

**IN THE MATTER OF The Resource Management Act
1991**

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**IN THE MATTER OF Applications by Transpower New
Zealand Limited for Resource
Consents and Notices of
Requirements for the Upper
North Island Grid Upgrade
between Whakamaru and South
Auckland**

Statement of Evidence of ROBERT JOHN McQUEEN

INTRODUCTION

1. My name is Dr Robert J. McQueen. I currently reside in Te Miro, near Cambridge, New Zealand.
2. I hold a PhD in Computer Science from the University of Waikato (1992), a MBA from the Harvard Business School, USA (1974), and a Bachelor of Applied Science (Electrical Engineering) from the University of Waterloo, Canada (1969).
3. My qualifications and experience directly relevant to these proceedings are:
 - (a) I am Vice Chairman of New Era Energy Incorporated (NEE), an Incorporated Society in New Zealand. NEE was set up in 2004, and incorporated in 2005, to investigate alternatives to the 400kV electricity transmission line proposed by Transpower and publicly announced in October 2004. NEE is comprised of a central co-ordinating organisation, New Era Energy Incorporated, and six affiliated groups located in

Manukau, Franklin, Waikato, Waipa, Matamata-Piako, and South Waikato. We aim to represent the concerns of approximately 10,000 people owning or residing on approximately 5,000 individual properties who will be impacted by the Transpower proposal. The nature of our activities since being organised have been to investigate the details and merits of the Transpower proposal, investigate alternatives to the proposal, prepare submissions when opinions are sought by Government agencies, and advise our members and other interested parties through meetings, a website, and other communication channels of the information and opinions we have accumulated. The positions I hold as Chairman of the Waipa NEE group, and as Vice Chairman of the central co-ordinating organisation are volunteer positions, and I receive no remuneration for my activities with these organisations. During the time since NEE was set up, I have undertaken extensive research into the economics, technologies, and environmental aspects associated with high voltage transmission lines, and in particular, the environmental and health impacts of the kind of HVAC transmission lines proposed by Transower.

- (b) I am a Professor of Electronic Commerce Technologies at the Waikato Management School, University of Waikato. I have been employed by the University since 1988, and have held the position of Professor since 2002. In that position, I am expected to keep myself familiar with the technologies associated with Electronic Commerce, and more generally, with the use of Information and Communication Technologies (ICT) used in business. In addition to teaching in this area at tertiary level, I am expected to undertake professional research, and have that research published in internationally recognised, refereed, peer reviewed journals. I have published 57 peer reviewed journal and conference research papers, and a number of other publications during my academic career.
- (c) My undergraduate Bachelors degree from the University of Waterloo was in Electrical Engineering. My specialisation in

my final year of that degree was electrical power systems, and my final year project was on the control of solid state rectification and inversion processes as used in the transmission of high voltage direct current (HVDC) electrical transmission lines.

4. My skills and experience particularly relate to conducting research on the use of technologies for business use, the processes for the business case evaluation of alternative technologies, business analysis techniques, and an engineering mindset approach which seeks to find optimum solutions to problems and situations which minimise cost and risk, and maximise benefits.
5. In addition to the submission originally made to the Board of Inquiry (recorded as submitter 1076) which I wish to speak to, one of the main areas of my oral evidence will be on the health impacts of EMFs for those living under, or close to, large HVAC transmission lines such as that proposed by Transpower.
6. While I am not a practicing or published academic researcher in the area of Health Effects of EMF, I feel as a published academic in a different field, with a PhD, I can understand the processes of publishing refereed research, and can speak to the important issues underlying the debate on whether a linkage between EMFs and Health Effects has been proved.
7. As a result of my involvement with New Era Energy since October, 2004 in representing the interests of landowners and other community members who oppose the construction of the Transpower 400kV transmission line, I have reviewed many thousands of pages of documents and research papers about the health impacts of electricity transmission lines. My own status with respect to EMF health effects I would now describe as being a knowledgeable layman, but my oral evidence before the Board of Inquiry hearing will rest on, and refer to the published research of outstanding scientists, which have been included in the appendices to this statement.
8. Because the New Era Energy organisation, or myself personally, do not have the funds to call the international authors of these papers as witnesses, or fund their fees and travel to New Zealand to give

evidence in this hearing, I will rely on the attached copies of these published papers as my expert evidence, and speak to the findings in these papers.

