IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF Submissions and further submissions by **TRUSTPOWER LIMITED** on the Horizons Regional Council's Proposed One Plan.

EVIDENCE OF KERRY JAMES WATSON

1. INTRODUCTION

1.1. My full name is Kerry James Watson. I am TrustPower Limited's ('TrustPower' or 'Company') Manager – Environment. I am therefore responsible for TrustPower's environmental portfolio, which sees me managing the Company's interests in resource consent applications, regional and district policy statements and plans, legislation, optimisation, Treaty of Waitangi matters, environmental compliance and hazardous substance programmes.

1.2. In respect of TrustPower's involvement in the Horizons Regional Council's Proposed One Plan, I have been responsible for considering the implications of the plan for TrustPower, and have overseen the coordination of the Company's input into the plan, including the lodging of submissions and further submissions.

1.3. I am authorised to present this evidence on behalf of TrustPower.

2. QUALIFICATIONS AND EXPERIENCE

2.1. I hold a Bachelor of Science (Ecology), a Diploma of Teaching from Waikato University and a Contemporary Certificate of Policing from Victoria University.

2.2. I was first employed by TrustPower in August 2007 as an Environmental Officer and was subsequently appointed Manager – Environment in

March 2008. Prior to working for TrustPower I was employed as a Detective Constable with the Criminal Investigation Branch of the New Zealand Police. I was a member of the New Zealand Police for more than 6 years. Prior to this I was a secondary school teacher for three and a half years. I have presented evidence on a number of occasions in both the District and High Courts.

2.3. It is important to note that this evidence is not technical planning evidence and is given in my capacity as an employee of TrustPower. Mr. Robert Schofield will present planning evidence in support of TrustPower's case.

2.4. Being a generator and retailer of electricity, TrustPower has a daily interaction with most aspects of the environment. This involvement is amplified by the number, geographic spread and nature of the Company's generation assets (all but the existing Tararua Wind Farm are hydroelectric power schemes ('Hydro Schemes')). One of my key roles is to manage the programmes stemming from the environmental portfolio in a manner which is appropriate and sustainable, while minimising risk and, like all companies, maximising shareholder return to equity.

2.5. In my current role I am managing a number of resource consent processes including:

(a) reconsenting the TrustPower's Patea and Matahina Hydro Schemes (located in the Taranaki and Bay of Plenty regions respectively);

(b) consenting the new Wairau (72.5MW) and Arnold (46MW) Hydro Schemes (located in the Marlborough and West Coast regions respectively); and

(c) consenting two new wind farms – the Kaiwera Downs (240MW) and Mahinerangi Wind Farm Projects (200MW) (located in the Southland and Otago regions respectively).

2.6. In relation to plan and policy development, I oversee the monitoring of over 60 district and regional councils throughout the country and note that at present TrustPower is actively involved in more than ten proposed plan or policy statement processes. I am also responsible for managing the

Company's involvement in, and response to, national policy initiatives such as the National Policy Statement on Electricity Transmission, the Proposed NZ Coastal Policy Statement, and the development of national guidance for Renewable Energy Projects, as well as National Environmental Standards including that currently proposed for Ecological Flows and Water Levels.

2.7. As stated in paragraph 1.2 of my evidence, I have been involved in the coordination of TrustPower's input into the Proposed One Plan which comprises the Manawatu-Wanganui region's Policy Statement, Regional Plan and Regional Coastal Plan. The purpose of this evidence is to:

(a) Provide a brief overview of TrustPower and its generation portfolio; and

(b) Describe TrustPower's Tararua Wind Farm (located in the Horizons region) and the significance of the Tararua wind resource.

3. OVERVIEW OF TRUSTPOWER

3.1. TrustPower is a home grown company listed on the New Zealand Stock Exchange and employing approximately 400 people nationwide. TrustPower remains a predominantly NZ owned company (more than 90% of its shares are NZ owned) with its head office in Tauranga.

3.2. The company grew from the Tauranga Electric Power Board, which was established in 1924. TrustPower was formed pursuant to the Electric Companies Act 1992, as part of the deregulation of the electricity supply industry. Subsequently, and pursuant to the Energy Reforms Act 1998, TrustPower elected to become an electricity generation and retail company.

3.3. With approximately 220,000 customers the Company is currently the third largest retailer of electricity in New Zealand.

3.4. The Company is committed to responsible and effective energy generation and to applying best industry practice to its activities. It acknowledges the importance of the environment to it continued operations, and has adopted a set of environmental polices which

encourage the practical minimisation of any adverse environmental impacts associated with its activities. As noted in paragraph 2.6 of my evidence TrustPower is also active in various environmental initiatives relating to its generation assets.

