

28<sup>th</sup> March 2002

15 Sewell Road  
TANAH MERAH  
QLD 4128

Mr Sebastian Roberts  
Acting General Manager  
Regulatory Affairs – Electricity  
ACCC  
P O Box 1199  
DICKSON ACT 2602

Dear Sir,

Re: REVIEW OF REGULATORY PRINCIPLE/  
TEST

Australia needs to have a regulatory system that includes the alternative of under-grounding, instead of excluding it without any analysis or cost benefit analysis.

I base my decision on the following:

There is now enough evidence associating exposure to electromagnetic fields emanating from power lines with ill-health to humans.

I strongly recommend that the power lines in Australia now be under-grounded at all times.

I base my recommendation on the following:-

1. **1979** Wertheimer and Leeper study. Wertheimer's study which bought worldwide attention to the link between EMF's and childhood leukemia was originally criticized as flawed but was repeated with better methodology by Savitz. Since the now famous Wertheimer and Leeper study to present day, extensive

epidemiological research into the human health effects of extra low frequency electromagnetic fields has been conducted.

2. **1999** Pooled analyses of worldwide studies by Greenland et al and Ahlborn et al. It is largely on the basis of these that the Doll 2 Report agreed to a doubling of the risk of leukemia associated with EMF's at 4mG.
3. **March 2001** The 'Doll Report' found 4mG is the level at which a DOUBLING of childhood leukemia risk has been seen. It found that there was a doubling of the risk of childhood leukemia at athermal exposures of just 4mG. Many scientists believe 4mG in 2001 was found as opposed to 2mG by the US EPA in 1991 as "background rates", such as cell phones, cell towers and computers are much higher than ten years ago.
4. **June 2001** The World Health Organization International Agency on Cancer Research (IARC) **formally designated EMF to be a Group 2B (Possible) carcinogen in humans, based on sufficient evidence for leukemia in children from powerline and other EMF sources.**

The IARC is regarded as the leading authority on cancer in the world. The IARC statement took into account all the previous studies of the last twenty-five years to come to its conclusion. Many new studies have been released since this statement. The IARC is the classification system for cancer and the California Department of Health Services statement is the second classification system and it incorporates diseases other than cancer. Since the research on both these summaries has been completed further research has confirmed that EMF's interplay in the commencement of illness from electromagnetic fields.

5. **Spring 2001** The publication of the Davis et al and the Levallois et al papers

DAVIS S, KAUNE W T, MIRICK D K, CHEN C and STEVENS R G, **2001**. Residential magnetic fields, light-at-night, and nocturnal urinary 6-Sulfatoxymelatonin concentration in women. American Journal of Epidemiology, 154 (7), 591-600.

LEVALLOIS P, DUMONT M, TOUITOU Y, GINGRAS S, MÂSSE B, GAUVIN D, KRÖGER E, BOURDAGES M. and DOUVILLE P, **2001**. Effects of electric and magnetic fields from high-power lines on female urinary excretion of 6-Sulfatoxymelatonin. *American Journal of Epidemiology*, 154 (7), 601-609.

6. **January 2002** the important miscarriage papers by De-Kun Li et al and Lee et al were released.

SHIDO M, NITTA H and KABUTO M, 2001. Magnetic fields (MF) of 50 Hz at 1.2 microtesla as well as 100 microtesla cause uncoupling of inhibitory pathways of adenylyl cyclase mediated by melatonin 1a receptor in MF-sensitive MCF-7 cells. *Carcinogenesis*, **22**, 1043-1048.

7. **August 2002** The Californian Department of Health Services presented its 8 year \$7million EMF Program Risk Assessment Report Summary for adult and childhood leukemias, adult brain cancer, Lou Gehrigs disease and it has found the strongest, link to date on potential health risks from EMF's.

Conducted by three scientists specialising in epidemiology the report concluded:

To one degree or another, all three of the DHS scientists are inclined to believe that EMF's can cause some degree of increased risk of leukemia, adult brain cancer, Lou Gehrigs Disease and miscarriage.

They strongly believe that EMF's do not increase the risk of birth defects, or low birth weight.

They strongly believe that EMF's are not universal carcinogens, since there are a number of cancer types that are not associated with EMF exposure.

