

**Before the Freshwater Hearing Panel and the PISI Hearing Panel  
Appointed by Wellington Regional Council  
to Hear Submissions on Proposed Change 1 to the Regional Policy  
Statement for the Wellington Region**

---

In the matter of: **the Resource Management Act 1991**

And: **Submissions and Further Submissions  
Lodged on Proposed RPS Change 1 Plan  
by Meridian Energy Limited**

**Statement of Evidence of Christine Anne Foster  
Called by Meridian Energy Limited**

**HEARING STREAM 3  
CLIMATE CHANGE**

**14 August 2023**

## 1. Introduction

- 1.1. My name is Christine Anne Foster. I am a Planning Consultant and sole director of CF Consulting Services Limited, based in Wellington. My qualifications and resource management planning experience are as detailed in my statement of evidence to Hearing Stream 2 dated 29 June 2023. The context for Meridian's submission and further submissions on Proposed RPS Change 1 (PC1) is also outlined in my 29 June 2023 statement.
- 1.2. This statement of evidence is within my area of expertise as a resource management planner, except where I state that I rely on the evidence of others or evidence presented in the Council's section 42A report. I reaffirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses set out in the Environment Court 2023 Practice Note. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.
- 1.1 Meridian's interest in Hearing Stream 3 is to draw attention to, and address, two broad points:
- (a) That regionally significant infrastructure assets generally, and renewable electricity generation assets in particular are, themselves vulnerable to the adverse effects of climate change and are also critical to sustaining community and economic resilience to the adverse effects of climate change; and
  - (b) That reducing reliance on fossil fuels and the transition to a low-carbon or zero-carbon economy will require the generation of substantial replacement (i.e. additional) electricity from non-fossil, renewable sources, in order to sustain economic and community well-being as the RPS and PC1 intend. The need for additional renewable electricity generation capacity is recognised as a matter of national importance and requires more than the historical and current resource management 'business as usual' approach. To achieve the generation capacity needed, at the pace required, resource management planning instruments will need to actively promote and enable renewable electricity generation opportunities.

## 2. Scope of Evidence

- 2.1 There are six s. 42A reports to Hearing Stream 3, addressing six topics under the 'climate change' heading. This statement of evidence addresses the two areas of Meridian's interest that are addressed in four of the s. 42A reports:
- (a) **Climate Change (General):** in which I address the importance of including in the RPS policy provisions that promote and enable renewable electricity generation;
  - (b) **Energy, Waste and Industry:** in which I also address the importance of policy provisions that promote and enable renewable electricity generation;

- (c) **Climate Resilience and Nature Based Solutions:** in which I address the role that renewable electricity generation can have in enhancing resilience within communities;
  - (d) **Transport:** in which I support the reporting officer's recommendations in respect of two discrete matters relating to Policy CC.3 and Method CC.10.
- 2.2 I do not address the s. 42A reports on the topics of Natural Hazards or Agricultural Emissions, because none of Meridian's submission points are 'live' in those reports.
- 2.3 For each issue, I summarise the issues raised and relief requested in Meridian's submission, reference the relevant discussion in the Section 42A Report, and examine the matters at issue.
- 2.4 In addition, I address a question that was put to Meridian during the Hearing Stream 2 hearing about s. 61 of the Act.
- 2.5 In preparing this statement of evidence, I have read and considered:
- (a) Proposed Change 1 to the Regional Policy Statement for the Wellington Region;
  - (b) The four s. 42A Hearing Reports for Hearing Stream 3 identified in paragraph 2.1 above (prepared by Pam Guest, Louise Allwood and Jerome Wyeth) dated 31 July 2023;
  - (c) The statements of evidence of Jake Roos and Stuart Farrant dated 7 August 2023;
  - (d) The statement of evidence of Duncan Tindall (Technical Transport Planning) dated 28 July 2023;
  - (e) The submissions and further submissions listed in sections 3 to 17 of this statement of evidence, to the extent the submissions address the matters summarised in paragraph 1.1 above;
  - (f) The section 32 report accompanying proposed RPS Change 1, dated August 2022.

### **3. Context - New Zealand's Energy Future**

- 3.1 Many of the concerns expressed in Meridian's submission and further submissions relate to PC1's failure to confront the reality that the transition to a low-carbon or zero-carbon economy cannot be achieved without the development of substantial replacement renewable energy. The s. 32 report and the s. 42A reports focus on the Council's greenhouse gas emissions reduction goals and reduction policies and methods. The reports do not present the complete picture of what is required to achieve the reduction goals, or the size and urgency of the challenge in developing suitable renewable energy alternatives.
- 3.2 The Government has recently published a Discussion Document, seeking public feedback on how to advance New Zealand's transition away from dependence on 'emissions-intensive' fuels (*'Advancing New Zealand's Energy Transition'* published 9 August 2023). I include a copy of the Discussion Document in Appendix 1 to this statement. On page 15 of the Discussion Document, the Government characterises the issues relating to renewable electricity generation in the following way:

*‘Meeting our emissions targets will require a rapid and efficient expansion of renewable electricity such as wind and solar generation. We need to boost renewable electricity generation by 170 per cent by 2050 to support increased electricity demand and to transition away from emissions intensive fuels. Significant expansion and upgrade of other parts of the electricity network will also be required to enable this renewable electricity to reach customers. The Government, through MBIE and the Ministry for the Environment, is currently progressing proposed changes to the National Policy Statement for Renewable Electricity Generation and the National Policy Statement for Electricity Transmission under the Resource Management Act.’*

3.3 New Zealand is a signatory to the ‘Paris Agreement’<sup>1</sup>, to limit global warming to below 2 degrees (and preferably 1.5 degrees) Celsius compared to pre-industrial levels. Signatories to the Paris Agreement present their commitments in five-yearly ‘nationally determined contributions’. New Zealand’s commitments are enshrined in legislation. The *Climate Change Response Act 2002* set out the Government’s first emissions reductions targets for 2050 and established the Climate Change Commission. The purpose of the Climate Change Commission (specified in the 2002 legislation) is to provide independent expert advice to Government on mitigating climate change, including through emissions reductions, and adapting to the effects of climate change. The *Climate Change Response (Zero Carbon) Amendment Act 2019* revised the 2050 targets for greenhouse gases and biogenic methane gas. The 2050 target for greenhouse gas emissions is zero emissions by 2050<sup>2</sup>.

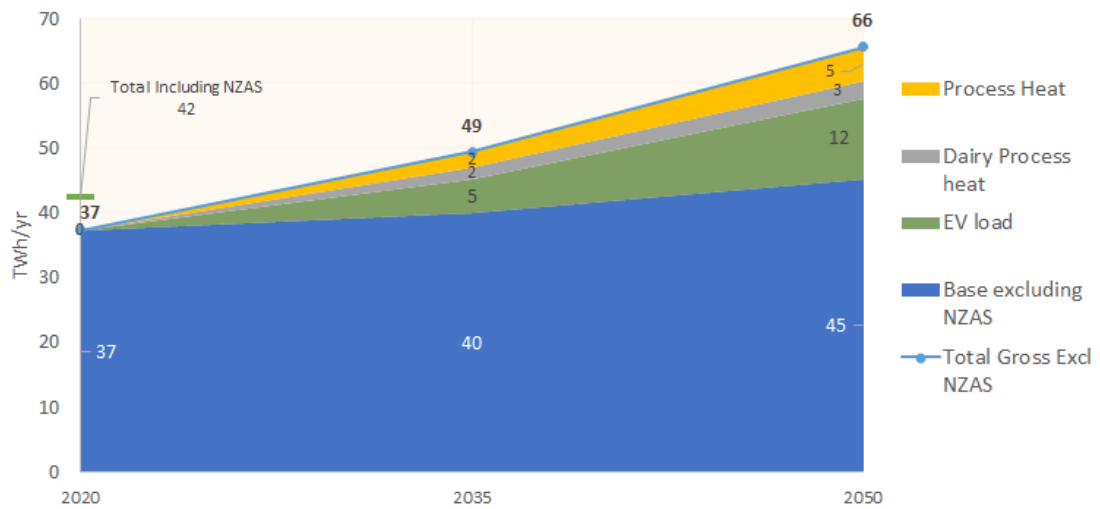
3.4 Achieving New Zealand’s zero-carbon targets will require the development of renewable energy generation at a pace that is unprecedented. Figure 1 below illustrates the Electricity Authority’s projection of likely future electricity demand in various sectors.

---

<sup>1</sup> A legally binding international treaty first signed in 2015 under the United Nations Framework Convention on Climate Change

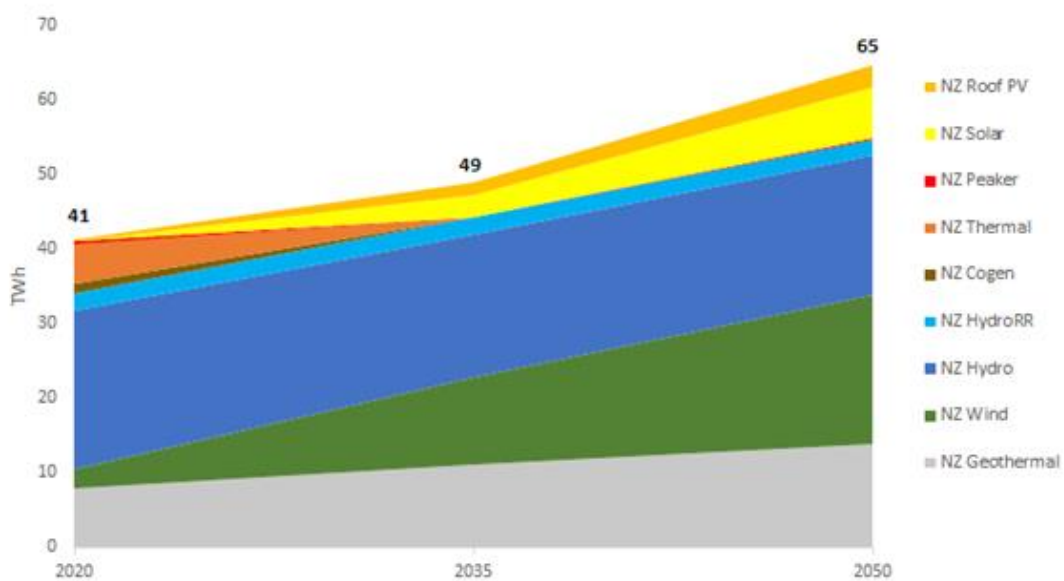
<sup>2</sup> Section 5Q, Part 1B, Climate Change Response (Zero Carbon) Amendment Act 2019

