

# **Report and Recommendations of the Board of Inquiry into the Proposed National Policy Statement for Renewable Electricity Generation**

Prepared in March 2010  
by the Board of Inquiry into the Proposed National Policy Statement  
for Renewable Electricity Generation

## **BOARD OF INQUIRY**

In the Matter                      of the Resource Management Act 1991

And

In the matter                      of the Inquiry into the Proposed National Policy  
Statement for Renewable Electricity Generation

### **THE BOARD OF INQUIRY**

Dr Royden Somerville QC (Chair)

Sir Wira Gardiner KNZM (Member)

Mrs Geraldine Baumann (Member)

Associate Professor Ralph Chapman (Member)

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## **REPORT AND RECOMMENDATIONS OF THE BOARD OF INQUIRY**

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## INTRODUCTION

[1] You have chosen to use the process set out in sections 47 to 53 of the Resource Management Act 1991 (the RMA or Act) to achieve the Proposed National Policy Statement for Renewable Electricity Generation (NPS). The proposed NPS is annexed to this report as Appendix A.

[2] The membership of the Board of Inquiry (the Board) appointed by you to inquire into and report to you on the proposed NPS in accordance with sections 47 to 51 of the RMA and within the terms of reference set by you is: Dr Royden Somerville QC (Chair), Sir Wira Gardiner KNZM, Mrs Geraldine Baumann, and Associate Professor Ralph Chapman (Members).

[3] Pursuant to section 48, the Board publicly notified the proposed NPS on 6 September 2008. It received 118 submissions, and 25 further submissions. Some late submissions were made and these were received by the Board. Fifty-four submitters appeared before the Board and many called evidence in support of their submissions. The Board also invited submissions from experts to address specific matters being covered.

[4] The Board is very grateful to all the submitters for their assistance. In some cases it asked submitters for further information which often required a considerable amount of work. The willingness to undertake that work was appreciated and the resulting material greatly assisted the Board.

[5] The Board was supplied with information from the Ministry of Economic Development, the Ministry for the Environment, Te Puni Kokiri, the Electricity Commission, and the Energy Efficiency and Conservation Authority (EECA). The Ministry of Economic Development provided information on behalf of other government departments which did not appear before the Board. The Board is grateful to the above Ministries, the Commission, and the Authority, for their assistance.

[6] The Board also considered the documents you referred it to, relevant research and publications, and cases on renewable electricity generation (REG) activities in the Environment Court and superior courts.

[7] The Board sat in Wellington, Nelson, Christchurch, Palmerston North, Dunedin, Hamilton, Tauranga, Tangoio Marae in Hawkes Bay, and Auckland. It also visited REG activities around New Zealand.

[8] The Board is grateful for the invitation to sit at the Tangoio Marae and for the hospitality accorded it, and to the five major generating companies for arranging visits to their REG facilities.

[9] The Board acknowledges the support services provided by the Ministry for the Environment and thanks those Ministry personnel who so ably assisted it.

[10] The Board noted that Mrs Baumann is employed by the New Zealand Historic Places Trust. The Trust made a submission on the proposed NPS but did not appear in support of it. There was no objection by any of the submitters to Mrs Baumann's membership of the Board; however, she did not take part in any discussions concerning the Trust's submissions.



## BACKGROUND

[11] Approximately 65% of electricity is generated from renewable electricity generation (REG) activities. The strategic policy objective of central government is to have REG increased to 90% by 2025 (based on delivered electricity in an average hydrological year). This target is found in the New Zealand Energy Strategy 2007, the New Zealand Energy Efficiency Conservation Strategy 2007, and the proposed NPS. It was also confirmed by you to the Board.

[12] Because the significant increase in REG activities over the next 15 years required to achieve this objective needs to occur within the context of the RMA, it is important that a national policy framework is developed under the Act.

[13] The NPS on Electricity Transmission (NPSET) was issued by notice in the Gazette on 13 March 2008 and came into force on 10 April 2008. The proposed NPS needs to contain policies that allow for local authorities to give effect to both of these national policy statements in their RMA policy and planning instruments, and for decision-makers to apply them consistently.

## TERMS OF REFERENCE

[14] The terms of reference you set for the Board state *inter alia*:

### **Scope of matters to be considered by the Board and Board's report**

The Board must carry out those functions set out in sections 48 to 51 of the RMA. The principal function of the Board is to prepare a report and make recommendations to the Minister pursuant to section 51 of the RMA. In doing so it must consider the following matters, as required by section 51 of the RMA:

- (a) the matters in RMA Part 2; and
- (b) the proposed national policy statement; and
- (c) any submissions received on the proposed national policy statement; and
- (d) any evidence received; and
- (e) any other relevant matter.

### **Matters to be explicitly addressed**

The Board should provide in its report recommendations, with reasons, on the wording of the NPS, including the objectives and policies. The report and recommendations may also address:

- the internal consistency of the NPS as a whole, and ways to address any potential inconsistencies;
- the level of certainty or clarity provided by the NPS, and if this is inadequate, ways to improve it;
- the removal or further refinement of issues, objectives and policies where this is appropriate for achieving the policy approach of the NPS;
- the identification of any unintended or unforeseen, but likely outcomes of the NPS, and ways to address these.

## THE PROPOSED NATIONAL POLICY STATEMENT

[15] The proposed NPS and the NPSET focus on REG activities and the national grid. Other matters of national significance involving natural and physical resources are covered by other national policy statements and proposed national policy statements.

[16] The proposed NPS must achieve the purpose of the RMA. Section 45(1) states:

### **45. Purpose of national policy statements (other than New Zealand coastal policy statements)**

- (1) The purpose of national policy statements is to state objectives and policies for matters of national significance that are relevant to achieving the purpose of this Act.

[17] The Board of Inquiry into the proposed NPSET stated in its report dated November 2007:

An objective is, by definition, something towards which effort is directed; an aim, goal or end of action. A policy is a definite cause or method of action selected from among alternatives and in light of given conditions to guide and determine present and future decisions.

[18] The Court of Appeal in *Auckland Regional Council v North Shore City Council* [1995] NZRMA 424 at 430 (CA) considered that policies in a regional policy statement can be directive and highly specific. The Board considers that the same approach can be taken to the formulation of policies in a NPS.

[19] The Board is satisfied that the proposed NPS meets the requirements of section 45(1) of the RMA.

[20] It is sustainable to use natural resources that are renewable rather than non-renewable and finite. If electricity is generated from renewable resources it allows for the ongoing social and economic wellbeing, and health, of people and communities in New Zealand. It means that future generations will be provided for. The proposed NPS also includes a policy framework for managing adverse environmental effects of REG activities.

[21] The objective and policies of the proposed NPS also relate directly to the principles in section 7(ba),(i) and (j) of the RMA. The efficiency of the end use of energy (which involves demand side management) is addressed in section 7(ba), the effects of climate change in section 7(i), and the benefits of renewable energy in section 7(j). “Climate change” and “renewable energy” are defined in section 2 of the Act:

**climate change** means a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods

**renewable energy** means energy produced from solar, wind, hydro, geothermal, biomass, tidal, wave, and ocean current sources

[22] When considering the role of the proposed NPS, section 7(j) is particularly relevant. It states:

### 7. Other matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—

...

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

[23] The proposed NPS clothes the principle in Section 7(j) in a way that will guide and direct decision-makers when they apply it.

[24] A useful explanation of the general effect of a NPS is set out in the explanatory note to the proposed NPS.

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.

[25] Section 55 of the RMA states:

### 55. Local authority recognition of national policy statements

- (1) In subsections (2) and (2A), **document** means—
  - (a) a regional policy statement; or
  - (b) a proposed regional policy statement; or
  - (c) a proposed plan; or
  - (d) a plan; or
  - (e) a variation.
- (2) A local authority must amend a document, if a national policy statement directs so,—

- (a) to include specific objectives and policies set out in the statement; or
  - (b) so that objectives and policies specified in the document give effect to objectives and policies specified in the statement.
- (2A) The local authority must—
- (a) make the amendments referred to in subsection (2) without using the process in Schedule 1; and
  - (b) give public notice of the amendments within 5 working days after making them.
- (2B) The local authority must also make all other amendments to a document that are required to give effect to any provision in a national policy statement that affects the document.
- (2C) The local authority must make the amendments referred to in subsection (2B) using the process in Schedule 1.
- (2D) In all cases, the local authority must make the amendments—
- (a) as soon as practicable; or
  - (b) within the time specified in the national policy statement (if any); or
  - (c) before the occurrence of an event specified in the national policy statement (if any).
- (3) A local authority must also take any other action that is specified in the national policy statement.
- (4) A national policy statement may include transitional provisions for any matter, including its effect on existing matters or proceedings.

[26] In this report, when addressing the content of the proposed NPS, the Board considers *inter alia* whether the instrument:

1. states an objective and policies for matters of national significance that are relevant to achieving the purpose of the RMA;
2. provides a national policy framework in the context of the RMA which will promote and encourage REG activities and the related benefits of those activities;
3. provides guidance and direction for local authorities when giving effect to the proposed NPS in their RMA policy and planning instruments; and
4. provides guidance to decision-makers considering applications for resource consents and/or notices of requirement for designations for REG activities.

## DEMAND FOR RENEWABLE ELECTRICITY GENERATION

[27] REG and REG activities are defined in the proposed NPS:

**“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.

[28] Most large-scale REG activities (hydro, wind and geothermal) are connected to the national grid. The national grid includes the high voltage power cables that transmit electricity from where it is generated to local lines networks, or directly to industrial users.

[29] Distributed generation includes electricity which is generated close to where it is used, either on a stand-alone basis or connected to local power lines, but not to the national grid. Off-grid generation, known as “stand alone power systems” can range from domestic scale to much larger developments which provide electricity for whole communities. In some situations, as on Stewart Island or the Chatham Islands, electricity generation sources are connected into mini grids which distribute electricity to households and businesses on the island network.

