

**Submission to an application for resource consent under section
96 of the Resource Management Act 1991**

To: Northland Regional Council
Name: Ministry of Economic Development
Address: P.O. Box 1473, Wellington.

1. The Ministry of Economic Development (MED) supports the application of Mighty River Power Limited for resource consent to enable it to construct and operate a coal-fired power station at Ruakaka referred to as the Marsden B Power Station Re-powering Project, in light of its contribution to the national energy objective of enhanced security of supply, and as long as local environmental impacts can be appropriately avoided, remedied or mitigated.

2. The particular parts of the application MED supports

MED supports the application, to the extent that the Marsden B Power Station Re-Powering Project contributes to the Government's objectives for the energy sector.

3. The reasons for making this submission are:

The Marsden B Power Station Re-powering Project is aligned with one of the government's key energy outcomes; to improve electricity security of supply.

Contribution to Government's Policies and Objectives

As stated above, the proposed Marsden B Power Station Re-powering Project is aligned with one of the government's key energy outcomes; to improve electricity security of supply.

Note that it is not the government's role to decide which forms of generation should proceed or to choose between generation proposals. If a generation proposal can sufficiently mitigate its environmental effects, then the decision of whether or not to proceed will come down to commercial considerations.

Sustainable Development Programme of Action for Energy

The Sustainable Development Programme of Action is one of the Government's major overarching documents designed to guide and underpin policy development. Energy has been identified as one of the target areas for sustainable development because of its correlation to economic growth, potential environmental impact, and because both consumers and businesses are heavily reliant on its supply.

In '*Sustainable Energy: Creating a Sustainable Energy System*', which was released on 27 October 2004 and sets out a policy framework within which energy choices can

be considered going forward, the government identified the key properties of a sustainable energy system as being:

- a) reliable and resilient;
- b) environmentally responsible; and
- c) efficiently and fairly priced.

The government considers that the objective of environmental responsibility is addressed for local environmental impacts through the Resource Management Act obligation to avoid, remedy or mitigate, and for global climate change impacts through the government's national climate change policies which are described in more detail below.

The objective of efficient and fair pricing is progressed through creation and promotion of open markets for energy services.

This submission primarily provides information on the first objective, a reliable and resilient energy system, and the Ministry of Economic Development's assessment of the Marsden B Power Station Re-powering Project's potential contribution to this objective. A major objective of the programme of action for energy is to ensure that New Zealand consumers have a secure supply of electricity.

New Zealand's Energy Composition and Future Needs

Hydroelectric generation currently accounts for approximately two thirds of New Zealand's electricity generation and approximately 20% of the balance comes from gas-fired generation. New Zealand's electricity generation system can be described as a mixed hydro-thermal system where hydro energy is used as much as possible, dependent on lake levels, and thermal power stations run as necessary to make up the rest of the required supply¹.

However, New Zealand's energy composition is about to undergo significant change. With the run down of Maui and limited known alternative sources of indigenous gas, other forms of energy will likely be needed to fill the gap. The Ministry of Economic Development's Energy Outlook has projected that the rundown/depletion of the large gas fields will reduce the proportion of gas-fired generation from 21% in 2000 to 14% by 2010 and to 7% in 2025 (note there is considerable uncertainty around these projections). Furthermore, there is limited potential for new hydro developments, particularly on the scale of those built in the past.

Even with improvements in energy efficiency and changes in energy consumption patterns, new generation is likely to be needed in the short to medium term. While renewable forms of generation, such as geothermal and wind, are likely to make up a progressively increasing share of electricity capacity, generation from fossil fuels will be required for some time to supplement hydro production and manage variations in hydro output².

The document '*Sustainable Energy: Creating a Sustainable Energy System*', acknowledges that the availability of coal is a source of resilience in New Zealand's

¹ Ministry of Economic Development, *New Zealand Energy Outlook to 2025*, October 2003

² New Zealand Government, *Sustainable Energy: Creating a Sustainable Energy System*, October 2004.

energy system. The document states that with tight gas supplies and rising prices, large industrial users such as steel, wood and dairy processing may switch from gas to coal to secure reliable energy supply at a more stable price. The document also acknowledges that increased coal consumption, such as via cogeneration, would increase greenhouse gas and other emissions from the industries concerned and possibly foreclose investment in renewable energy options.

Ensuring security of electricity supply is a critical issue for all New Zealanders and for the government. There are two aspects to security of supply. Firstly, it is imperative to minimise the risk associated with dry years, and secondly to ensure that New Zealand has the generation capacity over the long term to meet the projected growth in energy demand.

Dry Year Risk

Heavy reliance on hydro-generated electricity leaves New Zealand vulnerable to the effects of dry years. 2001 was very dry in the South Island hydro catchments and 2003 was similarly severe, necessitating public electricity conservation campaigns. Dry years highlight the dependence of both consumers and industry on energy as a key element of infrastructure and, consequently, how essential security of supply is.

