Ministry for the Environment
Manatū Mō Te Taiao

Proposed National Policy Statement for Renewable Electricity Generation

Evaluation under Section 32 of the Resource Management Act 1991

New Zealand Government

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Preface

This document contains an evaluation for the Minister for the Environment of the proposed National Policy Statement for Renewable Electricity Generation ('the NPS') as required under section 32 of the Resource Management Act 1991 (RMA). A section 32 evaluation considers the appropriateness, alternatives, costs and benefits of a proposed national policy statement, and its objectives and policies.

This section 32 evaluation presents an initial assessment of the NPS. It is expected that the NPS will undergo further refinement following public submissions to the Board of Inquiry. This report and a summary of public submissions are intended to assist the Board of Inquiry as it undertakes its own assessment of the NPS.

A second section 32 evaluation will be completed after the Board of Inquiry has conducted its inquiry process (set out in sections 48 to 51 of the RMA) and has provided its report and recommendations to the Minister on the proposed NPS.

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Preamble

This national policy statement sets out an objective and policies to enable the sustainable management of renewable electricity generation under the Resource Management Act 1991 ('the Act').

New Zealand's energy demand has been growing steadily and is forecast to continue to grow. In October 2007 the government adopted the New Zealand Energy Strategy, which states that New Zealand must confront two major energy challenges as it meets growing energy demand. The first is to respond to the risks of climate change by reducing greenhouse gas emissions caused by the production and use of energy. The second is to deliver clean, secure, affordable energy while treating the environment responsibly.

The contribution of renewable electricity generation, regardless of scale, towards addressing the effects of climate change plays a vital role in the wellbeing of New Zealand, its people and the environment. In considering the risks and opportunities associated with various electricity futures, the government has determined that 90 per cent of electricity generated in New Zealand should be derived from renewable energy sources by 2025 (based on delivered electricity in an average hydrological year).

Development that increases renewable electricity generation capacity can, however, have environmental effects that span local, regional and national scales, often with adverse effects manifesting locally and positive effects manifesting nationally. In some instances the benefits of renewable electricity generation can compete with matters of national importance as set out in section 6 of the Act, and with matters to which decision-makers are required to have particular regard under section 7 of the Act. In particular, the natural resources from which electricity is generated can coincide with areas of significant natural character, significant amenity values, historic heritage, outstanding natural features and landscapes, significant indigenous vegetation and significant habitats of indigenous fauna. Adopting a nationally consistent approach to balancing the competing values associated with the development of New Zealand's renewable energy resources will provide greater certainty to decision-makers, applicants, and the wider community.

Title

This national policy statement may be cited as the National Policy Statement for Renewable Electricity Generation.

Commencement

This national policy statement comes into force on the day after which it is notified in the Gazette.

Matter of national significance

The matter of national significance to which this national policy statement applies is the need to develop, upgrade, maintain and operate renewable electricity generation activities throughout New Zealand.

Objective

To recognise the national significance of renewable electricity generation by promoting the development, upgrading, maintenance and operation of new and existing renewable electricity generation activities, such that 90 per cent of New Zealand's electricity will be generated from renewable sources by 2025 (based on delivered electricity in an average hydrological year).

Recognising the national significance of the benefits of renewable electricity generation activities

Policy 1

The benefits of renewable electricity generation activities, at any scale, are of national significance. Decision-makers must have particular regard to the national, regional and local benefits relevant to renewable electricity generation activities. These benefits may include, but are not limited to:

i. maintaining or increasing electricity generation capacity while avoiding, reducing or displacing greenhouse gas emissions

ii. maintaining or increasing security of electricity supply at local, regional and national levels by diversifying the type and/or location of electricity generation.

Acknowledging the practical constraints associated with the development, upgrading, maintenance and operation of new and existing renewable electricity generation activities

Policy 2

When considering measures to avoid, remedy or mitigate the adverse environmental effects of renewable electricity generation activities, consent authorities must have particular regard to the constraints imposed on achieving those measures by:

i. the nature and location of the renewable energy source

ii. logistical or technical practicalities associated with developing, operating or maintaining the proposed renewable electricity generation activity

iii. the nature and location of existing renewable electricity generation activities

iv. the location of existing structures and infrastructure including, but not limited to, roads, navigation and telecommunication structures and facilities, the local electricity distribution network, and the national grid.

Having regard to the relative reversibility of adverse effects associated with particular generation types

Policy 3

When considering proposals to develop new renewable electricity generation activities, decision-makers must have particular regard to the relative degree of reversibility of the adverse environmental effects associated with proposed generation technologies.

Enabling identification of renewable electricity generation possibilities

Policy 4

By 13 March 2012, local authorities are to notify, in accordance with Schedule 1 of the Act, a plan change, proposed plan or variation to introduce objectives, policies and, where appropriate, methods, into policy statements and plans to enable activities associated with:

i. the identification and assessment by generators of potential sites and energy sources for renewable electricity generation

ii. research-scale investigation into emerging renewable electricity generation technologies and methods.

Supporting small and community-scale renewable electricity generation

Policy 5

By 13 March 2012, local authorities are to notify, in accordance with Schedule 1 of the Act, a plan change, proposed plan or variation to introduce objectives, policies and, where appropriate, methods, into policy statements and plans to enable activities associated with the development and operation of small and community-scale distributed renewable electricity generation.

Interpretation

In this national policy statement, unless the context otherwise requires:

"**Act**" means the Resource Management Act 1991.

"**Application**" means any application for resource consent or consents or application under section 127 of the Act. Applicant has the corresponding meaning.

"**Decision-makers**" means all persons exercising functions and powers under the Act.

"**Local electricity distribution network**" means the system of electricity conveyance that connects individual electricity users with the national grid and electricity generation facilities.

"**National grid**" means the assets used or owned by Transpower NZ Limited.

"**Renewable electricity generation**" means generation of electricity from solar, wind, hydro, geothermal, biomass, tidal, wave, or ocean currents resources.

"**Renewable electricity generation activities**" means the construction, operation and maintenance of structures associated with the generation of renewable electricity. This includes small and community-scale distributed renewable generation activities and the system of electricity conveyance required to convey electricity to the local electricity distribution network and/or the national grid.

"**Small and community-scale distributed renewable electricity generation**" means renewable electricity generation projects with an installed electricity generation capacity of less than four megawatts and excludes offshore wind, tidal and wave generation.

Explanatory note

This note is not part of the national policy statement but is intended to indicate its general effect.

This national policy statement comes into force on the day after which it is notified in the Gazette. It provides that renewable electricity generation is a matter of national significance under the Resource Management Act 1991.

This national policy statement is to be applied by all persons exercising powers and functions under the Act. The objective and policies are intended to guide applicants and decision-makers when making applications for resource consent, in making decisions on the notification and determination of resource consent applications, in drafting policy statements and plans that relate to renewable electricity generation activities, and when exercising other powers under the Act.

The national policy statement requires local authorities to give effect to its provisions in plans made under the Resource Management Act 1991 by initiating a plan change, proposed plan or variation by 13 March 2012.

Executive Summary

A secure and reliable system of electricity generation and transmission is a crucial component of a modern, prosperous society.

Demand for electricity in New Zealand is increasing with population growth, rising incomes, and the widespread adoption of new technologies powered by electricity. In order to meet growth in demand until 2025, New Zealand will need to increase generation capacity by around 175 megawatts (MW) per annum.

Historically, the New Zealand electricity system has relied on fossil fuel-based thermal-generation to meet demand in excess of what can be supplied by hydro-generation. Generating electricity from fossil fuel sources released around 8.3 million tonnes of CO_2-equivalent emissions into the atmosphere in 2006.[1] In the absence of any price on emissions, projections suggest that approximately 2325 MW of additional electricity generation capacity needed by 2030 would use fossil fuels. As a result, electricity-related greenhouse gas emissions would increase by approximately 50 per cent by 2030 if we do not change our course.[2] The government believes this would not only be environmentally irresponsible, but that it would also place New Zealand exports at a disadvantage, increase the country's exposure to the cost of imported fossil fuels, and threaten New Zealand's reputation as a clean, green tourist destination.

The Ministry for Economic Development has undertaken modelling for the New Zealand Energy Strategy (NZES), which indicates the majority of opportunities to reduce greenhouse gas emissions in the electricity sector derive from "aggressively pursuing existing and new renewable-based electricity generation".[3] In support of its sustainable energy goals, the government has adopted a target for renewable electricity generation of 90 per cent by 2025 (based on delivered electricity in an average hydrological year). Experience with the Resource Management Act 1991 (RMA), however, has raised concerns that renewable projects face particular hurdles under the current regulatory framework that could threaten the ability of generators to develop the additional generation capacity necessary to meet this target by 2025. The government's proposal to amend the Electricity Act to create a preference for renewable electricity generation (by implementing a 10-year restriction on new base load, fossil-fuelled thermal electricity generation) will work with this national policy statement to promote achievement of its sustainable energy goals. Because amending the Electricity Act in this way would restrict the use of coal and gas-based electricity generation, a failure to consent sufficient renewable generation capacity could place national security of supply at risk. This would in turn oblige the government to consider revising its position on thermal generation and therefore, its renewable generation target. This would have implications for greenhouse gas (GHG) emissions. Any risk to security of supply and/or the potential for that risk to be addressed by thermal generation could have significant economic consequences for New Zealand.

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1 *New Zealand's Greenhouse Gas Inventory 1990–2006*, Ministry for the Environment, April 2008.

2 *The New Zealand Energy Strategy to 2050*, Ministry of Economic Development, October 2007.

3 Ibid, p36.

The proposed National Policy Statement for Renewable Electricity Generation (the NPS) seeks to assist decision-makers when considering whether proposals to use and develop New Zealand's renewable energy sources will promote the sustainable management of natural and physical resources. It does this specifically by:

- recognising the national significance of the benefits of renewable electricity generation activities
- promoting the development, upgrading, maintenance and operation of renewable electricity generation activities, such that 90 per cent of New Zealand's electricity will be generated from renewable sources by 2025
- requiring decision-makers to consider the practical constraints that may limit the ability of developers to avoid, remedy or mitigate the adverse environmental effects of renewable electricity generation activities
- requiring decision-makers to have regard to the relative degree of reversibility of the adverse environmental effects associated with particular generation technologies
- requiring regional policy statements and regional and district plans to be amended to enable:
  - the reasonable operation and maintenance requirements of existing renewable electricity generation activities
  - the identification of renewable electricity generation possibilities
  - small and community-scale development of renewable electricity generation.

The present report provides an evaluation of the proposed NPS and, in accordance with the requirements of section 32 of the RMA, addresses the following four key questions:

1. To what extent is the Objective the most appropriate way to achieve the purpose of the RMA?
2. Are the policies proposed the most appropriate for achieving the Objective?
3. What are the benefits and costs of the proposed policies?
4. What are the risks of acting or not acting if there is uncertain or insufficient information about the subject matter of the proposed policies?

1. To what extent is the Objective the most appropriate way to achieve the purpose of the RMA?

The purpose of the RMA is set out in section 5 as being:

> *(1) ... to promote the sustainable management of natural and physical resources.*
>
> *(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –*
>
> *(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
>
> *(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
>
> *(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

Economic growth is heavily dependent on a secure and cost-effective supply of electricity. The supply and price of electricity support the continuation of current economic activity but also promote long-term certainty and encourage, along with other key infrastructure, an environment conducive to investment and growth. In other words, electricity contributes significantly to the economic, social and cultural wellbeing of people and communities. Promoting an increase in generation capacity through renewable sources will also result in diversification of the range of generation types and locations of generation. The benefit of a diverse generation sector is that security of supply increases as reliance on any one generation type and location is reduced.

The government believes there are obvious and low-cost greenhouse gas reduction opportunities in the energy sector in the form of renewable electricity generation when compared with other sectors. Increasing the proportion of electricity generated from renewable sources to 90 per cent will reduce dependence on fossil-fuel generation and help control GHG emissions. Achieving the government's 90 per cent renewable target will, therefore, minimise the country's exposure to fluctuations in resource price and limit the extent of its economic liabilities on the international carbon market.

Taken together, increased security of supply and the comparatively reduced long-term cost of a generation system based heavily on renewable sources will provide significant economic, social and cultural benefits to the country. There are, however, some potential costs associated with a move to promote and increase the proportion of electricity generated in New Zealand from renewable energy sources. These costs include:

- the potential to increase pressure on the transmission network, leading to a need for more investment in transmission infrastructure
- the need to provide more installed capacity than would be the case if New Zealand opted for thermal generation
- the potential for adverse environmental effects associated with the use and development of natural and physical resources.

The benefits and costs of promoting an increase in the proportion of electricity generated in New Zealand from renewable sources were analysed during the development of the NZES. On balance, it was concluded that the benefits to be derived from increasing the proportion of renewable electricity generation to 90 per cent outweighed the associated costs.

The conclusion of this evaluation is that the proposed Objective is the most appropriate way to achieve the purpose of the RMA.

2. Are the policies proposed the most appropriate for achieving the Objective?

Policies 1, 2 and 3 are intended to provide guidance to decision-makers when considering applications for resource consent to undertake renewable electricity generation activities. This focus is considered appropriate as it is targeted at addressing the lack of regulatory certainty (lack of certainty being the principal problem identified with the status quo).

Policies 4 and 5 complement this focus by requiring local authorities to remove unnecessary regulatory barriers to enable the identification of renewable electricity generation possibilities and, by similarly enabling the development of small and community-scale renewable electricity generation. The effect of these policies will be felt in the medium term and will encourage the development of a robust and resilient electricity generation system in New Zealand.

Taken together it is considered that the proposed policies provide a robust package that is effective and efficient, and the most appropriate way to achieve the Objective of the proposed NPS.

3. What are the benefits and costs of the proposed policies?

The proposed NPS will promote an increase in the proportion of electricity generated in New Zealand from renewable sources. This will support the development of a diverse and resilient electricity generation sector, which will in turn increase security of electricity supply. A reduced dependence on fossil-fuel generation will minimise New Zealand's exposure to international fluctuations in resource (oil and gas) prices. The proposed NPS will support other government initiatives seeking to reduce greenhouse gas emissions and to address climate change. Importantly, the proposed NPS will limit the extent of New Zealand's potential economic liabilities on the international carbon market deriving from its climate change obligations under the Kyoto Protocol. It is difficult to quantify these economic benefits, but they are expected to be significant.

Clear statutory recognition of the national benefits of renewable electricity generation will provide generators with a degree of certainty that decision-makers will give appropriate consideration to these benefits when considering plan provisions and applications.

The total present value cost of the proposed NPS is estimated to be $23.5 million. Tables detailing estimated costs and the assumptions behind these estimates are included in Appendix A. A discussion of specific costs associated with the project is set out below:

Government costs

The government will incur costs associated with the preparation of non-statutory guidance and explanatory workshops to support consistent interpretation and implementation of the proposed NPS: $260,000 undiscounted cost in the first year following approval. Further costs could result if Crown submissions are required in relation to specific applications and/or plan changes.

Local government (territorial, unitary and regional councils) costs

A majority of costs associated with the proposed NPS will fall on local government, which will be responsible for notifying and processing plan changes. Estimates ignore the potential for synergy with other related plan changes and are based on the assumption that there will be one plan change process per regional council, unitary authority and territorial authority. It is thus estimated that staff training / upskilling, and the process of plan change notification and hearings required to give effect to the proposed NPS will result in a cost to local government of $19.9 million (undiscounted cost spread over year's two to five following approval). An additional $3.1 million (undiscounted cost spread over 20 years following approval) has been estimated to allow regional councils, unitary authorities and territorial authorities to implement

public education and advocacy in support of innovation in the field of renewable electricity generation.

Generator costs

It is expected that generators will monitor plan changes made in response to the NPS. It is likely that generators will lodge submissions on plan changes in areas where they have a commercial interest; a cost of $7.3 million (undiscounted cost spread over years two to five following approval) has been estimated to account for generator advocacy (one full-time equivalent (FTE) per major generator plus $50,000 per plan).

Local community stakeholders and non-government organisations (NGO) costs

It is likely that the NPS will stimulate an increased level of community involvement in plan advocacy. A cost of $3.4 million (undiscounted cost spread over year's two to five following approval) has been estimated to account for public submissions.

4. What are the risks of acting or not acting if there is uncertain or insufficient information about the subject matter of the proposed policies?

There has been a past trend for decision-makers to address the benefits of renewable electricity generation in an inconsistent way. The Environment Court is, however, increasingly required to make decisions that balance local and national, costs and benefits in relation to renewable electricity generation proposals; case law is emerging in this area as a result. In addition, the status quo has possibly become more favourable towards renewable electricity generation since the release of the NZES. It is expected that the imminent introduction of the New Zealand Emissions Trading Scheme (NZETS) will also have a significant effect on the weight given to the benefits of these projects in RMA decisions. Nevertheless, the RMA does not clearly establish the significance of the benefits of renewable electricity generation projects, which by their nature can compete with other environmental values and are often felt at the national level. This complicates the RMA decision-making process and has led to increasing uncertainty in the marketplace, and has the potential to frustrate development opportunities into the future. It is, therefore, not possible to conclude that sufficient renewable electricity generation projects will be developed under the status quo to meet the government's renewable electricity target of 90 per cent by 2025. Given the potentially significant consequences of failing to meet this target, it is considered that the introduction of an NPS is an appropriate risk-management intervention.

The risks of not acting to address this issue are:

- insufficient renewable electricity generation capacity will be consented and developed to meet the government's renewable electricity target of 90 per cent by 2025
- as a result, New Zealand will either face security of electricity supply problems with significant associated economic implications, and/or the government will need to amend its target and allow the development of more thermal-base load generation

- if the government is forced to amend its renewable electricity generation target, it is very likely that New Zealand will face higher economic costs to meet its Kyoto obligations. Increasing the country's reliance on thermal electricity generation would therefore have direct financial implications for the nation. Such a move would also have indirect economic costs, as it is likely that New Zealand's international image would suffer in the markets of its increasingly 'climate change aware' trading partners
- continuing uncertainty for local authorities, the Environment Court, the development community and the general public, should government fail to articulate the benefits of renewable electricity generation in a statutory RMA instrument.

