

**IN THE MATTER**

of the Resource Management Act 1991

**AND**

**IN THE MATTER**

of submissions and further submissions by TRUSTPOWER LIMITED to the Board of Inquiry on the Proposed National Policy Statement for Renewable Electricity Generation

**RYAN DOUGLAS PIDDINGTON**

**Introduction**

1. My full name is Ryan Douglas Piddington. I am employed by TrustPower Limited ('TrustPower') as a Senior Environmental Officer and am based at the Company's head office in Tauranga.
2. I am authorised to present this evidence on behalf of TrustPower.

**Position, Qualifications and Experience**

3. I am a qualified Environmental Scientist, having graduated from The University of Brighton, United Kingdom, with an Honours Degree in Environmental Science in 2004. I have been employed with TrustPower as an Environmental Officer since May 2005 and as a Senior Environmental Officer since September 2008.
4. In this position I am responsible for, amongst other things, monitoring TrustPower's Compliance Management System, coordinating TrustPower's response to resource consent applications lodged by others and leading several large resource consent processes, including the reconsenting of 3 hydroelectric power schemes on the West Coast of the South Island. I have also been involved in the consenting of the Kaiwera Downs Wind Farm ("KDWF") through 2007 and 2008. In respect of the KDWF project, I had the responsibility at TrustPower for coordinating a comprehensive programme of consultation with interested parties, stakeholders, Tangata Whenua, the public generally, the relevant consent authorities, and with submitters. In addition I have been involved in a number of Regional and District Plan Variations and Change processes and am familiar with the Resource Management Act 1991 and the processes and procedures involved with the same.
5. Prior to working at TrustPower I was studying to achieve my qualifications in the United Kingdom
6. Having worked for TrustPower since May 2005, I have a very good working knowledge of the Company's operations, generation assets and strategic direction.

7. It is important to note that this evidence is not technical planning evidence and is given in my capacity as an employee of TrustPower. Gavin Kemble of Ryder Consulting Limited will present planning evidence in support of TrustPower's case.

#### **TrustPower Limited**

8. Being a generator and retailer of electricity, TrustPower has 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 Taranaki 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 that is appropriate and sustainable, while minimising risk and (like all companies) maximising shareholder return to equity.
9. TrustPower is, or has recently been, involved in a number of resource consent processes including:
  - (a) reconsenting the TrustPower Patea and Matahina Hydro Schemes (located in the Taranaki and Bay of Plenty regions respectively);
  - (b) the newly consented Mahinerangi and Kaiwera Downs Wind Farms (located in the Otago and Southland regions respectively); and
  - (c) consenting of the new Wairau (72.5MW) and Arnold (46MW) Hydro Schemes (located in the Marlborough and West Coast regions respectively).
10. In relation to plan and policy development, TrustPower is involved in the monitoring of over 60 district and regional councils throughout the country. TrustPower is presently involved in more than ten proposed plan or policy statement processes. The Company also has extensive involvement in central government policy initiatives such as the Proposed National Policy Statement for Freshwater Management, the Proposed NZ Coastal Policy Statement, as well as National Environmental Standards including those currently proposed for Ecological Flows and Water Levels.
11. The purpose of this evidence is to:
  - (a) Briefly describe TrustPower and its generation portfolio; and
  - (b) Provide comments and examples that illustrate TrustPower's position regarding the proposed NPS.

#### **Overview of TrustPower**

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

13. The Company grew from the Tauranga Electric Power Board, which was established in 1924. TrustPower was formed pursuant to the Energy 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. The Company is currently the third largest retailer of electricity and the fifth largest electricity generator in New Zealand, with approximately 220,000 customers.
14. 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 its continued operations, and has adopted a set of environmental policies which encourage the practical minimisation of any adverse environmental impacts associated with its activities.
15. 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**