[30] A number of predictions were given to the Board concerning the likelihood of REG activities making a 90% contribution to electricity demand by 2025. These predictions are summarised in Table 1.

**Table 1: Predictions of REG contribution by 2025**

|  | Electricity generated / GWh per annum | Power capacity / MW                             | Percentage contribution to generation from renewables |
|--|---------------------------------------|---|---|
| MED Reference scenario*                    | 51,700                                | 13,400‡   | 83  |
| MED NZ\$0 (CO <sub>2</sub> -e) per tonne   | 52,600                                | 12,900‡   | 69  |
| MED NZ\$100 (CO <sub>2</sub> -e) per tonne | 51,200                                | 13,600‡   | 84  |
| MED -1.5% economic growth†                 | 47,100                                | 12,500‡   | 81  |
| MED +1.5% economic growth†                 | 56,100                                | 15,100‡   | 84  |
| MED NZES 'Low carbon' scenario**           | ~44,000                               | —   | 90  |
| EC MDS1 'Sustainable path'                 | 53,500                                | 12,800  | 89  |
| EC MDS2 'South Island surplus'             | 52,900                                | 12,400  | 82  |
| EC MDS3 'Medium renewables'                | 49,600                                | 10,200  | 77  |
| EC MDS4 'Demand-side participation'        | 52,700                                | 11,100  | 69  |
| EC MDS5 'High gas discovery'               | 52,400                                | 11,100  | 69  |
| Meridian intermediate 'demand growth rate' | 50,000–52,000                         | —   | Not specifically addressed                            |
| MRP 1.5%-2.5% demand growth rate           | 52,000–62,000 (demand)                | —   | Not specifically addressed                            |
| MRP 3% demand growth rate                  | 68,000 (demand)                       | —   | Not specifically addressed                            |
| Contact 'Conservative demand assumption'   | ~58,500 (demand)                      | —   | ~80   |
| Contact 2.5% demand growth rate            | ~61,000 (demand)                      | —   | ~80   |
| Genesis                                    | ~53,000 (demand)                      | 11,100-12,000‡<br>(100-150 MW y <sup>-1</sup> ) | Not specifically addressed                            |

MED: Ministry of Economic Development

NZES: New Zealand Energy Strategy (2007)

EC: Electricity Commission

MDS1-MDS5: Scenarios described by the EC in Table 1 of 2008 Statement of Opportunities (2008)

MRP: Mighty River Power

\*Assumes carbon price of NZ\$25 (CO<sub>2</sub>-e) per tonne

†Percentage growth relative to MED reference scenario

‡Assuming projected rates of growth, as presented in the literature, added to an existing capacity of ~9,400 MW in 2008

[31] The Board is satisfied that the growth in demand for electricity is such that to match it with supply will require a significant increase in installed capacity. The supply side of REG involves the distribution of electricity to where it is used. Perhaps as much as 77% additional REG will be needed to meet demand over the next 15 years.

[32] A significant increase in large-scale REG activities (over 10 megawatts (MW)) involving the use of wind and geothermal resources will be needed. This would:

- (a) provide for a diverse generation base to avoid over-reliance on hydro-electric power (HEP), which is susceptible to production constraints during dry years, which can affect security of supply;
- (b) result in a significant reduction in the use of fossil-fuelled generation activities in order to reduce the discharge of greenhouse gases; and
- (c) help to meet the increasing demand for electricity.

[33] Local authorities have not been zoning areas for wind turbines in their RMA planning instruments. However, electricity generation companies have been identifying areas for wind turbine developments before using the RMA resource consent processes. A number of wind farms have been approved when this approach has been used. Not all of them have been constructed. Applications for resource consents for others have been declined. REG activities using geothermal resources have been in place in New Zealand since the 1950s. A number of new geothermal developments have been granted resource consents in recent years and have been or are being constructed.

[34] Because of the ambitious target contained in the objective of the proposed NPS, the Board considers that RMA instruments also need to promote and encourage small and community-scale REG activities such as small-scale hydro-electric facilities. These are classified into three categories by the Energy Efficiency and Conservation Authority (EECA). A micro hydro is up to 5 kilowatts (kW), a mini hydro is between 5 and 20 kW, and a small hydro is between 20 kW and 10 MW. Most micro hydro systems for houses and buildings are less than 5 kW, and in many cases less than 1 kW.

[35] Many potential REG activities, for example, those seeking to use solar and marine resources, are not economically viable at present but are likely to be so before 2025. The Board considers that any policy and regulatory barriers to these emerging and maturing REG technologies in RMA instruments need to be reduced or removed.

[36] Biomass can also be used for the generation of electricity. Bio-energy resources, like geothermal resources, need to be managed carefully to maintain their renewability.

[37] The upgrade of the national grid will provide for the efficient transmission of renewable electricity, and will support new REG activities in remote areas.



[38] Demand-side management (DSM) is also required to reduce the demand for new electricity generation activities. DSM involves methods to manage the use of electricity, such as energy efficiency, load management, and fuel switching. Energy efficiency involves an improvement in the way energy is used, which leads to more benefits per unit of energy. Load management involves measures to shift electricity use away from peak times. Fuel switching involves using a different fuel to provide for the same energy services, for example, moving to passive solar energy or wood pellets for heating.

[39] Local authority RMA policy and planning instruments should include objectives, policies and rules in respect of DSM. DSM can be encouraged in urban design protocols involving new subdivisions to ensure the access of sun to buildings, and by the development of financial instruments by local authorities in conjunction with micro-generation opportunities. DSM also has the potential to avoid or reduce the need for investment in upgrading power lines.

## SUBMISSIONS TO THE BOARD

[40] Submitters addressed a range of matters and sought amendments to the proposed NPS. Some submitters were of the view that there was no need for a NPS for REG.

[41] The main topics covered in the submissions and evidence received by the Board include: Part 2 considerations; the scale and scope of REG activities; the environmental benefits relative to REG activities; the management of adverse environmental effects of REG activities; the need to categorise REG technologies and activities; the need for enabling research and investigation; what should be covered in the definition of small and community-scale distributed REG; and the implementation of the proposed NPS.

[42] The changes to the proposed NPS suggested by submitters were that the NPS needed:

### Part 2 considerations

- (a) To give more guidance and direction for decision-makers in respect of how to balance competing values in Part 2 of the RMA when considering applications for resource consents for REG activities. Many of the submitters raised the need for assistance when applying the words “inappropriate use and development” contained in section 6(a), (b) and (f) of the RMA when considering proposed REG activities. Others submitted that there is a need to provide for a certain and consistent approach when balancing nationally significant benefits of REG with significant local environmental values.
- (b) To include the words used in sections 6, 7 and 8 of the RMA in the content of the policies.
- (c) To require local authorities and applicants for resource consents to consult and work with iwi and hapū on existing and proposed REG activities in order to identify section 6(e) and (f) values.

### Scale and scope of REG activities

- (d) To promote all forms of REG activities of any scale, including nuclear power, to avoid or reduce the discharge of greenhouse gases in order to manage the risks associated with climate change.
- (e) To restrict the policies to address only large-scale REG activities in order to have a chance of achieving its strategic policy objective.
- (f) To address DSM to assist in achieving its strategic policy objective.
- (g) To provide for new HEP activities with additional storage to complement any increase in wind turbine development.

- (h) To require local authorities to provide for targets for REG in their areas.
- (i) To require decision-makers to consider the output and yield of REG activities.
- (j) To address transmission lines (involving REG activities) which are not part of the national grid and do not come within the provisions of the NPSET.
- (k) To recognise the practical limitations on achieving the strategic objective within its stated timeframe.

## **Environmental benefits relative to REG activities**

- (l) To add to the benefits in Policy 1.

## **Management of adverse environmental effects of REG activities**

- (m) To provide for environmental compensation, financial instruments (including feed-in tariffs to stimulate small and community-scale distributed REG activities), and operational measures where there are potential significant adverse environmental effects from REG activities.
- (n) To provide for the protection of REG activities from a consideration of reverse sensitivity issues.
- (o) To remove Policy 3 concerning the relative irreversibility of adverse effects associated with particular generation types in order to avoid a bias against HEP.
- (p) To enable generation companies to gain access to conservation land and national parks where there are potential REG resources.
- (q) To prohibit REG activities in sensitive areas (conservation and marine), except for micro-scale units for huts, visitor facilities, or scientific installations.
- (r) To provide for recognition of transmission losses when siting REG activities.

## **Categorising REG technologies and activities**

- (s) To identify and address different forms of REG activities in specific policies.
- (t) To require local authorities to classify REG activities as permitted activities in their RMA policy and planning instruments.
- (u) To require applicants for resource consents for wind turbines to provide compensation to owners of residential buildings located within 2 kilometres of proposed wind turbines.

- (v) To provide for guidance and direction using spatial planning approaches to address the accumulation of wind turbines and the capacity of the landscape to accommodate them.

## **Enabling research and investigation**

- (w) To provide for research and investigatory work for proposed REG activities to be permitted activities.

## **Small and community-scale distributed REG**

- (x) To change the definition of ‘small and community-scale distributed REG’ by removing the 4MW threshold; or by substituting a 10MW threshold; or by including activities with adverse environmental effects which are no more than minor, rather than having an installed electricity capacity limit for the activity. Offshore wind, and tidal and wave generation should not be excluded from the definition.

## **Implementation of the proposed NPS**

- (y) To defer or withdraw it until the Proposed New Zealand Coastal Policy Statement (PNZCPS) and the Proposed National Policy Statement for Freshwater Management (PNPSFWM) are in place and gazetted, and if that does not happen, to include a policy in it which states it is to have priority over other national policy statements promulgated under the RMA.
- (z) To provide a National Environmental Standard (NES), manuals, and guidelines to implement it.

