SUBMISSION ON AN APPLICATION FOR RESOURCE CONSENT UNDER SECTION 96 OF THE RESOURCE MANAGEMENT ACT 1991

To: **West Coast Regional Council**
Buller District Council ("the Councils")

Submitter: The Energy Efficiency and Conservation Authority (EECA)

EECA is a Crown entity established by the Energy Efficiency and Conservation Act 2000. Its statutory mandate is to encourage, promote and support energy efficiency, energy conservation and the use of renewable sources of energy.

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1. This submission relates to the following Resource Consent application:

The application by Hydro Developments Limited for the construction and operation of a hydro power scheme and associated services on the Stockton Plateau in the Buller district ("the proposal").

2. EECA supports the proposal for the following reasons:

2.1. New Zealand's Electricity Context

As the New Zealand economy grows so will its demand for electricity. It is important that energy efficiency improves and electricity consumption patterns change to waste less. However, it is clear that economic growth will - despite the current recession - continue to place upward pressure on future electricity demand. It is imperative, for a number of economic and social development reasons, that New Zealand has the electricity generation capacity in place in time to meet demand.

New Zealand's reliance on hydro electricity means that it can be vulnerable to periods of low rainfall (often referred to as dry years). This, in combination with uncertainty over New Zealand's future gas supply (e.g the rundown of the Maui gas field), means that other sources of energy for electricity generation need to be developed.

A long term sustainable energy future will require New Zealand to use increasing amounts of renewable energy, such as electricity generated from hydro generation. Such generation is expected to play an increasingly important role in ensuring an effective energy system that delivers secure, clean energy at affordable prices and in an environmentally responsible manner. Increasingly cost-competitive local or distributed energy generation can contribute towards security of supply and a sustainable energy future by:

- making electricity supply more diverse and geographically dispersed;
- making local networks more reliable and resilient and potentially deferring future network investment by providing voltage load during periods of peak demand (in the case of some distributed generation only);
- improving the efficiency of the electricity system by reducing transmission and distribution energy losses; and
- providing remote communities with potentially more cost effective electricity than being connected to distribution networks.

2.2. Government Energy Policy

The Government is focused on a series of policy commitments to achieve a reliable, resilient and secure system that delivers New Zealand sustainable, low emissions energy. Three are directly relevant to this proposal. They are:

- securely delivering energy services at competitive prices;
- maximising the contribution of cost-effective renewable energy resources while safeguarding our environment; and
- reducing greenhouse gas emissions.

The Government has confirmed its support for a target for renewable electricity generation of 90 per cent by 2025 (based on delivered electricity in an average hydrological year).

2.3. New Zealand Energy Efficiency and Conservation Strategy

The NZEECS is a statutory document formed pursuant to section 10(1) of the Energy Efficiency and Conservation Act 2000. It is the detailed action plan to increase the uptake of energy efficiency and conservation, and renewable energy. It gives effect to a number of objectives which lead to the realisation of the renewable electricity target.

The Energy Efficiency and Conservation Act 2000 gives a strong mandate to the Minister responsible for that Act and to EECA to promote renewable energy. In lodging this submission, EECA has taken into account the sustainability principles in section 6 of the Energy Efficiency and Conservation Act including the principles of the Treaty of Waitangi. However, EECA is mindful that the comprehensive analysis and balancing of all issues is undertaken by the Resource Management Act (RMA) decision-maker in the context of achieving the sustainable management of all natural and physical resources.

EECA submits that the Council is required to have regard to the NZEECS pursuant to sections 104(1)(c) of the RMA.

2.4. Resource Management (Energy and Climate Change) Amendment Act 2004

The Resource Management (Energy and Climate Change) Amendment Act 2004 introduced the following matters into Part II, section 7, of the RMA, which EECA considers to be relevant to the proposal:

- the effects of climate change [section 7(i)]; and
- the benefits to be derived from the use and development of renewable energy[1] [section 7(j)].