16. TrustPower's generation portfolio, which it both owns and operates, is derived solely from renewable energy sources. Nationally, the Company's portfolio comprises the southern hemisphere's largest wind farm (Tararua) and 19 hydroelectric power schemes. A schematic layout of TrustPower's Generation Schemes is included as an Attachment to my evidence.
17. TrustPower's hydro generation assets differ from a number of other large electricity generators in that its assets are typically small to medium in scale and output with a wide (or distributed) geographic spread throughout the North and South Islands. 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.
18. 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 TrustPower's hydroelectric power schemes are required to generate by the System Operator in order to maintain the stability of the national grid.
19. The value of TrustPower's generation assets are inherent within its resource consents. In particular, within the Company's water permits for its hydroelectric power generation

schemes. Altogether, TrustPower has 481 resource consents and 3100 resource consent conditions that it must comply with.

20. 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.

#### **Overview of TrustPower's Position on the Proposed NPS**

21. TrustPower supports the vision and objective of the proposed NPS, however as currently drafted, the Company considers that it will unnecessarily restrict hydroelectricity generation development and enhancement projects in New Zealand. TrustPower considers that the proposed NPS may also create additional impediments to the re consenting and / or development, expansion or enhancement of TrustPower's hydroelectric power generation assets.

#### **Comments on the Proposed NPS**

##### Objective

22. TrustPower supports the Objective of the proposed NPS, and seeks its retention, with slight amendment, as discussed in the evidence of Gavin Kemble.

##### Policy One

23. While supportive of Policy One, TrustPower considers that this Policy could be strengthened by increasing or further clarifying the list of benefits associated with renewable electricity generation. The following paragraphs include some examples of the benefits that TrustPower's renewable generation activities induce.
24. On a day to day basis, TrustPower's generation schemes employ approximately 50 people. Their salaries can be considered as direct expenditure that is retained in the local economy, in addition to any operational spending on purchases from local and national suppliers and service providers.
25. Construction of new generation schemes can typically employ in the vicinity of 100 people over the course of a year, again with flow on expenditure effects. TrustPower's recently completed Deep Stream Hydroelectric Power Scheme was built with a 100% New Zealand labour force. People from around New Zealand were involved in environmental, engineering and construction disciplines. There were a total of 15 contracts over the construction period resulting in the employment of between 40 and 70 people at any one time.
26. Further to this, the Deep Stream Hydroelectric Power Scheme is an example where a reduction in the reliance on imported electricity and associated transmission losses has

been achieved. The effect of this is to improve security of supply for Dunedin and the surrounding area.

27. TrustPower's Cobb Hydroelectric Power Scheme, located in the Tasman area, is capable of supporting the top of the South Island during maintenance of the national grid thus providing security of electricity supply to local consumers.
28. TrustPower's proposed Wairau Valley Hydroelectric Power Scheme has been designed to allow Marlborough, and neighbouring Nelson, to be more self-sufficient in terms of electricity supply. This will lead to a reduction in the reliance on transmission lines carrying electricity into the region, as the majority of electricity in the area is currently imported. Due to the transmission lines being heavily loaded, nearly 20 percent of the peak power transmitted from the lower South Island is lost. The operation of the Wairau Valley Hydroelectric Power Scheme will help alleviate some of these losses.
29. TrustPower also notes that land associated with renewable electricity generation can often continue to be used and developed in accordance with its previous land use. For example a rural wind farm development, or canals utilised for hydroelectric power generation will not prevent an existing agricultural use from continuing, although the scale of the agricultural activity may be reduced. TrustPower's Tararua Wind Farm, for example, is now fully integrated with the underlying land use (farming). The establishment of this wind farm did not fundamentally change the productive capacity of the land, as farming operations have continued in much in the same way as occurred previously.
30. As a long standing totally renewable generator our generation portfolio plays an important role in ensuring that New Zealand's energy is supplied from some of the cleanest and most sustainable sources in the world. TrustPower has a number of picturesque hydrogeneration lakes throughout the country which we believe enhance New Zealand's reputation as a clean, green tourist destination. TrustPower is committed to the development of renewable generation sources and the reduction of CO2 emissions.
31. TrustPower has received carboNZero certification in respect of its generation activities and corporate operations, meaning that the New Zealand based business activities of generating and retailing electricity do not contribute to the build-up of greenhouse gases in the atmosphere. The carboNZero certificate is issued by Landcare Research and independently audited by PricewaterhouseCoopers.
32. TrustPower's renewable generation development program supports the government in meeting its international climate change obligations by displacing fossil fuel generation, therefore reducing New Zealand's greenhouse gas obligations under the Kyoto Protocol.