**Figure 1 Projected future electricity demand<sup>3</sup>**



3.5 Figure 2 below illustrates the Electricity Authority’s estimate of how the future demand for renewable energy will be met<sup>4</sup>:

**Figure 2 Projected future electricity generation sources<sup>5</sup>**



<sup>3</sup> Source: Electricity Authority, Market Development Advisor Group (an industry advisory group appointed by the Electricity Authority – the projection was published (as Figure 2) in the Authority’s issues paper ‘Price Discovery Under 100% Renewable Electricity Supply’ February 2022)

<sup>4</sup> Source: Figure 3 of the Electricity Authority’s issues paper ‘Price Discovery Under 100% Renewable Electricity Supply’ February 2022

<sup>5</sup> Source: Electricity Authority, Market Development Advisor Group (an industry advisory group appointed by the Electricity Authority – the projection was published (as Figure 2) in the Authority’s issues paper ‘Price Discovery Under 100% Renewable Electricity Supply’ February 2022)

3.6 A key point of relevance from Figure 2 for the Wellington Region is that a much larger contribution to new supply is expected to be from wind energy and solar energy generation. Electricity is expected to largely displace petrol and diesel in New Zealand's vehicle fleet and to replace coal and gas in industrial and domestic use. The pace I referred to in paragraph 3.4, to meet New Zealand's emissions reduction targets, means that the rate of renewable energy development will need to be approximately 2.5 times the rate achieved in the thirty-year period to 2020. That is, the equivalent of 400-500 megawatts of new electricity supply every year until 2050<sup>6</sup>. By way of comparison, the operational maximum output of the West Wind wind farm is 142.6 megawatts and the operational maximum output of the Manapouri hydro station is 800 megawatts.

3.7 Not surprisingly then, the Government's August 2023 Discussion Document invites feedback on the following key questions:

- *how do we ensure sufficient investment in new renewable generation to expand our electricity system for electrification and to replace retiring fossil fuel generation?*
- *how do we ensure adequate dispatchable generation capacity, storage or demand side response as fossil fuel plants retire and intermittent capacity grows including ensuring sufficient capacity for peaking, calm, cloudy periods, and managing the 'dry year' challenge (ahead of any NZ battery project solution)?*
- *how do we ensure competitive markets during transition to a more highly renewable electricity system?*
- *how do we grow and enhance transmission and distribution networks at a sufficient pace to meet our needs for demand growth and new renewable generation in a timely way?*
- *how do we support smarter use of networks and smarter technologies?*

3.8 Since the closing dates for submissions and further submissions on PC1, the Government has published a March 2023 draft revised NPS-REG (NPS-REG 2023) which proposes a more enabling approach. The single objective of the draft NPS-REG 2023 is more explicit than the 2011 NPS-REG about the need to increase renewable electricity generation capacity:

*'The Objective of this National Policy Statement is that electricity generated in Aotearoa New Zealand from renewable resources is significantly increased in a timely manner to achieve New Zealand's emissions reduction targets, emissions budgets, energy targets, and associated commitments under any emissions reduction plan:*

- (a) through enabling the effective and efficient development, operation, maintenance, and upgrading of renewable generation assets; and*
- (b) while managing adverse effects on the environment.'*

---

<sup>6</sup> Paragraph 3.5 of Electricity Authority's issues paper 'Price Discovery Under 100% Renewable Electricity Supply' February 2022

I accept that the proposed NPS-REG (2023) is a draft and does not have effect within the hierarchy of relevant statutory instruments. However, it gives voice to the known priorities of Government to respond to the adverse effects of climate change, reflected in the August 2023 Discussion Document and other advice by the Climate Change Commission. For example, the submission of the Climate Commission on the Natural and Built Environments Bill highlighted the point that<sup>7</sup>:

*‘Renewable electricity will play a key role in decarbonising the wider energy system. New generation will need to be built rapidly to meet an increase in electricity demand. However, building new renewable generation, such as hydropower, wind and geothermal, can be at odds with other outcomes, such as the protection and restoration of waterways (s 5(a)) and Iwi/Māori rights and interests (s 5(e)).’*

3.9 I have reproduced the full text of the Commission’s submission on this point because managing the adverse effects of renewable electricity generation proposals is important. These effects are managed through other objectives and policies in the RPS. The key point, for the purposes of Meridian’s submission, is that the quantum and the urgency of the need for additional renewable electricity generation is recognised as an issue at the highest levels of policy making in New Zealand. In my opinion, it warrants a more constructive response in PC1.

3.10 The Natural and Built Environments Bill, as amended following the Select Committee Hearing process and reported back to Parliament on 27 June 2023, includes the following two matters as part of a list of 11 ‘system outcomes’ in s. 5:

- (3) *In relation to climate change,—*
  - (a) *greenhouse gas emissions are reduced to assist New Zealand to meet the target set under section 5Q of the Climate Change Response Act 2002; and*
  - (b) *greenhouse gases are removed from the atmosphere.*
  
- (8) *Infrastructure is provided in a timely and ongoing manner to promote the well-being of both present and future generations.*

3.11 The stated purpose of the system outcomes is to establish what must be achieved at the national and regional levels to ensure that the purpose of the Act is achieved.

3.12 Although the Discussion Documents, draft legislation and draft NPS-REG 2023 are not yet operative, they clearly signal the direction of travel for policy relating to reducing greenhouse gas emissions and responding to the challenges of climate change.

3.13 For completeness, I note that I am aware that Meridian, as a member of the Electricity Sector Environment Group, has requested amendments to the NPS-REG (2023) objective and seek to emphasise the priority and urgency of significantly increasing the amount of electricity

---

<sup>7</sup> In the first bullet point on page 2 of the submission

generated from renewable resources and the importance of enabling new renewable electricity generation activities – as follows:

*(1) That the amount of electricity generated in Aotearoa New Zealand from renewable resources is significantly increased with priority and urgency, as a matter of national significance, in order to:*

- (a) achieve New Zealand’s emissions reduction and energy targets, and*
- (b) sustain the social, economic, cultural, health and well-being of people and communities.*

*(2) To:*

- (a) Maintain, secure and protect existing REG activities;*
- (b) Enable new REG activities, including through efficient planning processes and decisions;*
- (c) Secure and protect the potential future use and development of renewable energy resources; and*
- (d) Manage adverse effects on the environment.*

3.14 That approach seems to align with the urgency and significance of the issue as stated in the 9 August 2023 Discussion Paper. The essence of my evidence is that the amendments Mr Wyeth proposes to the provisions of interest to Meridian are a good start, but do not go far enough in light of the significance and policy direction being given these matters by Government currently.

#### 4. Chapter 3.1A: Regionally Significant Issue 1

<b>Proposed Amendments to Chapter 3:</b>	<b>Resource management issues, objectives and summary of policies and methods to achieve the objectives in the RPS</b>
<b>PC1 Amendment:</b>	<b>Proposed new Chapter 3.1A Climate Change: Regionally significant issue 1 (refer page 9 of PC1)</b>
<b>Meridian Submission Point:</b>	<b>S100.003</b>
<b>S. 42A Climate Change (General) Report:</b>	<b>3.6 Introduction to Chapter 3.1A and climate change resource management issues</b>
	<b>Paragraphs 79 to 81, 112 to 116 and 129 (3.6.3 Recommendations) on pages 20, 24, 25, 28 and 29</b>

4.1 Proposed new Chapter 3.1A Issue 1 is stated as: ‘Greenhouse gas emissions must be reduced significantly, immediately and rapidly.’ The explanation of the issue focuses exclusively on reductions in emissions. Meridian’s submission requested insertion of additional text in the explanation to proposed Issue 1 (not in the issue statement) as follows:



Development of the renewable energy resources available in the region will be necessary to assist the transition from fossil fuel dependency and reduce greenhouse gas emissions.

- 4.2 The reasons for the requested addition can be found in the explanation of New Zealand's energy future provided earlier in Section 3 of this statement. The s. 32 report and the s. 42A reports emphasise the urgent need to significantly and rapidly reduce greenhouse gas emissions. Meridian's submission points out the valid and equally significant and urgent need to replace fossil fuels with renewable energy alternatives. The stated reasons in the submission explain that:

*'RPS Change #1 fails to provide the support necessary to enable the necessary transition to renewable energy for the economy, transport network, people and communities. If the urgent and rapid transition sought by RPS Change #1 is to be achieved, strong guidance is necessary in the RPS about what that means in terms of increased renewable electricity generation capacity. The RPS, and the district and regional plans that give effect to the RPS, need to actively enable additional renewable electricity generation if progress towards the targets proposed by RPS Change #1 are to be achieved. All regions, cities and districts including Wellington Region ... will need to contribute to increasing renewable electricity generation if national targets and a nationwide transition to reliance on renewable energy sources are to be achieved.'*

- 4.3 At paragraph 115 of the 'General' s. 42A report, Mr Wyeth agrees that Meridian's point is valid (in his words 'that increasing renewable energy generation is necessary to reduce GHG emissions and transition away from fossil-fuel dependency'). However Mr Wyeth does not agree that the amendment proposed by Meridian should be made in the explanation to Issue 1. That seems to be because Mr Wyeth considers the wording sets out *how* the issue needs to be addressed, rather than providing further detail on the issue itself. Mr Wyeth's suggestion, in the alternative is to make changes through the Climate Change (Energy, Waste and Industry) topic report. Meridian supports some of Mr Wyeth's suggested amendments in that separate report (and I discuss them in sections 5 to 17 below).