The potential risks of acting are considered to be:

- lack of local and/or regional action: although only a handful of plans and policy statements specifically address renewable electricity generation, some councils may argue that their plans already meet the requirements of the proposed NPS, and therefore no further change is necessary. This may lead to potential confrontation, and possibly litigation between the Ministry, generators and local government as to how to best implement the proposed NPS
- uncertainty about how best to give effect to the proposed NPS could lead to delays and increased litigation costs
- underestimation of the costs and time it will take to put required changes in place
- a requirement that councils to undertake additional investigative, monitoring and policy development work, which will attract significant costs
- a potential lack of 'professional' resources at regional and district councils requiring councils to engage consultant advice. This would increase costs and, should additional resources not be available due to labour supply, some tasks may not be completed within the timeframes stipulated
- resources of regional and district councils being diverted away from the processing of consents for renewable electricity generation projects towards policy development, or away from other high-priority programmes. This could create tension between the Objective and the policies of the proposed NPS
- a requirement that decision-makers to have regard to the relative 'reversibility' of effects of different technology types. This could lead to a perceived regulatory bias against investment in relatively 'non-reversible' renewable generation technologies such as large-scale hydro generation
- promoting development at the cost of the local environment in some areas – costs that may not have occurred under the status quo.

1 Introduction

1.1 Overview and background

1.1.1 Electricity generation in New Zealand

A secure and reliable system of electricity generation and transmission is a crucial component of a modern, prosperous society.

The New Zealand energy system has largely been built around the transmission of electricity generated in the southern hydro-lakes to major load centres further north. This has given the country a relatively cheap and sustainable supply of renewable electricity, but limited storage capacity in the hydro-lakes can put security of supply at risk in dry years. Historically the New Zealand electricity system has relied on fossil fuel-based thermal-generation to back up hydro-generation when water is in short supply.

If New Zealand continues on its current path, electricity demand is projected to grow at around 1.3 per cent per annum.[4] At this rate of growth, approximately 3,900 MW of new capacity will be required to meet demand growth between 2005 and 2030. It is worth noting that this projected rate of growth is significantly lower than recent historic levels of growth (around two per cent per annum). Improved energy efficiency throughout the economy will lower the rate of growth in demand, but a significant amount of new capacity is still expected to be needed.

In order to meet growth in demand until 2025, New Zealand will need to increase generation capacity by around 175 megawatts (MW) per annum. There are of course other measures the government can undertake to satisfy electricity demand, specifically by implementing measures to reduce consumption, or to increase efficiency of use. These measures are not specifically addressed by this NPS or section 32 assessment, but are the subject of a range of other government policies.

Generating electricity from fossil fuel sources released around 8.3 million tonnes of CO_2-equivalent emissions into the atmosphere in 2006.[5] While New Zealand's total greenhouse gas (GHG) emissions account for only approximately 0.3 per cent of global emissions, New Zealand has the 12th highest per capita emissions rate in the world. In the absence of any price on emissions, projections suggest that approximately 2323 MW of additional capacity needed by 2030 would use fossil fuels. As a result, electricity-related greenhouse gas emissions would increase by approximately 50 per cent by 2030 if we do not change our course.[6] The government believes this would not only be environmentally irresponsible, but that it would also put New Zealand exports at a disadvantage, increase the country's exposure to the cost of imported fossil fuels, and threaten New Zealand's reputation as a clean, green tourist destination. These effects would have significant economic implications for the country. In

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4 *The New Zealand Energy Strategy to 2050*, Ministry of Economic Development, October 2007.

5 *New Zealand's Greenhouse Gas Inventory 1990–2006*, Ministry for the Environment, April 2008.

6 *The New Zealand Energy Strategy to 2050*, Ministry of Economic Development, October 2007.

addition, New Zealand has signed and ratified the Kyoto Protocol and by 2012 is obliged to have either reduced GHG emissions to 1990 levels, or to purchase carbon credits to offset post-1990 increases. In making this point it is noted that New Zealand does not necessarily have to reduce emissions from all sectors, as long as the total emissions reduce to 1990 levels. Although that obligation relates to the economy as a whole and not solely to the electricity generation sector, the government believes there are obvious and low-cost GHG reduction opportunities in the form of renewable electricity generation.

The government has identified four main climate change challenges[7] that the country will face in meeting growing demand for electricity. These are:

- to control and reduce New Zealand's greenhouse gas emissions
- to support international initiatives for multilateral action on greenhouse gas emissions, principally through maintaining momentum on the implementation of the Kyoto Protocol and ensuring this momentum is carried through into whatever agreements emerge for the period after 2012
- to prepare for, and adapt to, the impacts of changes in New Zealand's physical environment by responding to the risks and taking advantage of the opportunities they present
- to realise the objectives above at the lowest achievable long-term cost.

Modelling undertaken by the Ministry of Economic Development (MED) for the New Zealand Energy Strategy (NZES) indicates that the majority of opportunities to reduce greenhouse gas emissions in the electricity sector derive from "aggressively pursuing existing and new renewable-based electricity generation".[8] This analysis supports the government's vision that, for the foreseeable future, New Zealand will maintain a secure electricity supply through an increased use of new renewable sources of electricity generation alongside existing renewable and fossil-fuel generation.

1.1.2 The status quo

In the period from 1991 to mid-2006, only 17 per cent of generation capacity consented under the RMA was renewable, and the proportion of fossil fuel-based thermal generation had grown substantially. Reasons for this trend include:

- rising international demand for the services of manufacturers of renewable electricity generation components
- New Zealand's unique renewable energy resource characteristics (particularly wind) requiring tailored design and manufacturing solutions
- New Zealand's small market size reducing the ability of generators to achieve economies of scale, and affecting the financial viability of renewable electricity generation technologies

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[7] *The New Zealand Energy Strategy to 2050*, Ministry of Economic Development, October 2007.

[8] Ibid, p36.

- concern that renewable electricity generation projects faced particular hurdles under the RMA that reduced the comparative attractiveness of (already costly to develop) renewable electricity generation projects when compared with the alternative of thermal generation.

Notably, over half of all wind projects proposed during this period were subject to appeal to the Environment Court and only two new hydro projects of any significant scale gained appeal-free resource consents, with the output of these projects representing just 12 MW of new capacity.

As part of the 2004 amendment to the RMA, the government inserted two new matters into section 7 requiring decision-makers to have particular regard to the effects of climate change [section 7(i)] and the benefits to be derived from the use and development of renewable energy [section 7(j)]. In 2005, the RMA was also amended to provide for direct referral of applications to the Environment Court and to broaden the scope of the Minister for the Environment's powers to call-in matters that are, or are part of, proposals of national significance.

Following this, in late 2007, the government took two significant steps in accordance with its vision of increasing the use of new renewable sources of electricity generation:

- in October 2007, the government released the New Zealand Energy Strategy (NZES) which adopted a target for renewable electricity generation of 90 per cent by 2025 (based on delivered electricity in an average hydrological year)
- on 4 December 2007, the Climate Change (Emissions Trading and Renewable Preference) Bill was tabled in Parliament. The Bill has two parts:
  - Part 1 amends the Climate Change Response Act 2002 to introduce a greenhouse gas emissions trading scheme covering all sectors and all gases
  - Part 2 amends the Electricity Act 1992 to create a preference for renewable electricity generation by implementing a 10-year restriction on new base load fossil-fuelled thermal-electricity generation, except to the extent required to ensure the security of New Zealand's electricity supply.

In the period since the 2004 amendments to the RMA, the decisions of the Environment Court on the benefits to be derived from the use and development of renewable energy have led to the emergence of case law that is particularly relevant to renewable electricity generation projects. With the status quo now reflecting the NZES, the imminent greenhouse gas trading scheme, the government's preference for renewable electricity generation and, in light of case law established since 2004, the number of applications for renewable electricity generation projects and the number of consents granted for these projects has grown rapidly in recent times.

It is possible that the recent evolution of the status quo will contribute to the development of more renewable electricity generation projects, and that this will lead to an increase in the availability of electricity in New Zealand generated from renewable energy sources, as well as to an improvement in the overall security of electricity supply. This outcome is, however, by no means guaranteed. Renewable electricity generation activities are often accompanied by significant actual or potential adverse environmental effects and, particularly as new generation technologies become available, the nature and degree of these effects can sometime be uncertain. As the population of New Zealand increases, decision-makers will be required to consider the effects of an increasingly complex and competing set of demands made by New Zealanders for access to and use of the country's natural and physical resources. In this context, government will need to clearly articulate its position on the benefits associated with the development of renewable electricity generation activities in order to support the consistent

interpretation of sections 7(i) and 7(j) and to promote achievement of its target for renewable electricity generation of 90 per cent by 2025.

A lack of clarity as to the position of the government on the benefits of renewable electricity generation activities could contribute to regulatory uncertainty and could undermine the emerging pattern of case law relevant to decisions on the benefits of renewable electricity generation activities. Regulatory uncertainty could threaten the ability of generators to develop the additional generation capacity necessary to meet the government's target for renewable electricity generation of 90 per cent by 2025. Given the government's proposal to amend the Electricity Act as stated above, a failure to consent sufficient renewable generation capacity would place national security of supply at risk. This would, in turn, oblige the government to consider revising its position on thermal generation and, therefore, its renewable generation target with implications for greenhouse gas emissions. The risk to security of supply and/or the potential for that risk to be addressed by thermal generation could have significant social and economic consequences for New Zealand, which in turn could be expected to have a negative impact on the wellbeing of New Zealanders.

1.1.3 Previous consideration of electricity generation under the RMA

In 2005, the government convened a Governmental Reference Group to investigate the merits and potential scope of national guidance on the management of electricity generation under the RMA. In its May 2006 draft report, the Reference Group concluded that a national policy statement relating specifically to renewable electricity generation would add little value and could introduce unacceptable risks, including:

- non-renewable projects could be disadvantaged in the RMA process and given the (then perceived) inevitable need for non-renewable generation into the foreseeable future, that risk was considered to present a significant potential cost
- if renewable electricity generation received preferential treatment through the RMA this might contribute to an imbalance in New Zealand's generation mix which might in turn place the security of electricity supply at risk
- giving preference to renewable electricity generation might increase the risk of adverse environmental effects considering that renewable electricity generation can have a wide range of effects, some of which are irreversible.

The report of the Reference Group noted there was a difference of opinion within the group as to the likelihood or seriousness of these risks.

The Reference Group released its report in a very different context to that of today. As discussed above, since mid-2006, the government has signalled that it is not prepared to rely solely on a pricing mechanism (the New Zealand Emissions Trading Scheme) to deliver a change in the electricity sector. The government has also expressed a clear preference for renewable generation and has established a renewable electricity target with associated commitment to tilt the regulatory playing field in addition to influencing electricity production costs. Importantly, the release of the New Zealand Energy Strategy and the introduction of the Climate Change (Emissions Trading and Renewable Preference) Bill has shifted the focus of the New Zealand electricity market towards the use and development of renewable energy sources.

It was in this changed context that the Minister for the Environment in August 2007 decided it was desirable to prepare a national policy statement for renewable energy. The Minister then consulted a number of relevant interested parties and iwi authorities under section 46 of the RMA. As a result of comments received, the Minister decided in March 2008 that the scope of the national policy statement should be narrowed to renewable electricity generation.

The proposed NPS seeks specifically to assist decision-makers when considering whether proposals to use and develop New Zealand's renewable energy sources, promote the sustainable management of natural and physical resources.

1.2 National policy statements

The purpose of a NPS prepared under Section 45 of the RMA is to:

> *"State objectives and policies for matters of national significance that are relevant to achieving the purpose of this Act". The purpose of the RMA is "to promote the sustainable management of natural and physical resources".*

With the exception of the New Zealand Coastal Policy Statement, national policy statements (NPSs) are not mandatory, but may be prepared at the discretion of the Minister for the Environment where it is considered that policy guidance on a matter of national significance would be beneficial. To date, only two NPSs have been prepared: the mandatory New Zealand Coastal Policy Statement and the National Policy Statement on Electricity Transmission (2008).

The process for developing an NPS is outlined in sections 46 and 46A of the RMA. Broadly the process involves the Minister for the Environment (and Cabinet) determining whether an NPS is desirable, then:

- seeking comments from relevant interested parties, including specifically iwi authorities
- preparing a proposed NPS
- establishing the process for the NPS to be considered, which can be either:
  - the process set out in sections 47–52 of the RMA, which allows for the Minister to establish a Board of Inquiry with specific terms of reference, public notification, submissions, and a hearing process, and finally a recommendation from the Board of Inquiry to the Minister or
  - an alternative process to be determined at the discretion of the Minister, but which must give the public time to consider the proposed NPS, to make submissions, and to be heard. A recommendation will still be made to the Minister.
- the Governor General may, on the recommendation of the Minister, approve the NPS.

In accordance with this process, an independent Board of Inquiry will publicly notify the proposed NPS, call for submissions and hold a public hearing. Once the inquiry is complete, the Board will prepare a report that may include recommendations to the Minister for the Environment to make changes to the proposed NPS.

1.3 Section 32 evaluation

The purpose of the present document is to report the findings of an evaluation of the proposed NPS undertaken in accordance with the requirements of section 32 of the RMA. Such a 'section 32 evaluation' is required for policies and plans prepared under the RMA; it requires that the benefits and costs of a proposed plan or policy be assessed against the purpose of the RMA.

Specifically, section 32 states that:

> *(3) An evaluation must examine –*
>
> *(a) the extent to which each objective is the most appropriate way to achieve the purpose of this Act; and*
>
> *(b) whether, having regard to their efficiency and effectiveness, the policies, rules, or other methods are the most appropriate for achieving the objectives.*
>
> *(4) For the purposes of the examinations referred to in subsections (3) and (3A), an evaluation must take into account –*
>
> *(a) the benefits and costs of policies, rules, or other methods; and*
>
> *(b) the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods.*

Taken collectively, section 32 requires the benefits, costs and potential risks of the proposed NPS to be evaluated. In this context the terms benefits and costs include environment, social, cultural and economic considerations.

Section 32 of the RMA does not explicitly require an evaluation of whether the proposed NPS is 'desirable'. This assessment is required separately under section 45 of the RMA. However, when completing an evaluation in accordance with section 32, there is an implicit requirement to assess alternative approaches to the proposed NPS. Alternatives are, in this case, considered to include both alternatives to the proposed NPS and alternative objectives and policies.

The section 32 evaluation is a critical aspect of the NPS development process. Section 32A allows challenges to be made in a submission on an objective, policy, rule or other method on the grounds that Section 32 has not been adequately complied with. For this reason, it is essential that a systematic and robust evaluation process is used. The process used for the section 32 evaluation is explained in detail in section 4 of this report.

2 The Status Quo

2.1 Current regulatory framework

The wider framework that governs the use and development of New Zealand's renewable energy resources is set by a number of national and international statutes, strategies and policies including the:

- Resource Management Act 1991 and the Resource Management (Energy and Climate Change) Amendment Act 2004
- Electricity Act 1992, including the Government Policy Statement on Electricity Governance
- Energy Efficiency and Conservation Act 2000
- Climate Change Response Act 2002
- Climate Change (Emissions Trading and Renewable Preferences) Bill 2007
- Kyoto Protocol
- Energy Policy Framework
- Sustainable Development Programme of Action – Energy
- New Zealand Energy Strategy
- New Zealand Energy Efficiency and Conservation Strategy
- National Policy Statement on Electricity Transmission.

Within this wider framework, the regulatory environment within which New Zealand's renewable energy resources are to be used and developed is primarily determined by the RMA. The New Zealand Energy Strategy and New Zealand Emissions Trading Scheme are also expected to have a significant influence on the development of these resources. The key elements of this regulatory environment are outlined below, to provide a background to discussion later in this section on the current status, expected future scenario, and problems identified with the status quo.

2.1.1 The Resource Management Act 1991

Section 2 of the RMA defines renewable energy as: "energy produced from solar, wind, hydro, geothermal, biomass, tidal, wave, and ocean current sources". Renewable energy broadly encompasses energy derived from resources that are either regenerative or resources that, for practical purposes, are not depleted by their use over very long timeframes.

District and regional councils are responsible for making decisions on applications for renewable electricity generation projects under the provisions of the RMA. The decisions of these bodies are guided by the content of district and regional plans and regional policy statements.

The Resource Management (Energy and Climate Change) Amendment Act 2004 (RMAA) introduced three new matters into section 7 (Other matters) of Part II of the RMA, requiring all persons exercising functions and powers under the Act to have particular regard to:

(ba) the efficiency of the end use of energy

...

(i) the effects of climate change

(j) the benefits to be derived from the use and development of renewable energy.

Some local authorities have made changes to their plans and/or policy statements in response to these amendments. Eleven (of 86) regional councils, unitary authorities and territorial authorities have introduced objectives, policies and methods regarding climate change, energy efficiency and renewable energy and at least two others have drafted plan changes to address these matters. The amendments vary for each local authority in their extent and focus; however, all have a general aim of encouraging renewable electricity generation while avoiding, remedying or mitigating adverse effects on the environment.

