

**IN THE MATTER** of the Resource Management  
Act 1991

**AND**

**IN THE MATTER** of an application by Meridian  
Energy Limited for resource  
consents for the Mokihinui Hydro  
Project

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**STATEMENT OF EVIDENCE OF TIMOTHY WILLIAM FRASER ON  
BEHALF OF MERIDIAN ENERGY LIMITED**

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## 1. QUALIFICATIONS AND EXPERIENCE

- 1.1 My full name is Timothy William Fraser.
- 1.2 I am a Commercialisation Manager within Meridian's Strategy Group with responsibility for developing business opportunities in carbon and climate change. Prior to this position, I was Meridian's Climate Change Specialist and responsible for providing technical input into the company's submissions on proposed rules, regulations and legislation as they relate to climate change and the developing carbon markets. Prior to joining Meridian in June 2007, I was responsible for developing the Ministry of Transport's Climate Change work programme, and was the Ministry of Transport's representative on the cross government senior officials' Climate Change Working Group. I was also involved in the preparation of the draft New Zealand Energy Strategy and the draft New Zealand Energy Efficiency and Conservation Strategy. I am authorised to give this evidence on behalf of Meridian.
- 1.3 I hold a Master of Arts (Hons) degree in Geography from Canterbury University.
- 1.4 I have reviewed:
- a. Meridian's applications for the Mohikinui Hydro Proposal ("MHP") and the associated Assessment of Environmental Effects (AEE).
  - b. The Government's Sustainable Development Programme of Action;
  - c. Amendments to the Resource Management Act 1991 (RMA);
  - d. The Climate Change (Emissions Trading and Renewable Preference) Bill;
  - e. The New Zealand Energy Strategy (NZES)
  - f. The New Zealand Energy Efficiency and Conservation Strategy (NZECS);

- g. The Government Policy Statement on Electricity Governance (GPS);
- h. The evidence of Jim Renwick, NIWA's climate change scientist; and
- i. Relevant submissions of others, namely Forest and Bird and the Green Party.

## 2. SCOPE OF EVIDENCE

- 2.1 I have been asked by Meridian to prepare evidence in relation to climate change. This includes:
  - a. The relevance of renewable energy generation to lessening the impact of climate change.
  - b. Why the MHP is important within the wider context of New Zealand's international climate change obligations and is in accordance with Government strategies.

## 3. EXECUTIVE SUMMARY

- 3.1 Global climate change is happening and evidence from the IPCC indicates that reductions in global carbon dioxide emissions in the order of 50% to 80% relative to 1990 emissions will be required to prevent the occurrence of some serious climate change impacts.
- 3.2 As a signatory to the Kyoto Protocol, New Zealand has agreed to a cap on its emissions of 309.6 million tonnes over the first commitment period and on current projections we will be 21.7 million tonnes (or Kyoto units) in deficit.
- 3.3 MHP is a renewable energy project that will assist in New Zealand meeting both its climate change objectives and its sustainability aspirations.

- 3.4 In responding to this challenge, the Government has developed a range of integrated policies and work programmes. The development of renewable energy is a key part of this programme with the goal of 90% renewable energy by 2025 and the electricity sector being carbon neutral also by 2030.
- 3.5 Key pieces of legislation such as the Resource Management (Energy and Climate Change) Amendment Act 2004, and the Climate Change (Emissions Trading and Renewable Preference) Bill support these policy goals. High level strategies such as the NZES, the NZEECS, Government's commitment to a Renewable Energy NPS and the Government Policy on Electricity Governance underpin the serious attention to address the issue of climate change and encourage the development of renewable resources.

