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ENERGY CONSULTING

Submission on:

Draft Powering Our Future

Draft New Zealand Energy Strategy to 2050

30 March 2007

Preface



Strata Energy Limited specialises in providing services relating to the energy industry and energy utilisation. The company, which was established in 2003, provides advice to clients through its own resources and through a network of associate organisations. Strata Energy's consulting division, Strata Energy Consulting, has completed work on a wide range of topics for clients in the energy sector in both New Zealand and overseas.

More information about Strata Energy can be found on www.strataenergy.co.nz

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Submission on the draft “Powering our Future” Draft New Zealand Energy Strategy to 2050

Thank you for the opportunity to provide comment and input into the development of an energy strategy for New Zealand. Strata Energy Limited (Strata Energy) considers that the completion and implementation of the combined Draft New Zealand Energy Strategy to 2050 (NZES) and the New Zealand Energy Efficiency and Conservation Strategy (NZECS) are vital for New Zealand’s economic and environmental well being. It is very important that time is taken to develop the strategies into documents that can be applied practically and take New Zealand towards a sustainable energy future.

Strata Energy provides consultancy services to energy stakeholders in New Zealand and overseas. The company’s directors have deep experience in the energy industry from both supply and utilisation perspectives. We are developing platforms that will enable distributed generators to gain easy, low cost access to the wholesale and retail electricity markets and thereby provide the option for them to remain independent. We are also developing capability in the identification and management of carbon footprints and the implementation of credible carbon offset measures.

Strata Energy is pleased to provide the following discussion on the Draft NZES.

Overview

1. The vision, defined in the NZES, towards a sustainable low emissions energy system is definitely heading in the right direction for setting New Zealand’s place in the challenging global response to climate change. Strata energy supports and shares this vision.
2. New Zealand is fortunate to have diverse sources of primary energy that provide a secure supply based on a high proportion of renewable resources. The draft strategy identifies these sources and their availability in the future. It will be important to develop an understanding of the appropriate balance of renewable and non-renewable primary energy sources that will move us closer to sustainability and yet ensure secure and reliable supplies.
3. There has been much discussion on the nation’s aging energy infrastructure and the need for supply chain investment. What hasn’t been fully acknowledged is the relative modernity of New Zealand’s electricity generation and the advantages that this will provide. Figures 1 and 2 below show the relative age difference of New Zealand’s electricity generation and that of Pennsylvania, New Jersey and Maryland (PJM).