2.1.2 Ministerial call-in

Section 141A of the RMA allows the Minister for the Environment to intervene in local authority decision-making processes by 'calling in' applications or requests for private plan changes of national significance. Section 141B(2) of the RMA sets out the relevant factors the Minister may choose to consider when deciding whether a proposal is of national significance. These factors include whether the matter:

(a) Has aroused widespread public concern or interest regarding its actual or likely effect on the environment, including the global environment; or

(b) Involves or is likely to involve significant use of natural and physical resources; or

(c) Affects or is likely to affect any structure, feature, place, or area of national significance; or

(d) Affects or is likely to affect more than one region or district; or

(e) Affects or is likely to affect or is relevant to New Zealand's international obligations to the global environment; or

(f) Involves or is likely to involve technology, processes or methods which are new to New Zealand and which may affect the environment; or

(g) Results or is likely to result in or contribute to significant or irreversible changes to the environment, including the global environment; or

(h) Is or is likely to be significant in terms of section 8 (Treaty of Waitangi).

The Minister can be formally requested to intervene in a proposal, either by the applicant or by the relevant local authority. The Minister can also choose to intervene. When deciding whether to intervene, among other considerations, the Minister must have regard to the extent to which a matter is of national importance. Before the 2005 amendment to broaden the Minister's call-in powers, the call-in provisions of the RMA had only been applied once in the mid-1990s in relation to the Stratford Power Station proposal. However, in 2007, Transpower's North Island Grid Upgrade Project was called in, and so far in 2008 the 'Te Waka' wind farm proposal and 'Te Mihi' geothermal power station proposal have both been called in. The increasing willingness of the Minister to call in energy-related proposals could reflect the fact that many of the factors set out in section 141B(2) apply to these proposals. Given the nature of effects, both beneficial and adverse, of renewable electricity generation projects this trend is likely to continue.

Although not a universally supported or a universally appropriate option, the Ministerial power to 'call in' renewable electricity generation projects has the potential to ensure that complex and nationally significant proposals are processed in a timely and cost-effective manner; and that the nationally significant factors of such proposals are given appropriate consideration by decision-makers. The call-in process also has the potential to aid in establishing case law that can be used to inform consent applications and to guide decision-makers when considering other similar projects.

In this context, it is expected that an increasing number of applicants and councils will seek to invoke the call-in provisions in relation to renewable electricity generation projects, particularly if decisions made by the Minister (through a Board of Inquiry) are better able to deal with increasingly complex resource management matters, often relating to the balancing of conflicting local and national benefits and adverse effects.

2.1.3 The New Zealand Energy Strategy

The New Zealand Energy Strategy to 2050 was released in October 2007. The NZES sets out the government's vision for a reliable and resilient system delivering New Zealand sustainable, low emissions energy services. It specifically responds to the challenges of climate change and improving security of energy supply.

The NZES is a whole of system strategy covering electricity, transport, technologies, energy efficiency, and energy affordability. One of its key actions is to adopt a target for renewable electricity generation of 90 per cent by 2025 (based on delivered electricity in an average hydrological year). The NZES outlines the likely make-up of electricity generation under two scenarios: base case and low-carbon energy sector. The base case is effectively the status quo, while the low-carbon energy sector provides a close approximation of a case where the 90 per cent target is achieved. Both scenarios take into account predicted increases in electricity demand although the low-carbon energy scenario assumes greater improvements in demand reduction (such as increased energy efficiency) than the base case. In addition, a greater degree of technological advancement and the introduction of carbon pricing are assumed in the low-carbon scenario.

The mix and timing of projects underlying the low-carbon scenario has been modelled by the Electricity Commission.[9] The modelling involved the development of five scenarios, ranging from the 'sustainability path' to 'high gas discovery'. Although it is underpinned by different assumptions and is not driven by the 90 per cent renewable target, the 'sustainability path' in the Commission's modelling achieves an equivalent proportion of renewable electricity generation by 2025 and can therefore be compared with the low-carbon scenario in the NZES. Table 1 shows the estimated mix and timing of electricity generation projects under the 'sustainability path' scenario, as well as the percentage of electricity generated from renewable sources at periods between 2008 and 2025. Two of the hydro projects shown in Table 1 refer to control gate refits resulting in increased generation, but the remaining projects represent new generation capacity that will need to be consented under the RMA and constructed within these time periods in order to achieve the 90 per cent target set by the NZES.

[9] Electricity Commission, *2008 Grid Planning Assumptions: Consultation material on draft generation scenarios* (2008).

Table 1: Projected generation under the Electricity Commission's 'Sustainability Path' scenario

	Gas/oil	Diesel	Hydro	Wind	Geothermal	Biomass	Marine	Total	Renewable
Installed capacity 2007 (MW)	2959	156	5346	434	322	130	0	9347	
2007 output (GWh)	12,268	68	24,692	3,422	1,128	1,025	0	42,603	71%
Added capacity 2008–2010	–300	150 (1)	39 (3)	252 (4)	338.5 (4)			480	
Projected 2010 output (GWh)	10,532	134	24,872	5,408	2,314	1,025	0	44,286	76%
Added capacity 2011–2015		150 (1)	285.5 (7)	117 (3)				553	
Projected 2015 output (GWh)	11,180	200	26,191	6,331	2,314	1,025	0	47,240	76%
Added capacity 2016–2020	–885 (1)	450 (3)	488 (5)	496 (5)	620 (5)	30 (1)		1199	
Projected 2020 output (GWh)	5,561	397	28,445	10,241	4,487	1,261	0	50,392	88%
Added capacity 2021–2025	–360	300 (2)	220 (4+)	75 (1)	470 (4)	60 (2)	50 (1+)	815	
Installed capacity 2025 (MW)	1,414	1,206	6,378	1,374	1,750.5	220	50	12,393	
Projected 2025 output (GWh)	4,847	528	29,458	10,833	6,134	1,734	219	53,754	90%

Source: Enfocus Ltd 2008

Notes: See the Electricity Commission's 2008 Grid Planning Assumptions for further detail on the assumptions underlying the modelling of the sustainability path scenario. For the purposes of calculating output, the following load factors have been assumed: Wind 40%, Hydro 53%, diesel peakers 5%, geothermal 90%, biomass 90% and wave power 50%.

2.1.4 The emissions trading scheme

From December 2006 through March 2007, the government released five discussion documents and consulted broadly on possible policy directions for climate change and sustainability. In response to this consultation, the government has decided in principle that New Zealand will adopt an emissions trading scheme (the NZETS) as its core price-based measure for mitigating climate change.

The NZETS will, over time, include all major sectors (including stationary energy) and the six greenhouse gases specified in the Kyoto Protocol. It will be introduced across the economy in stages to allow gradual adjustment. All major sectors of the economy will be exposed to the international price of emissions at the margin for all operations by the beginning of 2013. The scheme will allow both sales to and purchases from international trading markets. The 'stationary energy' sector (coal, natural gas and geothermal) will enter into the NZETS in January 2010. Upon entry into the scheme, sectors will assume the core obligation to surrender emission units to match emissions, and further obligations with regard to monitoring and reporting.

2.2 Situation under the status quo

2.2.1 Emerging trends

The use and development of natural resources for the purpose of renewable electricity generation will always result in adverse environmental effects of some degree. These effects are likely to increase with scale and it is also likely that renewable electricity generation proposals, with the potential to contribute meaningfully to national electricity generation capacity, will always require resource consents. Will consent will be granted, or will it be granted subject to commercially viable conditions? That question is undoubtedly central to the decisions of generators considering the implications of investing significant sums, sometimes in the hundreds of millions of dollars, in the construction of large-scale renewable electricity generation projects.

In general terms, well-designed and appropriate projects should gain consent under the existing RMA framework, whereas poorly conceived projects with overwhelmingly negative environmental effects should be declined. However, the relativistic nature of decisions charged with promoting the sustainable management of natural and physical resources means that RMA decisions will never be as 'black and white' as many would like – irrespective of which side of the debate one is on. The question this section 32 evaluation seeks to address is whether an NPS is needed to assist those 'well-designed and appropriate' projects in gaining consent, or whether the status quo is adequate for this purpose.

There is a perception, and often a reality, of lengthy delays and high costs associated with the acquisition of resource consent for renewable electricity generation projects. To take a balanced view, any major development project will face higher costs associated with the RMA; these costs will be relative to the scale and mix of effects that need to be assessed. The costs associated with assessing environmental effects and gaining resource consent are, in the majority of cases, likely to be generally appropriate and associated with the reasonable requirements of preparing resource consent applications for projects that may have significant environmental effects; additional costs associated with unnecessary processing delays are, however, less acceptable.

Uncertainty in the RMA decision-making framework due to a lack of clarity surrounding the balancing of effects associated with renewable electricity generation projects can complicate the consent process and has the potential to add significant development costs to these projects. Very little information is publicly available on the projects that might have been discounted as 'unconsentable' under the RMA before reaching the consenting stage – making it very difficult to confirm whether the RMA has acted as a deterrent to even more (or larger projects) being advanced to the consenting stage. However, while the costs of uncertainty in relation to renewable electricity generation projects are difficult to quantify, anecdotal accounts suggest they can be of sufficient size to undermine the viability of projects at the pre-application stage.

Assessments of the effect the RMA is having on renewable electricity generation projects have been undertaken by MWH Consultants in 2003,[10] the Governmental Reference Group in 2006,[11] and the Environmental Challenge Limited (ECL) in May 2006.[12] A review of these reports, along with a review of recent case law and the results of consultation with key stakeholders in the energy market (generators, regulators and interest groups), has highlighted a number of significant issues with the resource consent process. These issues are discussed under the subheadings below.

2.2.1.1 Objectives and policies in statutory planning documents

Some notable exceptions aside, regional policy statements generally do not contain policies that would encourage the use and development of resources (such as wind or water) for renewable electricity generation purposes. Again with some notable exceptions, this pattern is found in regional and district plans, which generally lack relevant policies and methods under which consents for renewable energy could be sought. Similarly, a primary finding of a 2004 review of planning for wind energy[13] was that "many district plans are effectively silent with regard to wind energy". It is important to note that the New Zealand wind industry was still in its infancy when the first generation of plans under the RMA were produced; second generation plans, or plan changes, in those locations where wind energy is being actively developed are beginning to include specific provision for wind farms (eg, the recently notified Tararua District Plan, with the Tararua District including one of New Zealand's first large-scale commercial wind farms, at Te Apiti).

The 2004 amendment to the RMA inserted the effects of climate change and the benefits of renewable energy into section 7 as matters to which decision-makers are to have particular regard. Yet only 11 of 86 regional councils and territorial authorities have introduced objectives, policies and methods into their plans regarding climate change, energy efficiency and renewable energy. This could reflect differing levels of resourcing or capacity, or, because not all of New Zealand is endowed with renewable energy resources some local authorities may not have been prompted to consider changes to their planning framework. On the other hand, it could reflect the political difficulty of providing for development that has the promise of benefits at both national and local scales, but the potential to result in significant adverse local environmental effects.

In short, perhaps due to the relative lack of government guidance, much of the country does not have an explicit policy framework to guide the assessment of applications to use and develop renewable energy resources. Without this guidance, generators can find themselves having to negotiate a patchy regulatory system where local authority's plans are skewed towards identifying and evaluating the potential adverse effects of renewable electricity generation projects.

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[10] *Evaluation of Energy Efficiency and Renewable Issues in Plans under the Resource Management Act, and Other Local Authority Initiatives*, MWH, April 2003.

[11] *The Merits and Potential Scope of National Guidance on the Management of Electricity Generation under the RMA*, Draft Report of the Reference Group, May 2006.

[12] *Electricity Generation Case Study: Trend Analysis*, The Environmental Challenge Ltd, Report to the Ministry for the Environment, May 2006.

[13] *Winds Up*, Mark Ashby, 2004.

2.2.1.2 Consenting existing generation capacity

The presumption in the RMA is that consents granted to provide for the use of public resources, such as the allocation of water-use rights or the granting of permission for private occupation of the coastal marine area, will expire. If the consent-holder proposes to continue undertaking the consented activity, new consents will be required. In many instances the most sustainable use of natural and physical resources will be to maintain existing renewable generation capacity and to maximise its efficient use. If existing generation capacity is not maintained, the new generation capacity required to make up for the resultant shortfall would be considerably more expensive to develop than the alternative of optimising the efficiency with which existing capacity is used. There are also economic benefits to optimising the potential returns from existing investment, and as such there is a logical desire amongst generators to enhance the use of existing infrastructure and resources for renewable electricity generation.

In addition to facing the same barriers as new projects, existing renewable electricity generation infrastructure was often developed at a time when New Zealand's natural and physical resources were managed under a different set of values. Gaining consent for existing projects under the RMA can therefore be particularly complicated and can entail longer lead-in and processing times than new projects. Generators consider the process of gaining consent for existing projects to be an unduly difficult, costly and time-consuming process given the significant contribution that these projects make to the security of electricity supply in New Zealand and the wellbeing of New Zealanders. There have been no instances where consent for existing large-scale renewable electricity generation activities has been declined, although conditions have been changed to improve environmental performance and the term of the subsequent consent has, in some cases, been granted for less than was sought (the Tongariro Power Development is one such example). While it is necessary to consider the appropriateness of existing generation infrastructure as consents approach expiry, the general lack of policy recognition for the benefits of these projects continues to frustrate generators.

2.2.1.3 Processing timeframes

In almost all cases studied where generators have sought to develop significant renewable electricity generation projects under the RMA, applications have been publicly notified to a broad audience and the processing timeframes have extended beyond the statutory timeframes identified by the RMA. It is appropriate for affected parties to be notified and, in some cases, for statutory timelines to be extended to allow applicants to explore potential avenues for resolution of submitters' concerns.

Hydro projects were found to have the longest processing timeframes; on average generators waited 18 months after the final date for lodging appeals before receiving a decision from the Environment Court. This delay is significant when added to the time it takes to prepare a consent application (which anecdotal accounts suggests can stretch for five years or more), and in view of the time it can take for councils to process applications.

2.2.1.4 National benefit analysis

One of the key issues for consenting renewable electricity generation is that the costs (in environmental terms) are often incurred locally, while the local benefits are difficult to assess and are generally felt (or calculated) at a national level.

In over half of the projects reviewed as part of this assessment, decision-makers undertook an analysis of the national benefit of the proposal. However, few council decisions explicitly gave weight to national electricity generation benefits as a counter-balance to the adverse effects.

The beneficial effects of the commercial activity of renewable electricity generation do not generally gain material recognition in policy statements and plans. Although only required in second generation plans, few regional and district plans seek to acknowledge the significant social, economic and environmental benefits associated with renewable electricity generation activities. Perhaps these are implied, but the general lack of amendments made to plans and/or policy statements around the country to explicitly recognise the benefits of renewable electricity generation continues to be a barrier to the timely and efficient granting of consents for well conceived renewable electricity generation projects.

More broadly, plans tend to look at site impacts rather than the sectoral or strategic environmental implications of decisions. Despite this, case law emerging from the Environment Court is beginning to encourage standardised methodologies for the assessment of environmental effects in areas where expert consideration of these effects can be highly subjective. An example of this is the so-called 'Pigeon Bay Criteria' for assessing the effects of proposals on the natural landscape.

Although there is evidence of greater certainty and consistency in the RMA decision-making framework since the 2004 amendment, the following question taken from the Environment Court's decision on Meridian Energy's proposed wind energy project, 'West Wind', at Makara[14] illustrates the difficult position that decision-makers regularly find themselves in when asked to consider the issue of weighing national benefits against local effects in relation to renewable electricity generation proposals:

> *[456] ... Where should the weighting lie between the benefits for the wider environment, and the disbenefits for the local environment and those who live and work in it? Put another way, acknowledging that every desirable outcome comes at a cost, how much of this outcome should the local environment and its local inhabitants reasonably be asked to bear?*

The question expressed by the Environment Court in the Makara wind farm decision is one that has to be addressed in all decisions on applications for consent to develop renewable electricity generation activities. Despite the difficulty inherent in making such judgements, case law is beginning to establish the clear need to factor national benefits into these decisions. In an earlier case in relation to the Awhitu wind farm project, *Genesis Power Limited v Franklin District Council* (A148/05), the Environment Court found that the benefits of this proposed wind development, when seen in the national context, outweighed the site-specific effects and effects on the local surrounding area. In that case, the Environment Court concluded that granting resource consent to the proposal would have numerous positive effects in the national interest and would reflect changes made by the RMA (Energy and Climate Change) Amendment Act 2004. In a similar vein to the Genesis Power decisions, the Court in *Unison Networks and Hawke's Bay Wind Farm v Hastings District Council* W58/06 clearly recognised that the proposed wind farm would have adverse effects on landscape and visual amenity but, after balancing the competing factors, concluded that the best way to promote sustainable management was to grant consent. While the Court sought to weigh local and national implications in both the Genesis Power and Unison Networks decisions, the exercise of doing so was taxing.

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[14] *Meridian Energy v Wellington City Council and Wellington Regional Council* W31/07.

It is notable that, despite receiving consent for the Awhitu project, Genesis Power has chosen not to proceed to the development stage and it is understood that the significant costs associated with the mitigation measures required by the conditions of consent were influential in this regard. This observation reflects concern amongst the major generators that resource consents show a trend to be granted subject to conditions of consent that are too strict and 'protectionist', so as to undermine the financial viability of consented projects. For example, TrustPower Limited advises that conditions have been imposed on six of its hydro schemes, resulting in a loss of capacity ranging from 1.2 to 9 per cent. The cumulative impact of incrementally reducing the capacity of particular applications will mean that more capacity needs to be developed elsewhere to meet demand. Perhaps counter-intuitively, applying strict protectionist conditions could further spread the footprint of adverse effects associated with this form of development. The emergence of such a trend represents a significant obstacle within the existing consenting framework that could undermine the efforts of generators to develop sufficient renewable electricity generation capacity to meet the government's target for renewable electricity generation of 90 per cent by 2025.