#### **4. THE PROPOSAL**

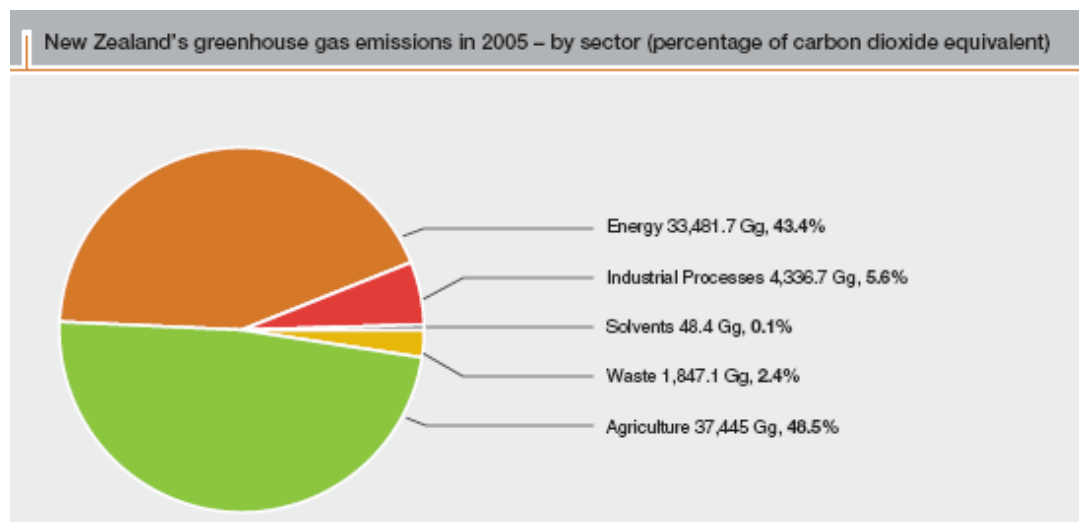
- 4.1 I confirm my evidence is based on the project proposal as described in the Assessment of Environmental Effects, brief details of which are described in Appendix 1.

#### **5. CLIMATE CHANGE – THE NEW ZEALAND PERSPECTIVE**

- 5.1 Jim Renwick has prepared evidence on the causes of climate change and I defer to his evidence on this.
- 5.2 In 1988 the Intergovernmental Panel on Climate Change (IPCC) was established by the United Nations Environment Programme and the World Meteorological Organization
- 5.3 The IPCC Fourth Assessment Report found that atmospheric concentrations of carbon dioxide, methane and nitrous oxide have

increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years. The global increases in carbon dioxide concentration are due primarily to fossil fuel use and land-use change. Increases in methane are also very likely predominantly due to agriculture and fossil fuel use. Nitrous oxide increases are very likely primarily due to agriculture.<sup>1</sup>

- 5.4 New Zealand's total greenhouse gas emissions are small from a global perspective – around 0.2 to 0.3 percent of global emissions. Per head of population New Zealanders emit nearly twice as much greenhouse gases as the British and almost five times as much as the Chinese.<sup>2</sup>
- 5.5 Moreover, New Zealand's emission level is forecast to grow as our population and economy grow. The Government has recognised that unless prompt action is taken it will become increasingly difficult (and economically disruptive) to bring our emissions growth under control. The Government has identified a need to act within the next few years in order to influence the long-term investment decisions that will drive our emissions reduction performance in the coming decades.



From: <http://www.climatechange.govt.nz/files/NZ-Climate-Change-Solutions.pdf>

<sup>1</sup> The term 'very likely' is one that is used by the IPCC and communicates the degree of uncertainty in developing conclusive assessments.

<sup>2</sup> New Zealand Government (2007) *The Framework for a New Zealand Emissions Trading Scheme: Executive Summary* 4.

- 5.6 As the table above shows, the main growth in emissions (43%) is carbon dioxide from the energy sector (predominantly transport and electricity generation). Half of our total greenhouse gas emissions are produced by agriculture (methane and nitrous oxide from farm animals and use of fertilisers).

## 6. ROLE OF RENEWABLE ENERGY AS A CLIMATE CHANGE MITIGATION TOOL

- 6.1 In evidence to the Environment Court, Dr David Wratt (General Manager of Climate Change, NIWA and Chair of the Royal Society of New Zealand Climate Change Committee) indicated reductions in global carbon dioxide emissions of between 50 and 80% may be required by 2050 to prevent the occurrence of some serious climate change impacts.<sup>3</sup> Lord Nicholas Stern agrees and notes that:

*“Global emissions need to fall by at least 50% relative to 1990 emissions by 2050 in order to limit the grave risks associated with climate change... Agreement [is needed] by developed countries to take on immediate and binding targets of 20% to 40% by 2020, and commit to reductions of at least 80% by 2050.”<sup>4</sup>*

- 6.2 The IPCC Fourth Assessment Report states that many impacts can be reduced, delayed or avoided by mitigation<sup>5</sup>, and identifies hydro power as one of the key mitigation technologies and practices currently commercially available<sup>6</sup> for the energy sector.

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<sup>3</sup> Statement of Evidence on behalf of Meridian Energy to the Environment Court (Project Hayes), 13 May 2008.