[43] Some submissions raised matters which did not come within the Board’s terms of reference or relate to the RMA. These include requiring the Minister of Conservation to give access to conservation lands for REG activities; requiring the payment of compensation to landowners adjacent to REG activities; and the establishment of feed-in tariffs. The proposed NPS cannot confer powers which are not conferred by the RMA, nor can it go beyond the scope of the RMA. Nuclear energy does not fall within the definition of ‘renewable energy’ in the RMA.

[44] Although the Board does not specifically refer in this report to all matters addressed by submitters in their submissions and supporting documents, they were carefully considered.

[45] The Board now considers the provisions of the proposed NPS in light of the submissions and the material received.

# THE BOARD'S CONSIDERATION OF THE PROPOSED NPS PROVISIONS

## Part 2 considerations

[46] The preamble to the proposed NPS contains the following statement:

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. **[Emphasis added]**

[47] A common theme raised by submitters was that the NPS should guide and direct decision-makers by including a consistent approach to balancing the nationally significant matters identified (the need for REG activities and the benefits relevant to them) with the significant adverse effects they could have on the environment. This would address uncertainties around decision-making particularly in respect of applications for resource consents for REG activities.

[48] When making factual findings, predictions, and value judgements, decision-makers need to follow a rational and consistent reasoning process if there is to be the certainty submitters are seeking.

[49] The use of the words "balancing the competing values" in the preamble, indicates that balancing is the principal reasoning process when addressing values that might be relevant when considering any REG development proposal. However, the values referred to in Part 2 can be incommensurable because there may be no common factor or metric that can be used for balancing or weighing them when making a value judgement. A value choice is often required where one value is chosen and another is rejected. The objective and policies of the proposed NPS should provide guidance for decision-makers when they are making value choices.

[50] The Board considered that the use of the words “balancing the competing values” in the preamble is too restrictive and should be changed to cover balancing, weighing, and choosing values, and rejecting other values, when making a value judgement. Accordingly, it considers that the words “to addressing the competing values” should be used in the preamble.

[51] The thrust of the proposed NPS is to promote and encourage nationally significant REG activities (whatever the scale) and benefits relevant to them, by ensuring that they are given significant weight by decision-makers when they are considering Part 2 matters. The benefits of REG activities should be given greater weight than local environmental values which will be adversely affected by the activities. That will promote the nationally significant strategic objective in the proposed NPS. The Board suggests that a specific policy to guide decision-makers when applying the principles in Part 2 needs to be included in the NPS.

[52] The Board considered that the proposed NPS need not repeat the provisions in Part 2 of the RMA. It is unnecessary to reiterate all the mandatory considerations which are contained in the Act and cannot be displaced or overridden by policies within a NPS. This was acknowledged in the Board of Inquiry report and decision on the “Upper North Island Grid Upgrade Project” (September 2009) produced under section 149 of the RMA, which summarised the relevance of a NPS in terms of the purpose of the Act and the principles in Part 2.

[221] Subject to Part 2, the NPS is to be applied by decision-makers under the Act, but not as a substitute for, or to prevail over, the RMA’s statutory purpose or the statutory tests. It is a relevant consideration to be weighed along with other considerations in achieving the sustainable management purpose of the Act. The objectives and policies of the national policy statement are intended to guide decision-makers in considering requirements for designations for transmission activities and in making decisions on resource consents.[fn]65  
[footnote omitted]

[53] A number of RMA instruments are also available to protect section 6 values which were of concern to many submitters. For example, the NPS does not override water conservation orders in respect of rivers where electricity generation companies may have an interest in using them for HEP development. The NES on air quality is not overridden in respect of discharges from facilities generating electricity from biomass.

[54] The Board does not consider that there is a need for a specific policy in the NPS requiring applicants for resource consents for proposed REG activities, and local authorities, to consult and involve iwi and hapu on section 6(e) and (f) values. The recommended policies of the boards of inquiry into the PNZCPS and the PNPSFWM, and local authority RMA instruments, recognise these obligations.

## Scale and scope of REG activities

[55] In the preamble to the proposed NPS there is reference to the New Zealand Energy Strategy (NZES) of October 2007. This has since been amended. The NZES is not a statutory instrument whereas a NPS is. The Board considers that the NZES does not need to be incorporated into the NPS pursuant to Schedule 1AA of the RMA. The strategic target contained within the NZES is included in the objective of the proposed NPS. The Board suggests that the words “in October 2007 the government adopted the New Zealand Energy Strategy” be removed from the second paragraph of the preamble and the words “central government has the strategic target” be added into the third paragraph.

[56] A number of proposals for REG activities have been called in by the Minister for the Environment because they qualify as proposals of national significance in terms of the factors that are contained in section 45(2) of the RMA.

[57] The proposed NPS recognises two matters of national significance. The first is under the heading ‘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.

The second matter of national significance is under the heading ‘Recognising the National Significance of the Benefits of Renewable Electricity Activities’. The first two sentences of proposed Policy 1 state:

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.

[58] The Board considers that the proposed NPS would be more internally consistent if both of these matters of national significance were included under the heading ‘matter(s) of national significance’. Then the heading in respect of proposed Policy 1 could be changed to “recognising the benefits of renewable electricity generation activities” and the first line of proposed Policy 1 could be deleted. These are matters of drafting style rather than being central to the meaning or thrust of the proposed NPS.

[59] Because the objective of the proposed NPS contains an ambitious target and timeframe, regional and district councils need to incorporate objectives and policies in their RMA instruments that promote and encourage the development of REG activities of any scale. The Board considers that a significant increase in the use of wind and geothermal energy will be required to meet the target. The Board received evidence that sufficient storage is likely to be provided by HEP development to complement the projected expansion of REG activities using wind energy.

[60] The Board also considers that there needs to be an acknowledgement of the role of DSM in the proposed NPS. Although DSM is not a relevant consideration for a decision-maker when considering applications for resource consents for REG activities, it is relevant in a policy sense if the strategic goal in the proposed NPS is to be met in respect of the demand for electricity over the stated timeframe.

[61] The Board does not consider that it is useful to include a policy in the proposed NPS that requires local authorities to set targets for the achievable growth of REG activities. The cost for them of evaluating the potential for REG activities in their areas and then fixing a planning target for 2025, would outweigh the benefits of doing so, because there would be too much uncertainty about the information and the ability to meet that target. At best it would be aspirational rather than robustly quantifiable information.

[62] Neither does the Board consider that there is any advantage in including a specific policy in the NPS requiring local authorities or decision-makers to evaluate whether or not a proposed site for REG activity is more productive and would provide a greater electricity yield than another site, by carrying out a ranking based on a comparative analysis. Changing technologies and economics mean that what is a low grade energy source for generating electricity today may be able to be used productively in the future.

[63] The Board did not consider that specific policies are needed in the NPS to address transmission lines involving REG activities which are not part of the national grid and are covered by the NPSET. The Board considers that these lines are recognised in the definitions of “renewable electricity generation activities” and “small and community-scale distributed renewable electricity generation”, and in Policies 2 and 5 in the proposed NPS.

[64] Because of the challenges involved in achieving the strategic goal of the generation of 90% of New Zealand’s electricity from renewable resources by 2025, the Board considers that it would be appropriate and useful to include within the policy framework of the NPS an acknowledgement of the practical implications of achieving that target within 15 years.

## **Environmental benefits relative to REG activities**

[65] The Board suggests that the list of benefits set out in proposed Policy 1 could be augmented by including the recognition of: the importance of using New Zealand’s renewable rather than finite natural resources for the generation of electricity; the lessening of reliance on imported fuels using finite energy sources; and the fact that many of the technologies which use these resources can be removed at the end of their life and do not have irreversible effects on elements of the environment. The Board considers that these further benefits relevant to REG activities are of national significance.



## **Management of adverse environmental effects of REG activities**

[66] The Board considers that the wording of proposed Policy 2 can be improved by specifically linking it to decision-makers' consideration of applications for resource consents and the nature of the conditions that might be imposed. Large-scale REG activities need to be linked to the national grid and this should also be recognised in Policy 2.

[67] Submitters brought to the Board's attention the difficulty of recognising the nationally significant benefits relevant to REG activities while finding a way to tolerate the risk REG activities present to the local environment. The Board considers that it would be beneficial to include in the NPS a policy that guides local authorities and decision-makers when considering how to manage significant environmental risks from large-scale REG activities. The principles and purpose of the RMA do not mean that no adverse environmental effects should be tolerated. Mitigatory measures to address significant adverse effects can include environmental compensation, which covers financial contributions that benefit the local environment that will be impacted by a proposed development. Other mitigatory measures can allow for operational requirements of REG activities to provide for local recreational and other benefits. Adaptive risk management methods can also be used to address the risk of significant irreversible adverse environmental effects from REG developments.

[68] Because of the national significance of REG activities, electricity generating companies submitted that proposed NPS policies should recognise the need for local authorities to ensure that proposed new residential developments in the vicinity of REG activities are not located in such a way that could result in reverse sensitivity issues.

[69] The Board considers that it is important that local authority RMA policy and planning instruments recognise the national significance of REG activities and the benefits relevant to them, by promoting the operation, maintenance and upgrading of existing activities, and the establishment of new activities, while managing not only the adverse environmental effects of these activities, but also the adverse effects of other activities on REG activities.

[70] The Board considers that a specific policy dealing with reverse sensitivity is required in the proposed NPS which is consistent with Policy 10 in the NPSET.

[71] There were many submissions in respect of Policy 3 in the proposed NPS:

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.

[72] The ability to remove physical electricity generation structures at the conclusion of their life and return an area or river to its unmodified state is a relevant matter when considering the sustainable management of natural resources. Some technologies clearly have this benefit. For example, physical structures involving solar, tidal, marine, biomass, or wind technologies can be partially or totally removed at the end of their life, whereas it is more difficult to do that with large HEP structures. However, the Board did hear evidence that in some countries old dam structures are being removed and rivers returned to their natural flows. The Board also heard that geothermal technology can create some irreversible effects such as slumping.

