

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

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

- 1. The Ministry of Economic Development (MED) supports the application of Meridian Energy Limited for resource consent to construct and operate a hydro energy development referred to as the Mokihinui Hydro Proposal in the Buller District. MED supports the application because it contributes to national energy objectives and as long as environmental impacts are appropriately avoided, remedied or mitigated.**

MED expects the Department of Conservation will submit on local environmental issues.

- 2. The particular parts of the application MED supports are:**

The whole of the application.

- 3. The reasons for making this submission are:**

MED considers that the Mokihinui Hydro Proposal offers benefits, by making use of a viable and renewable energy source, helping ensure security of supply through diversification in electricity production methods, and by generating electricity in a manner that avoids greenhouse gas emissions.

This submission seeks to ensure that the contribution Mokihinui would make to achieving the government's energy objectives is taken into account in the consent decision.

Renewable electricity's contribution to government policies and objectives

The government is committed to a sustainable energy system. New Zealand needs to respond to climate change and reduce carbon emissions from our energy production and use. We also need to ensure our energy systems can deliver secure, clean energy at affordable prices to support economic development.

In the past six years, the government has introduced a number of specific energy and energy-related policies and strategies that contribute to a more sustainable energy system. They include:

- the New Zealand Energy Strategy to 2050 (October 2007), which sets out a path to a sustainable low emissions energy system (addressed in more detail below);
- the New Zealand Energy Efficiency and Conservation Strategy¹ (October 2007)
- the introduction of an Emissions Trading Scheme (ETS) to address climate change. This is to be implemented progressively from 2008 to include all sectors of the economy by January 2013.

¹ Prepared under the Energy Efficiency and Conservation Act 2000.

- the Sustainable Development Programme of Action in 2003, which sets out principles for sustainable development policy and decision-making. Energy is one of four action areas identified in the programme;
- the Government Policy Statement on Electricity Governance², which outlines the overall objective for the electricity industry of ensuring that electricity is produced and delivered to all classes of consumer in an efficient, fair, reliable and environmentally sustainable manner and promoting and facilitating the efficient end use of electricity;
- amendments to section 7 of the RMA (addressed in more detail below);
- the preparation of a National Policy Statement on Renewable Electricity Generation; and
- the establishment of the Electricity Commission in 2003.

New Zealand Energy Strategy

In October 2007, the Government released the New Zealand Energy Strategy to 2050 (NZES). The NZES sets out the Government's vision of "a reliable and resilient system delivering New Zealand sustainable, low emissions energy services, through:

- Providing clear direction for the future of New Zealand's energy system;
- Utilising markets and focused regulation to securely deliver energy services at competitive prices;
- Reducing greenhouse gas emissions, including through an emissions trading scheme;
- Maximising the contribution of cost-effective energy efficiency and conservation;
- Maximising the contribution of cost-effective renewable energy resources while safeguarding our environment;
- Promoting early adoption of environmentally sustainable energy technologies;
- Supporting consumers through the transition".

As part of the Strategy, the government has set a target that 90 percent of our electricity be generated from renewable sources by 2025.

Mokihinui would contribute to the government's renewable electricity target. It would help New Zealand move towards a sustainable energy system by:

- securely delivering energy services at competitive prices;
- maximising the contribution of cost-effective renewable energy resources; and
- reducing New Zealand's greenhouse gas emissions.

This is discussed in more detail below.

Security and reliability at competitive prices

Maintaining security of energy supply at competitive prices is essential for a modern economy. Supply interruptions and steeply rising prices cause social stress and hardship.

Long-term security of supply requires:

² Prepared under the Electricity Act 1992.

- Building enough generation capacity to meet peak demands;
- Ensuring there is enough fuel to generate sufficient electricity at all times;
- Building and maintaining a transmission system to convey power from generation plants to consumers, particularly at peak times; and
- Making the most of cost-effective energy efficiency opportunities.

Mokihinui would contribute to security of supply, particularly for the West Coast region, by increasing generation capacity and ensuring there is enough fuel to generate electricity at all times.