<sup>4</sup> Stern, Lord Nicholas, “Key Elements of a Global Deal on Climate Change” (LSE, 2008)

<sup>5</sup> *Climate Change 2007: Mitigation of Climate Change. Summary for Policymakers, Page 19*

<sup>6</sup> *Climate Change 2007: Mitigation of Climate Change. Summary for Policymakers, Page 10.*

- 6.3 Increasing New Zealand's supply of renewable energy, particularly from projects such as the MHP, will assist with mitigating the problem of increasing emissions in the electricity sector and improve West Coast and South Island security of supply. New renewable power stations will reduce dry year demand which is currently met by generation from existing thermal plant. In simple terms, if the two percent annual growth in demand is not met by an increase in supply of renewable energy (for example, from sources such as wind, hydro and geothermal), then that demand will need to be met by thermal generation such as coal or gas - thereby contributing to an increase in emissions. The MHP is therefore going to be an important part of New Zealand's emission management programme and security of supply response.

## 7. RENEWABLE ENERGY

### Renewable Energy as a subset of Sustainability

- 7.1 The Government is developing climate change policies to take both immediate and long-term steps to protect our way of life and our standard of living from the adverse effects of climate change, and to meet its obligations under the Kyoto Protocol. The package of climate change policy solutions for the energy sector includes the New Zealand Emissions Trading Scheme, the NZES, the NZEECS, the Sustainable Transport Strategy and a range of programmes and policies to encourage change.<sup>7</sup>
- 7.2 In September 2007, the Government announced its target of having the entire electricity sector become carbon neutral by 2030. Central to this target is the Government's objective of ensuring that *"by 2025, 90 percent of our electricity generation will be from renewable sources."*<sup>8</sup> Increasing New Zealand's supply of electricity from renewable resources

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<sup>7</sup> For example the Energywise Homes and Smarter Homes programmes, the biofuel sales targets, the carbon neutral public service, the business energy efficiency grant programme. See <http://www.climatechange.govt.nz/nz-solutions/path-to-sustainability.html>.

<sup>8</sup> New Zealand Government (2007) *New Zealand's Climate Change Solutions* 19.

*now* is key to achieving this goal. The Government itself has recognised that hydro projects will be part of the solution.<sup>9</sup>

7.3 As well as having specific renewable energy policy initiatives, the Government has indicated it sees the development of a renewable energy pathway as part of an overall sustainability and economic transformation programme. The New Zealand Government is committed to creating an economy and a way of life that is environmentally sustainable. The Minister of Energy and Climate Change Issues, David Parker wrote recently that “*Sustainability lies at the heart of who we are as a nation, and the face we show to the world. We have a long and proud history of caring for and enjoying our environment.*”<sup>10</sup>

7.4 The Government has recognised that economic transformation and environmental sustainability can be seen as two sides of the same coin, and that: <sup>11</sup>

- a. improved efficiency in the use of energy and natural resources is central to improving productivity and increasing the value of our exports, and will help to conserve valuable non-renewable resources for use by future generations;
- b. developing renewable domestic energy sources will improve New Zealand’s energy security;
- c. there is a growing market for products and services which involve low greenhouse gas emissions, as has already been recognised by some sectors;
- d. failure to control greenhouse gas emissions could have trade risks, both at a political level (because countries that do not take the issue seriously may find it hard to improve access to markets and may face trade barriers) and at a global consumer level (since New Zealand’s clean, green image is part of the

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<sup>9</sup> New Zealand Government (2007) *New Zealand Energy Efficiency and Conservation Strategy* 68.

<sup>10</sup> Hon David Parker, in Ministry for the Environment (2007) *New Zealand’s Climate Change Solutions 2*.

<sup>11</sup> New Zealand Government (2007) *The Framework for a New Zealand Emissions Trading Scheme: Executive Summary* 3.

international brand that underpins the premium sought for many of our products and services);

- e. the impetus towards sustainability creates new incentives to develop efficient technologies and improve management practices across all sectors of the economy.
- f. Increasing New Zealand's supply of electricity from renewable resources is seen by the New Zealand Government as an essential aspect of New Zealand's ongoing sustainable development and reduction of the impacts from climate change.