One of the considerable advantages of electricity generated by coal is that supply is not dependent on rainfall. The Marsden B Project could help ensure continued electricity supply for both New Zealand consumers and industry during future dry periods.

Growth in Energy Demand

The most recent *Energy Outlook* provided by the Ministry of Economic Development projects that the composition of New Zealand's energy supply and demand will change as the demand for energy increases, the Maui gas field declines and new technologies for the production, delivery and use of energy become more economically viable. It should be noted that several developments since 2003 mean that some of the Outlook's predictions, particularly for the supply side, are dated. In particular, the Outlook included Project Aqua, which would have delayed the need for more generation. Since the Outlook's publication, Meridian Energy Limited have announced that Project Aqua will not proceed.

The Energy Outlook considers a range of scenarios, all of which predict increased electricity demand, ranging from average of 1.2 percent per annum to 1.8 percent per annum over the period to 2025³. There is some evidence to suggest that in the shorter term, increases in demand may be higher than these figures. Analysis of Grid Exit Point data from 1999 indicates that electricity demand is currently increasing in the range of 2 to 2.5 percent on average per annum.

³ Ministry of Economic Development, *Energy Outlook to 2025*, October 2003.

Assumptions of the Energy Outlook's Reference Scenario:

- 2.5% p.a. GDP growth from 2007
- Oil prices rising from US\$20/bbl in 2004 to US\$25/bbl by 2020 and constant thereafter
- Constant exchange rate of NZ\$1.00 = US\$0.50 out to 2025
- Pohokura gas available from 2007 and Kupe from 2008
- New gas available from discoveries averaging 35 PJ p.a. for 2011-2013 and 60 PJ p.a. from 2014 onwards

Electricity efficiency and demand side management help to reduce demand for electricity. The Electricity Commission has as a key goal the efficient provision and use of electricity. According to the Government Policy Statement on Electricity Governance, the Commission should ensure it gives full consideration to the contribution of the demand side as well as the supply side in meeting the Government's electricity objectives.

The National Energy Efficiency and Conservation Strategy (NEECS) aims to move towards a sustainable energy future for New Zealand by promoting energy efficiency, conservation, and a transition to the use of renewable energy sources. A specific target of the NEECS is to improve energy efficiency by at least 20 percent by 2012. The Energy Efficiency and Conservation Authority (EECA) also has a demand response programme to identify the demand response potential that exists in the electricity market and how industry participants can work together to realise this potential.

It is nonetheless expected that demand for energy will continue to grow, particularly if strong economic growth continues. It is important that, as the means become available, New Zealand undertakes to ensure that we have the capacity to accommodate the growth in demand and to compensate for the likely decline in the availability of indigenous gas. The Marsden B Project would contribute to the increased generation capacity required to satisfy both. Mighty River Power estimate that the power station would be capable of generating about 2200 GWh per annum, which is approximately 5 percent of New Zealand's current electricity demand.

The Marsden B power station is also situated at an ideal location to improve the security of New Zealand's electricity system. Specifically the Marsden site is located north of the Auckland load centre and existing transmission lines at the Marsden site can take the electricity produced from the station to users in Northland and Auckland. This implies reduced pressure on the transmission lines south of Auckland which are nearing capacity. Transpower is currently planning a transmission upgrade between Otahuhu, in South Auckland and Whakamaru, north of Lake Taupo. The Marsden B power station would improve security of supply regardless of whether or not Transpower's upgrade proceeds. It is also likely to reduce transmission losses as it would reduce overall transmission flows.

Climate Change and Renewable Energy

The uptake of coal generation will have local, national, and international environmental effects. In considering consent applications, local authorities consider whether or not the environmental effects of a proposal can be avoided, remedied or mitigated, with one notable exception – the effects of climate change. The Resource Management (Energy and Climate Change) Amendment Act 2004 prevents councils from considering the climate change effects of discharges of greenhouse gases from industrial and trade premises when considering consent applications. Climate change effects are instead dealt with at the national level through the Government's climate change policy package.

As part of its climate change policy package, the Government has announced its intention to introduce an emissions charge from 2007 to manage the environmental effects of greenhouse gas emissions. The Marsden B Power Station would be subject to the charge. As such the national effects of greenhouse gas emissions will be addressed through the emissions charge and other components of the government's domestic climate change policy package.

Similarly, although the Marsden B Power Station Re-powering Project would not *contribute* to renewable energy objectives, it would be unlikely to materially foreclose renewable energy options, which are expected to continue to increase in line with the Government's objectives and the need for investment in a variety of generation options to meet the projected growth in electricity demand.

4. The Ministry of Economic Development may wish to be heard in support of its submission, if any clarification of its position is required.

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