EECA submits that there are two principal ways in which particular regard may be given to section 7 (i) and (j), these being:

- **when making decisions** on resource consent applications for renewable energy developments; and
- **by incorporating policies and provisions** in plans and policy statements which recognise and provide for renewable energy developments and their associated benefits.

2.4.1. The effects of climate change

With regards to section 7(i), EECA submits that renewable energy developments, including the proposed hydro power scheme on the Stockton Plateau, have the potential to make a significant positive effect on climate change, by being benign in respect of greenhouse gas emissions compared with alternative sources of generation. In this regard, EECA submits that the Council is required to have explicit regard to the following when considering whether or not to grant resource consent:

- It is widely accepted that one of the principal contributors to accelerated climate change are greenhouse gas emissions generated from human activities, such as the burning of fossil fuels for electricity generation. Accordingly, in order to minimise the adverse effects of greenhouse gas emissions new generation needs to increasingly come from renewable energy sources, (e.g. hydro), rather than fossil fuels (e.g. coal).

- Cumulatively renewable energy developments have the potential to make a significant contribution to the achievement of New Zealand's commitments under the Kyoto Protocol[2]. As a signatory to the Protocol, New Zealand has agreed to reduce its carbon dioxide (CO_2) emissions[3] in the first commitment period (2008-2012) to 1990 levels or otherwise take responsibility for any surplus emissions.

- Despite its international commitments, in recent years New Zealand's emission levels have continued to increase. For example, in 2006, approximately 8 million tonnes of CO_2 were emitted into the atmosphere from electricity generation, compared with less than

1 The following definition of "*renewable energy*" was added to section 2 as part of the Amendment Act, "*energy produced from solar, **wind**, geothermal, hydro, biomass, tidal, wave, and ocean current sources*" [emphasis added].
2 The Kyoto Protocol, which came into force on 16 February 2005, is the principal international response to climate change, following on from the United Nations Framework Convention on Climate Change.
3 The commitment relates to greenhouse gases of which CO_2 is the major contributor.

4 million tonnes of CO_2 in 1990[4]. This represents more than a doubling of New Zealand's CO_2 electricity related emissions over the past 16 years.

- This proposal will not only contribute 50 megawatts (MW) towards the region's electricity requirements, but it will also not emit any greenhouse gases (other than the relatively small amount emitted during construction and embodied in its construction materials). Accordingly, at up to 240 gigawatt hours (GWh), the proposal would avoid between approximately 91,000[5] and 220,000[6] tonnes of carbon dioxide equivalent (CO_2-e) per annum, depending on whether gas or coal generation is avoided[7].

2.4.2. The benefits to be derived from the use and development of renewable energy

With regard to section 7(j) and the benefits of hydro schemes such as the proposal, EECA submits that the Council is required to have explicit regard to the following when considering whether or not to grant resource consent:

Security of Supply Benefits

- The proposed hydro scheme with a maximum capacity of 50 MW will generate approximately 240 GWh annually (0.86 petajoules), which is enough electricity to supply approximately 29,000 households per annum. Up to 8 MW of the baseload capacity may be supplied directly to Stockton Mine.

- The proposal will make a significant contribution to the achievement of the government's renewable electricity target. It will contribute in a significant way to meeting demand for electricity in the West Coast region and, importantly, will make the region more self sufficient in electricity supply along with Trustpower's proposed Arnold River hydro scheme and Meridian's proposed Mokihinui hydro scheme.

- Hydro storage based generation, such as the proposal, is valuable because it would allow relatively fast responses to demand changes and storage ability, thus enabling it to be used to balance rapid changes in demand and the intermittency of the wind. Therefore, it would not only provide more overall generation capacity, but it may