- 4.4 I do not agree with Mr Wyeth's characterisation of Meridian's proposed additional text. The need to provide replacement (additional) renewable electricity generation capacity is an issue in itself, and is the directly related 'flip' side of the need to reduce greenhouse gas emissions. Developing new or additional renewable electricity generation capacity is not *how* greenhouse gas emissions will be reduced. Greenhouse gas emissions will be *reduced* by the reductions in fossil fuel use by industry, transport systems and households proposed in the other policies and methods proposed in PC1. The *need* to develop new or additional electricity generation capacity is a consequence of the need to reduce dependence on fossil fuels. In my opinion, the description of the issue is incomplete without confronting this dual, and directly related, issue.

- 4.5 In my opinion, the additional wording proposed by Meridian accurately fills out the full two-part scope of the issue. The text is not a long addition to the explanation and complements (does not conflict with) the issue statement. It is appropriate that the reality it discusses is

presented in the first regionally significant climate change issue. It is the ‘flip-side’ of the core issue and, in my opinion, more effectively describes the challenges inherent in the issue. It is my opinion that the addition of the words proposed to the explanation of Issue 1 will better achieve the sustainable management purpose of the Act and will better give effect to the 2011 National Policy statement for Renewable Electricity Generation (NPS-REG).

4.6 It is notable that the objective of the current NPS-REG emphasises the point being made by Meridian. The objective is:

*‘To recognise the national significance of renewable electricity generation activities by providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities, such that the proportion of New Zealand’s electricity generated from renewable energy sources increases to a level that meets or exceeds the New Zealand Government’s national target for renewable electricity generation.’*

4.7 As noted earlier, the objective of the draft replacement NPS-REG is more directive and enabling, although I acknowledge that it remains a draft and may be amended.

4.8 I do not consider the reasons given in paragraph 115 of the s. 42A report provide a sufficient reason to resist inclusion of the requested additional text in the explanation to Issue 1. In my opinion, the proposed additional text (set out in paragraph 3.1 earlier) accurately reflects the known scope of the issue and is supported by the Government’s independent advice on climate change and with the policy direction currently being considered by Government and I commend it to the Hearing Panel for inclusion in the explanation of Issue 1.

## 5. Chapter 3.1A Objective CC.1

<b>Proposed Amendments to Chapter 3:</b>	<b>Resource management issues, objectives and summary of policies and methods to achieve the objectives in the RPS</b>
<b>PC1 Amendment:</b>	<b>Proposed new Objective CC.1 (Table 1A) (refer page 11 of PC1)</b>
<b>Meridian Submission Point: Further Submissions:</b>	<b>S100.004 FS17.001 (Wellington International Airport Ltd) FS10.030 (Oil Companies) FS19.027 (Wellington Water Ltd) FS24.026 (Powerco) FS3.0010 (Waka Kotahi)</b>
<b>S. 42A Climate Change (General) Report:</b>	<b>3.7 Objective CC.1  Paragraphs 136, 146, 152 and 153 (pages 31 to 35)</b>

5.1 Meridian’s submission requested amended of clause (c) of Objective CC.1 to read:

### **Objective CC.1**

By 2050, the Wellington Region is a low- emission and climate-resilient region, where *climate change mitigation* and *adaptation* are an integral part of:

- (a) sustainable air, land, freshwater, and coastal management,
- (b) well-functioning *urban environments* and *rural areas*, and
- (c) well-planned infrastructure **(including regionally significant infrastructure)**.

5.2 The reasons given for the requested amendment are that Objective CC.1 needs to apply to all types and scales of infrastructure (including local infrastructure and regionally significant infrastructure – with renewable electricity generation being a defined component of regionally significant infrastructure).

5.3 Mr Wyeth proposes to amend Objective CC.1 as follows:

~~By 2050, t~~The Wellington Region is a low-emission and climate-resilient region, where *climate change mitigation* and *climate change adaptation* are an integral part of:

- (a) sustainable air, land, freshwater, and coastal management,
- (b) well-functioning urban ~~areas environments~~ and rural areas, and
- (c) ~~the well-planning-ed~~ and ~~delivery of~~ infrastructure.

5.4 I support Mr Wyeth’s suggested amendment to clause (c). The planning and delivery of infrastructure will both be essential. Meridian’s requested amendment is intended to overcome a particular quirk in the RPS definitions. The RPS definition of ‘infrastructure’ includes electricity generation and the definition of ‘regionally significant infrastructure’ also includes electricity generation, but at a different scale. Also, importantly, for the purposes of Objective CC.1, ‘infrastructure’ does not include ‘regionally significant infrastructure’ (but is distinct from it:

<p><b>'Infrastructure includes:</b></p> <p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d) <i>Facilities for the generation of electricity, lines used or intended to be used to convey electricity, and support structures for lines used or intended to be used to convey electricity, excluding facilities, lines, and support structures if a person:</i></p> <p style="padding-left: 40px;">(i) <i>uses them in connection with the generation of electricity for the person's use; and</i></p> <p style="padding-left: 40px;">(ii) <i>does not use them to generate any electricity for supply to any other person'</i></p> <p>Note the definition does not include National Grid transmission lines.</p>	<p><b>'Regionally significant infrastructure includes:</b></p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>• <i>the national electricity grid, as defined by the Electricity Governance Rules 2003</i></li> <li>• <i>facilities for the generation and transmission of electricity where it is supplied to the network, as defined by the Electricity Governance Rules 2003</i></li> <li>• <i>...'</i></li> </ul>
--	---

5.5 Use of the defined term 'infrastructure' in Objective CC.1 actually excludes renewable electricity generation for supply to the national grid and national grid transmission lines. That is problematic in my view, and may not be what Mr Wyeth intended. In paragraph 16, Mr Wyeth accepts that renewable electricity generation has a significant role in achieving the PC1 low-emission objective. That role can't be fulfilled, through Objective 1, unless the text explicitly includes those renewable electricity generation activities and facilities (and electricity transmission also) in my opinion. The planning and delivery of renewable electricity generation, along with all of the other regionally significant infrastructure (including life-line infrastructure), will be necessary to achieve Objective CC.1.

5.6 Accordingly, I recommend the further refinement of Mr Wyeth's proposed amendments to Objective CC.1 requested by Meridian:

~~By 2050, t~~The Wellington Region is a low-emission and climate-resilient region, where climate change mitigation and climate change adaptation are an integral part of:

- (a) sustainable air, land, freshwater, and coastal management,
- (b) well-functioning urban ~~areas environments~~ and rural areas, and
- (c) ~~the well-planning ed~~ and delivery of infrastructure **(including regionally significant infrastructure)**.

## 6. Objective CC.3

<b>Proposed Amendments to Chapter 3:</b>	<b>Resource management issues, objectives and summary of policies and methods to achieve the objectives in the RPS</b>
<b>PC1 Amendment:</b>	<b>Proposed new Objective CC.3 (Table 1A) (refer pages 14 and 15 of PC1)</b>
<b>Meridian Submission Point:</b>	<b>S100.004</b>
<b>Further Submissions:</b>	<b>FS26.006 (Meridian on submission S70.001 (Harmony))</b>
<b>S. 42A Climate Change (General) Report:</b>	<b>3.9 Objective CC.3</b> <b>Paragraphs 179, 195, 212, and 214 (pages 39, 42, 47 and 48)</b>

- 6.1 Meridian's submission requested an explicit reference to the development of additional renewable energy resources in addition to the focus of Objective CC.3 on reduction of emissions (consistent with the reasoning explained earlier in this statement of evidence). In paragraph 212 of the s. 42A report, Mr Wyeth recognises the importance of significantly increasing renewable energy generation capacity to meet regional and national greenhouse gas emission reduction targets, but does not adopt Meridian's suggested additional wording. His reason is his preference to retain, in Objective CC.3, the focus on greenhouse gas emission reductions and he notes that he has recommended amendments to other PC1 provisions to accept the relief Meridian requested.
- 6.2 I accept Mr Wyeth's reasoning in relation to Objective CC.3 because this objective addresses the 'how' aspect he discussed in relation to Issue 1. Objective CC.3 sets out explicitly how much reduction is to be made by different sectors and I accept that this aspect of the 'how' is confined to the emissions reduction component of Issue 1.
- 6.3 Meridian's submission also made minor editorial suggestions to improve the internal consistency of the dates specified in the objective, which Mr Wyeth has discounted. I note that these suggestions are not the crux of what I understand Meridian's concern to be and don't pursue these wording refinements further in this statement.
- 6.4 I understand that Meridian is content to not pursue the amendment proposed to Objective CC.3, provided the amendments to the 'how' in other provisions, discussed by Mr Wyeth, actively promotes and enables additional renewable electricity generation capacity.

## 7. Objective CC.7

<b>Proposed Amendments to Chapter 3:</b>	<b>Resource management issues, objectives and summary of policies and methods to achieve the objectives in the RPS</b>
<b>PC1 Amendment:</b>	<b>Proposed new Objective CC.7 (Table 1A) (refer page 23 of PC1)</b>
<b>Meridian Submission Point:</b>	<b>S100.007</b>
<b>Further Submissions:</b>	<b>FS26.0010(Meridian on submission S148.023 (Wellington International Airport Ltd)</b>
<b>S. 42A Climate Change (General) Report:</b>	<b>3.10 Objective CC.7  Paragraphs 218, 227 and 232 (pages 48, 50 and 51)</b>

7.1 Objective CC.7 addresses societal attitudes to the effects of climate change and behavioural change:

People and businesses understand what climate change means for their future and are actively involved in planning and implementing appropriate *mitigation* and *adaptation* responses.

7.2 Meridian's submission requested an amendment to expand the objective to also refer to understanding the changes that need to be made to respond to the challenges of climate change:

People and businesses understand what climate change means for their future **and the changes that need to be made to respond to the challenges of climate change** and are actively involved in planning and implementing appropriate *mitigation* and *adaptation* responses.