[73] An irreversible adverse effect on the environment is a matter that is relevant to sustainability, and if there are risks of such effects from a proposed development, the precautionary principle can be utilised by a decision-maker to manage them.

[74] Improvements in REG technologies over time may also help to reduce the risk of significant irreversible adverse environmental effects.

[75] Submitters who supported proposed Policy 3 focused on the need for New Zealand to find ways of addressing the demand for electricity without continuing to develop large HEP schemes which flood river valleys. Other submitters considered that large-scale HEP development was essential to meet electricity demand and noted that recent large-scale projects involve run of the river schemes rather than the creation of large reservoirs. The electricity generation companies uniformly submitted that there should not be discrimination against a particular REG technology because a decision-maker would not be in a position to address the relative reversibility of different technologies when considering a particular site proposed for a development. The example was given that if a generation company were applying for an HEP development, proposed Policy 3 could reinforce a submission that it should develop wind turbines elsewhere instead.

[76] The Board considers that the benefits of including proposed Policy 3 are outweighed by the costs and uncertainties of decision-makers trying to apply it. The objective of the proposed NPS is to promote established and emerging REG technologies. The management of an adverse environmental effect usually involves the consideration of a particular development proposal and managing the risks to the environment of that proposal, rather than decision-makers judging whether another technology should be favoured because, on the face of it, structures involved could eventually be removed.

[77] The Board considered that the most appropriate way to reflect the benefits of technologies which are capable of being removed at the end of their resource consent term would be to recognise this in Policy 1. The Board considers that proposed Policy 3 should be deleted.

[78] The Board did not consider it appropriate to include a specific policy in the NPS prohibiting or promoting REG activities in sensitive conservation and national park areas because many of these areas are addressed by other legislation, and if they do come within the RMA are usually covered by local authority RMA policy and planning instruments.

[79] The Board considers that the concern submitters had for the proposed NPS to provide for the recognition of transmission losses when siting activities is addressed in proposed Policy 2.

## **Categorising REG technologies and activities**

[80] The principal forms of large-scale REG technologies and activities relate to rivers, wind and geothermal resources. Many submitters raised environmental issues in respect of these technologies and activities. The Board considers it appropriate to include specific policies addressing categories of REG technologies and activities in the NPS policy framework. This is because the resource management issues in respect of some REG technologies and activities warrant greater policy guidance and direction for local authorities when developing RMA policy and planning instruments. These instruments are a mandatory relevant consideration for decision-makers considering applications for resource consents and notices of requirement to designate REG activities.

[81] Submissions from generation companies addressed the hurdles they face when applying for resource consents in respect of existing HEP developments. A large number of submissions were concerned with how cumulative adverse effects on the environment of multiple wind turbines, developed in clusters or spread out, can be managed. There was also concern about how to address the siting of wind turbines in areas containing section 6 values. The concern was that district plans do not address these issues, and guidance is needed in the NPS. Guidance was also sought by some regional councils involved in developing regional policy statements and plans, to address the allocation and use of geothermal resources for REG.

[82] The Board is satisfied that the policy framework for implementing the strategic objective in the proposed NPS would benefit from more directive policies in respect of REG activities using wind and geothermal resources.

## **REG activities using wind resources**

[83] In the past, wind turbine developments have been addressed by electricity generating companies filing applications for resource consents. In most cases the land-use activity has been classified as non-complying or discretionary in the relevant district plan. Often when an application for resource consent is made, considerable time is spent evaluating section 6 matters.

[84] The Board received evidence about large wind turbine areas on the Tararua Range established by the resource consent process, and the likely applications for large areas on the Puketoi Range, south-east of Pahiatua. Also, the Board reviewed Environment Court cases involving applications for resource consents for wind turbines, and a large number of them involved the coastal environment where a high quality wind resource is often found.

[85] Although there are maps that identify wind resource areas for REG, these are not defined by fine-grained lines and are only indicative. They are too coarse for local authorities to incorporate them unchanged into their RMA policy and planning instruments. Annexed as Figure 1 is "South Island wind

resource concentrations depicted in local authority areas (2010)” and as Figure 2 “North Island wind resource concentrations depicted in local authority areas (2010)”. These figures showing indicative wind resource areas (and the explanation of these as set out below) were supplied by EECA at the Board’s request.

Figure 1 and Figure 2 are taken from the “Transmission to Enable Renewables - Economic Wind Resource Study” prepared for the Electricity Commission by Connell Wagner in March 2008. A local government boundary overlay has been added to the figures. The report identifies the geographic spread of potential wind resource based on a range of factors set out in sections 2.1 to 2.9 of the report. Identification of suitable wind farm areas has been carried out using modelling and GIS techniques and provides information on the location and extent of potential wind generation at a regional, not an individual, wind farm scale. Factors that have been considered to delineate the potential resource include wind speeds, terrain, altitude, protection status of land, land use and proximity to structures. Other factors have been excluded from consideration, such as district plan zoning, proximity to existing transmission network, and suitability of the land for different densities of turbines. The potential wind farm installed capacity (maximum power output) has then been calculated for each of the potential geographic areas identified. This has been calculated as a typical wind farm capacity per unit area of land, and two categories have been applied to the geographic areas. Category 1 has a unit area wind farm capacity of 10MW per square kilometre. Category 2 has a unit area wind farm capacity of 8 to 9MW per square kilometre. The calculated capacities represent theoretical maximums and the practical capacity in each zone will be much less once environmental impacts and social acceptability are taken into consideration.

[86] Submitters suggested a number of policy and planning options for addressing the establishment of wind turbines by a plan change or proposed plan change. They ranged from:

- (a) excluding wind turbines from areas with section 6 values; to
- (b) allowing wind turbines as permitted or controlled activities unless they were specifically excluded from areas with section 6 values; and to
- (c) promoting and encouraging wind turbines in areas where there is a known wind resource by zoning the areas as suitable for development.

[87] It was submitted that in addition to those steps to be taken by local authorities, NES should be promulgated to set performance standards in respect of noise, height and separation distances from residential buildings. It was also suggested that the Board prepare a map showing areas where wind

turbines would be permitted or controlled activities. Other submitters suggested that the status quo should remain, with wind turbines always being classified as non-complying or discretionary activities.

[88] It is clear to the Board that where there has been uncertainty for those seeking to develop wind turbine areas, this is principally due to some district plans not identifying those areas where there are section 6 values. The Board heard how these values may relate to large areas involving ridges and topography suitable for REG activities using wind.

[89] It is also clear to the Board that some territorial authorities (district councils) are expecting or relying on regional councils to identify section 6 values, and then they will utilise that information in their district plans.

[90] Not all regional councils have undertaken the identification of nationally important section 6 (a) and (b) values. The Board considers that if that were done by all regional councils, an electricity generator seeking a resource consent for a wind turbine or wind turbines could elect to avoid those areas where those values have been identified. The Board considers that where section 6(a) and (b) values are involved, the activity status of wind farms in those areas should be fully discretionary.

[91] The Board also considers that in those rural areas where section 6(a) and (b) values are not identified, decision-makers should be restricted in the exercise of their discretion to those matters that relate specifically to the proposed development's effects on the local environmental values, and in particular the proposed site and its immediate surrounds. When addressing local environmental values, the national significance of the proposed REG activity and its benefits should be given greater weight than the adverse effects on the amenity values of the proposed site and surrounding area.

[92] The Board considers that specific policies need to be included in the NPS directing regional councils and district councils to identify where there are section 6(a) and (b) values outside urban areas. Wind turbine developments can then be classified in district plans as fully discretionary activities where these values have been identified, and as restricted discretionary activities where they have not. In the case of restricted discretionary activities, the decision-maker's discretion should be limited to: local amenity effects; effects on other infrastructure (road transport, aviation); effects on the relationship of tangata whenua and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga; effects on areas of significant indigenous vegetation or significant habitats of indigenous fauna; and effects on maintaining public access to lakes and rivers and along the coastal marine area.

[93] The Board considered whether to recommend to you the use of overlays in district plans by territorial authorities to show where multiple wind turbines, whether in clusters or scattered, are permitted or controlled activities in rural areas. The Board did not have sufficient detailed information to undertake that process itself.

[94] The advantages of using overlays to establish controls in district plans include addressing the accumulation of wind turbines in the landscape and the capacity of the landscape to absorb those wind turbines, and the

establishment of an area as suitable for multiple wind turbines where they are already consented, or where there is more than one application for resource consents to develop them.

[95] Within existing consented wind turbine areas, the ability to make minor changes to the location and density of turbines to maintain output over the life of the activity needs to be provided for by a permissive approach, subject to performance standards.

[96] The overlay approach for addressing potential cumulative effects of wind turbines over large areas of rural land should provide for a more certain and timely resource management approach than progressive applications for resource consents which are called in. The ability to address competing section 7 matters during plan change proceedings would avoid the need for repeating that exercise over the next 15 years.

[97] A plan change covering a large area within a district, and perhaps over two districts, could be addressed in a more uniform way by you appointing a board of inquiry or referring it to the Environment Court.

[98] The Board considers that there are also matters which would benefit from a NES being developed to provide for a uniform approach across the country. These include the classification of the activity, and the imposition of performance standards in areas where there is a known wind resource, to address noise, earthworks, colour, height and separation distances from residential buildings.

[99] Therefore in summary, the Board suggests that prescriptive policies be directly included in the NPS for wind turbine developments. The Board considers that its suggested policies will encourage those regional and district councils that have not already identified section 6(a) and (b) values outside urban areas, to share resources in order to undertake that work within 24 months of the NPS coming into force. The Board judges that the timetable is appropriate to meet the strategic target in the proposed NPS. If a NES were developed to provide for a consistent activity status classification of wind turbines outside urban areas this would also expedite wind turbine development.