## **8. NEW ZEALAND'S INTERNATIONAL CLIMATE CHANGE OBLIGATIONS**

- 8.1 New Zealand has ratified the Kyoto Protocol and has taken on a quantified commitment to limit its emissions of an aggregate of six greenhouse gases. This commitment establishes the current economic imperative for reducing greenhouse gas emissions in New Zealand. It is in New Zealand's economic best interest to reduce its emissions when it can do so for a lower cost than the other means of compliance with the Protocol.
- 8.2 The Kyoto Protocol is a global "cap and trade" system. It sets a total cap, or limit, on greenhouse gas emissions from the countries that have ratified it. The cap is made up of the sum of the emission limitation and reduction commitments of the individual countries. Each country that is included in Annex I of the Kyoto Protocol has an "assigned amount" of emissions for the five-year first commitment period from 2008 to 2012. These are specified relative to emission levels in 1990 and range from an 8% decrease for EU member states to an 8% increase, for Australia. New Zealand's assigned amount for the five years of the first commitment period is based on a 0% change from 1990 ie over this five year period it equates to five times its 1990 emissions; which is five times 61.9 million tonnes of CO<sub>2</sub>-equivalents, or 309.6 million tonnes.

- 8.3 These initial assigned amounts can be divided into assigned amount units (AAUs) that are transferable between countries. Thus New Zealand has an initial allocation of 309.6 million AAUs. AAUs are used, along with other Kyoto units, that include certified emission reductions (CERs),<sup>12</sup> emission reduction units (ERUs)<sup>13</sup> and removal units (RMUs)<sup>14</sup>, to achieve compliance with the Protocol. The commitments for the Annex I parties that have ratified the Kyoto Protocol are to hold Kyoto Units (the sum of AAUs, ERUs, CERs and RMUs) equal in number to, or greater than, the estimated emissions in the first commitment period.
- 8.4 Individual countries do not have a binding emissions limitation. Rather they must ensure that the total of their emissions is no more than their holding of Kyoto units. The Kyoto units can be transferred between countries so that countries, in which emissions increase above their initial assigned amount, can be compliant by purchasing additional Kyoto units from other countries.
- 8.5 New Zealand can increase its emissions, as it is doing, provided that it obtains and surrenders sufficient Kyoto units to cover these. The Kyoto units, which provide the holder with a right to emit, can be obtained from other countries that have ratified the Kyoto Protocol and are included in Annex I, or countries outside of Annex I that undertake projects to reduce emissions.
- 8.6 Kyoto units trade at a price, and given New Zealand's intention to meet its commitments, this price establishes the economic benefit of reductions in emissions in New Zealand. New Zealand can choose to

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<sup>12</sup> A certified emission reduction (CER) is an emission credit produced as a result of a project undertaken in a non-Annex 1 country that reduces emissions below business as usual.

<sup>13</sup> An emission reduction unit (ERU) is an emission credit produced as a result of a project undertaken in an Annex 1 country that reduces emissions below business as usual. An ERU is produced by converting an AAU or a RMU.

<sup>14</sup> Removal units (RMUs) are produced by activities that result in the absorption of CO<sub>2</sub> in an Annex 1 country

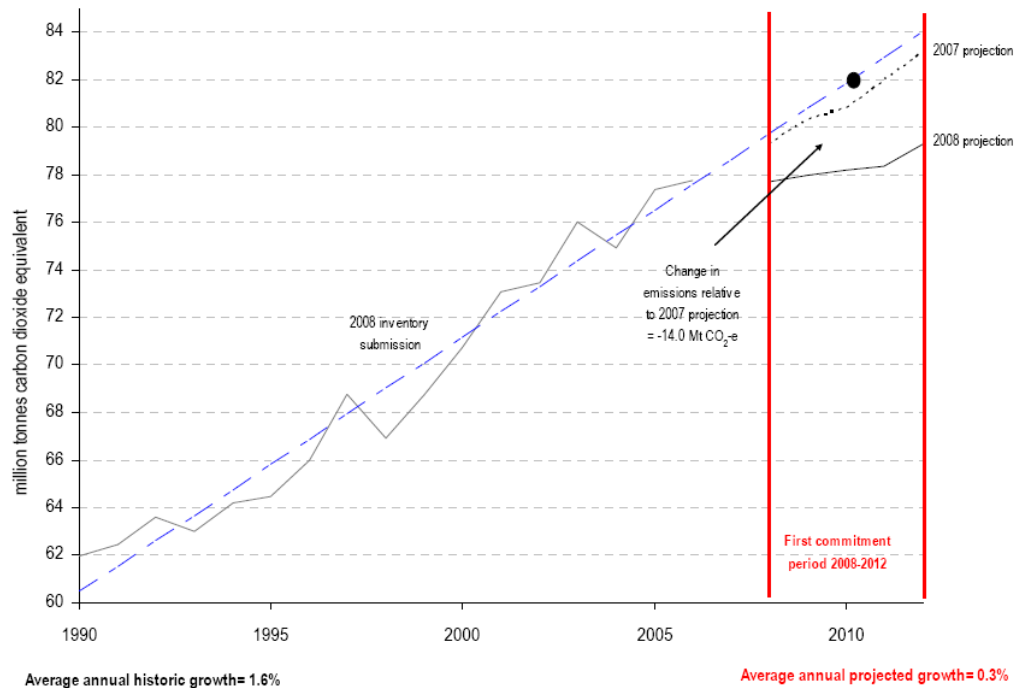
reduce emissions domestically or it can purchase more Kyoto units; either option can ensure its compliance with the Kyoto Protocol. Any actions that can be undertaken in New Zealand that cost less than the cost of purchasing emission units are worthwhile. They are lower cost to the nation and ensure that New Zealand meets its commitment at the lowest possible cost. Reducing emissions domestically either reduces the number of Kyoto units that have to be purchased for New Zealand to be compliant, or establishes a surplus of Kyoto units that can be sold.