7.3 At paragraph 227 of the s. 42A report, Mr Wyeth states his support for the general intent of the above proposed amendment but considers the wording is unnecessary and may make the outcome less clear and specific. I have a different view. As well as understanding and being involved in planning and implementing their own mitigation and adaptation responses, people and businesses need to understand the wider changes in society that need to be made to sustain or enhance community and economic resilience to the adverse effects of climate change. These include substantive changes, upgrading and new regionally significant infrastructure (including additional renewable electricity generation capacity) that need to be introduced at pace and which will alter the landscape. Just as climate change effects may alter the environment and the landscape. I note that Table 1A of PC1 sets out the policies and methods that are intended to achieve Objective CC.7 (including behaviour change programme and climate change adaptation strategies). In my opinion, these initiatives need to also 'socialise' the acknowledged need to actively enable regionally significant infrastructure

upgrading and development (including the development of additional renewable electricity generation capacity).

7.4 Mr Wyeth's view is that the refinements he proposes address Meridian's requested relief in part. He proposes:

People and businesses understand ~~what the current and future effects of~~ climate change and how this may impact them ~~means for their future~~ and are actively involved in ~~planning and implementing~~ appropriate *climate change mitigation* and *climate change adaptation* responses.

7.5 Mr Wyeth's proposed amendments do not address the point raised in Meridian's submission at all. The refinements retain the focus on people and businesses being involved in mitigations and responses that affect them, and do not address the wider need for consciousness of and acceptance of the wider infrastructural and environmental changes required to sustain community resilience. In my opinion, inclusion of the additional wording proposed in paragraph 6.2 above would better respond to Issue 1. To fit better with Mr Wyeth's proposed refinements, perhaps the wording amendment could read:

People and businesses:

(a) understand ~~what the current and future effects of~~ climate change and how this may impact them,

(b) understand the changes that need to be made to respond to the challenges of climate change, and

(c) ~~means for their future~~ are actively involved in ~~planning and implementing~~ appropriate *climate change mitigation* and *climate change adaptation* responses.

## 8. Definition of 'Climate Change Mitigation'

Proposed Amendments to Appendix 3:	Definitions
PC1 Amendment:	Proposed new definition of 'Climate Change Mitigation' (refer page 219 of PC1)
Meridian Submission Point:	S100.024
S. 42A Climate Change (General) Report:	3.17 Climate Change Definitions Paragraphs 320, 332, 333 and 341 (pages 68, 69, 70, 71 and 72)

8.1 Meridian's submission requested inclusion in the proposed new definition of 'climate change mitigation' of positive actions that assist in reducing greenhouse gas emissions (including, for example, the development of renewable energy). In paragraph 333 of the s. 42A report, Mr Wyeth again agrees that renewable energy generation is critical to reducing greenhouse gas emissions but does not consider a specific reference is necessary in the definition.

8.2 Mr Wyeth has recommended substantial ‘trimming’ of the definition for the reasons explained in paragraph 332 of his report. He considers the inclusion of examples creates confusion but considers one way of overcoming this would be to include the examples as a note to the definition. I don’t support the use of notes in definitions. My opinion is that definitions should in general be self-contained and clear, based on the ordinary meaning of the words used.

8.3 I found the examples useful – but incomplete. That is the issue raised by Meridian’s submission. I agree with Mr Wyeth that the development of additional renewable electricity generation capacity will be critical to reducing greenhouse gas emissions, in the sense of playing a critical support role. Given the criticality acknowledged not just by Mr Wyeth, but by the Climate Change Commission and Government, it is surprising it is not mentioned in the definition as a central mitigation or supporting measure. My recommendation is that it ought to be, perhaps adapting Mr Wyeth’s recommended refinements as follows:

#### **Climate change mitigation**

Human actions ~~to~~ that reduce *greenhouse gas emissions* by sources, or enhance *greenhouse gas removals* by *creating sinks of greenhouse gases, or provide supplementary or development of new and alternative renewable energy sources to assist the reduction of greenhouse gas emissions. Examples of reducing emissions by sources include walking instead of driving, or replacing a coal boiler with a renewable electric powered one. Examples of enhancing removals by sinks include growing new trees to absorb carbon, promoting and providing for active transport, and increasing public transport services and affordability.*

### **9. Recognising and Providing for RSI and REG – or Enabling RSI and REG**

9.1 The RPS policies are in two sets: (1) policies that ‘direct’ what must be included in district and regional plans and (2) ‘consideration’ policies that set out matters that must be considered when determining applications for consent, notices of requirement and plan changes.

9.2 Policy 7 is one of the RPS’s ‘directing’ policies. It directs that district and regional plans shall include policies and/or methods that recognise the social, economic, cultural and environmental benefits of regionally significant infrastructure, including in relation to listed particular matters. As earlier noted, ‘regionally significant infrastructure’ is a defined term that includes electricity generation (including generation from renewable sources).

9.3 Policy 7 is intended to give effect to Objectives 9 and 10. Objectives 9 and 10 are the RPS objectives for energy and regionally significant infrastructure. Policy 8 directs district and regional plans to protect regionally significant infrastructure and acts together with Policy 7 in giving effect to Objectives 9 and 10. Policy 11 directs district plans to promote energy efficient design and small scale renewable energy generation. Policy 39 is a ‘considerations’ policy and sets out the benefits of REG and RSI that must be considered when assessing applications for consent, notices of requirement and plan changes. The policies work together, as set out in RPS Table 3:



<b>Objective 9</b>  <b>The region’s energy needs are met in ways that:</b> (a) improve energy efficiency and conservation; (b) diversify the type and scale of renewable energy development; ( (c) maximise the use of renewable energy resources; (d) reduce dependency on fossil fuels; and (e) reduce greenhouse gas emissions from transportation. <sup>8</sup>	<b>Policy 7</b> Directing district and regional plans to recognise the benefits from renewable energy and regionally significant infrastructure
	<b>Policy 9</b> Reducing the use and consumption of non-renewable transport fuels and carbon dioxide emissions from transportation
	<b>Policy 10</b> Promoting travel demand management
	<b>Policy 11</b> Promoting energy efficient design and small scale renewable energy generation
	<b>Policy 39</b> Recognising the benefits from renewable energy and regionally significant infrastructure (when considering applications for consents and plan changes)
<b>Objective 10</b> <b>The social, economic, cultural and environmental, benefits of regionally significant infrastructure are recognised and protected.</b>	<b>Policy 7</b> Directing district and regional plans to recognise the benefits from renewable energy and regionally significant infrastructure
	<b>Policy 8</b> Directing district and regional plans to protect regionally significant infrastructure
	<b>Policy 39</b> Recognising the benefits from renewable energy and regionally significant infrastructure (when considering applications for consents and plan changes)

9.4 The language of Policies 7 and 39 is ‘recognise’. This is the word used in the NPS-REG 2011 objective, which I highlight below:

*‘To recognise the national significance of renewable electricity generation activities by providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities, such that the proportion of New Zealand’s electricity generated from renewable energy sources increases to a level that meets or exceeds the New Zealand Government’s national target for renewable electricity generation.’*

9.5 The second important part of the objective of the NPS-REG is the intention to recognise the national significance of renewable electricity generation activities will be recognised by providing for their development, operation, maintenance and upgrading. To an extent, clause (b) of Objective 9 seeks to provide for the development, operation, maintenance and upgrading of renewable electricity generation in the reference to diversifying the type and scale of renewable energy development. However, the element of active provision for

<sup>8</sup> Policies 57 and 65 are also intended to give effect to Objective 9 but are not directly relevant to the discussion of the PC1 changes at issue in Meridian’s submissions.

renewable electricity generation in the suite of policies (and particularly in Policies 7 and 39) is absent.

9.6 Meridian’s submissions seek to insert into the policies that give effect to RPS Objectives 9 and 10 a more active approach to providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities as intended by the NPS-REG 2011. The need to do this is supported by the greater urgency that is now acknowledged by Government (as described earlier in this statement).

9.7 The wording of the RPS chapter 4.1 policies reflects the issues and the future view of the time in which they were drafted<sup>9</sup>. The environmental challenges associated with climate change and the Government’s commitments to reducing greenhouse gas emissions have moved considerably since that time. The muted approach of the current RPS policies in respect of providing for renewable energy development is inadequate, in my opinion, to achieve the extent of system change that PC1 intends, to enable the region to adapt and respond to the challenges of climate change. Something more is required than the 2013 ‘business as usual’ RPS policies.

9.8 Throughout the s. 42A report, Mr Wyeth agrees in principle with the opinion I express in paragraph 9.7. For example, in paragraph 7, Mr Wyeth agrees that Policy 7 can and should be more directive, given the importance of significantly increasing renewable electricity generation to help meet national and regional greenhouse gas emission reduction targets. He recommends strengthening Policy 7. Mr Wyeth recommends adopting the wording ‘recognise and provide for’. In this respect, his recommendations do not in my opinion fully address the issues raised in Meridian’s submission and continue the somewhat muted approach of the existing policy wording. Something more is required, in my opinion, to address the *urgency* of the system change required and the *significant increase* in renewable electricity generation required to support the emissions reduction targets proposed by PC1. The language adopted by the Draft NPS-REG 2023 includes:

- ‘*realising the benefits*’ of renewable electricity generation,
- ‘*enabling*’ the effective and efficient development, operation, maintenance, and upgrading of renewable generation assets,
- ‘*enabling*’ renewable electricity generation activities to occur in a timely and efficient way.