## **REG activities using geothermal resources**

[100] Following a comprehensive process under the RMA, the geothermal resources in the Waikato region have been identified, and the regional council has developed policy and planning provisions for allocating and managing them. These provisions have found favour with the electricity generation companies and territorial authorities involved in the resource consent processes for REG activities using the resource. They provide certainty for those applying them and have a robust policy foundation.

[101] Therefore, the Board has endeavoured to use the Waikato Regional Council's approach to establish a policy platform for the allocation and management of known geothermal resources under the RMA to promote their allocation and use for electricity generation throughout New Zealand.

[102] These provisions will apply to all regions. However, in some regions geothermal resources can be categorised as limited or protected without much further work. That is likely to be the case in the South Island. In the North Island there are known geothermal resources suitable for REG activity. The Board considers that a prescriptive and directive policy approach that requires the incorporation of specific objectives and policies directly into local authority RMA policy and planning instruments is an efficient and certain way of promoting and encouraging REG activities using these resources. This will assist regions that are presently developing policy and planning instruments for electricity generation using geothermal resources (Northland and Bay of Plenty). It will also ensure that emerging hot-rock technologies can be utilised throughout the country if they become economic within the next 15 years.

## **HEP activities**

[103] The Board suggests that it is appropriate to include an additional policy in the NPS which requires local authorities to promote, enable and provide for the development, upgrading, maintenance and operation of new and existing HEP activities in regional policy statements, and regional and district plans.

[104] Some local authorities have already incorporated provisions addressing the suggested policy into their RMA policies and plans. The Board considers it is appropriate that this occurs in all regions.

[105] The information received by the Board shows that in the case of HEP, many projects have been re-consented. However, it was submitted that in order to contribute to the objective of the NPS, it would be useful to control the activity status around re-consenting, and restrict the relevant considerations to be taken into account by the decision-maker, rather than requiring a reconsideration of all the section 6 values that would need to be evaluated for the establishment of a new facility. This occurs in some regional plans at the moment. This approach complements section 104(2A) of the RMA.

### **104 Consideration of applications**

...

- (2A) When considering an application affected by section 124, the consent authority must have regard to the value of the investment of the existing consent holder.

[106] At the end of its resource consent term, an activity that is considered by central government to be of national significance should not be removed or diminished in its effectiveness, but rather should be reviewed as to its efficiency, and ways to enhance environmental outcomes without reducing electricity output should be addressed.

[107] However, the Board considers it inappropriate to suggest that specific policies be included in the NPS to address the allocation and prioritisation of water use in rivers, and the re-consenting of existing HEP activities. It considers that these are matters for regional councils to address

in a catchment or regional context with the national guidance recommended by the Board of Inquiry into the PNPSFWM.

## **REG activities using solar, biomass and marine resources**

[108] The Board considers that there should be a specific policy in the NPS requiring local authorities to promote and enable the use of solar, biomass and marine resources for REG in regional policy statements and regional and district plans.

## **Enabling research and investigation**

[109] To encourage and facilitate the growth of REG activities, of whatever scale, RMA policy and planning instruments are required to promote the identification, research, investigation and assessment of potential sites and sources of REG, including emerging and maturing REG technologies. Proposed Policy 4 aims to do that.

[110] You are able to develop a NES to complement proposed Policy 4 and to provide for an investigatory activity (involving a potential site for REG development) to be classified as a permitted activity, subject to performance standards. Some examples of investigatory activities were given to the Board by a submitter. They were: wind anemometers less than 80 metres in height; geothermal slim hole drilling (less than 6 inches in diameter) to a depth of less than 3000m, for the purpose of sampling and proving the key parameters of an inferred reservoir; and water level and/or rain gauge monitoring equipment and associated telemetry equipment located within river beds and/or on land. The Board suggests that amendments are made to proposed Policy 4 to clarify and simplify the wording.

## **Small and community-scale distributed REG**

[111] Small and community-scale distributed REG may provide a valuable contribution to meeting the electricity needs of local communities over the next 15 years and beyond.

[112] “Small and community-scale distributed REG” is defined in the proposed NPS as follows:

... means renewable electricity generation projects with an installed electricity generation capacity of less than four megawatts and excludes offshore wind, tidal and wave generation.

[113] This definition relates to proposed Policy 5. There was concern about including a 4MW threshold in the definition of “small and community-scale distributed REG.” Concern was also expressed by some submitters about excluding offshore wind, tidal and wave generation from the definition. The Board understands from the Ministry for the Environment that the reason for that exclusion is because of the difficulty in anticipating what the adverse environmental effects might be for the technology involved.



[114] The Board is not satisfied that the limit of what is to be regarded as small and community-scale distributed REG should be arbitrarily fixed at 4 MW, or even 10 MW, as suggested by some submitters. The difficulty with fixing a capacity cut-off is that the adverse environmental effects of different technologies may vary considerably. The advances of technology over 15 years will also allow for the provision of more electricity output for the same or fewer adverse environmental effects.

[115] The Board considers that the focus should be on the effects of the activity on the environment. If the adverse effects on the environment of small and community-scale distributed REG are no more than minor then a more permissive planning approach should be taken to encourage such activities.

[116] The Board considers that in remote rural communities, and marae, there are significant advantages in developing micro or mini REG activities. A combination of technologies which provide for energy efficiency measures and micro-generation could be sustainable, providing the RMA processing costs are minimised, because of the current or prospective economics of such technologies.

[117] If small REG activities are located on individual rural properties or next to small rural communities, then any adverse effects of the activity on the environment are experienced by those benefiting from the supply of electricity. The Board considers that to fall within the definition of "small and community-scale distributed REG" the activity should relate to a specific property, or if it involves more than one property, the electricity should be distributed by lines that are not connected to the national grid. It recommends a change to the definition.

[118] In the case of micro and small-scale REG, the Board considers that local authorities could introduce performance standards into their RMA instruments of the sort contained in the EECA draft report on *Domestic-scale distributed generation guidance for local government*, (July 2009), and the recent report from the United Kingdom: *Permitted development rights for small scale renewable and low carbon energy technologies, and electric vehicle charging infrastructure: Consultation*, Department for Communities and Local Government, (2009).

[119] It would be appropriate and efficient for a NES to be developed so that there is a consistent approach to encouraging small and community-scale REG activities (including micro-generation). Barriers, which include the cost of applications for resource consents, could be reduced or removed by categorising activities as permitted, subject to performance standards.

[120] The Board suggests a minor change to proposed Policy 5 concerning when local authorities need to notify changes to RMA instruments in order to give effect to that policy. This would make it consistent with proposed Policy 4.

[121] It would be helpful if definitions contained in the interpretation section of the proposed NPS were moved to the front of the instrument. This is the approach taken in the NPSET. Also, the Board considers proposed Policy 4 should follow proposed Policy 5.

## Implementation of the proposed NPS

[122] The Board is aware that the ability to meet the strategic policy goal contained in the proposed NPS could be compromised if local authorities do not notify in accordance with Schedule 1 of the RMA, a plan change, proposed plan, or variation, to introduce methods to give effect to the objectives and policies contained in the proposed NPS. The Board suggests that a specific policy direction in terms of section 55 of the RMA needs to be included in the NPS, rather than relying on an explanatory note.

[123] A number of submitters suggested that it would be helpful to have guidelines on the implementation of the proposed NPS, to assist applicants seeking resource consents for REG activities, and local authorities giving effect to the NPS in their RMA policy and planning instruments. The Board notes that the Ministry for the Environment has provided guidelines in respect of the NPSET.

[124] There were a number of submissions urging that the proposed NPS should be deferred or withdrawn until the PNZCPS and the PNPSFWM processes are completed. The Board heard suggestions that the provisions of the different national policy statements need to be aligned to avoid inefficiencies and difficulties that could occur if they contain conflicting provisions. This would provide certainty for applicants for resource consents for REG activities, for decision-makers having regard to the different national policy statements, and for local authorities trying to give effect to conflicting provisions in their RMA policy and planning instruments.

[125] It was also suggested that the proposed NPS should be given priority over the other national policy statements because of its strategic policy goal of achieving 90% REG by 2025. The Board considered that there are legal difficulties with such an approach, and it would be more efficient to align the provisions of these high level policy statements to ensure that the specific objective of the proposed NPS is not undermined.

[126] The Board has endeavoured to align the policies in the NPS it is recommending to you with those in the NPSET and with the recommendations made by the boards of inquiry into the PNZCPS and the PNPSFWM. The Board is satisfied that the policies in respect of the coast and fresh water contained in the relevant recommended national policy statements can be applied consistently with the specific policies relating to the generation and transmission of electricity contained in the recommended NPS and the NPSET.

[127] The Board's suggested amendments to the proposed NPS are contained in the NPS set out in Appendix B of this report.

[128] The Board considered the section 32 report on the proposed NPS and submissions in respect of it. The Board acknowledges that you will need to undertake a further section 32 evaluation on receipt of its report and also if you decide to investigate the use of a NES to complement a NPS for REG. The Board considers that the changes it suggests for the proposed NPS satisfy the tests in section 32.

## CONCLUSION

[129] The Board concludes that to achieve the strategic policy objective contained in the proposed NPS of 90% of New Zealand's electricity being generated from renewable sources by 2025 (based on delivered electricity in an average hydrological year), REG activities of any scale and the benefits relevant to them, need to be promoted in RMA instruments. DSM initiatives should also be encouraged.

[130] The Board concludes that in order to meet the strategic target there will need to be a significant increase in REG using wind and geothermal energy.

[131] The Board concludes that the recommended NPS:

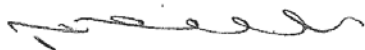
1. states an objective and policies for matters of national significance that are relevant to achieving the purpose of the RMA;
2. provides a national policy framework in the context of the RMA which will promote and encourage REG activities and the related benefits of those activities;
3. provides guidance and direction for local authorities when giving effect to the NPS in their RMA policy and planning instruments; and
4. provides guidance to decision-makers considering applications for resource consents and/or notices of requirement for designations for REG activities.