The difficulty of weighing national and local effects and benefits is understandable given the complex and varied nature of the resources, technologies, local values and national benefits at play in applications for consent to use and develop renewable energy resources. The philosophy behind the RMA leads it to remain largely silent on how to appropriately balance national and local benefits and effects, preferring instead to rely on the case-specific judgements of decision-makers whose consideration of effects and benefits is subject to assessment against Part II of the RMA. Within this framework decision-makers are required to have particular regard to the benefits to be derived from the use and development of renewable electricity generation and until such time as the significance of these benefits are made clear, generators will face lodging applications within an uncertain regulatory framework.

2.2.2 Situation in 2008

In order to establish emerging trends, much of the foregoing analysis has necessarily been backward-looking. Although the New Zealand Energy Strategy has only recently been released and the New Zealand Emissions Trading Scheme has not yet been introduced, both have been foreshadowed for some time; it is possible that the investment decisions of generators have recently been influenced in anticipation of these changes to the regulatory environment. As such, an analysis of the immediate situation is required to predict the effect of the status quo on the future of renewable electricity generation in New Zealand.

As at June 2008, four renewable electricity generation projects were under construction. In addition to this, a further 14 projects have been consented around the country, four of which are under appeal. Excluding these four, the 10 projects will provide a total additional capacity of 858.9 MW. Notably the four projects under appeal are all wind farms. If granted consent, these projects would provide an additional total capacity of 1040 MW. Tables 2–4 below provide further details.

Table 2: Renewable electricity generation projects under construction

Name	Type	Operator	Commissioning date	Region	Capacity (MW)
Kawerau	Geothermal	Mighty River Power	2008	Bay of Plenty	90
Ngawha Expansion	Geothermal	Top Energy	2008	Northland	15
Te Rere Hau (parts 2–4)	Wind	NZ Windfarms	2008–2009	Manawatu	46
West Wind	Wind	Meridian	2009	Wellington	142.6

Source: Ministry of Economic Development (unpublished data).

Table 3: Renewable electricity generation projects consented

Name	Type	Developer	Region	Capacity (MW)
Hawea Gates (retrofit)	Hydro	Contact Energy	Otago	19
Lake Rochfort Hydro Project	Hydro	Kawatiri Energy	West Coast	4
Nga Awa Purua	Geothermal	Rotokawa Joint Venture	Waikato	13
Tukairangi Road	Geothermal	Geotherm Group	Waikato	60
Centennial Drive	Geothermal	Contact Energy	Waikato	20
Hawke's Bay Wind Farm	Wind	Hawke's Bay Wind Farm	Hastings	225
Titiokura	Wind	Unison	Hastings	48
Taumatatotara (on hold)	Wind	Ventus	Waikato	20
Awhitu (on hold)	Wind	Genesis	Franklin	18
Horseshoe Bend	Wind	Pioneer Generation	Central Otago	1.8

Source: Ministry of Economic Development (unpublished data).

Table 4: Renewable electricity generation projects consented but under appeal

Name	Type	Developer	Region	Capacity (MW)
Taharoa	Wind	Taharoa C Inc	Kawhia	100
Project Hayes	Wind	Meridian	Central Otago	630
Mahinerangi	Wind	TrustPower	Otago	200
Motorimu	Wind	Allco Wind Energy	Manawatu	110
Kaiwera Downs	Wind	TrustPower	Southland	240
Te Uku	Wind	WEL Energy	Waikato	84

Source: Ministry of Economic Development (unpublished data).

New renewable electricity generation technologies are currently being developed and tested under the status quo. A project to trial a 1 MW tidal stream turbine in the Cook Strait was granted a coastal permit in April 2008, and a council hearing was held in May 2008 to consider an application to install marine turbines in the Kaipara Harbour. In addition, at least 14 wave and tidal stream technologies are currently being investigated around New Zealand. International trends suggest that investment in marine and tidal electricity generation projects is becoming economic. If site-specific conditions prove appropriate, New Zealand is anticipated to see more widespread 'speculation' around marine and tidal electricity generation projects.

The emerging pattern then is one of increasing willingness on behalf of generators to propose large-scale renewable electricity generation projects, particularly wind generation projects. Nevertheless, all issues raised in section 2.2.1 above are still relevant. Regulation has a significant influence on the commercial decisions of generators, at least as far as the energy sector is concerned; therefore the NZETS and the NZES will only achieve their long-term targets if there is corresponding attention to the actual and potential blockages or constraints within the regulatory system. Accordingly, in the absence of clear evidence to the contrary, we can expect the trends identified in section 2.2.1 to be a reasonable indicator of future experience.

2.3 Likely future scenario under the status quo

There is a degree of uncertainty surrounding estimates as to the likely timing and mix of future renewable electricity generation projects, largely because they are subject to the commercial decisions of generators. An underlying assumption of the models relied upon in this evaluation is, that projects with the least 'cost' will proceed earlier than more 'costly' projects. In this sense 'cost' is influenced by factors such as demand for electricity, emissions charges, available technology and the time and monetary costs of obtaining consent for a project. A variable factor is the cost that electricity generators receive for any electricity generated. It is assumed that the 'market' will determine when and where new generation projects are undertaken based on these factors.

It is possible that the analysis of trends and the current situation undertaken above may underplay the issues that will face future proponents of renewable electricity generation projects. Assuming the market is working to favour the most cost-effective projects, the most financially attractive projects and the projects that are the easiest to consent have probably already been developed or applied for. If this assumption holds, future projects are likely to be more costly to develop, more complex to process and, possibly, more likely to be associated with significant or uncertain environmental effects.

Introducing an emissions price will increase the cost of transport fuels and other non-renewable energy (such as coal and natural gas). Conversely, it will reduce the relative price of low-emission goods and services and increase the relative returns on investment in low-emissions technologies. This will make it more cost effective for electricity generators to invest in renewable energy such as wind, marine and solar power into the future. Hence, as section 2.2.2 above shows, the NZETS and the government's proposal to restrict the development of base load thermal generation for the next 10 years will have an immediate effect on long-term investment decisions made by the New Zealand energy sector.

Table 1 above illustrated a possible scenario to get New Zealand to a position where it is generating 90 per cent of its electricity from renewable sources. This could involve more than 56 electricity generation projects being consented, built and commissioned before 2025. Under the scenario modelled by the Electricity Commission, this would include more than 48 renewable electricity projects ranging in size from a 5 MW hydro project to a possible 250 MW wind farm. Of the assumed projects, 23 will produce less than 50 MW while 13 would produce more than 100 MW.

The mix of renewable projects includes at least 19 hydro projects, 13 wind projects, 13 geothermal projects, 3 biomass projects and 1 or more wave projects of varying sizes. It is noted that the mix of generation types assumed by the modellers has been criticised for over-emphasising hydro and under-emphasising the contribution of wind projects. Some of these projects (such as project West Wind) are already consented and others (such as the Te Mihi geothermal project) are part-way through the consenting process. The majority, however, are still to be considered under the RMA.

Under the scenario modelled (or any other credible scenario), renewable projects will be distributed around the country reflecting the distribution of energy sources. Under the 'sustainability path' scenario, New Zealand could expect at least one renewable energy project in 12 of the country's 16 regions. The greatest concentration of projects is likely to be in the Waikato region (in part because of its substantial geothermal resource) with the modelled scenario suggesting at least 13 projects there. However, Bay of Plenty, Hawke's Bay, Manawatu, Wellington and Otago regions are also likely to see at least three renewable projects each over the next 17 years.

2.4 Problem statement

Renewable electricity generation projects are often very complex in that they tend to introduce potentially significant adverse environmental effects at the same time as significant benefits. Complicating the matter further, the nature and degree of potential effects can in some cases be difficult to assess or are subjective, leading to polarised expert opinions. Importantly, the benefits of these projects can come at the cost of valued elements of the local environment. Within a regulatory regime that encourages democratic participation and local decision-making, developers are required to rigorously assess the effects and benefits of their proposal to use and develop the particular natural and physical resource. This generally requires developers to factor long lead-times into their project plans to enable extensive public consultation and comprehensive baseline monitoring. The time and costs involved in preparing an application for resource consent can therefore be substantial. Given the potential environmental effects associated with most renewable electricity generation projects, this work is appropriate and necessary to satisfy decision-makers that a particular proposal promotes the purpose of the RMA. Furthermore, long lead-times, effective pre-application consultation and strong effects assessments can significantly reduce consent processing times for well-conceived and managed projects. This fact is aptly demonstrated by Environment Waikato and Taupo District Council's rapid processing of resource consents for the Rotokawa II geothermal project, which was largely attributable to a lengthy process of public consultation and a comprehensive assessment of effects guided by a clear regulatory framework.

Notwithstanding the emergence of RMA 'success stories' such as the Rotokawa II project, comprehensive public consultation and effects assessments have not necessarily reduced the time it takes to gain an appeal-free consent in many jurisdictions across New Zealand and the general presumption of generators is that all large-scale projects will be appealed to the Environment Court. Lack of regulator expertise, lack of a relevant policy framework, active local opposition, the reputation and approach of the developer, and the nature and complexity of the proposal all affect the time and cost of gaining resource consent for renewable electricity generation projects.

Council officers are repeatedly called upon to make balancing judgements against the purpose of the RMA: when processing consents; when receiving the consent; when considering whether further information is required; when making notification decisions; and, ultimately, when making a recommendation to the council hearings panel. Similarly, decision-makers must keep the ultimate purpose of the RMA in mind when considering submissions and evidence on a particular application. Renewable electricity projects will in almost all instances require council officers and decision-makers to consider competing section 6 and 7 values throughout the resource consent process. While this context is common to all large-scale development projects, due to the potential scope of adverse environmental effects and the nature of associated benefits, renewable electricity generation activities tend to raise a particularly broad set of resource management issues. The current RMA decision-making framework requires decision-makers to consider the benefits of renewable electricity generation but does not clarify the nature of these benefits or provide guidance on the weight that should be afforded to them. In this context, balancing judgements made subject to Part II of the RMA can be particularly complicated and can take time for a responsible public servant or decision-maker to make. The compounding effect will have a significant bearing on the time it takes to process consent applications. It is considered, therefore, that the critical factor influencing the time it takes to gain consent is the compounding effect of uncertainty within the regulatory framework.

The problem with the status quo, therefore, is that the RMA does not clearly establish the significance of the benefits of renewable electricity generation projects, which by their nature can compete with other environmental values and are often felt at the national level. Decisions made by the Environment Court are beginning to establish case law that tackles and clarifies this issue. Nevertheless, the lack of statutory guidance complicates the decision-making process and has contributed to persistent uncertainty in the marketplace which, if left unchecked, has the potential to frustrate efforts to increase the proportion of electricity generated from renewable sources and to deliver the various social, economic and wellbeing benefits associated with such an increase.

It is considered that this problem has emerged primarily for the following reasons.

(i) **There is the potential for inconsistent recognition through the RMA decision-making process of the nationally (and globally) significant benefits of renewable electricity generation capacity in New Zealand.** RMA decisions, particularly those made by the Environment Court, are beginning to address the national and global environmental benefits of renewable electricity generation. Decision-makers have, in particular, proven to be very good at dealing with adverse environmental effects versus economic and social benefits. Without clearly articulated statutory guidance on the benefits of renewable electricity generation, however, it can be very challenging to weigh these benefits against local adverse environmental effects. A persistent problem with the status quo is that there is insufficient statutory guidance to ensure that the national benefits of renewable electricity generation will be consistently applied in balancing judgements made against Part II of the RMA. In this context, there is a significant degree of uncertainty as to whether the current decision-making framework will support an increase in the proportion of electricity generated from renewable sources sufficient to deliver the potential social and economic benefits associated with meeting the government's target for renewable electricity generation.

(ii) **Until recently local authorities have not, in general, developed specific policies to address renewable electricity generation.** The government believes that the amendments made to the RMA in 2004 that relate to the effects of climate change, and the benefits of using and developing renewable energy sources, need to be reflected in district and regional plans in order for these benefits to be given appropriate weight in the judgements of RMA decision-makers. A timely and consistent policy response to the 2004 amendment is required if the targets of the NZES are to be met.

(iii) **The lack of policy guidance across much of New Zealand in relation to renewable electricity generation can hinder investment in future technology.** Many current and likely future means of generating electricity from renewable sources are in the early phases of commercialisation and their effects and viability are often unknown. As such, more research and investigation into potential generation technologies and energy sources will be necessary to ensure that the decisions of the energy sector in New Zealand promote the sustainable management of natural and physical resources. Policy statements and plans will need to be amended to remove impediments to research and investigation. As knowledge of technology improves, local and regional councils should become more proactive in identifying potential opportunities in their areas; and they should increase the level of consultation with the community and generators (both large and small-scale) to encourage appropriate investment.

(iv) **Costs and processes associated with resource consent acquisition can discourage investment in smaller-scale projects with limited adverse effects.** While larger-scale renewable generation projects will have a dominant influence on security of electricity supply, there is significant potential for smaller community-scale 'distributed renewable electricity generation' to make a valuable cumulative contribution towards developing a reliable, secure and clean electricity supply in New Zealand. The cost of gaining consent under the RMA as a percentage of total project costs is likely to be proportionately higher for small-scale projects and the fact that many regional and district plans are silent on small-scale renewable electricity generation can create unnecessarily high compliance costs and uncertainty for potential developers.

(v) **Consenting existing renewable generation activities can be unnecessarily onerous.** Existing projects (largely hydro schemes) have a range of known adverse environmental effects, as well as significant benefits which have been enjoyed by local and national communities. There have been a range of challenges for existing operators in consenting existing projects, and while it is necessary to re-evaluate the appropriateness of a project in more modern times, the consenting process for existing activities of this type should perhaps emphasise efforts to improve environmental performance, increase efficiency, and ensure the effective use of resources.

(vi) **Projects may be becoming increasingly difficult to consent.** Renewable electricity generation projects consented and developed to date are likely to have been the most economically attractive projects and those that have been 'easier' to consent. Demand for electricity will continue to increase, and as the store of more easily 'consentable' projects diminishes, more complex decisions to balance local adverse effects and national benefits will need to be made. This trend is emerging in a context of population growth and increasing affluence where New Zealanders are demanding more of the recreational, amenity and ecological attributes of the environment. The environmental effects and benefits of renewable electricity generation can be extensive; as time goes by, decision-makers will be required to make judgements that balance an increasingly competing set of environmental values. A regulatory regime that does not clearly articulate the national significance of the benefits of renewable electricity generation will perpetuate the problems faced by applicants and decision-makers in relation to renewable electricity generation projects.

3 Alternatives to the Status Quo

3.1 Introduction and summary

The Ministry for the Environment has considered and evaluated a range of alternative options for addressing the problem identified with the status quo.

The alternatives considered were:

- amending the RMA to elevate the importance of renewable electricity generation into section 6 of the Act
- amending section 166 of the RMA to include electricity generators, thereby enabling them to issue notices of requirement for designations
- identifying a specific threshold above which the Minister will call in all renewable electricity generation proposals
- preparing a national environmental standard
- using non-statutory guidance
- relying on submissions made by the Minister for the Environment solely or on behalf of the Crown
- preparing a national policy statement for renewable electricity generation.

A summary of the evaluation of each alternative is provided in Table 5.

Table 5: Summary evaluation of alternatives for addressing the problem identified with the status quo

Alternative to the status quo	Effect on renewable electricity generation	Main strength	Main weakness
Amend RMA	Immediate and significant effect in support of renewable electricity generation.	Clear and directive.	May encourage development at the expense of the natural and physical environment.
Ministerial call-in above specific threshold	Would provide a clear and consistent consent path for large-scale developers.	Clear and likely to promote consistency in decision-making.	Decisions will still be made within the existing status quo.
National environmental standard	Would provide certainty as to the footprint of effects developers should expect.	Consistent parameters of effects.	Slow and difficult to build support for a nationally set standard. Could be subject to challenge on the basis of site-specific information.
Non-statutory guidance	May help upskill council processing officers.	Can help increase consistency of implementation.	Has no statutory weight.
Submissions made by the Minister solely or on behalf of the Crown	Provide a government position on specific proposals.	Could help decision-makers when making balancing judgements.	Government submissions have no more weight than any other submitter.
National policy statement	Immediate effect in support of renewables.	Elevates benefits to a matter of national significance, influences judgements of decision-makers immediately and requires changes to planning framework.	Objective and policies subject to interpretation and weighting of local decision-makers. High costs of plan changes.

3.2 Evaluation of alternatives

3.2.1 Amending the RMA

Two alternative approaches to amending the RMA were considered:

- elevating the importance of renewable electricity generation by moving "the benefits of renewable energy" into section 6
- amend section 166 to include electricity generators, thereby enabling them to issue notices of requirement for designations.

Each alternative is addressed in turn below.

3.2.1.1 Amending section 6 of the RMA

The RMA was amended in 2004 to require decision-makers to have particular regard to the effects of climate change (section 7(i)) and the benefits to be derived from the use and development of renewable energy (section 7(j)). As noted in section 2 of this report, very few local authorities have amended their plans to reflect this insertion; the lack of statutory clarity around the benefits of renewable electricity generation introduces the potential for future decisions on these benefits to interpret the meaning and significance of sections 7(i) and 7(j) differently.

At the time section 7 was amended, it was considered desirable to maintain the environmental preservation and protection emphasis of section 6. Notwithstanding the wider national and international environmental benefits of renewable electricity development, inserting a 'resource use and development' emphasis into section 6 would challenge the established structure of the RMA, and could complicate interpretation of Part II of the RMA. While New Zealand's commitment to a renewable electricity target requires a substantial increase in renewable capacity overall, it is the government's view that proposals with unacceptable adverse effects should not proceed. Elevating renewable electricity generation to section 6 of the RMA as a matter of national importance could result in projects with unacceptable effects receiving consent. As such, amending section 6 of the RMA to introduce the benefits to be derived from the use and development of renewable energy sources is not considered appropriate.