- 8.7 Figure 1 indicates that as at May 2008, the net position is projected to be a deficit of 21.7 million units during the first Kyoto commitment period (2008-2012). This comprises 14.7 million tonnes excess emissions over the first commitment period and 7 million tonnes of assigned amount units already promised to successful tenderers in the Projects to Reduce Emissions programme.<sup>15</sup> While there has been a net decrease in projected emissions in the May 2008 Net Position Report, New Zealand emissions still continue to track upwards.

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<sup>15</sup> Net Position Report – Projected balance of Kyoto Protocol units during the first commitment period (Ministry for the Environment, 15 May 2008).

Figure 1: Historical emissions data and projected emissions 1990-2012



**Note:** Includes emissions from energy (including transport), agriculture, waste, solvents and industrial processes. Emissions from deforestation are not included.

8.8 Every tonne of emissions reduced in New Zealand will result in one less Kyoto unit that will need to be purchased. Additional electricity generated with renewable resources that displace generation from the combustion of carbon-based fuels, will reduce emissions in New Zealand. It reduces the need to generate electricity from sources which would emit greenhouse gases.

8.9 While construction of MHP is likely to fall outside the first commitment period of the Kyoto Protocol, its value in reducing emissions is no less important going forward. The New Zealand Government is committed to decreasing our emissions over time. New Zealand is actively engaged in international negotiations to develop the next iteration of the Kyoto Protocol and reducing emissions is a long-term game – and not one with a 5 year hard stop.

8.10 In relation to MHP, a simple analogy can be made between a project such as the MHP, and the development of an equivalent thermal

project. As the evidence of Mr Watts showed, MHP could save in the order of 225,000 – 256,000 tCO<sub>2</sub>-e/year (or 0.22 – 0.25MtCO<sub>2</sub>-e). This would be the equivalent of taking approximately 56,000 vehicles off the road per year.

## 9. GOVERNMENT STRATEGIES ON CLIMATE CHANGE

### New Zealand Policies on Renewable Energy

9.1 Since 2000, the Government has communicated its preference for renewable energy through a series of framework papers, discussion documents, legislative amendments, national strategies and policies. These include:

- a. The Sustainable Development Programme of Action;
- b. Amendments to the Resource Management Act 1991 (RMA) and Climate Change Response Act 2004
- c. NZES
- d. NZEECS; and
- e. The Government Policy Statement on Electricity Governance (GPS).

### Sustainable Development Programme of Action

9.2 The Government's overall approach to energy policy was outlined in its Energy Policy Framework, released in October 2000. Outcomes through the Framework included:

*Environmental sustainability, which includes continuing improvements in energy efficiency and a progressive transition to renewable sources of energy.*

9.3 The Government then released its Sustainable Development Programme of Action on Energy in January 2003. Four areas including

energy, were identified, that without action, would impede New Zealand's long term sustainable development.<sup>16</sup>

- 9.4 The development of renewable energy is a strong theme running through both the Framework and Programme of Action documents. The Programme of Action includes as an intended outcome:

*Our renewable sources of energy are developed and maximised [by]*

- *Developing and implementing mechanisms to achieve the [then] NEECS renewable target of 30 petajoules*
- *Supporting research and innovation in renewable technology*
- *Establishing a timetable and targets for the transition to renewable energy beyond 2012, subject to the completion of a satisfactory review in 2010 of progress in this decade.*

- 9.5 In October 2004, the Minister of Energy released the document Sustainable Energy: Creating a Sustainable Energy System for New Zealand, which established a framework for energy policy moving forward i.e. an energy system that is reliable and resilient, environmentally responsible and fairly and efficiently priced. The document identified two key challenges the New Zealand energy system would face in the long term - global climate change and the coming peak in global oil production.

- 9.6 Following the Prime Minister's Speech from the Throne on 8 November 2005, the Government announced it would explore various energy scenarios to develop a New Zealand Energy Strategy. The sustainable energy work up to that point was then amalgamated into a draft NZES and draft (replacement) NZEECS.

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<sup>16</sup> Press Release: Marion Hobbs, Minister for the Environment 31/01/2003  
<http://www.beehive.govt.nz/ViewDocument.aspx?DocumentID=15944>

## New Zealand Energy Strategy

9.7 In October 2007 the New Zealand Energy Strategy (NZES) was published. The Strategy outlines two major long term challenges. The first is responding to the risks of climate change by reducing the greenhouse gases caused by the production and use of energy. The second is to deliver clean, secure, affordable energy while treating the environment responsibly.

9.8 In responding to these challenges, the Government's energy vision for New Zealand as articulated in the NZES is:

*"A reliable and resilient system delivering New Zealand sustainable, low emissions energy service"*

9.9 The Strategy identifies, amongst other things, that this would be achieved by:

*Providing clear direction on the future of New Zealand's energy system*

*Maximising the contribution of cost-effective renewable energy resources while safeguarding our environment*

*Reducing our greenhouse gas emissions, including through an emissions trading scheme*

9.10 In order to maximise the contribution of renewables electricity, the Government set itself a renewables energy target:

**Action:** *The government has set a target for 90% of electricity to be generated from renewable sources by 2025 (based on an average hydrological year).*

9.11 Government modelling results show that 90% of electricity could be generated from renewables in 2025, without imposing additional costs

above those incurred under the 2030 target scenario.<sup>17</sup> However achieving the target of 90% renewables by 2025 will require:

- *Market and **regulatory** structures to enable investment in a diverse range of renewable energy projects; and*
- *A robust transmission grid to support the development of renewable energy resources remote from major load centres.*<sup>18</sup>
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9.12 To facilitate this and provide national guidance on renewable energy projects, the Government is developing a National Policy Statement under the RMA.<sup>19</sup>

**Action:** *The government is developing a NPS on renewable energy in 2008.*

9.13 As I discuss below, the Proposed NPS was released on 13 August 2008.

9.14 Along with setting a target for renewable energy, and developing a NPS, the NZES also recognises renewable energy projects can be constrained by transmission. Generation is often remote from existing load centres and major transmission lines – and individual renewable generation plant is typically small relative to the size of the regional demand.

**Action:** *The Electricity Commission and Transpower are developing planning processes and guidelines to coordinate transmission and renewables investment.*

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<sup>17</sup> The 2030 scenario can be found in the MED publication “Energy Outlook to 2030”

<sup>18</sup> New Zealand Energy Strategy to 2050 – Powering our Future: October 2007 (pg 79)

<sup>19</sup> Providing National guidance on Renewable Energy Projects through the Resource Management Act 1991: [CBC \(07\) 177](#)

### **New Zealand Energy Efficiency and Conservation Strategy (NZECS)**

- 9.15 Following a review of the National Energy Efficiency and Conservation Strategy 2001, the draft NZECS was released for public consultation in December 2006 and published alongside the NZES in October 2007.
- 9.16 The NZECS recognises that meeting the 90% renewables target by 2025 will require generating electricity from a diverse range of renewable sources such as wind, geothermal, **hydro**, and biomass. Emerging technologies such as wave, tidal, and solar photovoltaic cells may also help contribute to achieving the target, as will increased energy efficiency and distributed generation.
- 9.17 However a number of regulatory barriers have been identified that hinder the uptake of renewable electricity such as the lack of national guidance on renewable energy (which in part may be addressed through the proposed Renewable energy NPS). This lack of guidance can make obtaining consents for large scale renewable energy developments more difficult.