3.5. Three key features of TrustPower's generation philosophy and portfolio distinguish it from New Zealand's other large generators:

(a) A commitment to small to medium hydro and wind generation;

(b) A commitment to renewable generation from small and medium hydro and wind power facilities; and

(c) A commitment to local supply (so as to ensure that power is generated close to where it is consumed).

Generation Portfolio

3.6. Nationally, TrustPower's generation portfolio comprises one wind farm in the Tararua ranges and 18 hydroelectric power schemes consisting of 35 hydro stations.

3.7. In response to the apparent shortfall in electricity supply within New Zealand, TrustPower is actively pursuing a number of renewable generation development opportunities, which are mostly located near existing TrustPower-owned infrastructure or in locations with increasing demand versus supply pressure. In addition to the projects summarised in paragraphs 2.5(b) and (c) of my evidence, TrustPower has recently and successfully completed construction of the Deep Stream Hydro Scheme (located in the Otago region).

3.8. TrustPower is also involved in the development of renewable generation in Australia and is undertaking construction of the Snowtown Wind Farm in South Australia.

3.9. A schematic layout of TrustPower's Hydro Schemes is included as an **Attachment** to my evidence.

3.10. TrustPower's involvement in hydro generation traces back (through the Tauranga Electric Power Board) to 1968 when it was joint owner with the Tauranga District Council of the Kaimai Hydro Scheme.

3.11. TrustPower's hydro generation assets are generally of small to medium size with a wide (or distributed) geographic spread, occupying substantial areas of land which are often within environmentally sensitive areas. This geographic spread provides effective natural risk management as lack of rain or wind in one region, or even a single machine fault, will not affect the entire production.[1]

3.12. Distributed generation assets are generally recognised as being more efficient in terms of transmission losses, when compared to large-scale schemes and also relieve constraints on and help reinforce the national grid. On several occasions each year certain TrustPower Hydro Schemes are required to generate by the system operator in order to maintain the stability of the national grid. Smaller and distributed assets can however lead to higher operating costs if not competently managed.[2]

3.13. At this point I would like to note that in leading up to the preparation for this hearing TrustPower has been in discussions with other electricity generators with energy development interests in the Horizon's Region. While TrustPower's interests are closely aligned with other electricity generators, given the varying interests of the electricity generators in the Horizons Region, I believe that it is appropriate that they each present their own case.

4. TARARUA WIND FARM

Overview

4.1. TrustPower first entered the wind generation industry with the installation of a trial machine in the Kaimai ranges in the mid 1980s. However, the first serious entry was with the purchase in December 1999 of the newly commissioned Tararua Wind Farm, consisting of 48 660kW, three-bladed

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1 Compare for example the impact of the loss of the Taranaki combined cycle gas turbine rated at 400MW to a Tararua wind turbine rated at 3MW.

2 Obviously it costs less to operate 1 x 400MW machine compared to 400 x 1MW machines, perhaps spread over several schemes and regions.

wind turbines. The wind farm is located 10 kilometres north-east of Palmerston North, in the Tararua Ranges.

4.2. In May 2004, TrustPower completed construction of Stage II of the wind farm, which saw the erection of 55 additional turbines of the same model. Stage II was successfully completed on time and under budget and has been performing ahead of expectations since then in terms of annual energy production for the realised wind resource.

4.3. TrustPower was granted the necessary resource consents for Stage III in 2005. Stage III, which was completed in August 2007, involved the construction of 31 additional 3MW turbines (or 93MW) capable of supplying about 43,700 average New Zealand households.

4.4. The Tararua Wind Farm is the largest in New Zealand at 160.98MW, producing some 620GWh/yr and 1.6% of New Zealand's annual generation volume. This is enough energy to supply nearly 80,000 kiwi households each year.

Significance of the Tararua wind resource

4.5. The Tararua Ranges are recognised internationally as having an outstanding wind resource. More particularly, with an average wind speed of close to 10m/s at hub height, Stage I & II of the Tararua Wind Farm has a life to date capacity factor[3] of approximately 45%, making it one of the most efficient wind farms in the world.[4] In November 2006, the wind farm achieved a 71% capacity factor. When compared with Europe and US accepted capacity factors of 30% and 35% respectively, it is clear that the Tararua Wind Farm is a well-managed and efficient wind generation facility.

4.6. To put capacity factors into perspective, New Zealand's hydro schemes operate at an average capacity factor of around 52-55%, thus allowing

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3 The capacity factor is simply the wind turbine's actual energy output for the year divided by the energy output if the machine operated at its rated power output for the entire year.

4 The 2003 issue of WindStats (a quarterly international wind energy publication with news, reviews on wind turbine production and operating data from over 12,000 wind turbines) stated that *"the Tararua wind farm in New Zealand looks to establish new records for annual capacity factor"*.

reserve capacity to assist with demand peaks and other system disturbances. The availability of this reserve capacity is one reason New Zealand is suited to large volumes of wind generation in the electricity system.