### Policy Two

33. TrustPower agrees that renewable electricity generation projects are often constrained by the various factors set out in Policy Two. However, the Company also considers that securing access to land is a fundamental issue that can constrain the development of renewable electricity generation. TrustPower notes that barriers to access, particularly with respect to conservation estate land often present significant impediments to renewable electricity development and enhancement proposals, sometimes even preventing them from being pursued altogether.
34. By way of an example, in 1999 TrustPower attempted to progress a hydroelectric power scheme in the Dobson Valley (West Coast). If developed the Dobson Scheme would have created a reservoir within the Card Creek Conservation Estate. The status of the land presented a significant impediment to the development of the Dobson Scheme. In this respect, a comprehensive ecological assessment found that the portion of the Conservation Estate to be inundated supported limited values of note. After several failed attempts to secure access to land, some of which included extremely generous land swap proposals that would have generated a net environmental gain, TrustPower was forced to conduct a comprehensive design review, eventually deciding to advance an alternative proposal in 2004 (being the proposed Arnold Valley Hydroelectric Power Scheme).
35. It is worth noting that even the alternative proposal was not devoid of land access challenges. In this respect, the preferred headpond location for the Arnold Scheme was situated on Conservation Estate. Although the impact footprint of the headpond was found to induce an insignificant adverse impact on the environment, TrustPower ultimately submitted resource consents for an alignment outside of Conservation Estate. Its experience with the Dobson Scheme was, at least in part, the reason for this decision. The most optimal design would have seen the headpond extend onto the Conservation Estate.
36. Land access difficulties were also encountered during TrustPower's Mahinerangi Wind Farm consent application process. TrustPower had originally applied to the Dunedin City, Clutha District and Otago Regional Councils for Resource Consents to build a 300MW wind farm on a mix of private and Dunedin City Council owned land. Concerns were raised by Dunedin City Council in respect of environmental impact in relation to tussock and water supplies involving the land owned by Dunedin City. TrustPower therefore decided to apply only for consents related to developing the wind farm on private land, for which it already had signed landowner agreements. This had the effect of reducing the potential installed capacity of the wind farm by 100 MW.
37. TrustPower recognises that land access is not governed by the Resource Management Act 1991 (the 'Act' or 'RMA'). However, the Company notes that the impediments to access of such land must be recognised and addressed by the Crown. TrustPower suggests that the Crown should advocate in support of land access, or at the very least

ensure that barriers to access are not compounded by restrictive regional and district planning document provisions.

Policy Three

38. TrustPower considers that Policy Three should be deleted in its entirety. While TrustPower seeks to avoid or minimise adverse effects as far as practicable, it is inevitable that some level of adverse effects are created with its hydroelectric power generation schemes, some of which are not reversible.
39. TrustPower owns and operates a number of hydroelectric power generation schemes that have been operating for more than 100 years and could continue to operate well into the 21st Century. For example, the Mangorei Hydroelectric Power Scheme was commissioned in 1906, the Kaniere Hydroelectric Power Scheme in 1911, and the Coleridge Hydroelectric Power Scheme in 1914. Each of these schemes are still in operation today. It is therefore considered that although it is more difficult to reverse the adverse effects induced by hydroelectric power generation infrastructure, the long life of such assets, and therefore the lower utilisation of resource to build, should be recognised when considering renewable generation technology as a whole.
40. If implemented, this Policy could amplify project development costs by making consent more difficult to argue for, and ultimately affect ability to obtain viable resource consents and consent conditions for hydroelectric power generation proposals.

