

BEFORE THE BOARD OF INQUIRY

IN THE MATTER of the Resource
Management Act 1991

AND

IN THE MATTER of applications for
resource consent and
notices of requirement
by Transpower New
Zealand Limited for the
North Island Grid
Upgrade Project

**STATEMENT OF EVIDENCE OF ANTHONY CYRUS MITTON IN REBUTTAL
FOR TRANSPOWER NEW ZEALAND LIMITED
(EMF/EPR)**

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Introduction

1. **MY** name is Anthony Cyrus Mitton. I wish to present rebuttal evidence to the statement of evidence of Mr Gary Orbell on behalf of Matamata-Piako District Council (**Submission number 1113**).

2. **MR** Orbell at paragraph 5.5 of his evidence, briefly refers to some issues associated with induced currents from electromagnetic fields. In particular, he is concerned with:
 - (a) compromises that land owners may have to make with respect to developing their land with extensive fence structures;

 - (b) reduced milk production as a result of induced currents in metal milk lines; and

 - (c) induced currents on buried metal pipelines.

3. I have covered item 2(a) in paragraphs 59, 115 and 116 of my first brief of evidence. I conclude that the transmission line is unlikely to compromise future land owners who wish to develop their land. Should the situation arise, any induced or coupled voltages on new or existing fencing can be resolved by suitable design and electrical isolation. Transpower is proposing to identify and assess fences on individual properties along the NOR route likely to be effected by EPR or induction. Practical mitigation measures, as indicated at paragraph 59 of my first statement of evidence, can be employed where necessary; these include, isolation of fence sections, earthing or relocating the fence.

4. **WHILE** stray voltages in dairy sheds are known to reduce milk production, I have stated in my first statement of evidence in paragraphs 146 and 147, that it is commonly found that the reason for this is leakage currents associated with poor earthing or equi-potential bonding of the dairy shed's 230V/400 V power supplies. In the unlikely situation that a stock fence running parallel to the transmission line carries a voltage close to or into a dairy shed, this voltage can be isolated by ensuring the fence is not electrically connected to the dairy shed or associated infrastructure.

5. I have not specifically covered bare buried metallic pipelines in my first statement of evidence. Any such induced voltages on bare buried pipelines will be significantly less (my calculations indicate 20% or less) than voltages on insulated pipelines (described in paragraphs 117 and 118 of my first statement of evidence). This is because bare pipelines are “continuously earthed” which limits voltage build-up.

Anthony Cyrus Mitton

1 May 2008