9.9 Mr Wyeth explains in his report that his recommendation to adopt the language ‘recognise and provide for’ derives from clause 3.2 of the draft NPS-REG 2023. Clause 3.2 requires regional councils to include in their regional policy statements a ‘consideration’ policy setting out the matters that must be recognised and provided for when making decisions about renewable electricity generation activities. I do not understand Clause 3.2 to be a policy that prescribes or confines the approach a RPS can take in providing for renewable electricity generation activities in my view. How the RPS provides for renewable electricity generation activities must also be derived from the objective and policies of the NPS-REG. This includes

---

<sup>9</sup> The RPS was made operative in 2013

considerations of realising benefits and enabling development and upgrading activities to occur in a timely and efficient way. Importantly also, Clause 3.2 also requires recognition and provision for the national significance of renewable electricity generation and the need to significantly increase renewable electricity generation in a timely manner. In addition, NPS-REG 2023 Policies 3.6 and 3.7 direct local authorities to allow renewable electricity generation activities in areas that have significant environmental values and to enable them in areas that do not have significant environmental values. Policies 3.6 and 3.7 set out how potential adverse effects are to be managed in each case.

9.10 The difficulty is that the NPS-REG 2023 is a consultation draft and the timetable for finalising it is uncertain. It is impossible to make definitive recommendations about wording changes to align with the NPS-REG 2023 while it remains draft. If there is long time gap until they are finalised, and if misalignment with PC1 results, the Council may have to further amend the RPS to achieve alignment. The amendments that I propose do not seek to give effect to the NPS-REG 2023. Rather, they are a direct response to Issue 7 and respond to the acknowledged criticality of developing of renewable energy to facilitate the significant reductions in greenhouse gas emissions proposed by PC1.

9.11 In my opinion, the stated objectives of PC1 are aspirational in terms of the extent of greenhouse gas emission reduction proposed and the timeframe. In my opinion, adoption of more enabling language for the use and development of renewable energy will provide a more effective way of achieving the stated objectives of PC1 than the publicly notified wording (or the current RPS). However, I also recognise the importance of managing potential adverse environmental effects arising from the use and development of renewable energy resources (and this is acknowledged in clause (b) of the NPS-REG 2023 objective). There are other objectives and policies in the RPS that detail how adverse effects are to be managed. These sit comfortably alongside the current wording of Policies 7 and 39 because the wording of Policies 7 and 39 only goes as far as 'recognising' the benefits of renewable electricity generation. A shift in emphasis towards 'enabling' or 'providing for' the use and development of regionally significant infrastructure and renewable energy should be accompanied by acknowledgement of the need to manage potential adverse effects in my opinion.

9.12 I draw on the reasons given in this section and in section 3 of my evidence in discussing the amendments proposed by Meridian to RPS Policies 7, 11 and 39 below:

## 10. Policy 7

<b>Proposed Amendments to Chapter 4.1</b>	<b>Policy 7: Recognising the benefits from renewable energy and regionally significant infrastructure – district and regional plans</b>
<b>PC1 Amendment:</b>	<b>Amendments to Policy 7 (refer pages 106 and 107 of PC1)</b>
<b>Meridian Submission Point:</b>	<b>S100.014</b>
<b>Further Submissions:</b>	<b>FS26.027 (Meridian on S99.001 by Genesis Energy) FS26.025 (Meridian on S113.015 by Wgtn Water Ltd) FS26.026 (Meridian on S129017 by Waka Kotahi) FS26.029 (Meridian on S134.009 by Powerco) FS10.031 (Oil Companies) FS24.027 (Powerco)</b>
<b>S. 42A Climate Change (Energy, Waste and Industry) Report:</b>	<b>3.7 Policy 7</b> <b>Paragraphs 61, 90, 91 to 94, 97 to 109 (pages 11, 17, 18, 19 to 102)</b>

10.1 The current wording of Policy 7 addresses regionally significant infrastructure and renewable electricity generation in separate sub-clauses (a) and (b). Mr Wyeth differentiates between regionally significant infrastructure and renewable electricity generation: *recognising and providing for* the benefits of renewable energy generation, but only *recognising* the benefits of regionally significant infrastructure. Given the importance of regionally significant infrastructure in sustaining community and economic resilience, my view is that the benefits of both should be recognised *and enabled*. Given that the definition of regionally significant infrastructure includes renewable energy generation, the two sub-clauses could be combined. Meridian’s submission retains the separated (a) and (b) structure (not wishing to mess too much with the established structure and) because the benefits are slightly different between the two.

10.2 I have added a clause (c) that acknowledges the importance of managing adverse effects in accordance with the RPS. This does not feature in the relief requested by Meridian but could, in my opinion, be seen as a consequential amendment to better align with the framework of the RPS (and to address any potential worries about the wording enabling the use and development of REG and RSI without regard for environmental effects). This is already acknowledged in the text of the explanation proposed by Meridian, but is not explicit in the policy itself.

10.3 On reflection, I consider the amendments proposed by Meridian to clauses (a) (ii) and (iv) of Policy 7 relate more to renewable electricity generation and belong, instead, within clause (b). Clause (a) of Policy 7 should focus on the contribution of regionally significant infrastructure to sustaining the resilience of communities (the issue outlined in climate Change Issue 1). I propose amendments to address that.

10.4 The heading of Policy 7 reflects its current content, being 'recognising' the benefits from renewable energy and regionally significant infrastructure. That should be changed, in my view, to more enabling language. I do suggest one minor refinement to the heading compared with Meridian's submission to better match the stated greenhouse gas emission reduction purpose of PC1: '~~Enabling reductions in greenhouse gas emissions and climate change adaptation, reliance on fossil fuels and R~~recognising the benefits ~~from of renewable energy and~~ regionally significant infrastructure including renewable electricity generation – regional and district plans'.

10.5 Following the reasoning explained in section 9 of this statement, it is my opinion that the amendments to Policy 7 proposed by Meridian, and further amended as I suggest below, will more comprehensively address proposed Climate Change Issue 1 and will better achieve the stated objectives of the RPS and the sustainable management purpose of the Act. I have incorporated those of Mr Wyeth's recommendations that I agree with:

**Policy 7: ~~Enabling reductions in greenhouse gas emissions reliance on fossil fuels and climate change adaptation, R~~recognising the benefits ~~from of renewable energy and~~ regionally significant infrastructure including renewable electricity generation – regional and district plans**

District and regional plans shall include policies and/or methods that **recognise**:

- (a) **recognise and enable** the social, economic, cultural and environmental benefits of regionally significant infrastructure, ~~and in particular low and zero carbon regionally significant infrastructure~~ including:
- (i) **the ability for** people and goods ~~to can~~ travel to, from and around the region efficiently and safely ~~and in ways that support the transitioning to low or zero carbon multi-modal transport using a range of travel modes, including travel modes that do not rely on fossil fuels;~~
  - (ii) ~~the contribution of regionally significant infrastructure to sustaining the resilience of communities to the adverse effects of climate change the transition from fossil fuel dependence to reliance on renewable energy and in ways that support transitioning to low or zero carbon multi-modal travel modes;~~
  - (iii) ~~the~~ public health and safety ~~benefits of providing is maintained through the provision of~~ essential services:– **including the** supply of potable water, ~~the~~ collection and transfer of sewage and stormwater, and the provision of emergency services;
  - (iv) **the provision of an efficient, effective and resilient electricity transmission network;** ~~the economic, social and cultural well-being derived from~~ people ~~have having~~ access to energy ~~generated from renewable sources, and preferably low or zero carbon energy, so as to meet their needs;~~ and
  - (v) ~~people have~~ access **by people and communities** to telecommunication services; ~~and.~~
- (b) **recognise and enable** the social, economic, cultural and environmental benefits of energy generated from renewable energy resources including:
- (i) **reduced dependence on fossil fuels and imported energy resources and the contribution to transitioning to a low emission economy;**

- (ii) enhanced security of supply, resilience, independence and diversification of our energy sources; and
  - (iii) the economic, social and cultural well-being derived from people having access to energy generated from renewable sources to meet their needs; and
  - (iv) ~~reducing dependency on imported energy resources; and~~
  - (v) ~~reducing reduced~~ greenhouse gas emissions;:-
- (c) while managing the effects of regionally significant infrastructure (including renewable electricity generation) in accordance with this Regional Policy Statement.

### Explanation

~~Notwithstanding that renewable energy generation and regionally significant infrastructure can have adverse effects on the surrounding environment and community, Policy 7 recognises that these activities can provide benefits both within and outside the region, in particular if regionally significant infrastructure is a low or zero carbon development.~~

Energy generated from renewable energy resources and regionally significant infrastructure can provide benefits both within and outside the region. Renewable energy benefits are not only generated by large scale renewable energy projects but also smaller scale projects. Objectives CC.1 and CC.3 cannot be achieved without a substantial increase in the amount of energy generated from renewable sources, including in the Wellington Region.

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

Renewable energy generation and regionally significant infrastructure can have adverse effects on the surrounding environment and community but also have functional and operational needs that constrain their location options. Typically, large renewable energy generation and regionally significant infrastructure facilities, by their very nature, cannot be established without causing some level of environmental effects. Consideration of local and regional benefits, functional and operational need and adverse effects need to be considered on a case by case basis to determine what is appropriate in any particular circumstances.

~~Energy generated from renewable energy resources and regionally significant infrastructure can provide benefits both within and outside the region. Renewable energy benefits are not only generated by large scale renewable energy projects but also smaller scale projects.~~

~~Renewable energy means energy produced from solar, wind, hydro, geothermal, biomass, tidal wave and ocean current sources.~~

~~Renewable energy generation and regionally significant infrastructure can also have adverse effects on the surrounding environment and community. These competing considerations need to be weighed on a case by case basis to determine what is appropriate in the circumstances.~~

~~Imported and non-renewable energy sources include oil, gas, natural gas and coal.~~

~~When considering the benefits from renewable energy generation the contribution towards national goals in the New Zealand Energy Strategy (2007) and the National Energy Efficiency and Conservation Strategy (2007) will also need to be given regard.~~

~~Regionally significant infrastructure is defined in Appendix 3.~~

## 11. Policy 11

<b>Proposed Amendments to Chapter 4.1</b>	<b>Policy 11: Promoting and enabling energy efficient design and small scale renewable energy generation – district plans</b>
<b>PC1 Amendment:</b>	<b>Amendments to Policy 11 (refer page 109 of PC1)</b>
<b>Meridian Submission Point:</b>	<b>S100.015</b>
<b>Further Submissions: S. 42A Climate Change (Energy, Waste and Industry) Report:</b>	<b>FS26.027 (Meridian on S83.001 by CentrePort) 3.8 Policy 11  Paragraphs 112 to 122, 127 to 129 (pages 23 to 25, 26 and 27)</b>

11.1 As illustrated in the table in paragraph 9.3 of my statement above, Policy 11 gives effect to Objective 9. Policy 11 addresses small scale renewable energy generation activities, as a companion to Policy 7 for larger scale renewable energy generation. PC1 proposes to amend Policy 11 to ‘promote and enable’ small scale renewable energy generation. Mr Wyeth proposes to extend the ‘enabling’ approach to community scale renewable energy generation as well.