[4] Ministry of Economic Development, *New Zealand Energy Greenhouse Gas Emissions 1990-2006, June 2007*
[5] 0.38 kt CO_2/GWh Gas generation emission factor *New Zealand's Energy Outlook to 2030*, p.41 footnote 86
[6] 0.90 kt CO_2/GWh Coal generation emission factor *New Zealand's Energy Outlook to 2030*, p.41 footnote 86
[7] Recent work by the Energy Data and Analysis Co-ordination cross-government group has predicted an average reduction of CO_2 equivalent emissions of 0.2 kt CO_2/GWh per annum, for the next 10 years, as a result of the installation of new renewable projects and energy saving measures. This reflects the expectation that a mixture of renewable and fossil-fuelled generators will be the marginal generator throughout any year and so the new generation of this proposal will displace a mixture of fossil-fuelled and renewable generation. Using this factor the predicted reduction in CO_2 emissions from this proposal would be 48,000 tonnes of CO_2 equivalent per annum. (http://www.med.govt.nz/upload/55313/emisison%20reduction%20effects.pdf)

also allow more wind generation to be incorporated into the electricity system.

- Hydro electricity generation assists with long-term security of supply by adding to New Zealand's total electricity generation base – and in doing so reduces the need to import energy from overseas (e.g. in the future, being able to service an electric vehicle fleet from renewable electricity would make New Zealand less vulnerable to imported, and potentially expensive, oil imports).

Reduction in transmission losses

- A significant benefit of the proposal is that it will be installed relatively close to the source of electricity demand with electricity being injected into the local distribution network, thereby avoiding losses from transmitting the electricity on the national grid. The average national-wide losses due to transmission were 3.7%[8] of the total electricity generated in 2007. The West Coast endures transmission losses of up to 50% at peak times from power delivered from the Waitaki hydro system[9].

Development benefits

- The promotion and development of electricity generated from hydro resources will result in short and long-term employment opportunities, and may have positive flow-on effects for businesses in the region, including industry. The proposal will also assist in supplying electricity to the Stockton Mine.

2.5. Public Support for Renewable Energy

A public opinion survey of attitudes towards energy issues undertaken between January and March 2008[10] indicated that New Zealanders overwhelmingly supported renewable energy generation. The survey examined approval ratings for different types of energy resources and, although direct comparisons can not be drawn, the results of similar survey undertaken in 2004[11] indicate an increasingly positive view of renewable energy between 2004 and 2008.

The 2008 survey reveals that New Zealanders consider where their energy comes from as being important enough to personally do something about or think about what they could do (i.e. become actively involved) and consider that where energy comes from will have an impact on future generations.

Renewable energy sources are favoured highly over fossil fuel sources with 80% of respondents viewing hydro as having a constant positive impact from now into the future. Fossil fuel sources are seen as having largely negative impact, both now and in the future.

[8] New Zealand Energy Data File June 2008 (www.med.govt.nz/upload/59482/00_EDF-June2008.pdf).
[9] West Coast Regional Renewable Energy Assessment, August 2008, page 20.
[10] www.eeca.govt.nz/renewable-energy/documents/renewable-energy-nielsen-research-report-may-08.pdf
[11] www.eeca.govt.nz/eeca-library/renewable-energy/wind/report/umr-omnibus-results-wind-research-report-04.pdf

The public opinion survey was repeated between October – December 2008. Preliminary results of this survey indicate that there is still strong support for renewable energy and wind energy in particular.

2.4 Summary

The reasons EECA believes the proposal should be approved by the Council are summarised below:

a) Renewable energy developments, such as the proposal, will cumulatively play a significant role in: providing enhanced security of electricity supply; meeting the renewable electricity target; and in meeting New Zealand's obligations under the Kyoto Protocol.

b) The proposal will contribute to meeting current and future electricity demand and will assist in increasing diversity in energy supply and contribute to maintaining/developing a more reliable, robust and sustainable electricity system.

c) The development and use of energy from renewable sources, such as the proposal, creates local, regional and national benefits and positive effects.

All of these factors should be given weight in the consideration of the achievement of sustainable management of natural and physical resources pursuant to the Resource Management Act.

3. EECA wishes the Council to approve Hydro Developments Limited's application for resource consent subject to appropriate conditions to avoid, remedy or mitigate adverse environmental effects.

4. EECA may wish to be heard in support of its submission.

5. If others make a similar submission EECA is prepared to consider presenting a joint case with them at the hearing.

DATED at Auckland this 23rd day of February 2009.

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