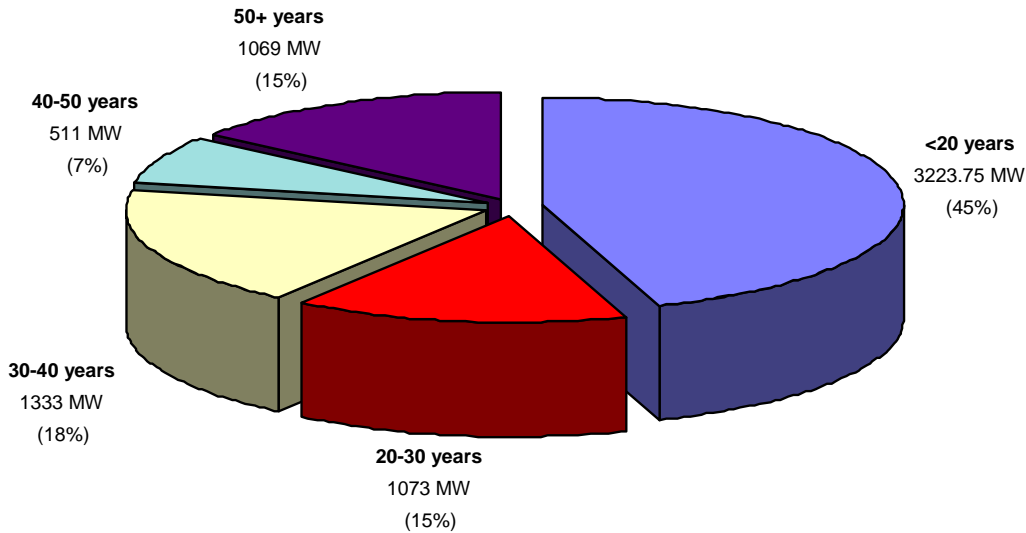


Figure 1: *Age of Generating Plants in New Zealand*

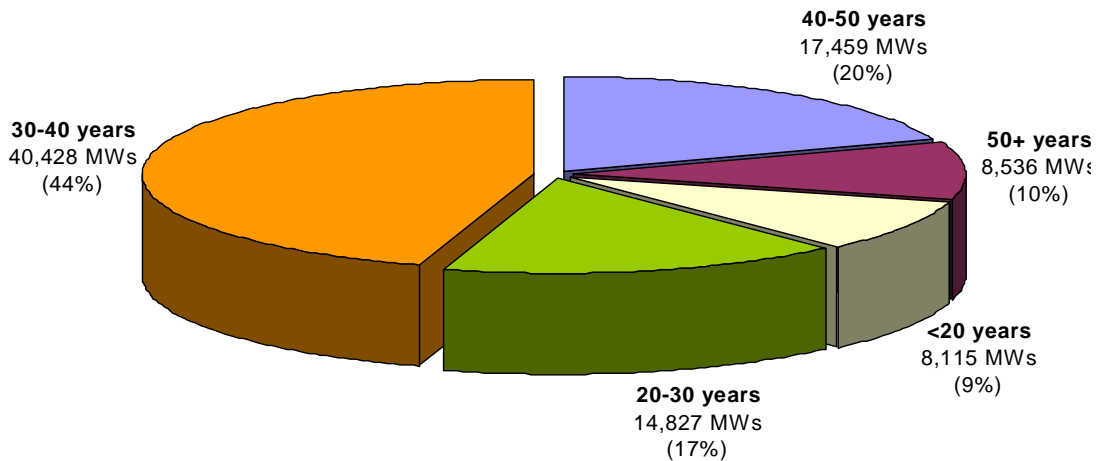


Figure 2: *Age of fossil fuel Steam Generators in PJM*

4. The above charts show New Zealand’s comparative advantage in terms of both age and renewable nature of our power generation. It also demonstrates the very real challenge facing other countries in terms of the need to replace old power plants and at the same time reduce emissions. Clearly, in PJM over 60MW of power generation plant will need replacement in the very near term. This is a problem New Zealand does not share. **It is important that the NZES identifies and gives recognition to the comparative benefits of New Zealand’s energy supply.**
5. Strata Energy considers that an important aspect of a national energy strategy is to set out how the existing benefits and advantages will be captured and used to deliver the wider national good policy objectives. As our wealth creating

industries face the increasing challenges of meeting climate change requirements of geographically distant markets, it will be important to support them by making available the advantages of location in New Zealand. This will include renewable energy supplies. **The draft NZES does not provide sufficient linkages with other key policies such as the Growth and Innovation Framework and energy supply.**

Reducing waste and increasing efficiency

6. The relatively low price of energy has produced a perception that it has low value and can be wasted. New Zealand along with all developed countries shares this vice¹. The full value of energy, including the cost to the environment, must be seen by consumers before the virtues of increased investment in sustainable and wise use of energy becomes established practice. Strata Energy supports the use of markets and economically efficient pricing to achieve this outcome. **The NZES should contain objectives that will channel our energy into productive wealth creating activities, minimise waste and reduce energy consumption in non-productive activities.**
7. An efficient market must incorporate the dynamics of both the supply and demand-side. New Zealand's electricity and gas markets have developed a supply-side bias, favouring the development of large supply-side investments over the smaller distributed demand-side response. Generally, big supply-side players have the resources to protect and promote their interests; it is the smaller players that need the support of Government through the NZES. **The NZES does not address the development of Distributed Energy Resources (DER) sufficiently and appears to consider that sustainability can be provided through the development of major renewable energy projects. This is not the case, sustainability and reliable supply can only be achieved by releasing the full potential of DER.**
8. Capturing DER will require significant policy, governance and market development to provide an efficient and effective framework. Currently, in the electricity market, responsive demand can only capture a proportion of the benefits it delivers. The distributed nature of these resources means that aggregation is required and our market operators have difficulty in accepting that the delivery of such resources has occurred². **The NZES does not provide sufficient 'teeth' to bite through the barriers that exist to DER.**

Climate change and low emissions

9. New Zealand has a rather unique situation due to its nuclear free policy, its geographical remoteness and the size and distribution of its population. It has a

¹ An example of wasteful energy use is the growing trend for the use of direct heating for external areas in both commercial and residential sectors. These include decking heaters and the heating of external terraces of cafes and restaurants.