Policy Four

41. Some confusion has developed over the intent of Policy Four. In TrustPower's submission, I elaborated on the issues that TrustPower considered to be of relevance if the Policy was to be implemented on the basis of specific sites and energy sources being identified within planning documents. If this interpretation is correct, TrustPower considers that unless carefully implemented, this will lead to preference being established for existing technologies or methods and such an outcome would be neither justified, or in accordance with the proposed NPS.
42. By way of example, it was only during the late 1990's that wind farms became commercially viable forms of electricity generation in New Zealand. Today, energy from wind generation makes up approximately 2.5% of New Zealand's annual electricity generation. It is therefore important that the proposed NPS does not rule out technologies and methods that, while not presently viable, may become viable in the future.
43. I would further wish to emphasise that planning documents which identify areas of significance are helpful in the identification and evaluation of potential development sites. Situations in which no such guidance is provided create considerable consenting risk and result in protracted and costly resource consent processes. During the consenting process for TrustPower's Deep Stream Hydroelectric Power Scheme, there

was considerable debate over the ecological value of the area to be inundated. Such lengthy debate could have been avoided had there been greater guidance in the planning documents in terms of significant or sensitive sites.

44. I have subsequently been informed that there is a differing interpretation of Policy Four. This alternative interpretation is that the Policy intends to enable the generic activities undertaken by generators associated with the identification and assessment of potential sites across the district / region, as opposed to identifying specific sites and energy sources. TrustPower would be much more accepting of such a policy provided it is drafted in a clear and concise manner.

#### Policy Five

45. TrustPower supports the intention of Policy Five and notes that such a Policy may go some way to encouraging developers to pursue small-scale electricity generation proposals, which due to their very nature can be costly to scope, consent and construct. By way of example, to scope, consent and construct TrustPower's Deep Stream Hydroelectric Power Scheme cost roughly \$25 million.
46. However the definition of 'small and community scale distributed renewable electricity generation' as being projects that have an installed electricity generation capacity of less than four megawatts is unnecessarily restrictive and not consistent with that promoted by the New Zealand Electricity Market. Under the Electricity Governance Rules 2009, 10MW is referred to as the threshold for 'small generation' and any generation below this threshold does not have to be offered into the electricity market to receive market price. Above this threshold, generators must complete market registration, reconciliation, as well as incur a number of compliance responsibilities and costs. In effect, the Electricity Market has essentially removed regulatory barriers for generation of less than 10MW and the same enabling approach should also be applied to consenting processes. It is also difficult to understand the environmental rationale for the establishment of the four megawatt threshold.
47. To achieve consistency with the New Zealand Electricity Market, it is suggested that small-scale projects be defined as projects that have an installed electricity generation capacity of 10 megawatts, or less. Further, it is considered that a 10 megawatt threshold is more defensible when the likely environmental effects of Scheme's exceeding 10 megawatts are considered.
48. TrustPower also suggests that Policy Five should be expanded to require local authorities to recognise the national significance of all (large and small-scale, new and existing) renewable electricity generation proposals when notifying their plan changes, proposed plans or variations as required under this Policy. TrustPower considers the cumulative benefits of small to medium scale proposals are nationally significant (approximately 20% of renewable generation capacity is from plants of 100MW or less)

and the embodiment of the objective of the proposed NPS within local planning documents is more likely to increase the general awareness of the NPS.