3.2.1.2 Amending section 166 of the RMA

Designations are a provision made in a district plan to give effect to a requirement made by a requiring authority. Section 166 of the RMA enables network utility operators that are approved as requiring authorities by the Minister for the Environment, to issue notices of requirement to designate land in district plans for their projects or works (instead of applying for land-use consents under section 9 of the RMA).

Network utility operators and network utility operations include those defined in section 2 of the Electricity Act 1992 as being an electricity operator or electricity distributor for the purpose of line function services. Currently, electricity generation does not fall within the definition of an electricity operator or distributor for the purpose of line function services, and therefore electricity generators cannot issue notices of requirement for electricity generation projects.

Approval as requiring authority enables a network utility operator, in addition to designating land, to apply to the Minister of Land Information under section 186 of the RMA: this can lead to compulsorily acquisition of land under the Public Works Act 1981 if need be, and the undertaking of emergency works under section 330 of the RMA.

Designations are a particularly powerful mechanism. By explicitly including generators among network utility operators with the power to designate for the purposes of renewable electricity generation, the government would be sending a strong signal in support of the use and development of New Zealand's renewable energy resources. It is noted that designations apply only in district plans and as such will be useful only for those renewable electricity generation activities that are defined as 'land uses' under the RMA.

Including electricity generators in the definition of network utility operator would give the generator the power to make decisions on their requirements, following a recommendation from the relevant council. As the requiring authority, the generator would still be required to make decisions under the framework of the RMA and these decisions would be subject to appeal to the Environment Court. Importantly, the decisions of the requiring authority and Environment Court would still be made under the existing decision-making framework: therefore this approach would not necessarily address the problems identified with the status quo.

Notably, the option already exists for specific projects to be prescribed as a network utility operation by regulations made under section 166(i). This approach was taken in relation to Project Aqua because the proposal was not in all respects a network utility operation.

However, the process is slower and more expensive than automatic network utility operator status, as it involves extensive survey and the promulgation of regulations. This option is available only for projects that can be prescribed as a network utility operation by regulations.

Given that the decisions of the requiring authority would continue to be made under the established framework of the RMA, it is not possible to conclude that amending the RMA in this manner would address the problem identified with the status quo. This alternative is therefore not considered appropriate as an alternative to the status quo, but it may be appropriate to consider whether this option may serve to complement other mechanisms for addressing the problem identified with the status quo.

3.2.2 Modify the call-in process

The option of Ministerial call-in is currently available under the status quo. Call-in can reduce the time involved in granting consents as council hearings are avoided and appeals are only permitted on points of law. At present, the decision to call in a particular process is made at the Minister's discretion in accordance with the provisions of sections 141A and 141B of the RMA.

These sections could be amended to introduce a threshold (installed capacity for example) above which all projects would be called-in. This would increase the level of certainty surrounding the call-in process and would enhance the likelihood that national interests would be applied consistently throughout the country. This approach, however, has several potential drawbacks:

- it might not always be appropriate to call in proposals: sometimes the national interest might be most appropriately served by alternative means such as the issuing of Crown submissions
- it is not clear where such a threshold should be set. If it is set too low, then the volume of projects required to be processed by the Ministry would increase dramatically. This would duplicate council functions and, without significant resourcing, might in fact slow down the rate at which applications for resource consent are processed. If the threshold is set too high then the process might fail to capture the potential cumulative benefits of small-scale distributed generation
- setting a threshold of national significance could also impede proposals to develop small-scale and distributed generation by effectively sending a signal that the contributions of this form of development are not nationally significant
- decisions on projects called in by the Minister are made under the existing RMA decision-making framework. Without statutory clarification of the benefits of renewable electricity generation there can be no guarantee that these decisions would afford particular weight to these benefits.

For these reasons this approach is not considered appropriate as a means for addressing the problem identified with the status quo.

3.2.3 Develop a national environmental standard or standards

National environmental standards (NESs) could be developed to ensure that applicants use established and consistent methods for measuring and assessing effects, and decision-makers apply consistent standards when considering the effects of renewable electricity generation proposals. This would be particularly relevant to renewable electricity generation projects where the effects are uncertain or subject to relative assessments, such as where wind turbines are proposed on visually prominent ridgelines. Consistent methodologies for assessing effects and consistent effect thresholds would increase certainty in the marketplace, could reduce the time it takes to undertake effects assessments, and could reduce time spent debating and considering the merits of differing assessment methodologies at hearings.

Particular areas where NESs could be of value include:

- setting specific effects assessment methodologies in the fields of visual amenity and landscape effects
- setting specific effects thresholds for turbine noise, vibration and flicker
- specifying activity status for small-, micro- and research-scale activities and those activities associated with the investigation of sites (such as wind monitoring masts).

However, factors that militate against the use of NESs in relation to renewable electricity generation include the following:

- case law is emerging around existing standards (for example, New Zealand Standard 6808 for wind turbine noise and the Pigeon Bay Criteria for landscape significance). Councils as well as independent experts are building these processes into their effects assessments and decisions. In developing specific standards, the Ministry for the Environment might risk undermining the momentum that is building through case law towards the development of Court-tested and approved methods and thresholds

- in the absence of a guiding national policy framework, it would be extremely challenging to develop national standards for some effects
- in an environment where there is a large range of available technologies, and where technological development is rapid, NESs would by necessity have to focus on discrete technologies or effects, and could lead to a 'piecemeal' framework
- it would be very difficult to build industry consensus on which methodologies and thresholds to adopt. In some cases (such as for landscape assessment) it is likely to take significant time to develop NESs; in this case a lengthy process is undesirable
- decisions made on the basis of standards set at a national level may be challenged in light of site-specific information provided by project proponents and opponents. Such challenges have the potential to undermine the benefit that an NES offers, namely certainty and consistency
- the development of national environmental standards would effectively entail central government assuming direct control over particularly influential regional and district planning provisions. Decision-making at the local level is a fundamental aspect of the RMA; until such time as a very clear need for national standardisation is identified, an approach that challenged this principle would not be appropriate.

Despite these drawbacks, NESs could make a valuable contribution to clarifying the regulatory environment and addressing the problem identified with the status quo, particularly under a policy framework established by a NPS. As the effect of the approved NPS on decision-making becomes clear, it may be appropriate to consider whether one or more NESs in discrete technical areas are necessary to support the achievement of the Objective.

3.2.4 Develop non-statutory guidance

Non-statutory guidance could provide an alternative to not only individual provisions within the proposed NPS, but also to the proposed NPS in its entirety. Such guidance could be provided to:

- help councils respond appropriately to sections 7(i) and 7(j) of the RMA
- identify the matters relevant to decision-makers' consideration of proposals to use and develop renewable energy resources
- guide councils' decisions as to the appropriate consent status for particular activities and appropriate assessment criteria.

Although guidance would be determined by the Court's interpretation of sections 7(i) and 7(j), because it has no statutory weight, guidance cannot be relied upon to effectively address the problem identified with the status quo and there would be no guarantee that it would be interpreted or applied consistently.

Despite this fundamental drawback, guidance could nevertheless play an important role in supporting the consistent and timely interpretation and implementation of the proposed NPS.

3.2.5 Submissions made by the Minister solely or on behalf of the Crown

Submissions made by the Minister solely or on behalf of the Crown on particular applications and/or plan changes have the potential to assist decision-makers in the process of determining the national interest of a particular project. These submissions could also help guide decisions on the balancing of matters included in Part II of the RMA. In this regard they have the potential to address the problem identified with the status quo. However, these submissions face several barriers that challenge their effectiveness:

- Crown submissions and submissions of the Minister solely will ultimately be considered alongside other submissions without any particular weight being afforded to them
- these submissions will not change the status quo and will therefore not clarify the weight to be given to the benefits of renewable electricity generation activities.

In isolation, submissions made by the Minister solely or on behalf of the Crown will not be an appropriate alternative for addressing the problem identified with the status quo. However, in some instances they could assist the implementation of the proposed NPS.

3.2.6 Preparing a national policy statement

A national policy statement may be prepared at the discretion of the Minister for the Environment where it is considered that policy guidance on a matter of national significance would be beneficial. Decision-makers are required to have regard to any relevant provisions of an NPS when considering an application for resource consent and any submissions received. In addition, local authorities are required to give effect to an NPS through changes to plans and policy statements and through decisions on applications and submissions received. As such, an NPS can have an, immediate and significant effect on the RMA decision-making framework.

An NPS can elevate a particular resource management matter to one of national significance and can help determine the weight that is to be given to that particular matter in the balancing judgements of decision-makers. Nevertheless, the objectives and policies of an NPS will always be subject to balancing judgements made under Part II of the RMA and cannot alter the requirement of a decision-maker to consider and weigh the various section 6 and 7 matters raised when considering the effects of a particular application. In addition, an NPS, cannot affect the decision-making processes undertaken in accordance with the requirements of the Conservation Act 1987 or the Historic Places Act 1993.

Importantly, the objectives and policies of an NPS can be focused on guiding the decision-making process and therefore can be expected to have an immediate effect on the status quo. The speed with which an NPS can influence resource management decision-making is demonstrated by the influence of the recently gazetted NPS for Electricity Transmission in a recent decision of the Kapiti District Council[15] and the officer's report to the Timaru District Council on a subdivision consent.[16] In both cases the NPS exerted a significant influence on decision-makers almost immediately after its gazettal. This is particularly relevant in the case of renewable electricity generation where a significant number of projects will need to be consented and developed over the next five to 10-year period in order to secure electricity supply in New Zealand.

3.3 Conclusion

Introducing a pro-development sentiment into section 6 of the RMA could enable development in high-value environments that should best be avoided, and therefore could risk inconsistency with the purpose of the RMA.

It may be appropriate to consider developing an NES or suite of NESs in the future, but at this stage case law is emerging that should standardise assessment methodologies. In the absence of a guiding policy framework, it is unlikely that nationally set standards for assessing effects, or establishing effects thresholds would, in themselves, address the problem identified with the status quo, but NESs may complement an NPS. Similarly, providing generators with the ability to issue notices of requirement for designations, submissions made by the Minister for the Environment solely or on behalf of the Crown and non-statutory guidance will not, in themselves, be sufficient to address the problem identified with the status quo; these measures may however have an important role to play in supporting the implementation of an NPS.

Having considered the above alternatives for addressing the problem identified with the status quo, it is considered that the most appropriate approach is to develop a national policy statement which ensures that the national benefits of renewable electricity generation are explicitly articulated. The key reason for this is that, aside from amending section 6 of the RMA, none of the alternatives would have an appreciable influence over the judgements central to the RMA decision-making process in relation to complex proposals that require balancing of effects and benefits across local, regional, national and, arguably, international scales.

[15] Application RM 070156 to replace pole 913 at 331 Valley Road, Paraparaumu.

[16] Application for subdivision consent No. 6314, Thornhill Holdings Ltd, Hilton Highway, Washdyke Flat.

4 Section 32 Evaluation Methodology

4.1 Introduction

The evaluation methodology was guided primarily by the RMA which requires an assessment of benefits and costs of all kinds. There were two phases to the evaluation, as required by section 32: firstly, an evaluation of the appropriateness of the proposed NPS Objective in achieving the purpose of the Act; and secondly, an evaluation of proposed NPS policies focused on the benefits, costs, effectiveness, efficiency and risks of each individual policy.

It is worth stating specifically that a national viewpoint is adopted in the evaluation of both objectives and policies. That is, the identification and assessment of costs and benefits is inclusive of not just central, regional and local government but it also considers specific costs and benefits relevant to particular 'groups' within the community and private sector interests, including generators.

The evaluation has attempted to clearly identify the procedural elements and the expected outcomes that distinguish the proposed NPS from the status quo. The key element of this cost-benefit analysis is that it focuses on the differences between the status quo and the proposed alternative.

4.2 Evaluation of the Objective

The Objective is evaluated against the purpose of the RMA as set out in its section 5, being:

> *(1) ... to promote the sustainable management of natural and physical resources.*
>
> *(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –*
>
> *(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
>
> *(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
>
> *(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

The evaluation includes consideration of key elements related to the purpose of the RMA. These are:

- sustaining the potential of natural resources, s5(2)(a)
- safeguarding the life-supporting capacity of natural resources, s5(2)(b)
- adverse effects on the environment, s5(2)(c)
- the effects of climate change, s7(i)
- the benefits of renewable energy, s7(j)
- social wellbeing

- economic wellbeing
- cultural wellbeing
- health and safety.

Finally an overall assessment was made as to the appropriateness of the Objective as a whole in achieving the purpose of the RMA.

4.3 Evaluation of the policies

In accordance with section 32 of the RMA, the evaluation of the proposed policies of the proposed NPS requires an assessment of their appropriateness in achieving the Objective. The terms used in section 32 are efficiency and effectiveness. Efficiency refers to the costs and benefits associated with the policy. An efficient policy is one where the benefits are greater than the costs. However, efficiency is a relative concept. Where there are two or more policy options, the most efficient option will be that with the greatest ratio of benefits to costs. Effectiveness means how successful the proposed policy would likely be in achieving the Objective (in terms of completeness and timing).

Section 32 guidance notes on the Quality Planning website[17] refer to both net environmental benefits and costs and net social and economic benefits and costs, when discussing the concept of 'efficiency'. Given that costs and benefits are distributed across social, economic and environmental spheres, it is necessary to extend the concept of efficiency to include equity considerations. It is perfectly feasible, therefore, for an option to be efficient if there are net environmental costs when there are (greater) net social and economic benefits, and vice versa. The simplest way, therefore, to define the concept of efficiency is to do so in terms of 'benefits outweighing costs over time'. Ideally, that would mean that all benefits and costs would be quantified (in monetary terms or otherwise). While desirable, it is not possible to quantify many costs and benefits associated with the proposed NPS. The most important aspect of a cost-benefit analysis is that the costs and benefits are made transparent; any decision made to proceed with a policy is then taken on the basis of an understanding of where the costs and benefits will fall, even if there is some uncertainty about the size of those costs and benefits.

This is particularly pertinent in the context of evaluation of an NPS which, by definition, is a collection of policies promoted at a national level. As such there will always be an element of uncertainty with regard to implementation. With 85 councils as implementation agencies, there is potential for considerable variability in just how NPSs are interpreted and applied (depending on the specificity with which the NPS is articulated). Calculating the cost and benefits of policies that only take effect through translation by individual councils exercising discretion within the RMA decision-making framework is therefore inevitably imprecise and requires many assumptions to be made.

For these reasons, a largely qualitative approach is presented in the identification and analysis of costs and benefits in this evaluation. Nevertheless, an effort has been made to quantify the costs resulting from implementation of the proposed NPS for district and regional councils, generators, local stakeholders, and central government. These cost estimates are included in Appendix A to this report.

[17] http://www.qualityplanning.org.nz/plan-development/implementation.php

5 Evaluation of the Proposed National Policy Statement for Renewable Electricity Generation

5.1 Evaluation of the Objective

Section 32 requires evaluation of the extent to which the Objective is the most appropriate way to achieve the purpose of the RMA. The purpose of the RMA is set out in section 5 as being:

> *(1) ... to promote the sustainable management of natural and physical resources.*
>
> *(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –*
>
> *(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
>
> *(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
>
> *(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

The objective of this NPS is:

> *To recognise the national significance of renewable electricity generation by promoting the development, upgrading, maintenance and operation of new and existing renewable electricity generation activities, such that 90 per cent of New Zealand's electricity will be generated from renewable sources by 2025 (based on delivered electricity in an average hydrological year).*

The government has identified four main climate change challenges[18] that the country will face in meeting growing demand for electricity. As noted in section 1.1.1, these are:

- to control and reduce New Zealand's greenhouse gas emissions
- to support international initiatives for multilateral action on greenhouse gas emissions, principally through maintaining momentum on the implementation of the Kyoto Protocol and ensuring this momentum is carried through into whatever agreements emerge for the period after 2012
- to prepare for, and adapt to, the impacts of changes in New Zealand's physical environment by responding to the risks and taking advantage of the opportunities they present
- to realise the objectives above at the lowest achievable long-term cost.

[18] *The New Zealand Energy Strategy to 2050*, Ministry of Economic Development, October 2007.

Economic growth is heavily dependent on a secure and cost-effective supply of electricity. The supply and price of electricity support the continuation of current economic activity. A secure and cost-effective supply of electricity, along with other key infrastructure, encourages an environment conducive to investment and growth. The uses and benefits of electricity are too numerous to list but it is clear that a reliable and cost-effective supply of electricity is essential to the quality of New Zealanders' lives. In other words, electricity contributes significantly to the economic, social and cultural wellbeing of people and communities on a national scale. Although in some areas efficiency gains could be made and electricity could be used more wisely, an increase in supply will be necessary to support improvement in the economic, social and cultural wellbeing of New Zealanders.

Importantly, the price of fossil-fuel generation is likely to increase as the global supply of oil and gas decreases, and as the cost of carbon emissions are increasingly factored into the economics of electricity generation. The government believes there are obvious and low-cost greenhouse gas reduction opportunities in the energy sector in the form of renewable electricity generation when compared to other sectors. A reduced dependence on fossil-fuel generation will minimise the country's exposure to international fluctuations in resource price (primarily oil and gas) and limit the extent of its economic liabilities on the international carbon market.

Promoting an increase in the proportion of electricity generated from renewable sources to meet the government's 90 per cent target by 2025 will also result in diversification of the range of generation types and locations of generation. The result of developing a diverse generation sector is that security of electricity supply will increase as reliance on any one generation type or location reduces. To illustrate the point, although 90 per cent of New Zealand's electricity was generated from renewable sources in 1975, this came almost exclusively from hydro-generation and the overall system was extremely vulnerable to hydrological fluctuation and disruption to security of supply.