## RECOMMENDATIONS

[132] After considering the matters in Part 2 of the RMA, the proposed NPS, submissions received on the proposed NPS, evidence received, the matters listed explicitly in the Board's terms of reference set by you, and other relevant matters, the Board recommends:

1. the NPS in Appendix B; and
2. that you consider providing guidelines and promulgating a NES to complement the provisions of the NPS set out in Appendix B.

Dated at Wellington this 26<sup>th</sup> day of March 2010



Dr Royden Somerville QC (Chair)



Sir Wira Gardiner KNZM (Member)

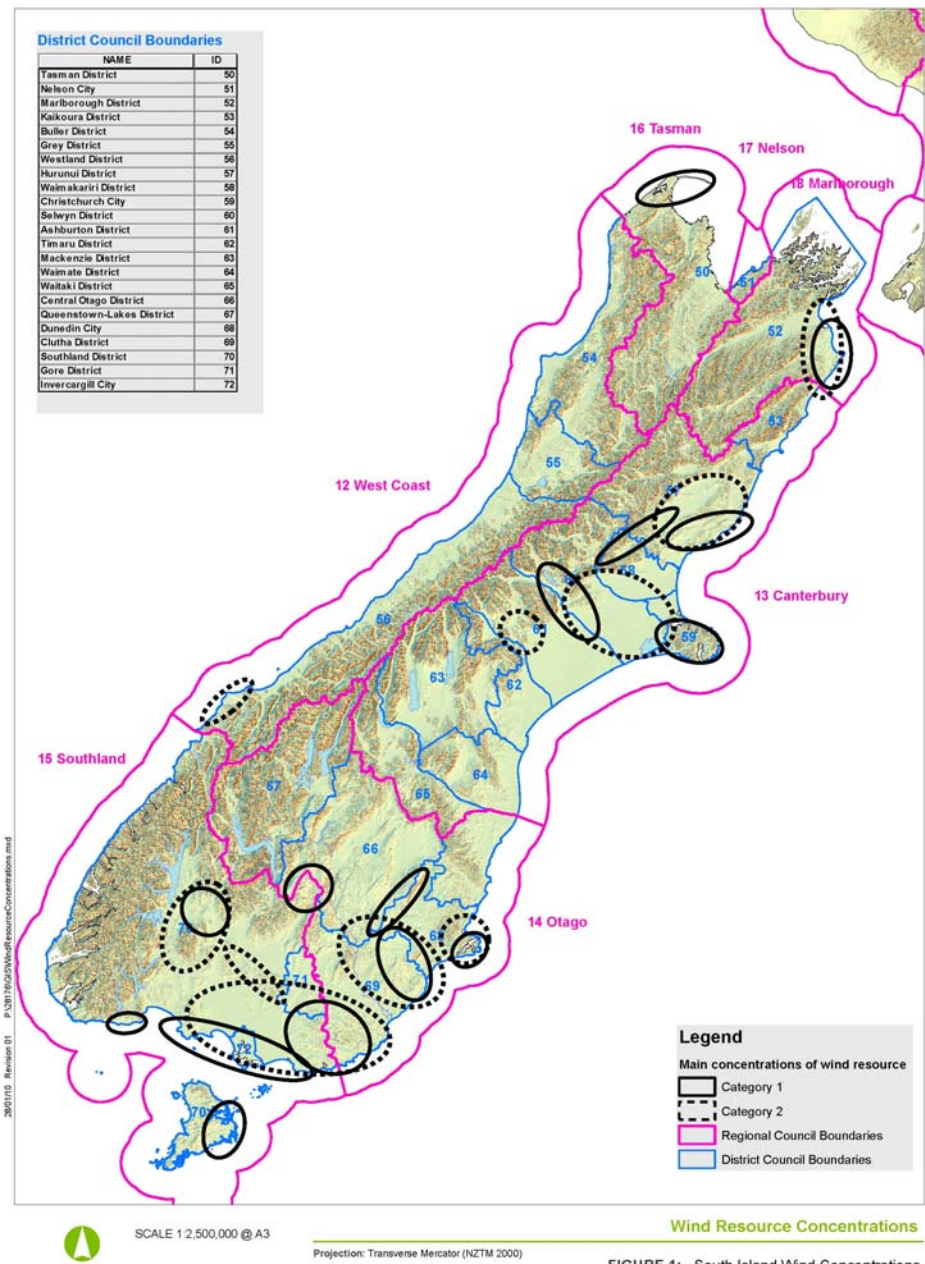


Mrs Geraldine Baumann (Member)

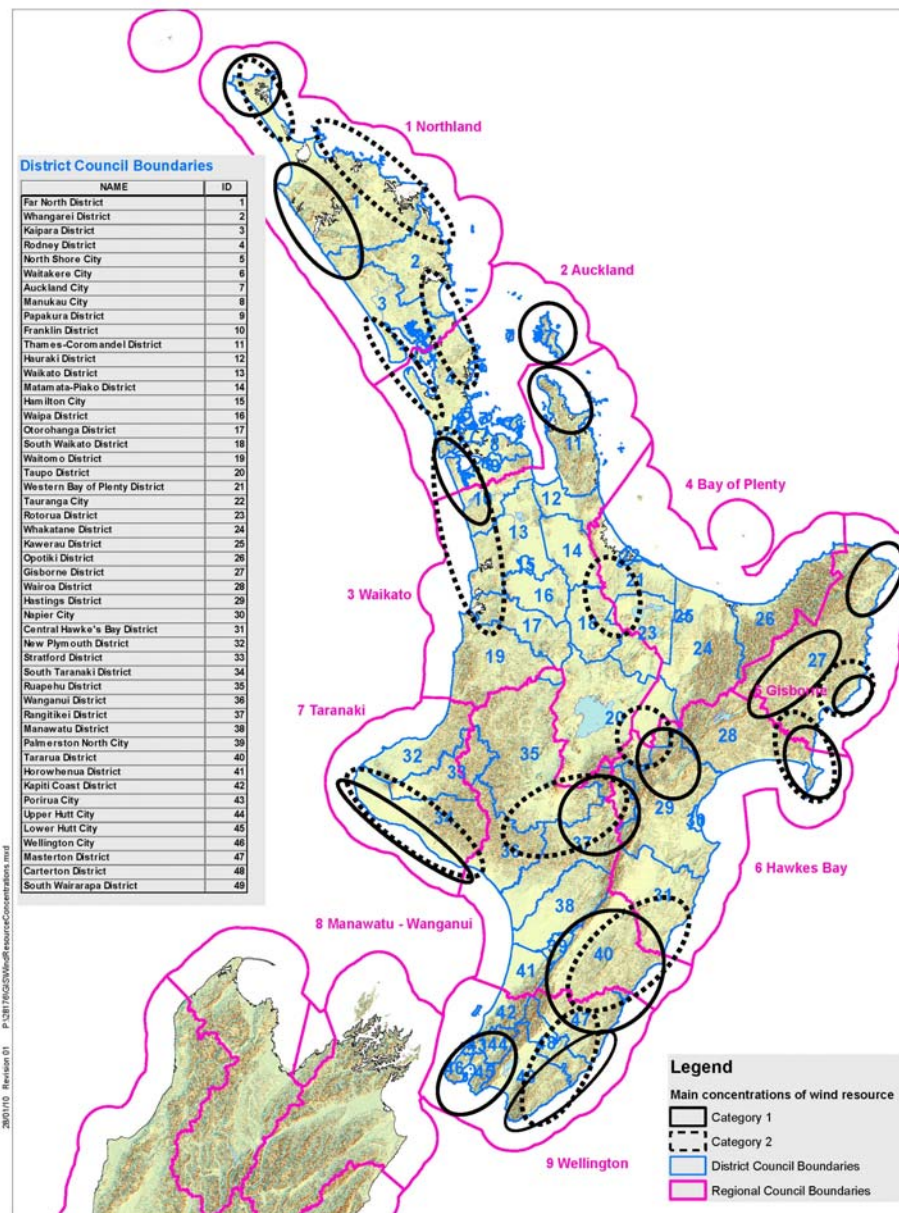


Associate Professor Ralph Chapman (Member)

Figure 1 – South Island wind resource concentrations depicted in local authority areas (2010)



**Figure 2 – North Island wind resource concentrations depicted in local authority areas (2010)**



**FIGURE 2: North Island Wind Concentrations**

## **APPENDIX A**

# **PROPOSED NATIONAL POLICY STATEMENT FOR RENEWABLE ELECTRICITY GENERATION**

### **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.

## **APPENDIX B**

# **NATIONAL POLICY STATEMENT FOR RENEWABLE ELECTRICITY GENERATION**

(as recommended by the Board of Inquiry)

### **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. 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, central government has the strategic target 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 addressing 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.

## 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 sections 127 and 128 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 electricity generation**” means electricity generation from a renewable source, for the purpose of using electricity on a particular site, or supplying an immediate community using local distribution lines, and where the adverse effects of the generation activity are not more than minor.

Terms given meaning in the Act have the meanings so given.

## Matters of national significance

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

## 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).

## **A Recognising the benefits of renewable electricity generation activities**

### **Policy A.1**

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

- (a) maintaining or increasing electricity generation capacity while avoiding, reducing or displacing greenhouse gas emissions;
- (b) maintaining or increasing security of electricity supply at local, regional and national levels by diversifying the type and/or location of electricity generation;
- (c) using renewable natural resources rather than finite resources;
- (d) lessening reliance on imported fuels for the purposes of generating electricity;
- (e) the reversibility of the adverse effects on the environment of some renewable electricity generation technologies.

### **Policy A.2**

When having particular regard to the matters under Part 2 of the Act, decision-makers shall recognise the national significance of renewable electricity generation activities and the benefits relevant to renewable electricity generation activities, and give greater weight to such national significance over local environmental matters.

