IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF hearings on the Horizons Proposed One Plan – Chapter 3 Infrastructure, Energy and Waste

EVIDENCE OF THE ENERGY EFFICIENCY AND CONSERVATION AUTHORITY

INTRODUCTION

1. My name is Rose Feary. I am a Renewable Energy Advisor with the Energy Efficiency and Conservation Authority (EECA) in Wellington. I hold a Law degree and have practiced in the Resource Management field dealing specifically with electricity and other infrastructure for many years, and I am a member of the Resource Management Law Association.

2. I am here today following EECA's written submission no. 307.

3. The evidence will cover the following matters that EECA believes should be given due consideration in the Council's planning and decision making processes:

    - New Zealand's Electricity Context;
    - Central Government Energy Policy Context;
    - Resource Management (Energy and Climate Change) Amendment Act;
    - Public Support for Renewable Energy;
    - Comments on EECA's submission.

    Before further examining these matters, the evidence will briefly outline the role of EECA.

THE ROLE OF THE ENERGY EFFICIENCY AND CONSERVATION AUTHORITY

4. EECA is a Crown entity established by the Energy Efficiency and Conservation Act 2000. EECA's statutory mandate is to encourage, promote and support energy efficiency, energy conservation and the use of renewable sources of energy. EECA's work includes helping businesses to get more from their energy dollar, improving our quality of life by promoting warmer, drier homes

and better personal transport choices, and protecting the environment through energy efficiency and renewable energy supply.

5. EECA has been integral in developing the New Zealand Energy Strategy, including the renewable electricity target, and has lead the development of the New Zealand Energy Efficiency and Conservation Strategy, with the Ministry for the Environment, for the Minister of Energy and the Government Spokesperson on Energy Efficiency and Conservation.

ELECTRICITY CONTEXT

Security of electricity supply

6. A reliable, robust and sustainable electricity system is of paramount importance for the New Zealand economy. Electricity is a vital input for businesses and consumers and, therefore, the efficient and cost-effective provision of electricity services over the long-term is of national and regional significance. To provide the electricity we need to maintain our current standard of living, the system is required to meet both current demand (when, and at the levels, that it occurs), and to also meet growing future demand.

New Zealand's electricity generation mix

7. New Zealand's electricity generation system can be described as a mixed hydro-thermal system, where hydro generation is used as much as possible, dependent on lake levels, and thermal power stations run as necessary to make up the rest of the required supply.

8. In an average hydrological year, New Zealand generates about 70% of its electricity from its renewable energy resources. Most of New Zealand's renewable generation comes from hydro and geothermal. However, in more recent years electricity generated from New Zealand's wind resource has increased significantly and is now playing an important role in New Zealand's electricity mix. Electricity generated from biogas, waste heat and wood (including cogeneration) also make small but valuable contributions. The remaining 30% of electricity is generated from fossil fuelled electricity generation plants (e.g. gas, coal and oil).

Meeting future demand

9. New Zealand's electricity demand is predicted to continue to grow at the rate of 1.3% or more per annum over the long term[1]. Over the short term increases in demand will fluctuate. If electricity demand grows at the predicted rate of 1.3% per annum, approximately 3,900 MW of new capacity will be required between 2005 and 2030 to meet New Zealand's electricity demand[2]. This is about 150 MW per annum. If, however, electricity demand grows at a higher rate, say 2%, more than 200 MW per annum will be required.

10. Over the past few decades a large proportion of demand growth has been met using fossil fuel power stations. This has resulted in a long term decline in the proportion of electricity generated from renewable sources. In more recent times, however, new wind farms in the North Island and in Southland have helped to meet new electricity demand. If we continue to build a mixture of fossil-fuelled and renewably-sourced electricity generation, as we have done over the last 25 years, New Zealand's electricity related emissions will increase by about 50% by 2030[3]. This fact, in combination with the decline of the Maui gas field, means it is now imperative that new renewable electricity generation capacity is developed while also implementing energy efficiency and conservation measures, to help New Zealand to meet its demand for electricity.

CENTRAL GOVERNMENT ENERGY POLICY CONTEXT

Climate change policy

11. New Zealand is a signatory to the Kyoto Protocol, which came into force on 16 February 2005. The protocol is the principal international response to climate change, following on from the United Nations Framework Convention on Climate Change. As a signatory to the protocol, New Zealand has agreed to reduce its CO_2 emissions in the first commitment period (2008-2012) to 1990 levels or otherwise take responsibility for any surplus emissions.

12. However, in recent years New Zealand's emissions have continued to increase. For example, in 2006, approximately 8 million tonnes of CO_2 were emitted into the atmosphere from electricity generation, compared with less

[1] New Zealand Energy Strategy to 2050, p.72
[2] New Zealand Energy Strategy to 2050, p.72
[3] New Zealand Energy Strategy to 2050, p.72

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

13. It will be an ongoing challenge for New Zealand to achieve 1990 levels but New Zealand remains committed to meeting its Kyoto Protocol obligations.