Taken together, increased security of supply and the comparatively reduced long-term cost of a generation system that is based heavily on renewable energy sources will provide economic, social and cultural benefits to the country.

Nevertheless, there are potential costs associated with a move to promote and increase the proportion of electricity generated in New Zealand from renewable energy sources. These primarily include:

- the potential to increase pressure on the transmission network: renewable energy resources are often located in remote locations away from demand centres. In addition, a high proportion of renewable electricity generation in the overall generation mix will require a particular transmission grid formation because of the intermittent output of some forms of renewable generation. Modelling by MED and EECA for the NZES[19] suggests that the cumulative generation and transmission costs of achieving the 90 per cent renewable energy target by 2025 would be approximately $310 million (using a 5 per cent discount rate). Having a higher percentage of renewable generation, such as 95 per cent, would increase this cost to $1.1 billion. Although these figures are significant, they will not be incurred directly as a result of the NPS because, regardless of whether the proposed NPS is gazetted, a significant degree of investment in generation and transmission infrastructure will be required

[19] MED, 2007. The implications of higher proportions of renewable electricity by 2030. http://www.med.govt.nz/upload/52211/The-implications-of-higher-proportions-of-renewable-electricity-by-2030.PDF.

- the need to provide more installed capacity than would be the case if New Zealand opted for thermal generation. Put simply, while thermal plants can operate 90 per cent of the time, wind (and to a lesser extent hydro) will be unavailable due to energy constraints (lack of wind or water) for a much greater proportion of the time. To address this, 'over-capacity' is required and that needs to be dispersed around the country to increase the probability that the conditions for generation will be available at enough locations to allow renewable electricity generation to meet national demand
- the generation of electricity for renewable energy sources also implies the use and development of natural and physical resources, which may result in adverse environmental effects. In this regard it is noted that the Objective works within the existing statutory framework of the RMA and decision-makers' regard to the Objective (and entire NPS) will be subject to consideration against the matters included in Part II of the RMA. In other words, in order for resource consent to be granted to a particular renewable electricity generation project, decision-makers will need to be satisfied that particular proposal appropriately sustains the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; safeguards the life-supporting capacity of air, water, soil, and ecosystems; and avoids, remedies, or mitigates any adverse effects of activities on the environment.

The benefits and costs of promoting an increase in the proportion of electricity generated in New Zealand were analysed during the development of the NZES and, on balance, it was concluded that the benefits to be derived from promoting the development of additional renewable electricity capacity outweighed the associated costs.

The preceding sections have identified that, without clear statutory guidance as to the benefits of renewable electricity generation, there is a risk that insufficient renewable electricity generation capacity will be consented under the status quo to meet the 90 per cent renewable generation target set by the government in the NZES. As noted in sections 1.1.2 and 2.4 of this report, failure to meet this target could have significant social and economic effects and significant implications for the wellbeing of New Zealanders.

The intent of the proposed NPS is to clarify the RMA decision-making framework to foster consistent interpretation of section 7(i) and 7(j) of the RMA, and to promote achievement of the government's target of 90 per cent renewable electricity generation by 2025. The proposed NPS seeks to do this by articulating the government's position on the benefits of renewable electricity generation.

The focus of this Objective is on recognising the national significance of renewable electricity generation and promoting its development in accordance with the government's 90 per cent renewable electricity generation target. This clarity is appropriate, given the context of the relatively 'devolved' system of policy development, administration and decision-making established by the RMA. This NPS does not seek to provide absolute direction on how to weigh potentially competing values down to regional and district levels as this would likely be poorly received by local authorities and communities, and in any case would be extremely difficult to prepare at a national level.

Although the government clearly articulates its support for renewable electricity generation projects through this Objective, there is no intention to support these projects at the cost of the environment. A key question, therefore, is whether the Objective will improve the opportunities for development of appropriate and well-conceived renewable electricity generation projects where the focus of the applicant is on developing renewable electricity generation capacity while also appropriately avoiding, remedying or mitigating any adverse effects. Given that decision-makers' regard to the Objective will be subject to Part II of the RMA and that specific consideration will be given to the various matters set out in sections 6, 7 and 8, the Objective's support for renewable electricity generation activities will not imply unsustainable environmental sacrifice. On the other hand, the clarity it provides will help to ensure that decisions made under the framework promote the sustainable management of natural and physical resources.

Table 6 evaluates the Objective against the components of section 5 of the RMA.

Table 6: Evaluation of the Objective

RMA provision	Evaluation
s5(2)(a)	This Objective clearly promotes the recognition of the national significance of renewable electricity generation and, by implication, the benefits derived from the use of renewable electricity. Renewable electricity by its nature is focussed both on existing needs and on the needs of future generations. Therefore, by developing renewable forms of energy generation, future generations are more likely able to meet their needs.
s5(2)(b)	Life-supporting capacity, while not directly mentioned, would be expected to be maintained through the management of adverse environmental effects of generation activities. Many renewable electricity generation projects occur in sensitive environments. This means that often detailed assessments of effects on water, air, soil and ecosystems are undertaken. This allows informed judgement by decision-makers as to whether the strategies to manage adverse effects (which may include avoiding, mitigating or remedying them) are appropriate to the location.
s5(2)(c)	The proposed NPS Objective requires a greater focus on 'promoting' renewable electricity generation activities. However, it does so within the existing RMA framework that clearly requires decision-makers to consider applications subject to Part II of the RMA, and to ensure that decisions promote the sustainable management of the natural and physical environment.
s7(i)	Section 7(i) of the RMA was inserted by the Resource Management (Energy and Climate Change) Amendment Act 2004 to add climate change as a matter to be considered by decision-makers. The Objective is consistent with this clause in Part II, specifically by recognising the national importance of the development, upgrading, maintenance and operation of renewable electricity generation activities such that 90 per cent of New Zealand's electricity will be generated from renewable sources by 2025. Hence, the proposed NPS will have benefits in terms of reduced or avoided greenhouse gas emissions.
s7(j)	The Objective is clearly consistent with this section of the RMA, which aims to recognise the specific benefits associated with use and development of renewable energy.
Social wellbeing	A reliable supply of electricity is essential to New Zealand's economic and social wellbeing. As such, the Objective would directly contribute to the economic and social wellbeing of people and communities. However, this must also be balanced against the fact that there is some potential for renewable electricity generation projects to cause local-scale social impacts – often on a significant scale (eg, some of the hydro-electric power schemes developed in the South Island in the past). In this regard it is noted that the Objective does not detract from the requirement of the RMA that proposals to use and develop natural and physical resources promote sustainable management.
Economic wellbeing	Economic wellbeing concerns also occur at both national and local level. Local benefits from renewable electricity are perhaps greatest during construction or upgrade phases, but also typically contribute to local economies through a series of ongoing benefits such as increased security of electricity supply. The national-level benefits of a larger proportion of our electricity coming from renewable generation are however more significant, and these are noted in the New Zealand Energy Strategy.

RMA provision	Evaluation
Cultural wellbeing	Cultural wellbeing is not specifically provided for in the Objective. However, Part II of the RMA (including section 8) recognises, among other matters, the importance of Māori and their special relationships, important historical sites, and the Treaty of Waitangi. The Objective itself does not have an impact on cultural wellbeing, and nothing in the proposed NPS suggests that such issues should be overlooked. It is also noted that section 6 takes priority (including a number of cultural matters) over section 7 (which includes climate change and renewable energy). Each proposal is still therefore assessed on its merits, and where there are significant adverse effects on cultural wellbeing, this would be considered in the usual RMA framework.
Health and safety	The health and safety of people and communities is both directly and indirectly dependent on a reliable supply of electricity. To this extent the Objective would be expected to contribute to the health and safety of people and communities. There are not considered to be any significant concerns arising from this Objective in terms of health and safety.

The conclusion of this evaluation is that the proposed Objective is well targeted towards addressing the problem identified with the status quo. It will support the development of renewable electricity projects that promote the sustainable management of New Zealand's natural and physical resources. On this basis, it is considered that the Objective is the most appropriate way to achieve the purpose of the RMA.

5.2 Evaluation of the policies

5.2.1 Policy 1

The benefits of renewable electricity generation activities, at any scale, are of national significance. Decision-makers must have particular regard to the national, regional and local benefits relevant to renewable electricity generation activities. These benefits may include, but are not limited to:

i. maintaining or increasing electricity generation capacity while avoiding, reducing or displacing greenhouse gas emissions

ii. maintaining or increasing security of electricity supply at local, regional and national levels by diversifying the type and/or location of electricity generation.

5.2.1.1 Policy intention

Policy 1 was drafted to explicitly ascribe national significance to the benefits of renewable electricity generation. This policy also makes it clear that, in relation to the benefits of renewable electricity generation activities, national significance is not dependent on the scale of the project or the level at which these benefits manifest themselves – be it national, regional or local.

The policy also provides a non-exclusive list of benefits to guide decision-makers' consideration. This list focuses attention on the three key benefits of renewable electricity generation; those being:

- increasing New Zealand's electricity generation capacity
- avoiding, reducing or displacing greenhouse gas emissions
- increasing security of supply.

5.2.1.2 Benefits

Importantly, the policy is drafted to ensure that it will have an immediate effect on consent decisions as there is no direct requirement for plans or policy statements to be changed or varied. It focuses directly on addressing the potential for decision-makers to under-emphasise the benefits of renewable electricity generation when making judgements that balance the benefits to be derived from renewable electricity generation against the imperative of protecting the local environment. This sends a clear signal as to how government views the benefits of renewable electricity generation and should clarify the importance of these benefits in the minds of council officers and decision-makers.

Policy 1 will guide applicants when making decisions as to what information they should include in applications, and the type of evidence they should present at hearings. It will also remove the need for generators to justify the benefits of renewable electricity generation and, by doing so, should reduce the likelihood of costly and distracting debate at hearings over the whether these benefits exist, or are of a relevant scale. This could lead to cost savings for councils as well as applicants.

Policy 1 will, therefore, increase market certainty that the benefits of renewable electricity generation activities will be reflected in the resource consent acquisition process.

An important feature of Policy 1 is that applicants are still required to establish that a certain proposal promotes the purpose of the RMA; this policy in no way undermines the 'protective' emphasis of section 6 of the RMA or the existing environmental safeguards of the RMA.

5.2.1.3 Costs

Policy 1 may set too narrow a list of benefits and, despite its non-exclusivity, this could be misinterpreted as sending a signal that other benefits recognised in the decisions of the Environment Court are somehow less important. It also introduces other matters for decision-makers to consider and has the potential to further complicate the balancing judgements required of decision-makers.

Elevating the benefits of renewable electricity generation activities to national importance could tip the balance too far in favour of renewable electricity generation projects. However, because the proposed NPS does not amend the obligations of the applicant to assess environmental effects in accordance with the Fourth Schedule to the RMA, and because all judgements are ultimately subject to assessment against Part II and the purpose of the RMA, this outcome is considered unlikely.

Matters for submitters to consider:

The decision has been taken to focus Policy 1 on the three core benefits associated with renewable electricity generation. Submitters may wish to provide information to assist the Board of Inquiry to establish whether a wider list of benefits would further clarify the regulatory framework within which applications are considered.

Submitters may wish to provide information to help the Board of Inquiry clarify the effect that this policy will have on the 'consentability' of renewable electricity generation projects.

5.2.1.4 Conclusion

Policy 1 is central to the purpose of the proposed NPS and is directly focused on addressing the problem identified with the status quo. It does so by clarifying the government's position on the benefits of renewable electricity generation and guiding decision-makers' consideration of these benefits. Doing so will increase regulatory certainty and will encourage consistent interpretation of section 7(i) and 7(j) of the RMA into the future.

Policy 1 does not require or rely on plan changes or variations and will have an immediate effect on decisions made under the RMA. This policy will take effect immediately at negligible or no cost because it does not require councils to amend their planning documents.

It is considered that Policy 1 will be efficient and effective and is the most appropriate way to achieve the Objective.

Table 7: Summary of costs and benefits associated with Policy 1

Costs	Benefits	Stakeholders				
		Central government	Local government	Generators	Industry	General public
Economic						
	Improved security of supply.	✓	✓	✓	✓	✓
	Increase in national generation capacity.	✓				✓
	Investment required in human capital in renewable generation sector.			✓	✓	✓
	Reduced long-term operation costs of generation.			✓	✓	✓
	Maintenance and enhancement of New Zealand's clean, green image.	✓			✓	✓
	Reduced costs of meeting international emissions commitments.	✓			✓	✓
Potential to place increased pressure on transmission infrastructure requiring upgrading.				✓	✓	✓
Social						
	The social benefits of a secure electricity supply are more directly recognised than at present.			✓		✓
Environmental						
	Avoidance of further greenhouse gas emissions from the electricity generation sector.	✓		✓		✓

5.2.2 Policy 2

When considering measures to avoid, remedy or mitigate the adverse environmental effects of renewable electricity generation activities, consent authorities must have particular regard to the constraints imposed on achieving those measures by:

i. the nature and location of the renewable energy source

ii. logistical or technical practicalities associated with developing, operating or maintaining the proposed renewable electricity generation activity

iii. the nature and location of existing renewable electricity generation activities

iv. the location of existing structures and infrastructure including, but not limited to, roads, navigation and telecommunication structures and facilities, the local electricity distribution network and the national grid.

5.2.2.1 Policy intention

This policy has been proposed to recognise practical constraints set by location of the renewable energy resource or the technical/engineering aspects of the generation technology. In some instances, these will limit the ability of developers to avoid or mitigate adverse environmental effects associated with the operation, maintenance, upgrading or development of new and/or existing renewable electricity generation activities.

The procedures for assessing the environmental effects of any proposal are set out in the Fourth Schedule to the RMA and the matters set out in Policy 2 would not alter these requirements. Given the centrality of the 'assessment of environmental effects' to the resource consent process, the granting or refusal of an application frequently hinges on the assessment of particular effects as being 'more' or 'less' than minor. Currently, the acceptability of adverse effects relies on the value-laden term 'less than minor'. Policy 2 is concerned with articulating particular matters peculiar to renewable electricity generation activities and, in doing so, will clarify the matters to which consent authorities must have regard when considering the environmental effects of resource consent applications for renewable electricity generation projects. Although the nature of effects may not be changed by this policy, it may change how decision-makers view the acceptability of certain effects that are concerned with one or more of the matters listed in the Policy. In this regard, Policy 2 seeks to tip the balance in favour of renewable electricity projects that, for reasons deriving from practical constraints, might otherwise fail to gain a commercially viable resource consent.

This policy also explicitly refers to constraints related to the nature and location of projects developed under previous resource management regimes. In some cases, these projects may have been developed in sensitive areas where the current regulatory regime now emphasises preservation or protection. This policy is intended to ensure that decision-makers consider the factors that may act to constrain operators' efforts to maintain the ongoing contribution of existing renewable electricity generation capacity to New Zealand's electricity system.

5.2.2.2 Benefits

Practical issues generally determine project design and site selection. Policy 2 will require decision-makers to explicitly have regard to this when considering applications, particularly when setting consent conditions. In some instances, decisions that require modifications to project design, or that set additional mitigation requirements, may threaten the viability of proposed projects. While such requirements may be necessary to promote the purpose of the RMA, this policy will ensure that decision-makers consider the implications of these decisions and recognise that in some instances the emphasis will need to be on mitigating rather than avoiding effects if projects of this kind are to be developed. Importantly, Policy 2 will require decision-makers to recognise that the location of other structures (navigation, telecommunication, etc) can also constrain options for site selection, and can again constrain mitigation options.

Policy 2 is directed towards decision-makers and its effects will be felt immediately without having to wait for plan changes or variations to take effect. Because Policy 2 is focused on the decision-making process, it will not introduce additional direct financial costs to councils.

Setting out the list of factors that may constrain project design, site selection and therefore measures to avoid or mitigate adverse effects, will help both to define the information that should be supplied to decision-makers and the matters that decision-makers are required to consider. The main benefit from Policy 2 is likely to derive from the increased guidance it provides to consent authorities surrounding the consideration of adverse effects. Policy 2 will in no way alter the existing requirement to address any potential adverse effects in a manner that promotes the sustainable management of natural and physical resources. On the contrary, it would likely place an onus on project proponents to show that options and technologies for addressing adverse effects had been adequately considered. This could impose an additional cost on project proponents (generators) in terms of research and development and consenting costs, although this would be expected to be a minimal cost above the status quo.

Importantly, and as for Policy 1, this policy in no way undermines the protective emphasis of section 6 and applicants will still need to establish that any proposal promotes the purpose of the RMA.

5.2.2.3 Costs

It is conceivable that some applicants may seek to use Policy 2 to argue that it is not practical to avoid, remedy or mitigate significant adverse effects. In this sense Policy 2 risks encouraging economically expedient site selection and project design. Some council officers spoken to as part of this evaluation thought Policy 2 would create a very favourable regulatory framework for renewable electricity generation projects. Although this is arguably consistent with the Objective of the proposed NPS, the question was raised about how far this balance would be tipped and whether Policy 2 would lead councils to 'lower the bar' for the determination of significance of adverse effects in their policy statements and plans.

Although this is mentioned as a possibility, it is not thought that amendments to this effect would or could occur under the framework provided by Part II of the RMA. Regardless of how the policy is interpreted by local authorities, adverse environmental effects will still need to be avoided, remedied or mitigated, subject to consideration against Part II of the RMA. Policy 2 does not alter this requirement and will actually require project proponents to show that the most advanced technical solutions for avoiding or mitigating adverse effects have been given due consideration. In short, the policy would be expected to provide a benefit by promoting a higher quality of project design. The policy may encourage further litigation around whether effects are adequately avoided, remedied or mitigated in a particular proposal. However, significant litigation already occurs in this area and the added guidance around this would be a definite benefit for decision-makers.