### **Government Policy Statement on Electricity Governance (October 2006)**

- 9.18 The Electricity Amendment Act 2004 requires the Electricity Commission to give effect to the objectives and outcomes as described by the Government in the Government Policy Statement on Electricity Governance. The Commission's principal objectives are to ensure that electricity is produced and delivered to all classes of consumers in an efficient, fair, reliable and environmentally sustainable manner, and to promote and facilitate the efficient use of electricity.
- 9.19 The Government Policy Statement acknowledges there are a range of factors the Electricity Commission does not have accountability for, and which will impact on the electricity sector through time. However, the Government expects the Commission to take into account and contribute as appropriate to the Government's wider policy objectives. These include:

- Climate Change Policy;

- The NZES;
- The NZEECS.

9.20 The 2006 revision of the Government Policy Statement now includes specific reference to renewable energy in relation to the wider Government objectives of climate change and energy security:

*47 Encouraging the development of renewable energy resources is a key part of the Government's strategy for managing climate change and long term energy security. To further this aim the Government's objectives in relation to renewable energy, are that:*

- *undue barriers to investment in renewables should be reduced or removed*
- *the efficient uptake of renewable generation should be promoted and*
- *the national transmission grid should be planned and made available so as to facilitate the potential contribution of renewables to the electricity system and in a manner that is consistent with the Government's climate change and renewables policies.*

9.21 These references also flow through to the objectives for the provision of transmission services where:

*49. The national transmission grid should be planned and made available so as to facilitate the potential contribution of renewables to the electricity system and in a manner that is consistent with the Government's climate change and renewables policies.*

### **Draft National Policy Statement on Renewable Electricity Generation**

9.22 The intention to develop a National Policy Statement (NPS) on Renewable Energy was stated in the NZES and a draft has been released for consultation by an independent Board of Inquiry with submissions closing 31 October 2008.

9.23 As stated by the Ministry for the Environment;

*The proposed National Policy Statement for Renewable Electricity Generation will establish the national significance of the benefits that are associated with renewable electricity generation. By clarifying the government's position on the benefits of renewable electricity generation, the NPS will help promote a nationally consistent approach to balancing the competing values associated with the development of New Zealand's renewable energy resources, and will provide greater certainty to decision-makers, applicants and the wider community.*

9.24 The proposed NPS intends covering the following areas:

- a. Recognising the national significance of the benefits of renewable electricity generation activities
- b. Acknowledging the practical constraints associated with the development, upgrading, maintenance and operation of new and existing renewable electricity generation activities
- c. Having regard to the relative reversibility of adverse effects associated with particular generation types
- d. Enabling identification of renewable electricity generation possibilities
- e. Supporting small and community-scale renewable electricity generation

## **Legislative Amendments**

### **Resource Management Act 2004**

9.25 The Resource Management (Energy and Climate Change) Amendment Act came into force in March 2004. This Amendment Act reflects New Zealand's obligations under the Framework Convention on Climate Change ("FCCC") and Kyoto Protocol by giving greater emphasis to climate change and renewable energy matters in RMA planning and decision making.

- 9.26 The Amendment Act makes explicit provision within Section 7 of the Resource Management Act 1991 for all persons exercising functions and powers under the Act to have particular regard to:

*Section 7(ba) the efficiency of the end use of energy,*

*Section 7(j) the benefits to be derived from the use and development of renewable energy, and*

*Section 7(i) the effects of climate change.*

The benefits of renewable energy developments must now expressly be considered together with other Part 2 matters.

- 9.27 These amendments seek greater alignment between local Government plans and national energy objectives, outlined in the NZES, NZEECS and climate change policies, and aim to ensure that Councils consider the contribution their regions can make to meeting New Zealand's commitments under the Kyoto Protocol.

### **New Zealand Emissions Trading Scheme (NZETS)**

- 9.28 The Climate Change (Emissions Trading and Renewable Preference) Bill was passed on 10 September 2008 and is waiting for assent from the Governor General before it becomes law. This Bill seeks to establish the New Zealand Emissions Trading Scheme (NZETS). The objective of the Scheme is to ensure that those responsible for emitting greenhouse gases (including the burning of fossil fuels) begin to take responsibility for the environmental cost of the emissions associated with their activities. The premise of the NZETS is that emission permits, or New Zealand Units (NZUs), will be surrendered by participants to Government to match the level of emissions produced across the economy. These units will need to be purchased on either the domestic or international market – the cost of which will be brought forward into the economy.