## **B Acknowledging the practical implications of achieving New Zealand's target for electricity generation from renewable resources**

### **Policy B.1**

In achieving the purpose of the Act, in the preparation of regional policy statements and regional and district plans and in considering applications and notices of requirement, decision-makers shall have particular regard to the following matters:

- (a) maintenance of the generation output of existing renewable electricity generation activities requires protection of the assets, operational capacity and continued availability of the renewable energy resource;
- (b) even minor reductions in the generation output of existing renewable electricity generation activities can cumulatively have significant adverse effects on national, regional and local renewable electricity generation output;
- (c) the achievement of New Zealand's target for the generation of 90 per cent of New Zealand's electricity from renewable resources by 2025 will require the significant development of renewable electricity generation activities and demand-side management.

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

### **Policy C.1**

When considering notices of requirement or applications and/or what conditions might be imposed to avoid, remedy or mitigate the adverse environmental effects of renewable electricity generation activities, decision-makers shall recognise and have particular regard to:

- i. the need to locate the renewable electricity generation activity where the particular renewable resource is available;
- ii. logistical or technical practicalities associated with developing, upgrading, operating or maintaining the renewable electricity generation activity;
- iii. 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 in relation to the renewable electricity generation activity, and the need to facilitate the connection of renewable electricity generation activity to the national grid.

### **Policy C.2**

As a means of avoiding, remedying or mitigating significant adverse environmental effects of renewable electricity generation activities, decision-makers should have regard to:

- i. offsetting mitigation measures through environmental compensation, and or financial contributions which benefit the local environment and community affected; and
- ii. designing measures which allow operational requirements to complement and provide for mitigation opportunities; and
- iii. adaptive risk management measures.

## **D Managing reverse sensitivity effects on renewable electricity generation activities**

### **Policy D.1**

In achieving the purpose of the Act, decision-makers must to the extent reasonably possible manage activities to avoid reverse sensitivity effects on renewable electricity generation activities and to ensure that operation, maintenance, upgrading, and development of renewable electricity generation activities is not compromised.

## **E Incorporation of renewable electricity generation activities into regional policy statements and regional and district plans**

### **E1 Solar, biomass and marine resources**

#### **Policy E1.1**

Regional policy statements and regional and district plans shall promote and enable the utilisation of solar, biomass and marine resources for electricity generation activities.

### **E2 Hydro-electric resources**

#### **Policy E2.1**

Regional policy statements and regional and district plans shall promote, enable and provide for the development, upgrading, maintenance and operation of new and existing hydro-electricity generation activities.

### **E3 Wind resources**

#### **Policy E3.1**

Regional policy statements and regional and district plans shall promote, enable and provide for the development, upgrading, maintenance and operation of new and existing electricity generation activities using wind resources.

#### **Policy E3.2 and direction (under s.55) to regional councils**

Each regional council is to change its regional policy statement (without using the process in Schedule 1 of the Act) to the extent needed to ensure the policy statements include the following objective and policy to take effect immediately:

##### **“Objective**

To achieve sustainable management of the region’s wind resource by enabling its utilisation for the generation of electricity in appropriate locations.

##### **Policy 1**

For the purposes of assessing the significance of adverse environmental effects of activities, including wind turbines, the regional council will identify, to the extent applicable in the region outside of urban areas:

- (i) outstanding natural features and landscapes that are to be protected from inappropriate use and development;
- (ii) that part of the coastal environment containing natural character that is to be protected from inappropriate use and development.”

### **Policy E3.3**

Each regional council is to notify a change to its regional policy statement (using the process in Schedule 1 to the Act) within 18 months of this national policy statement coming into force, which gives effect to the policy inserted by Policy E3.2 by identifying the areas specified, unless the regional policy statement already contains such identification.

### **Policy E3.4**

In the event that a regional council has not complied with Policy E3.3 within the timeframe specified in that policy, each territorial authority in the relevant region is to notify a change to its district plan to identify on its planning maps those areas specified in the policy inserted in the regional policy statement by Policy E3.2. Such a change is to be notified within 24 months of this national policy statement coming into force.

### **Policy E3.5**

Each territorial authority shall notify a change to its district plan within 30 months of this national policy statement coming into force to:

- (a) classify the construction, operation or maintenance of wind turbines in all parts of the district identified in the regional policy statement in accordance with Policy E3.3 or the district plan in accordance with Policy E3.4 as discretionary activities
- (b) classify the construction, operation and maintenance of wind turbines in areas not identified in regional policy statements in accordance with Policy E3.3 or district plans in accordance with Policy E3.4 as restricted discretionary activities with discretion restricted to:
  - i. local amenity effects;
  - ii. effects on other infrastructure (ie, road transport, aviation);
  - iii. effects on the relationship of tangata whenua and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga;
  - iv. effects on areas of significant indigenous vegetation or significant habitats of indigenous fauna; and
  - v. effects on maintaining public access to and along the coastal marine area, lakes and rivers.

### **Policy E3.6**

Where a national environmental standard dealing with the matters in Policy E3.5 has been made within two years of this national policy statement coming into force, then territorial authorities are not required to make the changes required by Policy E3.5.

### **Policy E3.7**

To avoid, to the extent reasonably possible, reverse sensitivity effects of new activities establishing close to wind turbines, whether existing or consented,



territorial authorities shall notify a change to their district plans within 12 months of this national policy statement coming into force to insert:

- (a) objectives and policies to give effect to this policy; and
- (b) assessment criteria to apply to resource consent applications for new activities within 2 km of any established or consented wind turbine that:
  - i. require consideration of any reverse sensitivity effects of the proposed activity on the wind turbine(s); and
  - ii. give weight to the need for established or consented wind turbines to be able to operate unhindered by changes to take account of new activities.

### **Policy E3.8**

As a means of implementing Policy E3.7, where consent has been granted for a wind generation plant comprising more than three turbines within the district of a territorial authority, that territorial authority may prepare a change to the relevant district plan to insert objectives, policies and methods to promote the use of known wind resources of the district or region by the mechanism of a Wind Turbine Area Overlay.

- (a) The provisions of a Wind Turbine Area Overlay should:
  - i. include the existing consented wind turbines;
  - ii. provide controls that enable new wind turbines to be established and operated in defined appropriate locations as restricted discretionary activities with discretion limited to the cumulative effects on amenity values produced by the wind turbines in the Wind Turbine Area;
  - iii. exempt wind turbines and the associated infrastructure from the controls within the underlying plan provisions;
  - iv. amend the underlying plan provision to limit the potential for new activities to establish in locations or ways that could hinder the location or operation of wind turbines and associated infrastructure either from reverse sensitivity effects or reducing separation distances that may be established under the Wind Turbine Area Overlay.
- (b) The delineation of a Wind Turbine Area Overlay is to be determined by:
  - i. taking account of the national significance of the benefits of renewable electricity generation when recognising and providing for appropriate use and development in respect of the matters of national importance in section 6 of the Act;
  - ii. recognising the national significance of the benefits of renewable electricity generation when having particular regard to the matters under section 7 of the Act and giving priority to such national significance over local matters.

## **E4 Geothermal resources**

### **Policy E4.1**

Regional policy statements and regional and district plans shall promote, enable and provide for the development, upgrading, maintenance and operation of new and existing electricity generation activities using geothermal resources.

### **Policy E4.2 and direction (under s55) to regional councils**

The regional council of any region containing known geothermal resources, other than Waikato region, shall change its regional policy statement (without using the process in Schedule 1 of the Act) to the extent needed to ensure the regional policy statements include the objectives and policies set out in Schedule A to take effect immediately.

### **Policy E4.3**

Where a regional council has modified its regional policy statement in accordance with Policy E4.2, the regional council shall notify a proposed regional plan within 12 months of this national policy statement coming into force to give effect to the geothermal provisions inserted in the regional policy statement. In particular, such a proposed regional plan shall provide objectives, policies and methods, including rules, to provide for the use of the geothermal systems commensurate with their classification.

### **Policy E4.4**

Within any region where the regional policy statement has been amended in accordance with Policy E4.2, the territorial authority for a district that contains one or more geothermal systems shall notify any changes required to its district plan within 12 months of the regional plan being notified in accordance with Policy E4.3 so as to:

- i give effect to the geothermal provisions inserted in the regional policy statement; and
- ii ensure consistency between the district plan provisions and the classification of geothermal systems proposed in the regional plan.

## **F Supporting small and community-scale renewable electricity generation**

### **Policy F.1**

Regional policy statements and regional and district plans shall promote and enable activities associated with the development and operation of small and community-scale distributed renewable electricity generation.

## **G Enabling identification of renewable electricity generation possibilities**

### **Policy G.1**

Within 12 months of the date on which this national policy statement comes into force, local authorities are to notify, using the process in 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 promote and enable activities associated with the investigation, identification and assessment by existing or prospective generators of potential sites and energy sources for renewable electricity generation.

## **H Time within which implementation is required**

### **Policy H.1**

Except where there is another date expressly stated in the national policy statement, local authorities are required to give effect to the policies in Sections E and F of this national policy statement in regional policy statements and regional and district plans made under the Act by initiating a change to regional policy statements, and a change to regional and district plans, proposed plans or variations by 31 March 2013.

## **Schedule A**

### **Objectives and policies to be inserted into regional policy statements in accordance with Policy E4.2**

#### **“Objective 1: Sustainable management of the regional geothermal resource**

Promotion of the sustainable management of the regional geothermal resource by:

- (a) ensuring integrated management of geothermal systems;
- (b) allocating some of the geothermal resource for take, use and discharge in a way that enables current energy needs and the reasonably foreseeable energy needs of future generations to be met, while avoiding, remedying or mitigating significant adverse effects on the regional geothermal resource;
- (c) protecting some characteristics of the regional geothermal resource from significant adverse effects.