Policy 1 has the potential to increase pressure to develop renewable generation projects in areas that are not appropriate, such as iconic landscapes or in sensitive river systems. When combined with this potential effect of Policy 1, Policy 2 again introduces the risk of the proposed NPS tipping the balance in favour of renewable electricity generation activities at the cost of the natural and physical environment. While this is acknowledged as a potential cost of Policy 2, it is not believed to be a likely outcome. While the proposed NPS clearly aims to promote the development of renewable generation projects, it does not aim to so 'at any cost'. Once again, this outcome is considered unlikely given the underlying requirement for all decisions to promote the sustainable management of natural and physical resources subject to consideration against Part II of the RMA.

Matters for submitters to consider:

Submitters may like to provide information to assist the Board of Inquiry to determine more accurately the potential consenting benefits and environmental costs of the proposed policy.

5.2.2.4 Conclusion

Policy 2 will require decision-makers to explain the practical determinants of site selection and project design to decision-makers. Policy 2 does not require or rely on plan changes or variations and will have an immediate effect on decisions made under the RMA. This policy will have no direct financial cost because it does not require councils to amend their planning documents. As it will take effect immediately at negligible or no cost, it is considered that this policy will promote efficient achievement of the Objective.

While Policy 2 introduces further matters for consideration in the assessment of effects, it does not improve the capability of those conducting the assessments. Some form of complementary guidance, possibly non-statutory, would be desirable to ensure its effective implementation. Assuming effective implementation, it is considered that the policy would be effective and efficient in achieving the Objective, with benefits outweighing costs.

Table 8: Summary of benefits and costs associated with Policy 2

Costs	Benefits	Stakeholders				
		Central government	Local government	Generators	Industry	General public
Economic						
	Improved guidance for decision-makers.		✓			
	Improved economic efficiency through increased coordination with existing infrastructure.		✓	✓	✓	✓
	Encourages the efficient use of renewable resources.	✓	✓	✓	✓	✓
Potential for increased cost in investigating options for addressing adverse effects.				✓		
Environmental						
Potential for adverse environmental impacts to be overlooked through an over-emphasis on technical (or other) constraints.		✓	✓			✓

5.2.3 Policy 3

When considering proposals to develop new renewable electricity generation activities, decision-makers must have particular regard to the relative degree of reversibility of the adverse environmental effects associated with proposed generation technologies.

5.2.3.1 Policy intent

Policy 3 seeks to ensure that the relative degree of reversibility of different generation technologies is recognised by developers when designing projects, and that it is considered by decision-makers when considering applications for resource consent and submissions received.

5.2.3.2 Benefits

Some renewable electricity generation technologies can have relatively reversible effects when compared with others. Marine or wind turbine generators can, for example, be removed at the end of a project's economic life and the environment returned to the pre-development state, to a greater or lesser degree. This policy focuses decision-makers on the relative degree of reversibility of the effects associated with particular technologies. Hence it supports development that minimises the potential for decisions made now, to foreclose on potential future options for the use and development of natural and physical resources.

This policy captures the fact that some renewable electricity generation technologies have the potential to be transitional. It is impossible to predict what electricity generation technologies will emerge in the future. Current fossil fuel prices are prompting increased investment in alternative sustainable generation technologies and this rate of investment is expected to increase as oil and carbon emission prices rise. Human innovation may uncover new carbon-neutral, highly efficient means of generation in the medium to long term. In the interim it is appropriate to consider the longevity of effects associated with generation technologies and to provide an avenue of policy support for those that can be removed with relatively little long-term impact.

5.2.3.3 Costs

Focusing decision-makers' attention on the relative reversibility of effects associated with particular generation technologies could prove prejudicial against those technologies with functionally irreversibly effects, such as hydro-generation. This risks inconsistency with the Objective of the proposed NPS.

Section 3 of the RMA already contemplates temporary effects and, therefore, under the existing framework developers are able to invite decision-makers to consider the temporary nature, or reversibility, of effects associated with a particular proposal. This policy, therefore, risks replicating an existing requirement of the RMA.

The concept of reversibility is open to interpretation. For example, while it is possible to remove wind turbines at the end of their economic life, it is unlikely that the foundations and access roads would be removed. In such an instance it is unclear whether the applicant could justify a claim that effects of the wind farm were reversible. Also, although the vibration, flicker noise and other effects of turbines on the environment (including, for instance, effects on migratory birds) might cease once they are removed, the applicant may not be able to defend a claim that this equates to reversibility. This lack of clarity as to what constitutes 'reversibility' could be used by project opponents in arguments against particular development proposals and has the potential to increase litigation costs.

Generators will be required to assess the reversibility of effects associated with their proposed technologies and this will introduce an additional cost. However, it is considered that this cost would be minor in the context of assessments already required.

Matters for submitters to consider:

Submitters may like to provide information to assist the Board of Inquiry to determine more accurately the potential effect of this policy on the 'consentability' of hydro-generation proposals and/or the security of electricity supply.

5.2.3.4 Conclusion

This policy requires consideration of the relative degree of reversibility of effects associated with particular generation technologies. In doing so, it may establish a marginal preference for the development of those forms of renewable electricity generation that have relatively more reversible effects, that is wind, marine and geothermal generation. So this policy could be argued to establish regulatory bias against new hydro-generation development.

On the other hand, the policy does not suggest that, because the effects of hydro schemes are less reversible than some other forms of renewable energy, such schemes should not proceed. The policy provides an additional point of argument for wind and marine projects (in particular) but takes nothing away from the arguments that may be marshalled to support a hydro development. It is noted that hydro schemes provide the benefits identified in Policy 1 and that reality is unaffected by Policy 3.

Hydro-generation plays an important role in a renewable energy system by servicing base load electricity demand. This is reflected in the existing emphasis on new hydro-generation in current modelling of future trends. With a reduced emphasis on hydro-generation, New Zealand's electricity system would need to increase the supply of other renewable technologies that are able to service this base load demand. In the short term this can be provided by an increase in geothermal generation capacity; in the long term it is expected that marine generation will play an important role in this regard. New Zealand has world-class geothermal and marine resources. Therefore, even if the policy does contribute towards a long-term shift in emphasis towards the use of such renewable resources at the expense of further hydro development, there would not seem to be significant negative implications in terms of the ability to meet the renewable energy target.

For that reason it is considered that the policy will be both effective and efficient in achieving the Objective of the proposed NPS.

Table 9: Summary of benefits and costs associated with Policy 3

Costs	Benefits	Stakeholders				
		Central government	Local government	Generators	Industry	General public
Economic						
	Encourages decision-making that promotes flexible, sustainable use of resources.	✓	✓	✓	✓	✓
Could introduce regulatory bias against those technologies with functionally irreversibly effects; such as hydro-generation.		✓		✓	✓	
Risks replicating an existing requirement of the RMA.		✓	✓	✓	✓	
Potential to increase litigation costs.		✓	✓	✓		✓

5.2.4 Policy 4

By 13 March 2012, local authorities are to notify, in accordance with Schedule 1 of the Act, a plan change, proposed plan or variation to introduce objectives, policies and where appropriate methods, into policy statements and plans to enable activities associated with:

i. the identification and assessment by generators of potential sites and energy sources for renewable electricity generation

ii. research-scale investigation into emerging renewable electricity generation technologies and methods.

5.2.4.1 Policy intent

This policy seeks to help ensure a secure supply of electricity in New Zealand, both up to and beyond 2025, by enabling generators to identify renewable electricity generation possibilities throughout the country. Activities associated with identification, research, investigation and assessment of potential sites and sources of renewable energy, and emerging generation technologies, are subject to varying activity statuses across jurisdictions. These activities will in most cases have limited environmental effects but anecdotal evidence suggests they can be subject to regulatory requirements more akin to those necessary for the assessment of effects associated with full-scale developments. Removing unnecessary regulatory barriers such as these is necessary if generators are to obtain the necessary information to take advantage of new opportunities and emerging technologies as they seek to meet the government's 90 per cent renewable target.

5.2.4.2 Benefits

This policy encourages research and investigation into new sites and sources of generation. It removes unnecessary barriers to generators wishing to build a clear picture of the resources and opportunities in New Zealand. This will provide the market with easier access to the information it requires to develop sufficient renewable generation capacity, to secure New Zealand's electricity supply and to meet the government's renewable generation target.

This policy will also enable smaller players on the margin of the industry to identify and investigate new technologies and sites, thereby carving themselves a market niche. Innovative entrants to the generation market will complement the role of larger generators, which in most instances appear to have adopted a 'technology follower' rather than 'technology leader' approach to investment and development.

Fostering innovation in the New Zealand electricity market is critical: the country will need to be able to embrace emerging opportunities if it is to meet renewable electricity generation targets to and beyond 2025. Building a regulatory environment that supports research and innovation will enable the New Zealand generator market to respond quickly to overseas innovation and experience, and to adapt to market movement. This approach could also have significant economic potential as it may foster technical expertise in New Zealand that can be exported as intellectual property.

Importantly, policy in support of innovation should work to some degree to balance the potential limiting effect of Policy 3 on new hydro-development.

5.2.4.3 Costs

This policy could encourage a 'speculation' rush with monitoring sites being erected in greater numbers around New Zealand. The effects of this will be minor, subject to landowner approval and in almost all cases temporary.

Matters for submitters to consider:

Submitters may like to provide information that will assist the Board of Inquiry to more accurately evaluate the benefit that this policy will have for generators when compared with the cost associated with the local government processes required to give effect to it.

5.2.4.4 Conclusion

Removing unnecessary regulatory barriers to innovation in New Zealand's energy sector will support adaptation to market change; it will also enable generators to embrace new opportunities in the short to medium term after already identified projects have been developed.

Given proposed implementation timelines, the council policy and plan changes and variations required by Policy 4 will be in place in time to enable the further monitoring, research and investigation necessary to develop new renewable generation capacity as the country approaches the 2025 target. This policy potentially plays a crucial role in supporting achievement of the Objective.

Costs associated with council policy and plan changes and variations will be limited by aligning timelines with those changes required by the 2008 National Policy Statement for Electricity Transmission. It is considered that the policy will be both effective and efficient in achieving the Objective of the proposed NPS.

Table 10: Summary of benefits and costs associated with Policy 4

Costs	Benefits	Stakeholders				
		Central government	Local government	Generators	Industry	General public
Economic						
	Will provide the market with easier access to the information it requires to develop sufficient renewable generation capacity to secure New Zealand's electricity supply.	✓		✓	✓	
	Will also enable smaller players on the margin of the industry to investigate new technologies and sites.	✓		✓	✓	
	Will enable the New Zealand generator market to respond quickly to overseas innovation and experience.	✓		✓	✓	
	Could work to some degree to balance the potential limiting effect of Policy 3 on new hydro-development.	✓		✓	✓	
The word 'enable' is not clearly defined and litigation to define its meaning could complicate and increase the costs associated with implementation of this policy.			✓	✓		✓
This policy could encourage a 'speculation' rush with monitoring sites being erected in greater numbers around New Zealand.			✓	✓	✓	✓

5.2.5 Policy 5

By 13 March 2012, local authorities are to notify, in accordance with Schedule 1 of the Act, a plan change, proposed plan or variation to introduce objectives, policies and where appropriate methods, into policy statements and plans to enable activities associated with the development and operation of small and community-scale distributed renewable electricity generation.

5.2.5.1 Policy intent

To address the disproportionately high consenting costs associated with small and community-scale renewable electricity generation projects with limited environmental effects. In doing so, the aim is to remove regulatory barriers that are currently acting to prevent small-scale developers from entering into the renewable electricity generation market.

5.2.5.2 Benefits

Small-scale developments have the potential to make a significant cumulative contribution to ensuring security of supply and to meeting the government's 2025 renewable generation target. However, small-scale projects currently tend to be caught under the same umbrella as larger projects and face disproportionately high regulatory compliance costs. This policy will address this and will remove barriers to investment in a scale of generation that has the potential to make a significant positive contribution to the wellbeing of New Zealanders. This contribution will be felt most particularly in rural communities and islands where small-scale distributed generation has the potential to increase security of supply by reducing reliance on the national grid, and also to provide an alternative income stream and land-use option by enabling the generation and export of electricity to the national grid.

The threshold of 4 MW installed capacity has been selected to capture the great majority of small-scale projects that are expected to be viable in rural and island locations across New Zealand, without providing a streamlined resource consenting process for those projects that may result in unacceptably significant adverse environmental effects. Marine generation has been excluded in the definition of small and community-scale projects because it has not been possible to clearly establish the scale of effects that could be expected to be associated with a project of less than 4 MW installed capacity. Similarly, installed capacity rather than electricity output has been used to promote clarity by avoiding the need to rely on generation efficiency estimates.

5.2.5.3 Costs

Removing barriers to this form of development could encourage the emergence of one to three wind-turbine assemblages in various rural and island locations, thereby spreading the adverse effects associated with this form of development over a wider area.

Specific policy support for small-scale renewable electricity generation activities could be misinterpreted as indicating particular support for small-scale over large-scale development.

Matters for submitters to consider:

Submitters may wish to provide information to assist the Board of Inquiry to determine the appropriateness of the proposed 4 MW threshold. Other legislation has been amended to define small-scale generation as up to 10 MW installed capacity and legislative consistency is desirable where appropriate. In this regard, further information may aid consideration of whether a threshold of 10 MW would be appropriate in this instance. Submitters may also wish to provide further information to enable the Board of Inquiry to more clearly establish the scale of effects that could be expected to be associated with a marine generation project of less than 4 MW installed capacity.

5.2.5.4 Conclusion

The contribution of small projects to the security of the New Zealand electricity system is potentially significant. This contribution comes both in terms of cumulative capacity and in terms of system resilience, as these projects are likely to be developed primarily to service remote rural villages. Although there is the potential for Policy 5 to encourage the spread of renewable electricity generation activities across the countryside, with associated amenity effects, this will be mitigated by the following factors:

- the environmental preservation elements of the RMA are untouched by the proposed NPS and any proposal would have to establish that it promotes the purpose of the RMA within this framework
- they may provide an alternative income stream and land-use option for the community
- effects are likely to be small, given that it is only projects under 4 MW of installed capacity that are required to be enabled by this policy.

On balance it is considered appropriate to include a policy in the proposed NPS that seeks to remove unnecessary barriers to small-scale, community-focused development. However, it may be necessary to define 'enable' in order to reduce litigation and therefore to improve the efficiency of this policy.

Table 11: Summary of benefits and costs associated with Policy 5

Costs	Benefits	Stakeholders				
		Central government	Local government	Generators	Industry	General public
Economic						
	Will remove barriers to investment in a scale of generation that has the potential to make a significant positive contribution to the wellbeing of New Zealanders.	✓	✓	✓	✓	✓
	Potential to increase security of supply in rural areas.	✓	✓			✓
	Potential to provide an alternative income stream and land-use option in rural communities.	✓	✓			✓
The term 'enable' has not been clearly defined and its interpretation could lead to litigation.			✓	✓		✓
Could increase diffuse adverse environmental effects.			✓			✓

It is noted that costs associated with council policy and plan changes and variations will be limited by aligning the implementation timeline with changes required by the 2008 National Policy Statement for Electricity Transmission. It is considered that the policy will be both effective and efficient in achieving the Objective of the proposed NPS.

5.2.6 Policy development process / alternatives considered

The Objective and policies of the proposed NPS were refined throughout the policy development process, particularly following:

- feedback from key electricity market stakeholders on policies developed out of the draft report of the Government Reference Group, on the merits and potential scope of national guidance on the management of electricity generation under the RMA
- responses to consultation conducted in accordance with section 46 of the RMA
- workshops and meetings held in March 2008 with generators, local government representatives, and key stakeholders in the energy market
- feedback on draft policies gathered from a sample of generators and councils during the section 32 evaluation
- feedback from government departments.

The policy development process saw many policy iterations but key changes were made in five general areas as discussed below.

5.2.6.1 Specified regional generation and technology type targets

The option of specifying regional generation targets or technology type targets was considered early in the policy development process. This approach was abandoned after meetings and workshops with generators, local government representatives, and other key stakeholders in the electricity market because:

- these targets could work to constrain the ability of generators to respond to market changes or to embrace technological innovation. As a result, targets of this type could hinder the ability of generators to meet the government's renewable electricity generation target of 90 per cent
- it is unclear what would happen should local authorities fail to meet generation targets
- there is a potential that, once targets had been reached, they could be used to justify blanket rejection of further resource consent applications
- local authorities lacked experience, did not have functions in this area, and would likely struggle to find the resources to manage the targets effectively
- it can be very difficult under the Local Government Act process to direct investment in areas where it is publicly unpopular; in this context regional targets could introduce another layer of political complexity into the process of gaining consent for renewable electricity generation projects.

5.2.6.2 Use of defined terms

Earlier versions of several of the policies used the word 'facilitate'. The use of this, and other words that did not have established meanings under RMA or case law, was minimised in an effort to limit uncertainty around interpretation. One exception is the use of the word 'enable' in Policies 4 and 5. The intention of this word is to require councils to remove unnecessary barriers from plans to specific forms of renewable electricity development, and ancillary activities such as research and monitoring. This could be achieved by limiting the scope of discretion when considering these applications, or by providing for low-impact activities as permitted or controlled activities. It was not considered appropriate to be so directive in the proposed NPS as to determine the activity status appropriate for certain activities; instead the emphasis was on conveying the government's intention that there should be no unnecessary barriers in the planning framework to impede low-impact activities. The word 'enable' was considered appropriate to convey this meaning.

