

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER of the Resource Management
Act 1991

AND

IN THE MATTER of a hearing by the
Canterbury Regional Council
Hearing Panel on the
proposed Canterbury Land
and Water Regional Plan

**STATEMENT OF EVIDENCE OF ANDREW JOHN McMAHON FOR
TRANSPower NEW ZEALAND LIMITED**

4 February 2013



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1. INTRODUCTION

Qualifications and experience

1.1 My full name is Andrew John McMahon. I am the Asset Engineering Stations Manager at Transpower New Zealand Limited (**Transpower**) and have been in this role since October 2012. Prior to that, I was a Senior Stations Engineer at Transpower since July 2008, and prior to that I held several roles in the United Kingdom Power Industry since 1990.

1.2 I have the following academic qualifications and professional memberships or affiliations:

- (a) Bachelor of Electrical and Electronic Engineering;
- (b) Chartered Electrical Engineer with the UK Engineering Council;
and
- (c) Member of the Institute of Engineering Technology.

Scope of evidence

1.3 In this brief of evidence, I:

- (a) introduce and describe the National Grid;
- (b) describe the nature of substations and how they operate; and
- (c) discuss issues associated with oil management within the context of Transpower's substations.

Code of Conduct for Expert Witnesses

1.4 I have read the Environment Court's code of conduct for expert witnesses and agree to comply with it. I have prepared my statement of evidence accordingly. I confirm that my evidence is within my area of expertise and that I have not omitted to consider material facts known to me that might alter or detract from my expressed opinions.

2. EXECUTIVE SUMMARY

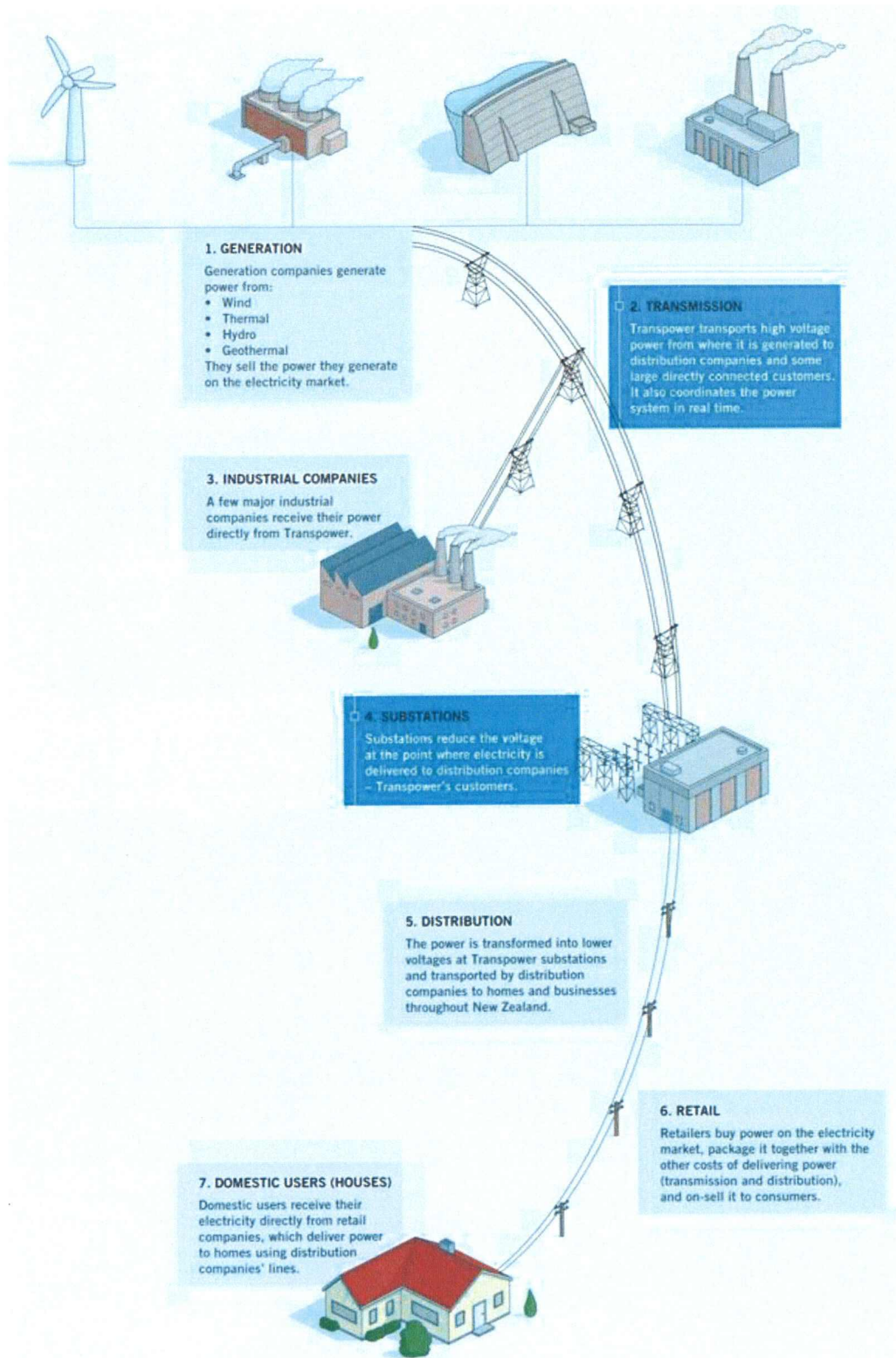
- 2.1** The key points of my evidence are that Transpower takes all practicable steps to minimise and contain oil leakage from our assets, including substations. The key reason for this is that having the correct level of insulating oil in our equipment is vital for the equipment to be able to operate.
- 2.2** There is only a very small chance of an oil spill from Transpower's equipment, and even if there is a spill, mitigation measures such as oil container bunds, oil containment tanks, oil treatment processes, oily water separators and float switches / high level alarms significantly mitigate the likelihood of any oil leakages into surrounding land or water.
- 2.3** Transpower also has a number of standards relating to oil services that it is required to comply with. For example, monthly and annual inspections are carried out at all of Transpower's substations by maintenance contractors.

3. TRANSPOWER, THE NATIONAL GRID AND SUBSTATIONS GENERALLY

- 3.1** Transpower is a State-Owned Enterprise. The Minister for State-Owned Enterprises and the Minister of Finance are our shareholders, on behalf of all New Zealanders. Transpower is the owner and operator of the National Grid. That means Transpower owns the assets – towers, lines and substations – that transmit electricity at high voltage throughout New Zealand. Transpower is also the System Operator, responsible for co-ordinating and managing the transmission of electricity across the National Grid.
- 3.2** Transpower's purpose is to keep New Zealand's electricity flowing and support a sustainable energy future through:
- (a) transporting bulk electricity from where it is generated by companies to cities, towns and some major industrial users;
 - (b) connecting with lines companies (like Vector and Orion) who package and deliver that power to the doorsteps of New Zealand's homes and businesses; and

- (c) managing New Zealand's power system (as the System Operator) so that electricity is delivered whenever and wherever needed, 24/7.

3.3 The diagram on the following page shows Transpower's position within the New Zealand electricity sector.



Transpower’s position within the electricity sector