5. CONCLUSION

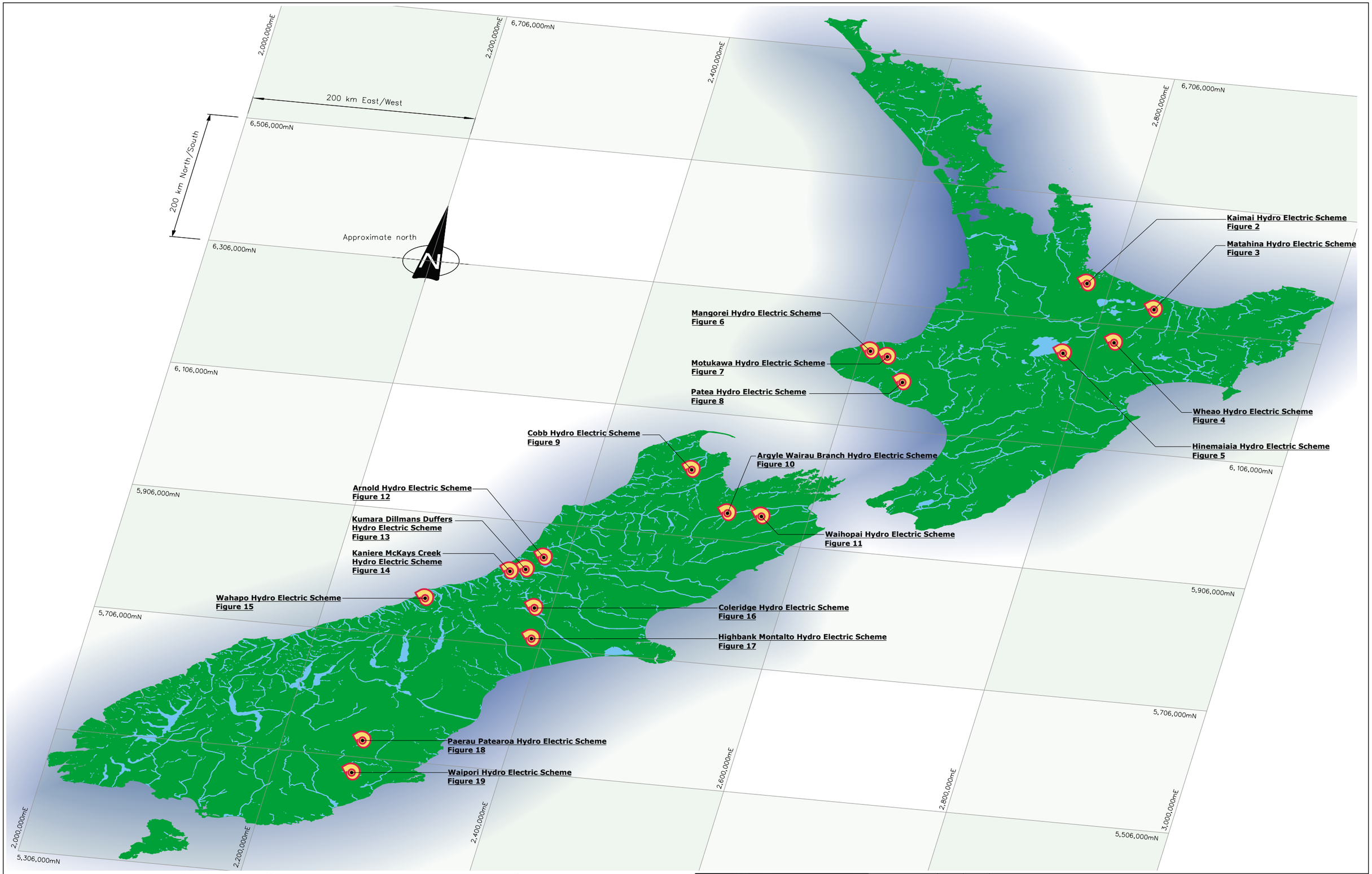
5.1. TrustPower remains committed to renewable, environmentally acceptable forms of electricity generation and therefore has a close interest in the development of objectives, policies and rules potentially impacting on its existing or future developments in the Horizons region.

5.2. While TrustPower is generally supportive of the intent of the Proposed One Plan, some aspects of the plan have the potential to adversely affect TrustPower's interests in maintaining and enhancing efficient renewable electricity generation. These will be further addressed throughout the hearing of TrustPower's submissions on the plan over the coming months.

Kerry James Watson
Manager – Environment, TrustPower Limited
17 June 2008

Attachment

TrustPower's Hydro Schemes



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LEGEND

- Road
- Stream or river
- Lake

TrustPower

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Environmental & Engineering Consultants
Auckland
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TrustPower Ltd

Resource Consent Compliance Key Figures Scheme Sites in New Zealand

Schematic Layout

FIG. No. Figure 1

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