*Additional Comments*

49. While the proposed NPS goes some way to promote the benefits of renewable electricity generation it should be extended to specifically include statements regarding existing renewable electricity generation infrastructure and the consenting and / or enhancement of the same.
50. TrustPower has been through a number of consenting projects, and is currently consenting two of its existing schemes, being the Matahina and Patea Hydroelectric Power Schemes. TrustPower notes that it is becoming an increasingly difficult, time consuming and costly process to consent existing infrastructure.
51. In this regard, the consenting processes for the Matahina and Patea Hydroelectric Power Schemes (which are medium size hydro schemes in the national context) have cost the Company millions over a timeframe of approximately five years, and this is only up to the council hearing stage. Smaller schemes can take just as long. TrustPower's 3MW Wahapo Hydroelectric Power Scheme, which was consented on a non-notified basis, took approximately four years to have its consents renewed and cost hundreds of thousands.
52. Existing infrastructure, therefore, faces the same impediments as new infrastructure, despite many of New Zealand's existing schemes (in particular hydroelectric power generation schemes) being in existence for some time and having known positive and negative effects.
53. Although TrustPower is not aware of any situation where resource consents sought for existing renewable electricity infrastructure have been declined, the conditions upon which consent is granted are almost always more restrictive. Some examples where the values of its existing assets have been reduced as a consequence of the consent renewal / consenting processes are set out in the following paragraphs.
54. The impact of the consenting process at the Motukawa Hydroelectric Power Scheme is a good example. The Motukawa Scheme is located in Taranaki. It has an installed capacity of 4.8 megawatt and an average annual output of 22 gigawatt hours. While its output is modest, it is an exceptional example of small-scale, distributed generation. The consent renewal process reduced the Scheme's output by some 6-7% percent through the imposition of further environmental enhancement measures. TrustPower's expert evidence questioned the need for many of the environmental enhancement measures that were ultimately imposed and the Company remains of the view that there is limited justification for many of the measures imposed. Having, however, expended significant monies on the renewal process, TrustPower determined that it would not appeal the consents issued. Indeed, the Scheme was not of a size that the cost of an appeal could be easily justified.

55. Further examples of where the consent renewal process has reduced the value of TrustPower's generation assets include the Branch Hydroelectric Power Scheme where the imposition of a flow share regime (presently being trialled) could result in an 8% reduction in output, the Waihopai Hydroelectric Power Scheme where there was a 4.2% reduction in output, the Waipori Hydroelectric Power Scheme where there was a 1.2% reduction in output and a reduced ability to generate during national and regional power shortages, and the Hinemaiaia Hydroelectric Power Scheme where there was a reduced ability to meet peaks in electricity demand.
56. Conversely, the Cobb Hydroelectric Power Scheme which was reconsigned during 2004 was granted consents which placed no limitation on output and also allowed for the capacity of the Scheme to be increased. The Cobb Scheme reconsigning process is a good example of increasing the efficiency of an existing physical resource and it is my view that recognising the potential of existing energy resources should be encouraged through planning and policy instruments.
57. In order to assist with the processing of resource consent applications associated with existing hydroelectric power schemes, to save unnecessary debate, and to reduce the level of uncertainty faced, TrustPower considers that decision-makers should be guided to have particular regard to the existing environment. This should be defined as '*the environment that exists with the electricity generation infrastructure in place at the time the application is made*'. This definition is confirmed by case law and, while frequently challenged, it is not necessary to relitigate the definition here.

### **Conclusion**

58. The proposed National Policy Statement for Renewable Electricity Generation seeks to recognise the national significance of renewable electricity generation in New Zealand. TrustPower is supportive of the vision and objective of the proposed NPS, and the intent of the majority of the policies, excluding Policy Three. While TrustPower acknowledges the vision and objective of the proposed NPS, it is considered that a number of amendments are required in order for the proposed NPS to be of benefit to renewable electricity generation developers and operators.
59. As currently drafted, the proposed NPS will unnecessarily impede new and existing hydroelectric power generation schemes and the development and enhancement of the same in New Zealand. Without hydroelectric power generation options, it is not likely that the government's target of 90 percent renewable electricity generation by 2025 will be achieved.
60. I thank the Board for affording me the time to present this evidence.

**Ryan Douglas Piddington**  
**Senior Environmental Officer, TrustPower Limited**  
15 June 2009

Attachment

Schematic layout of TrustPower's generation schemes