11.2 The point made in Meridian’s submissions is that an equivalent approach should be adopted for all scales of renewable electricity generation (small, community scale and large scale). This is particularly so given the significance of the challenge of achieving the additional renewable electricity generation capacity estimated to be necessary, nationally, to meet the time frames proposed by the Government’s Energy Strategy (and proposed by PC1). For this reason, I support Mr Wyeth’s proposed amendments to include community scale energy generation and to delete the limit of 100kW generation capacity.

11.3 Mr Wyeth also proposes to amend the definition of ‘small scale and community scale renewable energy generation’. The definition is currently tied to the NPS-REG and I recall the reasons for doing this when submissions on the proposed RPS were heard and determined. It made sense then and it still makes sense now. There is a usable definition in the NPS-REG. That definition may be amended by the NPS-REG 2023 but the RPS should adopt whatever direction is provided in the NPS in my opinion. I do not support the amendments Mr Wyeth proposes to the definition of small scale and community scale renewable energy generation. In my opinion, the proposed amendments are unnecessary and create unnecessary misalignment with the NPS-REG.

## 12. Policy 39

<b>Proposed Amendments to Chapter 4.2: Regulatory policies – matters to be considered</b>	<b>Policy 39: Recognising the benefits from renewable energy and regionally significant infrastructure – consideration</b>
<b>PC1 Amendment:</b>	<b>Amendments to Policy 39 (refer pages 139 and 140 of PC1)</b>
<b>Meridian Submission Point:</b>	<b>S100.018</b>
<b>Further Submissions:</b>	<b>FS23.009 (by Transpower in support) FS27.027 (by Winstones in support) FS26.047 (Meridian on S113.029 by Wgtn Water Ltd) FS26.048 (Meridian on S157.017 by Oil Companies) FS26.050 (Meridian on S10.004 by Transpower) FS26.049 (Meridian on S49.004 by Chorus et al) FS26.051 (Meridian on S99.003 by Genesis) FS26.052 (Meridian on S115.064 by Hutt CC) FS26.053 (Meridian on S165.068 by RFBPS)  FS26.054 (Meridian on S16.038 by KCDC) FS26.055 (Meridian on S30.063 by Porirua CC)</b>
<b>S. 42A Climate Change (Energy, Waste and Industry) Report:</b>	<b>3.9 Policy 39  Paragraphs 137 to 146, 151 and 152 (pages 29 to 33)</b>

12.1 Policy 39 is the ‘consideration’ policy that sets out the matters relevant for renewable electricity generation and regionally significant infrastructure that must be given particular regard in considering applications for consent, notices of requirement and plan changes. It has effect in addition to the policies included in district and regional plans via Policy 7.

12.2 Meridian’s submissions sought a more enabling approach in Policy 39, to match the amendments sought to Policy 7. Mr Wyeth agrees that Policy 39 is too weak in relation to renewable electricity generation (paragraph 144 of the s. 42A report) and a more enabling approach is warranted.

12.3 I support the amendments Mr Wyeth proposes, in changing the ‘have regard to’ approach to ‘recognising and providing for’. I think that is sufficient, given Policy 39’s ‘consideration’ role. A stronger enabling direction is required in Policy 7 in my opinion because it will drive consenting frameworks in district and regional plans. I broadly agree with Mr Wyeth’s s. brief 32AA evaluation supporting the amendments he proposes.

12.4 One thing perhaps missing from the proposed amendments to Policy 39 is the significance of the contribution of additional renewable electricity generation to facilitating reductions in greenhouse gas emissions and the transition to a low-emissions economy. This was highlighted in Meridian’s requested amendments and, in my opinion, would improve the



effectiveness of the policy (and I include this in the recommended amendments to Policy 7 (a) below. The title of Policy 39 should also be amended to align with the proposed 'recognise and provide for' approach now proposed. Functional needs and operational needs are defined terms in the National Planning Standards and I do not consider they need to be further clarified in clause (c):

**Policy 39: Recognising and providing for the benefits ~~from of~~ renewable energy and regionally significant infrastructure – consideration**

When considering an application for a resource consent, notice of requirement or a change, variation or review of a district or regional plan, ~~particular regard shall be given to:~~

- (a) recognise and provide for the social, economic, cultural, and environmental benefits of energy generated from renewable energy resources and/or *regionally significant infrastructure*, in particular where ~~it~~ these contributes to reducing greenhouse gas emissions ; and
- (b) recognise the social, economic, cultural, and environmental benefits of other and/or regionally significant infrastructure, in particular including where it contributes to reducing greenhouse gas emissions; and
- (~~b~~c) have particular regard to protecting regionally significant infrastructure from incompatible subdivision, use and development occurring under, over, or adjacent to the infrastructure; and
- (~~e~~d) recognise and provide for the operational need and functional the needs ~~for of~~ renewable electricity generation activities, including the need to facilities to locate where the renewable energy resources exist; and
- (~~e~~) recognise the benefits of utilising the significant wind, solar and marine renewable energy resources within the region.

Explanation

~~Notwithstanding that renewable energy generation and regionally significant infrastructure can have adverse effects on the surrounding environment and community,~~ Policy 39 recognises that renewable energy generation and regionally significant infrastructure these activities can provide a range of environmental, economic, social and cultural benefits locally, regionally and nationally, particularly to contribute to reducing greenhouse gas emissions as sought by Objective CC.3. These benefits are outlined in Policy 7.

### 13. Policy 65

<b>Proposed Amendments to Chapter 4.3: Allocation of responsibilities</b>	<b>Policy 65: Promoting efficient use and conservation of resources – non-regulatory</b>
<b>PC1 Amendment:</b>	<b>Amendments to Policy 65 (refer pages 166 and 167 of PC1)</b>
<b>Meridian Submission Point:</b>	<b>S100.022</b>
<b>Further Submissions:</b>	<b>FS26.067 (Meridian on S99.004 by Genesis)</b>
<b>S. 42A Climate Change (Energy, Waste and Industry) Report:</b>	<b>3.10 Policy 65</b> <b>Paragraphs 159, 164, 167 and 168 (pages 35 to 37)</b>

13.1 Policy 65 is a non-regulatory policy that seeks to promote the conservation and efficient use of resources. The submissions of Meridian and Genesis sought to insert explicit reference to increasing the proportion of electricity generated from renewable resources. At paragraph 164, Mr Wyeth recommends accepting the Meridian and Genesis submissions. However, in his recommended amendment (paragraph 168) he recommends slightly different wording, which alters the outcome slightly. I agree with Mr Wyeth's brief s. 32AA evaluation, that amendment to make explicit reference to increasing the proportion of electricity generation from renewable sources, will more effectively achieve the RPS objective. However, I recommend the wording proposed in Meridian's submission – as follows:

**Policy 65: ~~Supporting and encouraging~~ **Promoting efficient use and conservation of resources – non-regulatory****

To ~~promote~~ support and encourage conservation and efficient use of resources by:

- (a) applying the 5 Rs (Reduce, Reuse, Recycle, Recover, recycling and Residual waste management);
- (b) reducing *organic waste* at source from households and commercial premises;
- (c) increasing the diversion of wastewater sludge from wastewater treatment plants before deposition to municipal landfills;
- (d) requiring efficient municipal landfill gas systems;
- (e) **increasing the proportion of electricity generated from renewable sources;**
- (f) using water and energy efficiently; and
- (g) conserving water and energy.

**Explanation**

Policy 65 promotes the efficient use of resources to reduce *emissions* and supports the expansion of electricity generation from renewable sources to assist the transition from fossil fuel dependence. The policy endorses the waste hierarchy and also promotes similar principles for efficient water and energy use.

## 14. Definition of 'large-scale generators'

<b>Proposed Amendments to Appendix 3: Definitions</b>	<b>Proposed new definition of 'large-scale generators'</b>
<b>PC1 Amendment:</b>	<b>(refer page 222 of PC1)</b>
<b>Meridian Submission Point:</b>	<b>S100.025</b>
<b>Further Submissions:</b>	<b>FS2.37 (Rangitāne o Wairarapa)</b>
<b>S. 42A Climate Change (Energy, Waste and Industry) Report:</b>	<b>3.10 Policy 65</b>
	<b>Paragraphs 191 and 193 (page 41)</b>

14.1 The new definition of 'large-scale generators' included in PC1 is:

Any boiler, furnace, engine or other device designed to burn for the primary purpose of energy production having a net heat or energy output of more than 40kW, but excluding motor vehicles, trucks, boats and aircraft. This definition excludes *domestic fires*.

14.2 Meridian's submission requested insertion of reference to burning fossil fuels ('.....designed to burn **fossil fuels** for the primary purpose of energy production....'). Mr Wyeth explains in paragraph 191 of the s. 42A report that this definition was relevant because of amendments proposed to Policy 2. Mr Wyeth is recommending deletion of those amendments to Policy 2 and, if accepted, that mean there is no need for a definition of 'large-scale generators'. I understand that Meridian is content with that outcome. However, if the definition is retained, it should include the specification of 'fossil fuels' as proposed in Meridian's submission. The whole point of PC1 is to address unnecessary use of fossil fuels and to prefer the use of renewable energy. The definition should not preclude or create perverse outcomes for the use of renewable energy.