5.2.6.3 Timing of changes required by the proposed NPS

As noted, there is a clear need for acting quickly to address the problem with the status quo, if enough renewable electricity generation capacity is to be constructed to meet growth in demand and the government's 90 per cent renewable electricity target by 2025. Earlier versions of the proposed NPS required more changes to regional and district plans within a shorter timeframe (within two years of approval of the NPS). Feedback on this policy requirement indicated this to be an impractical and onerous requirement that would elevate the risk of litigation if councils failed to comply, or if they rushed through poorly conceived changes in order to comply. It was also apparent that there was significant potential to minimise costs by consolidating the changes required to give effect to the National Policy Statement for Electricity Transmission, with those required to give effect to this NPS. Consequently, the policies of this NPS were amended to shift the focus away from plan changes and towards guiding the judgements made by decision-makers, and to align the timeframes for plan changes required by both the 'electricity' NPSs.

5.2.6.4 Removal of requirement to identify and avoid 'high-value areas'

Earlier versions of the proposed NPS required councils to identify those high-value areas shown by assessment to be sensitive to the potential adverse environmental effects of renewable electricity generation activities. The preference was then to be given to avoiding adverse effects in these areas, although it was noted that in some instances it might be appropriate for development to take place. This policy was intended to clearly demark areas where development was not desirable, thereby increasing certainty for regulators, developers and the general public. However, on further investigation this approach was found to be fraught for the following reasons:

- there could be no guarantee that central government guidance would gain support and its development would be costly and time-consuming
- plan changes would take a long time to put in place
- there would be no certainty of consistency across the country, even with guidance (councils could choose to use their own methodology)
- there could be no guarantee that certain councils would not use this policy as justification for effectively putting a region-wide ban in place
- the process would be resource-intensive and likely to take up the time of those few officers in each council with the expertise to process consents for these complex, large and intensive projects. Put simply, the resource would be diverted to policy and away from processing consents
- even with this diversion of resources, the task is a very complex one and there is a limited pool of expertise able to achieve it. The results might vary in quality across the country
- it is likely that the policy would lead to extensive litigation over methodologies and definitions
- the cost would be significant. For all councils to do this work (district, region and unitary) would cost in excess of $50 million for this policy alone (over a 20-year period). If the requirement were tagged to regional councils the cost would be in the vicinity of $20 million for this policy alone (over a 20-year period)

- once the policy framework was in place, generators would need to apply on the basis of site-specific circumstances anyway. As the Unison Networks case illustrates, decisions on the location of high-value areas may not have given the certainty that inspired the inclusion of this policy in the first place
- case law developed in response to this requirement could be quite different to that which is already evolving, possibly confusing the regulatory environment for those seeking consent, or required to process consents
- it potentially duplicated existing requirements of the RMA by requiring decision-makers to comprehensively consider and balance the national and local benefits and effects of renewable electricity generation twice: once at the plan-setting level then again when considering specific proposals against the purpose of the RMA. This could amount to inefficient 'double-handling' of the issue given the relatively small number of large-scale, large-impact projects expected to come forward nationally.

Overall it was decided to abandon this policy approach on the grounds that it would:

- duplicate existing requirements of the RMA
- increase statutory complexity
- be extremely time-consuming and expensive
- not deliver clear or certain benefits.

5.2.6.5 Removal of the proposed requirement to optimise the use and development of the available renewable energy resource

Earlier iterations of the proposed NPS required decision-makers to have particular regard to the extent to which a particular application made use of available technology and site selection to optimise the use and development of the available renewable energy resource. This policy requirement was included in response to the need to ensure that local authorities and decision-makers gave appropriate consideration to the quality of the renewable energy resource and the degree to which the proposed development optimised its use. Its inclusion was prompted by the observation that, as electricity demand increases, it will become more important to ensure that available renewable electricity resources are used and developed efficiently.

While a policy of this type would promote the efficient use and/or allocation of resources, the section 32 evaluation concluded that the potential benefits of such a policy would not justify its inclusion in light of its costs. The decision not to include a policy of this type was made on the basis of the following observations:

- it is possible that a policy of this type would lead to requests for generators to supply proof, including economic rationale, that the proposal appropriately optimised the use and development of the available resource. In many instances, however, generators will be unable to specify the type of technology proposed to be used or detailed designs of the proposal as orders for parts are placed once consents are granted and specifying particular components could jeopardise negotiations. Clearly, 'optimisation' includes a number of factors and some decisions in the process will draw on confidential information that should not be subject to public review. Similarly, some manufacturers work with generators to confirm final site design and this information may not be available at the time of consent processing or hearing. In any case, generators would likely argue that they already have very strong incentives to optimise their use of the resource

- this policy fails to specify the criteria by which generators should optimise the use of a particular renewable energy resource. In so doing we are concerned that it may force developers to use the most technically efficient generation technology and prevent them from making sensible economically efficient trade-offs between cost and technical efficiency. In particular, community-scale generation developments may not be able to cost-effectively employ the latest technology due to a lack of economies of scale

- a policy of this type could also curtail the use of second-hand wind turbines in New Zealand due to their marginally lower technical efficiency compared with 'state of the art' wind turbines. This would rule out a particularly attractive option for community-scale generation developers noting that second-hand turbines have relatively low upfront costs and are available in small unit sizes

- the inclusion of a policy requirement of this type does not provide a level playing field between renewable generation and fossil-fuel generation. Fossil-fuel generation is not subject to a similar policy requirement to optimise its resource use

- the term "optimise" would be open to interpretation and could lead to misinterpretation, litigation, regulatory uncertainty and increased costs. In addition to increasing costs for developers, it was considered unlikely that territorial authorities would have the capacity to establish whether a particular proposal optimised the use of the available resource, and would need to engage expert advice. In this regard, there is a risk that a policy requirement of this type could lead to the applicant arguing that the project represents the optimal use of the resource while the council's or community's independent expert could conclude the opposite. While this situation plays itself out currently in relation to other environmental effects, a policy of this type would introduce another source of tension and therefore the potential for more cost.

6 Risks and Uncertainties

Section 32(4)(b) of the RMA requires an evaluation to take into account the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies.

The foregoing analysis of the status quo has identified that the RMA does not clearly establish the significance of the benefits of renewable electricity generation projects, which by their nature can compete with other environmental values and are often felt at the national level. This has led to uncertainty in the marketplace, potentially discouraging investment in some instances and potentially frustrating development opportunities into the future. The risks of not acting to address this issue are as follows:

1. Insufficient renewable electricity generation capacity will be consented and developed to meet growth in demand and the government's renewable electricity target of 90 per cent by 2025.
2. As a result of the above, New Zealand risks facing security of electricity supply problems, with significant associated social and economic implications.
3. Any shortfall in generation capacity will need to be made by fossil-fuel generation. If this occurs, New Zealand will face higher economic costs to meet its Kyoto obligations. Increasing the country's reliance on fossil-fuel electricity generation would, therefore, have direct financial implications for the nation. Such a move would also have indirect economic costs as it is likely that New Zealand's international image would suffer in the markets of its increasingly 'climate change aware' trading partners.
4. Continuing uncertainty for local authorities, the Environment Court, the development community and the general public should government fail to articulate the benefits of renewable electricity generation in a statutory RMA instrument.

A trend had become apparent for decision-makers to address the benefits of renewable electricity generation in an inconsistent way. The Environment Court is able to balance local and national, costs and benefits in relation to renewable electricity generation proposals, and case law is emerging in this area. Also, the status quo has possibly become more favourable for renewable electricity generation projects since the release of the New Zealand Energy Strategy. The imminent introduction of the New Zealand Emissions Trading Scheme is also expected to have a significant effect on the weight given to the benefits of these projects in RMS decisions. Therefore one cannot conclude with certainty that insufficient renewable electricity generation projects will be developed under the status quo to meet the government's renewable electricity target of 90 per cent by 2025. Given the potentially significant consequences of failing to meet this target, the introduction of an NPS is nevertheless considered an appropriate risk-management intervention.

There are inherent risks involved with the proposed NPS. These include:

1. Lack of local and/or regional action. Although only a handful of plans and policy statements specifically address renewable electricity generation, some councils may argue that their plans already meet the requirements of the proposed NPS, and therefore no further change is necessary. This may lead to potential confrontation, and possibly litigation between the Ministry, generators and local government as to how to best implement the proposed NPS. This risk can be mitigated by ongoing consultation and discussion between the Ministry and local authorities to ensure all parties clearly understand the Minister's intentions. Non-statutory guidance has a role to play in this regard. It is also noted that any potential lack of clarity may be resolved by the Board of Inquiry in its recommendations to the Minister.

2. Underestimation of the costs and time it will take to put required changes in place: timeframe risks are relevant as it is not clear what will happen if a local authority fails to meet the timetable. The need to act quickly is largely addressed by targeting key policies to the decision-making process without requiring plan changes. Plan changes required by the proposed NPS are intended to enable small-scale development, research and innovation. These are all matters that will assume relevance over the medium term, and the four-year timeframe set by the proposed NPS should be long enough for councils to tackle the plan changes. The Ministry for the Environment will continue to monitor implementation of the NPS and, should it be necessary, the Minister can use his or her powers under sections 25 and 25A of the RMA to intervene.

3. Uncertainty about how best to give effect to the proposed NPS could lead to delays and increased litigation costs.

4. The proposed NPS will require councils to undertake additional investigative, monitoring and policy development work. An estimate of these costs is provided in Appendix A of this report. One key risk to delivering on the proposed NPS is a lack of 'professional' resources at regional and district councils. Should additional resources not be available (due to labour supply), some tasks may not be completed within the timeframes stipulated. Also, the proposed NPS could result in the resources of regional and district councils being diverted away from the processing of consents for renewable electricity generation projects towards policy development, or away from other high-priority programmes. This could create tension between the Objective and the policies of the proposed NPS.

5. Discouraging investment. Policy requiring decision-makers to have regard to the relative 'reversibility' of effects of different technology types could discourage investment in relatively 'non-reversible' renewable generation technologies such as hydro generation. However, when making decisions on hydro generation, decision-makers will need to have regard to the benefits of renewable electricity generation and make an ultimate judgement as to whether a particular project promotes the sustainable management of natural and physical resources. Under this framework, only appropriate hydro generation projects will gain resource consent; although this policy may add another hurdle, it is unlikely to be determinative when compared with consideration of the actual and potential effects themselves.

6. Environmental effects. The policies of the proposed NPS could promote development in some instances where consent might not have been granted under the status quo. However, it is noted that the NPS does not amend the existing environmental protection emphasis of section 6 nor the need for decisions to promote the sustainable management of natural and physical resources.

7 Conclusions

This report provides an evaluation of the proposed national policy statement for renewable electricity generation in accordance with the requirements of section 32 of the RMA.

Analysis of the status quo leads to the conclusion that the RMA does not clearly establish the significance of the benefits of renewable electricity generation projects, which by their nature can compete with other environmental values and are often felt at the national level. Renewable electricity projects will in almost all instances require council officers and decision-makers to weigh competing environmental, social and cultural values throughout the resource consent process. Within a regulatory framework that does not clearly establish the weight to be given to the benefits of renewable electricity generation, or provide clear guidance on how to balance national versus local effects, these judgements are complicated and can take time for a responsible decision-maker to make. This will have a compounding effect and will have a significant bearing on the time it takes to process consent applications. It is, therefore, considered that the critical factor influencing the time it takes to gain consent is the compounding effect of uncertainty within the regulatory framework.

Similarly, and perhaps more importantly, without clear indication of the significance of the benefits associated with renewable electricity generation, decision-makers may find it difficult to weigh these benefits when considering applications subject to Part II of the RMA. This has led to uncertainty in the marketplace, potentially discouraging investment in some instances and potentially frustrating development opportunities into the future.

Because of the high-level guidance provided by the proposed NPS and the complexity of the marketplace and regulatory framework within which it will apply, it has not been possible to accurately quantify the costs and benefits of the proposed Objective and policies. However, it is possible to identify areas where costs and benefits are expected and to make preliminary estimates of the potential economic costs of the proposed NPS.

The principal benefits and costs of the proposed NPS can be summarised as follows:

- the proposed NPS will promote an increase in the proportion of electricity generated from renewable sources in accordance with the government's target for renewable electricity generation of 90 per cent by 2025. This will result in the development of a diverse and resilient generation sector, which will in turn increase the security of electricity supply. A reduced dependence on fossil-fuel generation will minimise the country's exposure to fluctuations in resource (oil and gas) prices, limit the extent of its economic liabilities on the international carbon market flowing out of New Zealand's international climate change obligations, and have positive implications for the wellbeing of New Zealanders
- clear statutory recognition of the national benefits of renewable electricity generation provides generators with a degree of certainty that decision-makers will give appropriate consideration to these benefits when considering plan provisions and applications

- the total present value cost of the proposed NPS is estimated to be $23.5 million.[20] Specific costs associated with the project are:
  - **government:** guidance and workshops: $260,000 (undiscounted cost in the first year following approval)
  - **local authorities (territorial authorities, unitary authorities and regional councils)***:*staff training, plan change notification and hearings: $19.9 million (undiscounted cost spread over years two to five following approval), public education and advocacy in support of innovation in the field of renewable electricity generation: an additional $3.1 million (undiscounted spread over 20 years following approval)
  - **generators***:* plan advocacy: $7.3 million (undiscounted cost spread over years two to five following approval)
  - **local community stakeholders and NGOs***:* the NPS is likely to stimulate an increased level of community involvement in plan formulation via submissions, with the costs of advocacy amounting to $3.4 million (undiscounted cost spread over year's two to five following approval).

Overall, this evaluation has found that the proposed NPS will promote the sustainable management of natural and physical resources. The Objective of the proposed NPS is considered the most appropriate way to achieve the purpose of the RMA, and the policies of the proposed NPS are considered to be effective, efficient and the most appropriate for achieving the Objective.

[20] The unit rates and assumptions used to derive cost estimates, and the results of economic modelling, are included in Appendix A

Appendix A: Estimate of Costs

Table 12: Assumptions for the preliminary cost assessment

	Unit rate	Assumptions
Regional councils (12)		
Training/upskilling/new staff	$75,000	0.5 FTE* per RC
Notify plan change/hearings	$300,000	per change (includes coastal plan if needed)
Consents / appeals	uncertain	
Sensitive areas assessment	N/A	Removed from proposal
Innovation	$10,000	per annum per RC for continued education / encouragement
Territorial authorities (68)		
Training/upskilling/new staff	N/A	
Notify plan change/hearings	$150,000	per change
Consents / appeals	uncertain	
Sensitive areas assessment	N/A	Removed from proposal
Innovation	N/A	
Unitary authorities (5)		
Training/upskilling/new staff	$75,000	0.5 FTE per UA
Notify plan change/hearings	$200,000	per change
Consents / appeals	uncertain	
Sensitive areas assessment	N/A	Removed from proposal
Innovation	$10,000	per annum per council
Central government		
Guidance preparation	$210,000	1 FTE plus standard QP cost
HVA methodology dev and testing	N/A	Removed from proposal
Workshops	$50,000	0.2 FTE plus $20,000 for venue hire, travel, materials, etc
Submitting on plans	uncertain	
Generators (5)		
Pre-consent preparation	uncertain	
Consents/appeals	uncertain	
Plan advocacy	$200,000	1 FTE per annum plus $50,000 per plan for years 2 to 5 FTEs for five main generators
Local community stakeholders		
Consents/appeals	uncertain	
Plan advocacy	$20,000	$20,000 per plan for experts, submissions, etc
NGOs		
Plan advocacy	$20,000	$20,000 per plan for experts, submissions, etc

* 1 FTE = $150,000

Table 13: Estimate of costs ($ million) over 20 years following approval

Stakeholder/cost source	Unit assumption	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total
Regional councils (12)																					
Training/upskilling/new staff	$75,000		$0.9	$0.9	$0.9	$0.9															$3.6
Notify plan change/hearings	$300,000			$1.8	$1.8																$3.6
Consents / appeals	uncertain																				$0
Sensitive areas assessment	N/A																				$0
Innovation	$10,000		$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.12	$0.12	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$2.2
Territorial authorities (68)																					
Training/upskilling/new staff	N/A																				$0
Notify plan change/hearings	$150,000			$5.1	$5.1																$10.2
Consents / appeals	uncertain																				$0
Sensitive areas assessment	N/A																				$0
Innovation	N/A																				$0
Unitary authorities (5)																					
Training/upskilling/new staff	$75,000		$0.4	$0.4	$0.4	$0.4															$1.5
Notify plan change/hearings	$200,000			$0.4	$0.6																$1.0
Consents / appeals	uncertain																				$0
Sensitive areas assessment	N/A																				$0
Innovation	$10,000		$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$01	$01	$0.1	$0.1	$0.1	$0.15	$0.1	$01	$01	$01	$0.1	$01	$0.9
Central government																					
Guidance preparation	$210,000	$0.2																			$0.2
HVA methodology dev and testing	N/A																				
Workshops	$50,000	$0.1																			$0.1
Submitting on plans	uncertain																				$0

Stakeholder/cost source	Unit assumption	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total
Generators (5)																					
Pre-consent preparation	uncertain																				$0
Consents/appeals	uncertain																				$0
Plan advocacy	$200,000		$1.9	$1.8	$1.8	$1.8															$7.3
Local community stakeholders																					
Consents/appeals	uncertain																				$0
Plan advocacy	$20,000		$0.4	$0.4	$0.4	$0.4															$1.7
NGOs																					
Plan advocacy	$20,000		$0.4	$0.4	$0.4	$0.4															$1.7
Total (undiscounted)		$0.3	$4.2	$11.4	$11.6	$4.1	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$02	$33.9
Discount rate	10.0%																				
Discount factor		0.91	0.83	0.75	0.68	0.62	0.56	0.51	0.47	0.42	0.39	0.35	0.32	0.29	0.26	0.24	0.22	0.20	0.18	0.16	
Discounted cost		$0.3	$3.5	$8.6	$7.9	$2.5	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$23.5m
Present value cost (20 years)	$23.5m																				