Building enough generation capacity to meet demand

Demand for electricity is growing. Electricity demand is projected to grow at around 1.3 percent per annum over the period to 2030.³

Energy efficiency and conservation measures, along with technologies such as solar water heating, are vital and necessary parts of New Zealand's future energy mix. However, these measures and technologies will not be enough to offset the need for new generation in the short to medium term. There is a pressing need to build new generation capacity to meet this growth in demand.

New Zealand currently has around 6100 MW of renewable generation capacity, and 2700 MW of fossil fuel generation, providing around 40,000 gigawatt hours of electricity per year. Under current forecasts, electricity demand is expected to grow by around 24% by 2025, which would require approximately 3500 MW of additional generation capacity to maintain security of supply.

Mokihinui, with an expected maximum capacity of 85 MW, would contribute to the increased generation capacity required to satisfy demand, while reducing New Zealand's dependence on non-renewable energy sources.

Diversification of generation types and location is also important for ensuring there is enough fuel to generate electricity. One of the key advantages of hydro generation is that it uses a renewable energy source and has no fuel costs.

In the national context, Mokihinui would generate from a different hydrological region than other hydro generation sites. Hence, Mokihinui would represent a diversification of supply and so assist with security of supply.

Within the local context, peak electricity demand in the West Coast is approximately 65 MW. Generation is supplied by nine small West Coast power stations (with a total peak output of 13 MW) with the balance imported from other regions. Mokihinui Power Station, at a maximum of 85 MW, would contribute to electricity generation and satisfying future demand growth. Additional generation on the West Coast would also contribute to security of supply because supply to the West Coast would be less reliant on a long transmission network.

Competitive pricing

Fair and efficient pricing of energy should reflect the relative scarcity or abundance of energy resources, and the costs of production, distribution and use. The availability of historically low cost energy has been a key component of economic growth and development, and for maintaining a high standard of living for New Zealanders. It is government policy that energy prices should, in principle, reflect the full costs of supply, including environmental costs.

³ Ministry of Economic Development, *New Zealand Energy Strategy to 2050*, October 2007, p 72.

Electricity prices in the West Coast region are particularly high by New Zealand's standards. The lack of local generation means that electricity must be supplied from distant generation centres, with resulting higher than usual transmission losses. The Mokihinui Hydro proposal, if consented, would help alleviate these losses and improve reliability and security of supply for the region. While the exact effect on final prices in the region that the new generation would have cannot be readily forecast, the advent of local generation is likely to mean that the future cost of electricity on the West Coast should be more aligned with national electricity prices. Lowered electricity prices would help improve quality of life in the region, attract greater investment and contribute to economic growth.

Part of fair and efficient pricing is ensuring that cost-competitive forms of generation are brought into use in a timely fashion. If lowest cost options are not used, using more expensive sources will place upwards pressure on prices.

The government is intending to introduce an emissions trading scheme (ETS), which will put a price on greenhouse gas emissions from thermal electricity generation. Under an ETS, the electricity sector will face the costs of greenhouse gas emissions from 2010. Electricity generated from fossil fuels will cost more to produce and by comparison renewable generation such as hydro will become more economic.

Increases to electricity costs can also be mitigated by having a diverse array of energy sources. Fossil fuels can be subject to price shocks or supply disruptions, which can sharply increase thermal generation costs. As mentioned above, one of the key advantages of hydro generation is that it uses a renewable energy source with no fuel costs.

Maximising energy from renewable resources

As mentioned above, New Zealand relies heavily on hydro power for our electricity, with approximately 60 percent generated from hydro. A further ten percent comes from other renewable and waste heat sources⁴, and the remainder from fossil fuelled plants⁵. New Zealand's electricity generation system can be described as a mixed hydro-thermal system, where hydro energy is used as much as possible, depending on lake levels, and thermal power stations run as necessary to make up the rest of the required supply.

However, New Zealand's energy composition is about to undergo change. The government has set a target of 90 percent electricity to come from renewable sources by 2025. This will require substantial increases in renewable electricity generation.

