENTIAL BIOLOGICAL OR ADVERSE HEALTH EFFECTS OF WIRELESS COMMUNICATION DEVICES

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The committee judged that important research needs included, in order of appearance in the text, the following:

- Characterization of exposure to juveniles, children, pregnant women, and fetuses from personal wireless devices and RF fields from base station antennas.
- Characterization of radiated electromagnetic fields for typical multiple-element base station antennas and exposures to affected individuals.
- Characterization of the dosimetry of evolving antenna configurations for cell phones and text messaging devices.
- Prospective epidemiologic cohort studies of children and pregnant women.
- Epidemiologic case-control studies and childhood cancers, including brain cancer.
- Prospective epidemiologic cohort studies of adults in a general population and retrospective cohorts with medium to high occupational exposures.

• Human laboratory studies that focus on possible adverse effects on electroencephalography activity and that include a sufficient number of subjects.
• Investigation of the effect of RF electromagnetic fields on neural networks.
• Evaluation of doses occurring on the microscopic level.
• Additional experimental research focused on the identification of potential biophysical and biochemical/molecular mechanisms of RF action.

DOSIOMETRY and EXPOSURE

Research Needs

1. There is a need to characterize exposure of juveniles, children, pregnant women, and fetuses, both for personal wireless devices (e.g., cell phones, wireless personal computers [PCs]) and for RF fields from base station antennas including gradients and variability of exposures, the environment in which devices are used, and exposures from other sources, multilateral exposures, and multiple frequencies.
2. Wireless networks are being built very rapidly, and many more base station antennas are being installed. A crucial research need is to characterize radiated electromagnetic fields for typical **multiple-element base station** antennas and for the highest radiated power conditions with measurements conducted during peak hours of the day at locations close to the antennas as well as at ground level.
4. RF exposure of the operational personnel close to multi-element newer base station antennas is unknown and could be high. [25 Gerler Street] These exposures need to be characterized. Also needed are dosimetric absorbed power calculations using realistic anatomic models for both men and women of different heights.

EPIDEMIOLOGY

The committee identified significant research needs for a number of epidemiologic studies, particularly of children.

Adults

Research Needs

1. Prospective Cohort Studies. A prospective cohort study will allow for the evaluation of diverse outcomes, but a very large sample size and extended follow-up is required for rare outcomes or those that occur only with very long latencies.
2. Occupational Cohorts with Medium to High Exposure. None of the occupational studies to date have been based on an adequate exposure assessment. Much work is needed to identify occupations with potentially high RF exposures and to characterize them.

Children

Research Needs

1. Prospective Cohort Studies of Pregnancy and Childhood. Children are potentially exposed from conception through maternal wireless device use and then postnatally when they themselves become users of mobile phones.
2. Case-control Study of Children Mobile Phone Users and Brain Cancer. Owing to widespread use of mobile phones among children and adolescents and the possibility of relatively high exposures to the brain, investigation of the potential effects of RF fields in the development of childhood brain tumors is warranted.

HUMAN LABORATORY STUDIES

Research Needs

There are some significant research needs for human laboratory studies.
Due to the paucity of data from identically replicated experiments,…..

1. There is a need for experiments focusing on possible adverse RF effects identified by changes in electroencephalogram activity as well as a need to include an increased number of subjects.

Mechanisms

Research Needs

1. The effect of RF electromagnetic fields on neural networks is a topic needing further investigation. There are indications that neural networks are a sensitive biological target.
2. Evaluation of doses occurring on the microscopic level is a topic needing further investigation.

BASE STATIONS

Wireless networks are being built very rapidly, and many more base station antennas are being installed**.** Maintenance personnel may be exposed to fairly high electromagnetic fields emanating from base station antennas unless all of the typically four to six antennas mounted on the base station are turned off. For all of the base station antennas, the radiated power is on the order of several tens of watts, with higher powers being radiated at peak hours of the day. Though not as well characterized, particularly for multiple co-located base station antennas, the radiated RF fields for rooftops near base stations may also be fairly high. The quantification of SAR distributions from base stations is fairly minimal and those distributions are of concern for professionals involved in maintenance of base stations, building/roof maintenance personnel, and members of the public that live in close proximity to the antennas. There are also subpopulations among the employees, which might be exposed to greater amounts of RF energy than the average population. The characterization of these subpopulations is important.

Thus, the interest in base station exposures close to the antennas is driven by the potential health effects on antenna repair professionals and building/roof maintenance workers from relatively high, acute exposures, but the interest in exposures for members of the public that live in close

proximity to the antennas or for the public at the ground level at larger distances is motivated by the need to address public concern about very low.

Specific Absorption Rate (SAR) is a measure of the rate at which radiofrequency (RF) energy is absorbed by the body when exposed to an RF electromagnetic field. The most common use is in relation to cellular telephones. Base station antennas mounted on rooftops, on poles, or other elevated positions are the important intermediaries for cell phone communications.

Identification of Research Needs Relating to Potential Biological or Adverse Health Effects of Wireless Communication
http://www.nap.edu/catalog/12036.html

DOSIMETRY AND EXPOSURE 15 level, chronic exposures that are in fact similar to those from existing TV and radio antennas albeit at different frequencies. Most of the reported studies to date have involved one base station antenna **[NB!!]** and have used mostly homogeneous models, often of simplified circular or rectangular cross sections of the exposed human. One study involving a heterogeneous, anatomically based model consisting of diverse constituents, but still assuming a single antenna rather than typical arrangements of four to six antennas, is given in Gandhi and Lam (2003).

In other words, the studies to date do not pertain to the commonly used multiple-element base station radiators. Also, unlike highly localized cell phone RF energy deposition, the base station exposures involve much, if not all, of the body and would have slightly different radiator origins (for multi-element base stations) and may be multi-frequency as well, particularly if several different-frequency base station antennas are co-located.

Furthermore, because of the whole-body resonance phenomenon, the SAR is likely to be higher for shorter individuals **[ie children]** due to the closeness of the frequency/frequencies of exposure to the whole-body resonance frequency.

In addition to the rapid growth in the number of base stations since 1990, there has also been growth in other sources of RF radiation from cordless phones, wireless computer communications, and other communications systems. The last general survey of RF levels in U.S. cities was during the 1970s, and an updated survey of RF intensities would be useful background for future epidemiologic studies. There are many indoor wireless systems as well as cell phones, which are used both indoors and outdoors. Measurements of the differences in the exposures generated by the use of these devices in these environments will be of value in determining if there are any health effects resulting from exposures to low levels and intermittent sources of RF radiation.