#### **Policy 1.1: Geothermal characteristics valued by tangata whenua**

Ensure that the ahi kaa (manawhenua) relationship of tangata whenua with, and their role as kaitiaki of, characteristics of particular geothermal systems, fields

and surface features is recognised and provided for, once specific resource management matters of traditional and contemporary cultural significance have been identified by tangata whenua.

**Policy 1.2: Significant geothermal features**

Recognise some geothermal features as significant geothermal features.

**Policy 1.3: Classification of systems**

Allocate the regional geothermal resource in a way that provides for multiple uses and the extent and variety of the region's geothermal features, through classifying the region's geothermal systems into classes based on:

- (a) system size;
- (b) vulnerability of significant geothermal features to extractive uses; and
- (c) existing use.

**Policy 1.4: Classes of geothermal systems**

Provide in the regional plan for each geothermal system to be classified as one of the following classes

- (a) Development geothermal systems: where development will be enabled because:
  - i) the system contains few geothermal features that are moderately to highly vulnerable; or
  - ii) the existing geothermal features are significantly impaired by lawfully established large takes; or
  - iii) the system is already subject to large scale energy use and development;
 

and in any case there is no evidence of a flow of subsurface geothermal fluid to or from a system described in (b), (c) or (d) below.
- (b) Limited development geothermal systems: where there are significant geothermal features that could be adversely affected by large-scale development but where smaller scale uses are unlikely to adversely affect those features.
- (c) Research geothermal systems: where there is insufficient information to identify them as Development, Limited Development or Protected Geothermal Systems. In such a system, takes may be allowed if it can be demonstrated that they will not threaten significant geothermal features in that system or the natural characteristics of a system described in (d) below. This class includes any large geothermal systems undiscovered at 1 January 2010.
- (d) Protected geothermal systems: where particular care must be taken to ensure that any use of the geothermal resource is sustainable and has no

adverse effect on significant natural geothermal characteristics because either:

- i) the system supports a substantial number of surface features that are moderately to highly vulnerable to the extraction of fluid; or
  - ii) the system is largely or wholly within a National Park or a World Heritage Area; or
  - iii) there is evidence of a flow of subsurface geothermal fluid to or from a system described in (d) i) or ii) above.
- (e) Small geothermal systems: manage all geothermal systems not classified under (a), (b), (c) or (d) above as small geothermal systems to enable limited takes that do not threaten significant geothermal features, existing uses, and other natural and physical resources.

#### **Policy 1.5: Precautionary approach**

Apply a precautionary approach to the management of the regional geothermal resource where there is scientific uncertainty and a threat of serious or irreversible adverse effects on the resource. In applying this approach, recognise those geothermal systems where adverse effects on geothermal characteristics will occur, and those where a greater degree of protection of those characteristics is required.

#### **Objective 2: Development geothermal systems**

That large scale take, use and discharge of geothermal energy and water is enabled within development geothermal systems in a manner that:

- (a) is efficient and allows the controlled depletion of energy so as to provide for the energy needs of current and future generations;
- (b) remedies or mitigates significant adverse effects on significant geothermal features; and
- (c) avoids, remedies, or mitigates adverse effects on other natural and physical resources including overlying structures (the built environment).

#### **Policy 2.1: Management of use and development in development geothermal systems**

Provide for large scale use and development of geothermal energy and water, promote efficient use of the resource and recognise there will be controlled depletion.

#### **Policy 2.2: Integrated system management required for development geothermal systems**

Each development geothermal system shall be managed in an integrated manner through:

- (a) A system management plan that defines, by reference to all relevant policies relating to geothermal resources in this Policy Statement, the objectives for the management of the system and provides as appropriate for:
  - i) operational flexibility and adaptive management including provision for subsequent uses;
  - ii) reservoir modelling and subsidence modelling;
  - iii) a discharge strategy, including provision for reinjection/injection;
  - iv) a mechanisms(s) to ensure co-ordination and promote co-operation between all consent holders for large takes;
  - v) research, monitoring and reporting;
  - vi) non-statutory review of the system management plan if in the opinion of the consent holders and the regional council, such amendments are minor.
- (b) a peer review panel for the purpose of assisting the consent authority to manage the system so as to achieve the objectives of the system management plan;
- (c) resource consent conditions; and
- (d) a system liaison group/forum where appropriate.

### **Policy 2.3: Reinjection/injection**

For large takes of geothermal energy and water from development geothermal systems, the geothermal water remaining after use is to be reinjected/injected in accordance with a discharge strategy forming part of a system management plan which shall consider the following matters, as relevant, to:

- (a) dispose of waste water;
- (b) return geothermal water to that system;
- (c) facilitate further extraction of energy from the system;
- (d) avoid or mitigate potential differential subsidence, and remedy or mitigate the adverse effects of subsidence, particularly in the built environment;
- (e) reduce the risk of hydrothermal eruptions, particularly in the built environment;
- (f) remedy or mitigate significant adverse effects on significant geothermal features; and
- (g) avoid, remedy or mitigate contamination of surface and ground waters.

Such a discharge strategy shall also have regard to:

- (a) any likely benefits to or adverse effects on the system or its productive capacity;
- (b) the need for adaptive management and flexibility over time;

- (c) the benefits, costs and adverse effects of the discharge strategy;
- (d) the need to avoid or mitigate potential differential subsidence, and remedy or mitigate the adverse effects of subsidence, particularly in the built environment; and
- (e) the need to reduce the risk of hydrothermal eruptions, particularly in the built environment.

**Policy 2.4: Small and medium sized uses of geothermal water and energy in development geothermal systems**

Provide for other uses of geothermal energy and water in development geothermal systems, including small takes and non-extractive uses, which are not inconsistent with any approved system management plan.

**Policy 2.5: Management of significant geothermal features in development geothermal systems**

Allow for the efficient take, use and discharge of geothermal energy and water in development geothermal systems while remedying or mitigating within the regional geothermal resource, significant adverse effects on significant geothermal features.

**Policy 2.6: Adverse effects of take, use and discharge in development geothermal systems**

When taking, using or discharging geothermal energy or water in development geothermal systems, avoid, remedy, or mitigate the adverse effects on non-geothermal natural and physical resources, including overlying structures (the built environment).

**Objective 3: Limited development geothermal systems**

That takes, uses and discharges of geothermal energy and water from limited geothermal systems are carefully managed to:

- (a) avoid, remedy or mitigate significant adverse effects on significant geothermal features; and
- (b) avoid, remedy or mitigate significant adverse effects on other natural and physical resources, including overlying structures (the built environment).

**Policy 3.1: Management of limited development geothermal systems**

Allow sustainable and efficient use and development of limited development geothermal systems.

**Policy 3.2: Management of significant geothermal features in limited development geothermal systems**

- (a) Restrict the take, use and discharge of geothermal energy and water in limited development geothermal

systems to avoid significant adverse effects on significant geothermal features.

- (b) Should unintended significant adverse effects occur to significant geothermal features as a result of the exercise of any consent, require the consent holder to remedy or mitigate those effects.

**Policy 3.3: Adverse effects of take, use, and discharge in limited development geothermal systems**

When taking, using or discharging geothermal energy and water in limited development geothermal systems, avoid, remedy or mitigate significant adverse effects on other natural and physical resources including overlying structures (the built environment).

**Objective 4: Research geothermal systems**

Protection of the geothermal characteristics of research geothermal systems pending any re-allocation of these systems into another system type as a result of research, by avoiding adverse effects of take, use and discharge of geothermal energy and water on significant geothermal features.

**Policy 4.1: Management of research geothermal systems**

Protect significant geothermal features in research geothermal systems from adverse effects by maintaining the stocks and flows of geothermal energy and water.

**Objective 5: Protected geothermal systems**

Protection of the geothermal characteristics of protected geothermal systems by:

- (a) avoiding adverse effects on significant geothermal features from the take and discharge of geothermal energy and water;
- (b) encouraging protection of other geothermal features.

**Policy 5.1: Protection of significant geothermal features in protected geothermal systems**

Protect significant geothermal features from adverse effects by maintaining the stocks and flows of geothermal energy and water.

**Policy 5.2: Management of all geothermal features in protected geothermal systems**

Encourage the protection of all geothermal features in protected geothermal systems where they are valued for amenity, cultural or scientific reasons.

**Objective 6: Small geothermal systems**

That small takes, uses and discharges of geothermal energy and water are enabled within small geothermal



systems while avoiding significant adverse effects on significant geothermal features and avoiding, remedying, or mitigating other adverse effects.

**Policy 6.1: Management of small geothermal systems**

Allow sustainable and efficient use and development of small geothermal systems.

**Policy 6.2: Management of significant geothermal features in small geothermal systems**

Restrict take, use and discharge of geothermal energy and water in small geothermal systems to avoid significant adverse effects on significant geothermal features.

**Objective 7: Adverse effects of other activities on the regional geothermal resource**

- 7.1. The protection of significant geothermal features in all geothermal systems from the adverse effects arising from land use and use of non-geothermal water.
- 7.2. Development and use of land and non-geothermal water compatible with the use, development and protection of the regional geothermal resource.

**Policy 7.1: Effects of other activities on surface geothermal features**

Ensure that uses of land and non-geothermal water in close proximity to significant geothermal features have no more than minor adverse effects on those features.

**Policy 7.2: Compatible activities within geothermal systems**

Ensure that development and use of land or use of non-geothermal water within geothermal is compatible with the purpose for which each Geothermal System is classified.

**Objective 8: Information requirements**

The integrated management of geothermal systems aided by increased knowledge and understanding of the regional geothermal resource.

**Policy 8.1: Information**

Ensure that high-quality data, research and monitoring of the regional geothermal resource and of the effects of its use, commensurate with the scale of any activity, are, where appropriate, independently peer reviewed and made publicly available having regard to commercial and cultural sensitivity.”

## **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.