## 15. Definition of 'nature based solutions'

<b>Proposed Amendments to Appendix 3: Definitions</b>	<b>Proposed new definition of 'nature based solutions'</b>
<b>PC1 Amendment:</b>	<b>(refer page 223 of PC1)</b>
<b>Further Submission:</b>	<b>FS26.069 (Meridian on S99.005 by Genesis)</b>
<b>S. 42A Climate Change (Climate Resilience and Nature Based Solutions) Report:</b>	<b>3.3 Issue 2: Definition for Nature-based solutions (sub-sections 3.3.4 to 3.3.7)</b>
	<b>Paragraphs 73, 87, 90 and 91 (pages 23, 28 and 29)</b>

- 15.1 The Genesis submission asserts that the development electricity from renewable sources is a nature-based solution that reduces greenhouse gas emissions whilst providing resilience for people.
- 15.2 At paragraph 87 of the s. 42A report, Ms Guest agrees that this is something that is promoted and supported by PC1, but considers that renewable electricity generation does not meet the definition of a nature-based solution. The definition includes examples of reducing greenhouse gas emissions (being an example of climate change mitigation) and increasing resilience (being an example of climate change adaptation). Ms Guest opposes the inclusion of renewable electricity generation as an example in the definition.
- 15.3 I accept Ms Guest’s point that the generation of renewable electricity is not an action that itself reduces greenhouse gas emissions. Rather, I would characterise it as an action that supports and facilitates greenhouse gas emissions and increases the community’s resilience. In this respect, in my opinion, the generation of electricity from renewable resources is an example that does fit within the scope of increasing resilience (the second list in the definition) in the manner explained in the Genesis submission. When compared with some of the other examples in the list of resilience actions, it is one that will arguably have greater impact in securing community and economic resilience.

## 16. Policy CC.3

<b>Chapter 4.1: Regulatory policies - direction to district and regional plans and the Regional Land Transport Plan</b>	<b>Proposed new Policy CC.3: Enabling a shift to low and zero-carbon emission transport – district plans</b>
<b>PC1 Amendment:</b>	<b>(refer page 101 of PC1)</b>
<b>Further Submission:</b>	<b>FS26.024 (Meridian on S165.036 by RFBPS)</b>
<b>S. 42A Climate Change (Transport) Report:</b>	<b>3.15 Policy CC.3</b>
	<b>Paragraphs 270 and 193 (pages 54)</b>

- 16.1 As reported in paragraph 270 of Ms Allwood’s s. 42A report, the Forest and Bird submission point seeks amendments to clarify the focus of Policy CC.3 as being reduction of greenhouse gas emissions. The submission requests the following wording amendment:

*‘By 30 June 2025, district plans shall include objectives, policies, rules and methods that enable infrastructure that supports the uptake of zero and low-carbon multi modal transport that ~~contribute to reducing~~ reduce greenhouse gas emissions, while protecting indigenous biodiversity.’*

- 16.2 Meridian’s further submission point, opposing this request, noted that Policy CC.3 has a particular purpose (enabling infrastructure that supports the uptake of zero-carbon and low-carbon transport). It is not a policy directed at protecting indigenous biodiversity. Neither

does it need to be. There are other objectives and policies in the RPS that manage indigenous biodiversity. Transport options enabled under Policy CC.3 will not be able to avoid the influence of those other indigenous biodiversity protection objectives and policies.

16.3 I also note that the requested wording suggests that all indigenous biodiversity should be protected in an absolute sense. That is not necessary or appropriate. The NPS-Indigenous Biodiversity (which came into effect on 4 August 2023) sets out national policies for the management of indigenous biodiversity. The NPS-IB intends different management approaches for identified significant natural areas compared to areas of indigenous biodiversity outside significant natural areas. Policy 7 is that 'Significant Natural Areas are protected by avoiding or managing adverse effects from new subdivision, use and development'. Policy 8 states: 'The importance of maintaining indigenous biodiversity outside Significant Natural Areas is recognised and provided for'. The NPS-IB does not require protection of all indigenous biodiversity in all situations. Neither does the RPS in my opinion. In any event, as already noted, the RPS has a comprehensive suite of other objectives and policies for managing indigenous biodiversity.

16.4 It is also highly relevant that the NPS-IB includes the following clarification in Part 1.3 (3):

*'Nothing in this National Policy Statement applies to the development, operation, maintenance or upgrade of renewable electricity generation assets and activities and electricity transmission network assets and activities. For the avoidance of doubt, renewable electricity generation assets and activities, and electricity transmission network assets and activities, are not "specified infrastructure" for the purposes of this National Policy Statement.'*

I agree with Ms Allwood that the requested relief is not appropriate. I understand that Meridian supports her recommendation to reject the requested relief.

## **17. Section 61 of the Act**

17.1 At the Hearing Stream 2 Hearing, the Panel asked Meridian its opinion as to whether the matters that were inserted into s. 61 of the Act in 2022 are matters the Hearing Panel is obliged to consider, or matters the Hearing Panel may consider.

17.2 The Hearing Panel's question raises a highly relevant matter and I appreciate the opportunity to address it. I set out below my understanding as a planner of s. 61.

17.3 Section 61 sets out the matters a regional council must consider in preparing a regional policy statement. Section 61 (2) sets out the matters the regional council *shall have regard to*, in preparing or changing its regional policy statement. The 2022 amendments to s. 61 of the Act<sup>10</sup> inserted the following additional matters into s. 61 (1):

---

<sup>10</sup> Introduced on 30 November 2022 by section 17 of the Resource Management Amendment Act 2020 (No. 30)

- (d) any emissions reduction plan made in accordance with [section 5Z1](#) of the Climate Change Response Act 2002; and*
- (e) any national adaptation plan made in accordance with [section 5Z5](#) of the Climate Change Response Act 2002.*

17.4 As noted earlier, the emissions reduction targets set by the Climate Change Response Act 2002 have been updated and superseded by the targets set by the Climate Change (Zero Carbon) Act 2019. S. 3 of the 2019 Act clarifies that it amends the Climate Change Response Act 2002 (the principal Act). Accordingly, the zero greenhouse gas emissions reduction target for 2050 set out in the amending 2019 legislation and the First National Adaptation Plan (published in 2022) are matters the Regional Council must have regard to. They are not 'optional' matters. To the extent that the Hearing Panel's determinations will form recommendations to the Regional Council, I suggest the s. 61 (1) (d) and (e) matters are, logically, matters the Hearing Panel must have also have regard to.

## **18. Conclusion**

18.1 For the reasons explained in the foregoing sections of this statement of evidence, I support the further amendments to PC1 set out in Appendix 2 to this statement.

**Christine Foster**

**14 August 2023**

**APPENDIX 1**

**DISCUSSION DOCUMENT**

**'ADVANCING NEW ZEALAND'S ENERGY TRANSITION (AUGUST 2023)**

**APPENDIX 2**

**CONSOLIDATED SET OF AMENDMENTS PROPOSED BY CHRISTINE FOSTER  
(FOR MERIDIAN ENERGY LIMITED)**



1. **Chapter 3.1: Issue 1:** insert the following additional text shown in red font (or words that have similar effect):

The regionally significant issues, and the issues of significance to the Wellington region's iwi authorities for climate change are:

1. Greenhouse gas emissions must be reduced significantly, immediately and rapidly

Immediate, rapid, and large-scale reductions in greenhouse gas emissions are required to limit global warming to 1.5°C, the threshold to avoid significant impacts on the natural environment, the health and well-being of our communities, and our economy. Extreme weather events and sea level rise are already impacting our region, including on biodiversity, water quality and availability, and increasing the occurrence and severity of natural hazards. Historical emissions mean that we are already locked into continued warming until at least mid-century, but there is still an opportunity to avoid the worst impacts if global net anthropogenic CO<sub>2</sub> emissions are reduced by at least 50 percent from 2019 levels by 2030, and carbon neutrality is achieved by 2050. In the Wellington Region, the main sources of greenhouse gas emissions are transport (39 percent total load in 2018-19), agriculture (34 percent), and stationary energy (18 percent). **Development of the renewable energy resources available in the region will be necessary to assist the transition from fossil fuel dependency and reduce greenhouse gas emissions.**

2. **Chapter 3.1: Objective CC.1:** Amend the text as shown in red font as follows:

~~By 2050, t~~The Wellington Region is a low-emission and climate-resilient region, where climate change mitigation and climate change adaptation are an integral part of:

- (a) sustainable air, land, freshwater, and coastal management,
- (b) well-functioning urban ~~areas environments~~ and rural areas, and
- (c) ~~the well-planning ed~~ and delivery of infrastructure (including regionally significant infrastructure).

3. **Chapter 3.1: Objective CC.7:** Amend the text as shown in red font below:

People and businesses:

- (a) understand ~~what~~ the current and future effects of climate change and how this may impact them,
- (b) understand the changes that need to be made to respond to the challenges of climate change, and
- (c) ~~means for their future~~ and are actively involved in ~~planning and implementing~~ appropriate climate change mitigation and climate change adaptation responses.