To one degree or another they are inclined to believe that EMF's do not cause an increased risk of breast cancer, heart disease, Alzheimers Disease, depression, or symptoms attributed by some to a sensitivity to EMF's.

The Department of Health Services review found a stronger connection between EMF's and health risks than other international reviews have in the past. The Department of Health Services placed more faith in the quality of the epidemiological studies in human populations and gave more credence to them as opposed to other earlier reviews that have given more weight to laboratory studies (animal and test-tube studies), which have not always produced evidence of risk. The Department of Health Services reviewers considered that the failure of the laboratory studies to show effect could be explained.

8. **August 2002** Two laboratories in Austria and Germany have shown that power-frequency magnetic fields can induce DNA damage, disrupting genetic blueprints. Researchers at the University of Vienna and the University of Hannover, Dr Hans-Albert Kolb and Dr Niels Kuster bring to six the number of groups that have demonstrated this type of genotoxic effect which was first reported seven years ago at the University of Washington in 1995 by Drs Henry Lai and N P Singh who analysed the brain cells of rats that had been exposed in vivo to continuous 60Hz fields. Dr Kolb repeated the work of Drs Oswald Jahn and Hugo Rudiger
9. **August 2002** Preliminary results of a large epidemiological study in Japan show that children exposed to magnetic fields of more than 4mG from power lines and appliances had twice the expected rate of leukemia, in effect confirming the Doll Report.
10. **Calcium Ion Resonance.** A fundamental calcium ion resonance has been discovered in the vicinity of 50 hertz. One of the first biological mechanisms to be identified, confirmed and established is calcium ion efflux.

**ELF EMF'S resonate at 50.1 hertz, in the same vicinity as the intercellular and intracellular calcium ion signalling systems in humans. External ELF signals appear to induce alterations in the calcium ion signals that in turn send signals to the pineal gland that alters the melatonin/serotonin balance. ELF EMF's are affecting our neurochemistry in far reaching ways.**

The *Energex v Logan City Council v Others* Judgment in the Planning and Environment Court 2604 of 2001 established a precedent for Queensland and Australia that Energex initiated and settled on with Logan City Council and was subsequently passed as Judgment.

The Judgment in the Planning and Environment Court Appeal No 2604 of 2001 which Energex includes the following (Appendix C):-

- Limits are placed on the ultimate capacity of the substation site.
- Incoming and outgoing feeders are to be under-grounded.
- Any additional feeders not connected to the existing overhead network to be under-grounded.
- Certain power lines will be under-grounded with some lines tre-foiled with a minimum cover of 900mm.
- The power lines shall not exceed 4mG at **six** defined locations (not inside houses) except during a declared state of emergency, for a period not exceeding 14 days in total in a calendar year in cases of fault conditions of emergencies and when maintenance work is being undertaken provided the limit is not exceeded for a period not exceeding 7 calendar days in total in a calendar year.
- Logan City Council or, community representatives via council have the right to request verification that the average magnetic flux density is within the 4mG limit at the specified locations. The conditions specify the process to be undertaken to calculate the adjustment factor to be applied to the actual reading taken to calculate the average magnetic flux density. The request in writing can be sought every two calendar months for a written copy of the results of the calculation of the Average Magnetic Flux Density at the specified locations and a written explanation of the basis of the adjustments, sample calculation and such other information relevant to the calculation of the Average Magnetic Flux Density as is necessary to allow the results of the calculation of the Average Magnetic Flux Density to be independently verified by the Council

This decision, initiated by Energex, reflects the necessity in Australia to change the handling of power line structures. Due to the evidence of the latest studies it is fortunate and admirable that Energex strove to shield the residents of this area from ELF EMF'S by under-grounding.

ELF EMF'S are an environmental toxin as it is FACT in the medical world that electric lighting brings on earlier puberty. ELF EMF's appear to affect the endocrine system, as ELF EMF's appear to mimic or have a mimic-like activity similar to the sex hormones, in particular, estrogen.

This letter indicates that the public is becoming more aware and very well educated in this area and the time has come for the ACCC to ensure that the safety and health of the Australian citizens is paramount.

Under-grounding needs to be incorporated into the Regulatory Principle.

Yours sincerely,

Donna M Fisher

**DONNA FISHER**  
President  
Tanah Merah Action Group