9. The reference materials attached to this evidence are peer reviewed academic papers published by leading, reputable academic researchers in academic journals or conference proceedings of high professional standing. I will speak to these papers in my oral evidence before the Board of Inquiry.
10. I am sufficiently concerned about the environmental impacts of the Transpower proposal that I, and others, have decided to invest considerable time and personal energy in giving this evidence to the Board of Inquiry. The financial resources that we can bring to bear on having legal counsel to assist us to prepare and guide our evidence to this hearing is extremely limited, and are a tiny fraction of the tens of millions of dollars that Transpower has been able to apply in hiring consultants and lawyers to prepare and present their evidence. However, having the biggest pot of money to throw at a legal hearings process does not guarantee that the position held by Transpower is the correct one in the context of natural justice.
11. We hope the Board of Inquiry will consider this when balancing the highly professionally prepared evidence resources presented by Transpower, with the evidence and testimony presented by those of us who have undertaken to make simple, but passionate, from the heart submissions objecting to Transpower's proposal.
12. In the end, we hope that the Board of Inquiry will find that Transpower's proposed transmission line, and the associated resource consents and the notices of requirement they require to be approved by the Board of Inquiry, are so flawed to justify a decision by the Board to reject, rather than mitigate, Transpower's proposals. We seek that the Transpower applications before the Board be turned down in their entirety.

Appendices of Paper files attached to this statement of evidence, giving citation and filename of document.

a) Published peer reviewed journal or proceedings articles:

1. Li, De-Kun (2002). A population-based prospective cohort study of personal exposure to magnetic fields during pregnancy and the risk of miscarriage, *Epidemiology*, vol 13, pp. 9-20. (limiscarriage.pdf)
2. Draper, Gerald, Vincent, Tim, Kroll, Mary E., and Swanson, John (2005). Childhood cancer in relation to distance from high voltage power lines in England and Wales: a case control study, *British Medical Journal*, Vol 330, 4 June 2005, pp. 1290-1292. (draperbmj.pdf)
3. Dickenson, Heather (2005) The causes of childhood leukaemia (editorial), *British Medical Journal*, vol 330 4 June 2005, pp. 1279-1280. (bmj05editorial.pdf)
4. Lowenthal, R. M, Tuck, D. M and Bray, I. C. (2007). Residential exposure to electric power transmission lines and risk of lymphoproliferative and myeloproliferative disorders: a case-control study. *Internal Medicine Journal*, Vol 37, No 9, September 2007, pp. 614-619. (Lowenthal07.pdf)
5. Henshaw, Denis L and Reiter, Russel J. (2005). Do magnetic fields cause increased risk of childhood leukaemia via melatonin disruption? *Bioelectromagnetics*, Vol 26, No S7, pp. S86-S97. (henshaw05.pdf)
6. von Winterfeldt, Delfof, Eppel, Thomas, Adams, John, Neutra, Raymond, and DelPizzo, Vincent (2004). Managing potential health risks from electric powerlines: a decision analysis caught in controversy. *Risk Analysis*, Vol 24, No 6, pp. 1487-1502. (winterfeldt.pdf)
7. Milham, S. and Ossiander, E. M. (2001) Historical evidence that residential electrification caused the emergence of the childhood leukemia peak. *Medical Hypotheses*, Volume 56, Issue 3, Pages 290-295. (milham.pdf)
8. O'Carroll, M J (2003). If, when and how - PP for EMF. Proceedings of the WHO/EC/NIEHS workshop: Application of the Precautionary Principle to EMF Luxembourg, 24-26 February 2003. (ocarrolemf.pdf)
9. Beale , Ivan L., Pearce, Neil. E., Booth, Roger J., and Heriot, Sandra A (2001). Association of health problems with 50-hz magnetic fields in human adults living near power transmission lines. *Journal of Australian College of Nutritional & Environmental Medicine* Vol. 20 No. 2; Aug. 2001, pp. 9-12,15,30. (beale.pdf)

b) Other evidence documents:

10. Martuzzi, Marco and Tickner, Joel A. (2004) The precautionary principle: protecting public health, the environment and the future of our children. A Report containing a set of papers assembled for the World Health Organisation. (martuzzi.pdf)

11. Bell, Leonard, Rabinowitz, Peter, Baum, Carl, Gerber, Alan, Carpenter, David. (2004). Sworn evidence to the Connecticut Sitting Council, docket 272. (connecticut.pdf)

12. McQueen, Robert J, Smart, Robin and Bennet, Laura (2005). Proposed New Zealand EMF Health Standard for New Construction of Overhead High Voltage AC Electricity Transmission Lines. Proceedings of the EMF Health Issues Conference, July 3, 2005, Published by New Era Energy. (healthstandardfinal.pdf)