The government believes there is no need for new baseload fossil fuel generation in the short to medium term. The government has introduced to the House the Climate Change (Emissions Trading and Renewable Preference) Bill that will restrict the construction of new baseload fossil-fuelled electricity generation for the next ten years, except to the extent necessary to ensure the security of New Zealand's electricity supply. This makes it especially important that consents for new renewable generation are approved.

While New Zealand has a wealth of renewable energy resources, economic and consentable sites are limited. There is considerable interest in wind energy, but good, consentable sites are limited. The intermittency of wind also needs to be carefully managed; however the combination of hydro and wind has proven to be successful in mitigating this issue. Geothermal is limited to certain parts of New Zealand and is subject to resource sustainability constraints. Bio-energy, using wood or methane collected from landfills, is likely to continue playing a small role. Solar energy is not yet extensively used because of its

⁴ Predominately geothermal, with the rest made up of wind and biomass.

⁵ Ministry of Economic Development, *New Zealand Energy Data File*, June 2007.

cost. Harnessing marine energy is a potential future source of energy, assuming robust and cost-effective technologies are developed.

The government considers that hydro power can be a viable energy source, that its development will help ensure security of supply through “diversification” in electricity production methods, and it is an environmentally responsible alternative to using fossil fuels for generation, provided adverse effects can be avoided, remedied or mitigated. The combination of wind and hydro generation has also proven successful in managing the intermittency of wind and maximising the use of hydro generation over fossil fuel alternatives.

Reducing greenhouse gas emissions

The energy system has global and local environmental effects. A key global environmental concern is climate change. Without more effective international action to reduce greenhouse gas emissions, the likely effects of climate change in New Zealand include rising average temperatures, rising sea levels, more frequent extreme weather events and a change in rainfall patterns. Globally, the major greenhouse gas generated by human activity is carbon dioxide from energy use. A number of actions are being undertaken both internationally and nationally to combat climate change, including the emission abatement targets set by the Kyoto Protocol and development of an emission trading scheme.

Greater use of renewable energy resources with lower emissions of greenhouse gases will reduce greenhouse gas emissions, and ultimately the climate change impacts, of New Zealand’s energy use.

From a climate change perspective, Mokihinui is an environmentally responsible alternative to fossil-fuelled electricity generation. It will not produce greenhouse gas emissions such as carbon dioxide or air pollutants such as sulphur dioxide during its operation.

If Mokihinui does not go ahead and the electricity came from a gas-fired generator, approximately 140,000 tonnes of carbon dioxide would be released each year. If the electricity came instead from a coal-fired generator, approximately 330,000 tonnes would be released each year. Mokihinui has clear national benefits, as it would help New Zealand meet its international climate change obligations and avoid the economic consequences of not doing so.

Resource Management

In 2002, the Government decided to provide a stronger mandate to councils to encourage energy efficiency and renewable energy generation (CAB Min (02) 27/3A). The result was the passing of the Resource Management (Energy and Climate Change) Amendment Act in 2004 and the inclusion of sections 7(ba), (i) and (j).

The amendment sought greater alignment between local authorities’ plans and national energy objectives outlined in the New Zealand Energy Efficiency and Conservation Strategy and climate change policies. The amendment aimed to ensure that local authorities and consent authorities consider the contribution their regions and districts can make to meeting New Zealand’s commitments under the United Nations Framework Convention on Climate Change and the Kyoto Protocol.

The amendment to section 7 requires decision-makers to have particular regard to the efficient use of energy, the effects of climate change, and the benefits associated with the use and development of renewable sources of energy. The Ministry considers all of these matters in section 7 to be met by the Mokihinui proposal.

As one of the actions under the New Zealand Energy Strategy, the government is preparing a National Policy Statement on Renewable Electricity Generation under the RMA to provide further guidance to consent authorities on the national benefits of renewable energy. This policy statement is expected to be notified in 2008. While it is under development, it signifies the importance to the government of renewable energy projects.

4. The Ministry of Economic Development requests that the consent authority make the following decision:

Approve the application for resource consent.

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

David Smol
Deputy Secretary
Energy and Communications Branch
Ministry of Economic Development

Address for Service: P.O. Box 1473
Wellington

Attention: Richard Hawke