4. Chapter 4.1: Policy 7: Amend the text as shown in red font below:

**Policy 7: Enabling reductions in greenhouse gas emissions reliance on fossil fuels and climate change adaptation, Recognising the benefits from of renewable energy and regionally significant infrastructure including renewable electricity generation – regional and district plans**

District and regional plans shall include policies and/or methods that ~~recognise~~:

- (d) recognise and enable the social, economic, cultural and environmental benefits of regionally significant infrastructure, ~~and in particular low and zero carbon regionally significant infrastructure~~ including:
- (vi) the ability for people and goods ~~to can~~ travel to, from and around the region efficiently and safely ~~and in ways that support the transitioning to low or zero carbon multi-modal transport~~ using a range of travel modes, including travel modes that do not rely on fossil fuels;
  - (vii) the contribution of regionally significant infrastructure to sustaining the resilience of communities to the adverse effects of climate change the transition from fossil fuel dependence to reliance on renewable energy and in ways that support transitioning to low or zero carbon multi-modal travel modes;
  - (viii) the public health and safety benefits of providing is maintained through the provision of essential services:– including the supply of potable water, ~~the~~ collection and transfer of sewage and stormwater, and the provision of emergency services;
  - (ix) the provision of an efficient, effective and resilient electricity transmission network; the economic, social and cultural well-being derived from people have having access to energy generated from renewable sources, and preferably low or zero carbon energy, so as to meet their needs; and
  - (x) ~~people have~~ access by people and communities to telecommunication services; and.
- (e) recognise and enable the social, economic, cultural and environmental benefits of energy generated from renewable energy resources including:
- (vi) reduced dependence on fossil fuels and imported energy resources and the contribution to transitioning to a low emission economy;
  - (vii) enhanced security of supply, resilience, independence and diversification of our energy sources; and
  - (viii) the economic, social and cultural well-being derived from people having access to energy generated from renewable sources to meet their needs; and
  - (ix) ~~reducing dependency on imported energy resources;~~ and
  - (x) ~~reducing reduced~~ greenhouse gas emissions; -
- (f) while managing the effects of regionally significant infrastructure (including renewable electricity generation) in accordance with this Regional Policy Statement.

#### Explanation

Notwithstanding that renewable energy generation and regionally significant infrastructure can have adverse effects on the surrounding environment and community, Policy 7 recognises that these activities can provide benefits both within and outside the region, in particular if regionally significant infrastructure is a low or zero carbon development.

Energy generated from renewable energy resources and regionally significant infrastructure can provide benefits both within and outside the region. Renewable energy benefits are not only generated by large scale renewable energy projects but also smaller scale projects. Objectives CC.1 and CC.3 cannot be achieved without a substantial increase in the amount of energy generated from renewable sources, including in the Wellington Region.

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

Renewable energy generation and regionally significant infrastructure can have adverse effects on the surrounding environment and community but also have functional and operational needs that constrain their location options. Typically, large renewable energy generation and regionally significant infrastructure facilities, by their very nature, cannot be established without causing some level of environmental effects. Consideration of local and regional benefits, functional and operational need and adverse effects need to be considered on a case by case basis to determine what is appropriate in any particular circumstances.

~~Energy generated from renewable energy resources and regionally significant infrastructure can provide benefits both within and outside the region. Renewable energy benefits are not only generated by large scale renewable energy projects but also smaller scale projects.~~

~~Renewable energy means energy produced from solar, wind, hydro, geothermal, biomass, tidal wave and ocean current sources.~~

~~Renewable energy generation and regionally significant infrastructure can also have adverse effects on the surrounding environment and community. These competing considerations need to be weighed on a case by case basis to determine what is appropriate in the circumstances.~~

~~Imported and non-renewable energy sources include oil, gas, natural gas and coal.~~

~~When considering the benefits from renewable energy generation the contribution towards national goals in the New Zealand Energy Strategy (2007) and the National Energy Efficiency and Conservation Strategy (2007) will also need to be given regard.~~

~~Regionally significant infrastructure is defined in Appendix 3.~~

5. **Chapter 4.1: Policy 11:** Amend the text as shown in red font below:

**Policy 11: Promoting and enabling energy efficient design and small and community scale renewable energy generation – district plans**

District plans shall include policies and/or rules and other methods that:

- (a) promote energy efficient design and the energy efficient alterations to existing buildings;
- (b) enable the development, operation, maintenance and upgrading of installation and use of domestic scale (up to 20 kW) and small and community scale distributed renewable energy generation. (up to 100 kW); and provide for energy efficient alterations to existing buildings;

**Explanation**

Policy 11 promotes energy efficient design, energy efficient alterations to existing buildings, and enables the development installation of domestic small and community scale and renewable energy generation (up to 100kW).

Energy efficient design and alteration to existing buildings, can reduce total energy costs (i.e., heating) and reliance on non-renewable energy supply.

~~Small scale distributed renewable electricity generation means renewable electricity generation for the purpose of using electricity on a particular site, or supplying an immediate community, or connecting into the distribution network. (from NPS REG 2011).~~

~~Small and community-scale renewable energy generation provides a range of benefits, including increasing local security of supply, energy and community resilience, and providing for the well-being of people and communities. Small and community-scale renewable energy generation also plays an important role in reduction greenhouse gas emissions and meeting national and regional emission reduction targets.~~

~~Orientation, layout and design can have a significant influence on the energy efficiency of developments.~~

~~Improved energy efficiency can be achieved by:~~

- ~~1. Enabling everyday services – such as shops, schools, businesses and community facilities to be accessed by walking and cycling~~
- ~~2. Enabling easy access to public transport services~~
- ~~3. Locating and designing infrastructure and services to support walking, cycling or the use public transport~~
- ~~4. Enabling the efficient use of the sun as a source of power and heating~~
- ~~5. Incorporating renewable energy generation facilities – such as solar panels and domestic scale wind turbines~~

~~Small scale distributed renewable energy generation facilities (up to 20 kW for domestic use and up to 100 kW for small community use) include solar generation particularly for water heating and wind turbines used for on-site or domestic purposes.~~

~~Energy efficient alteration may include alterations of buildings for the installation of solar water heating systems or domestic scale wind turbines.~~

6. **Chapter 4.2: Policy 39:** Amend the text as shown in red font below:

**Policy 39: Recognising and providing for the benefits ~~from of~~ renewable energy and regionally significant infrastructure – consideration**

When considering an application for a resource consent, notice of requirement or a change, variation or review of a district or regional plan, ~~particular regard shall be given to:~~

- (a) recognise and provide for the social, economic, cultural, and environmental benefits of energy generated from renewable energy resources and/or *regionally significant infrastructure*, in particular where ~~it~~ these contributes to reducing greenhouse gas emissions ; and
- (b) recognise the social, economic, cultural, and environmental benefits of other and/or regionally significant infrastructure, in particular including where it contributes to reducing greenhouse gas emissions; and
- ~~(b)~~ have particular regard to protecting regionally significant infrastructure from incompatible subdivision, use and development occurring under, over, or adjacent to the infrastructure; and
- (ed) recognise and provide for the operational need and functional the needs

~~for of~~ renewable electricity generation activities, ~~including the need to facilities~~ to locate where the renewable energy resources exist; and  
(~~de~~) ~~recognise the benefits of utilising~~ the significant wind, ~~solar~~ and marine renewable energy resources within the region.

#### Explanation

~~Notwithstanding that renewable energy generation and regionally significant infrastructure can have adverse effects on the surrounding environment and community,~~ Policy 39 recognises that ~~renewable energy generation and regionally significant infrastructure~~ these activities can provide ~~a range of environmental, economic, social and cultural~~ benefits locally, regionally and nationally, particularly to contribute to reducing greenhouse gas emissions ~~as sought by Objective CC.3. These benefits are outlined in Policy 7.~~

7. **Chapter 4.3: Policy 65:** Amend the text as shown in red font below:

#### **Policy 65: Supporting and encouraging ~~Promoting~~ efficient use and conservation of resources – non-regulatory**

To ~~promote~~ support and encourage conservation and efficient use of resources by:

- (h) ~~applying the 5 Rs (Reducing, Reusing, Recycling, Recover, recycling and Residual waste management);~~
- (i) ~~reducing *organic waste* at source from households and commercial premises;~~
- (j) ~~increasing the diversion of wastewater sludge from wastewater treatment plants before deposition to municipal landfills;~~
- (k) ~~requiring efficient municipal landfill gas systems;~~
- (l) increasing the proportion of electricity generated from renewable sources;
- (m) using water and energy efficiently; and
- (n) conserving water and energy.

#### Explanation

Policy 65 promotes the efficient use of resources to reduce ~~emissions~~ and supports the expansion of electricity generation from renewable sources to assist the transition from fossil fuel dependence. The policy endorses the waste hierarchy and also promotes similar principles for efficient water and energy use.

8. **Appendix 3: Definitions:** Amend the text of the proposed definition of 'climate change mitigation' as shown in red font below:

#### Climate change mitigation

Human actions ~~to that~~ reduce ~~greenhouse gas emissions~~ by sources, or enhance ~~greenhouse gas removals~~ by creating sinks of greenhouse gases, or provide supplementary or alternative renewable energy sources to assist the reduction of greenhouse gas emissions. Examples of reducing emissions by sources include walking instead of driving, or replacing a coal boiler with a renewable electric powered one. Examples of enhancing removals by sinks

~~include growing new trees to absorb carbon, promoting and providing for active transport, and increasing public transport services and affordability.~~

9. **Appendix 3: Definitions:** Amend the text of the proposed definition of 'nature based solutions' as shown in red font below:

Actions to protect, enhance, or restore natural ecosystems, and the incorporation of natural elements into built environments, to reduce greenhouse gas emissions and/or strengthen the resilience of humans, indigenous biodiversity and the natural environment to the effects of climate change.

Examples include:

Reducing greenhouse gas emissions (climate change mitigation):

- planting forests to sequester carbon
- protecting peatland to retain carbon stores

Increasing resilience (climate change adaptation):

(a) providing resilience for people

- ~~maximising electricity generation from renewable energy sources, recognising that renewable electricity generation can often be incorporatd within the natural and built environments (e.g. wind farm and carbon forestry, solar panels on rooftops)~~
- planting street trees to provide relief from high temperatures
- restoring coastal dunelands to provide increased resilience to the damaging effects of storms linked to sea level rise
- leaving space for rivers to undertake their natural movement and accommodate increased floodwaters,
- the use of water sensitive urban design, such as rain gardens to reduce stormwater runoff in urban areas

(b) providing resilience for ecosystems and species

- restoring indigenous forest to a healthy state to increase its resilience to increased climate extremes leaving space for estuarine ecosystems, such as salt marshes, to retreat inland in response to sea level rise.