² For example; generators get paid through the clearing manager for the electricity they generate and supply to the wholesale market but a provider of demand reduction (which also releases energy to the market) does not.

small number of major large scale industries and a relatively large number of small businesses. This means that management of emissions or 'carbon footprint' will be different to that of other developed nations. It is likely that a larger number of small initiatives and projects will be required to deliver results. The NZES needs to recognise this and provide guidance on how smaller projects will be aggregated and supported. **The draft NZES provides a menu rather than a meal and is lacking detail on analysis and practical guidance as to how sustainability and low emissions will be achieved in practice.**

10. Financial incentives will be required for low emissions projects access to incentives must be made for the large number of smaller projects required. Up to 2012, we are unlikely to need new technology break-throughs to make progress but need to ensure that money and resources to get the simple things in place are available. Such incentives should be encouraged to promote the training of trained people and development of insulation, fuel efficient vehicles, lighting and industry best practice programmes for motor applications and heating systems. **The NZES should set out the principles on which financial and other incentives will be based. These principles should include how support will be channelled to a large number of smaller projects and initiatives.**
11. For larger projects it is likely that partnership between the public and private sectors will be required. This will provide the step-change in accelerated activity required to make larger investments. Whilst the NZES provides an overview and expresses the desire for this to occur, it is lacking in detail. **Further development of the NZES should include extensive input of the private sector to develop workable and effective strategies that set out the framework for public/private investment in sustainable energy.**
12. The development of emissions trading markets will not wait for the completion of lengthy bureaucratic processes. It is becoming apparent that informal markets are developing rapidly. Such markets include financial contributions to carbon offset projects in order to offset such things as air travel. Given New Zealand's remoteness from its markets, the integrity of the offset mechanisms will be vitally important. **The NZES needs to develop an approach to offset mechanisms and how these can be used to channel finance into sustainable energy projects.**
13. People, through their consumer purchasing power, are the untapped resource in tackling climate change. It is important that people are given some clear direction in their choice of products, business actions and life-styles. The new concept of *Carbon Reduction* labelling, just launched in the UK, will have some major trade implications. **The NZES needs to provide structure and guidance on how carbon reduction will be promoted in New Zealand.**
14. Keys to success will include far more emphasis on measurement and verification of energy use linked to carbon emissions through advanced metering and monitoring. Also and targeting techniques with the focus on reporting a continual reduction in carbon emissions. **The NZES needs to develop a policy and guidance to support the development of measurement and reporting frameworks.**

15. New Zealand must start introducing some fundamental new thinking about a carbon constrained world and its implications. This needs to include the understanding of carbon footprints. **The NZES must have a whole of energy system approach (production, supply chain and utilisation) will be required rather than a focus on individual sectors or components.**

Capability to deliver NZES objectives

16. Currently, New Zealand has very limited engineering experience in both energy efficiency and renewable projects and what resources it has are fragmented and held in various companies and organisations. We need to think smartly on how to increase our capability over the next 5 years through up-skilling and demonstration programmes. **The NZES currently lacks detail on how this will be achieved.**

Summary

17. The draft NZES has provided a good platform for further development. It is important that time is now taken to produce a strategy that provides guidance and a framework that enables practical implementation. The process of finalising the strategy should not be rushed.
18. The NZES should identify and build on the benefits provided by New Zealand's energy resources.
19. The objective of sustainability will only be achieved if DER is fully utilised. Barriers to the development of DER must be identified and removed.
20. The global response to climate change is likely to be driven by public perceptions and markets rather than international political agreements. This will present opportunities and challenges to New Zealand's energy industry. The NZES must consider the issues presented by this dynamic situation.
21. To meet the objectives set out in the NZES, New Zealand will need to develop and retain key skills and capabilities. The NZES must provide a clear framework to achieve this over the long term.

Thank you for the opportunity to provide this submission. If you require further information, please contact us.

Yours sincerely

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