- 9.29 This Bill implements a phased economy wide emissions trade scheme covering all six greenhouse gases and from 2010, emitters in the stationary energy sector will be required to surrender emission units to cover their emissions.

- 9.30 Emissions trading schemes seek to provide economic incentives to discover least cost emission reduction solutions. The provision of a price of carbon is expected to incentivise the development of new generation of renewable energy projects and disincentivise investment in thermal generation.
- 9.31 The Bill also seeks to implement a ten year restriction on new fossil-fuelled baseload electricity generation, except to the extent necessary to ensure the security of New Zealand's electricity supply.

### **Thermal Restriction**

- 9.32 Promoting additional renewable electricity is the subject of legislative development via the Climate Change (Emissions Trading and Renewable Preference) Bill. Part 2 of the Bill amends the Electricity Act 1992 introducing a restriction on new fossil fuelled thermal electricity generation, except to the extent necessary to ensure the security of New Zealand's electricity supply. As noted in the explanatory memorandum, the Bill provides for exemptions for specific fossil fuelled generation proposals that address concerns over security of supply. Applications for exemptions from the restriction will be judged against a set of criteria and will be granted by the Minister of Energy on the recommendation of the Electricity Commission.
- 9.33 The Government's concern that led to the proposed restriction was that large scale investment in fossil fuelled generation could "crowd out" new renewable generation for a number of years and that this "would jeopardise the government's climate change and NZES objectives and undermine public confidence in the climate change policy"<sup>20</sup>. Cost modelling by the Ministry of Economic Development (MED) suggests that renewable generation is expected to be cost-competitive with fossil fuelled electricity generation, particularly when the effects of the ETS flow through to increased wholesale prices. However, the MED notes a number of factors that could make

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<sup>20</sup> *Explanatory memorandum to Climate Change (Emissions Trading and Renewable Preference) Bill*

thermal fuelled generation more economic, including high exchange rates and low cost gas. The restriction has been designed to address the possibility of low cost fossil fuelled generation.

- 9.34 The proposed restriction has been the subject of considerable criticism, particularly because renewable electricity will be encouraged via the ETS. Nevertheless, it demonstrates the Government's clear preference for additional renewable generation capacity to be built.

## 10. **ISSUES RAISED BY SUBMISSIONS**

- 10.1 I note in section 18 (page 10) of the Royal Forest and Bird Protection Society (Inc) submission reference to the increase in greenhouse gas emissions and loss of forest capacity as a carbon sink from the proposed project. I did not address this issue as it was not part of the scope of my evidence.
- 10.2 However, as part of Meridian's carbon accounting practices, all construction emissions, including those indicated by the submission would be reported in our GHG inventory under Scope 3 Indirect – one time emissions. Under Meridian's current carbon neutrality certification requirements, construction emissions would then need to be offset.

## 11. **CONCLUSION**

- 11.1 Global climate change is happening. Evidence from the IPCC indicates that reductions in global carbon dioxide emissions in the order of 50% to 80% relative to 1990 emissions will be required to prevent the occurrence of some serious climate change impacts. As a signatory to the Kyoto Protocol, New Zealand has agreed to a cap on its emissions of 309.6 million tonnes over the first commitment period. On current projections we will be 21.7 million tonnes (or Kyoto units) in deficit.

- 11.2 MHP is a renewable energy project that will assist in New Zealand meeting both its climate change objectives and its sustainability aspirations - and in terms of offsetting an equivalent gas or coal project, Mokihinui could save in the order of 225,000 - 256,000t/year which would be equivalent to taking up to 56,000 vehicles off the road.
- 11.3 In responding to this challenge, the Government has developed a range of integrated policies and work programmes to reduce our commitments under the Kyoto Protocol and embark on creating a sustainable and low carbon future for New Zealand. The development of renewable energy is a key part of this programme – 90% renewable energy by 2025 and an objective of the electricity sector being carbon neutral also by 2030.
- 11.4 Key pieces of legislation such as the Resource Management (Energy and Climate Change) Amendment Act 2004, and the proposed Climate Change (Emissions Trading and Renewable Preference) Bill support these policy goals. High level strategies such as the NZES, the NZEECS, Government's commitment to a Renewable Energy NPS and the Government Policy on Electricity Governance underpin the serious attention to address the issue of climate change and encourage the development of renewable resources.