14. The need to address New Zealand's accelerating CO_2 emissions has been a major policy strand informing subsequent government energy policy.

The New Zealand Energy Strategy

Background

15. The government's commitment to a sustainable energy future and increasing the uptake of renewable energy has underpinned government energy policy for the past 8 years. Both the Energy Policy Framework (2000) and the 2003 Sustainable Development Programme of Action highlighted the government's commitment to an efficient, fair, reliable and environmentally sustainable energy supply for New Zealanders. In 2007, the government released the New Zealand Energy Strategy and the New Zealand Energy Efficiency and Conservation Strategy. Both these documents are built upon previous government policy commitments to renewable energy. They provide an even clearer articulation of the goals of developing and maximising New Zealand's renewable energy resources, reducing greenhouse gas emissions, and achieving an improvement in energy efficiency, while maintaining security of supply.

16. The New Zealand Energy Strategy (NZES) provides comprehensive government direction on all aspects of energy in New Zealand against the background of the two major challenges facing New Zealand, which are :

- responding to climate change and the need to reduce carbon emissions from the energy sector; and
- the need to deliver secure, clean energy at affordable prices.

Fundamental principles

17. It is based on two underlying strategic principles, these being:

[4]Ministry of Economic Development, *New Zealand Energy Greenhouse Gas Emissions 1990-2006, June 2007*

- for the foreseeable future, it is preferable that all new electricity generation be renewable, except to the extent necessary to maintain security of supply; and
- investment should occur in energy efficiency measures where this is cheaper than the long-term costs of building extra generation capacity, including environmental costs.

Vision

18. The NZES sets out the government's vision for the energy sector, and a package of actions to respond to the challenges discussed above.

19. The overarching vision of the NZES is for ***"a reliable and resilient system delivering New Zealand sustainable, low emissions energy"***.

20. Achievement of this vision will be reached through a series of policy commitments. Two are relevant to this proposal. They are:

- maximising the contribution of cost-effective renewable energy resources while safeguarding our environment; and
- reducing greenhouse gas emissions.

Key Actions

21. The NZES's key renewable electricity actions, now being implemented by government, are as follows:

- the adoption of a target for renewable electricity generation of 90 per cent by 2025 (based on delivered electricity in an average hydrological year);
- the introduction of an Emissions Trading Scheme (ETS);
- changes to the Electricity Act 1992 to support the government's objectives for limiting new baseload fossil fuel generation over the next ten years; and
- the development of a National Policy Statement (NPS) for renewable energy under the RMA.

22. The NZES builds upon past government policy commitments to increase the uptake of renewable electricity[5], and will help to take New Zealand closer to its goal of a sustainable low emissions energy system.

[5] Energy Policy Framework (2000), National Energy Efficiency and Conservation Strategy (2001), which included a renewable energy target, Sustainable Development Programme of Action (2003). Government Policy Statement on Electricity Governance (2004)

New Zealand Energy Efficiency and Conservation Strategy

23. The New Zealand Energy Efficiency and Conservation Strategy 2007 (NZEECS) replaces the National Energy Efficiency and Conservation Strategy (NEECS) introduced in 2001[6]. The NZEECS is the detailed action plan for increasing the uptake of energy efficiency and conservation, and renewable energy. It gives effect to a number of objectives set out in the NZES, including the realisation of the renewable electricity target.

The renewable electricity target

24. As set out above, the NZES has established a renewable electricity target that aims for 90% renewable electricity generation by 2025. This target replaces the renewable energy target introduced in 2001 via the first NEECS. It provides an objective for central and local government, renewable energy developers and the community to work towards, in order for New Zealand to realise a more sustainable electricity future. Achievement of the target will help to return New Zealand's greenhouse gas emissions back to 1990 levels and thereby assist New Zealand to meet its obligations under the Kyoto Protocol and future international agreements. Achievement of the target should also lead to more economic productivity in the energy sector, encourage new industry and business development, and create a more diversified electricity supply portfolio.

Meeting the target

25. To meet the renewable electricity target, to reduce our electricity related greenhouse gas emissions, to meet electricity demand and to maintain security of supply will require a significant increase in renewable electricity generation.

26. New Zealand is in a fortunate position regarding the proportion of electricity that it already generates from its renewable energy resources. As discussed above, on average about 70% of New Zealand's electricity is generated from renewable resources. This compares very favourably with almost every other country in the world, but it also means that New Zealand is well placed to do even better than it does now.

27. Meeting the target will be challenging and will require "*a very high rate of investment in new renewable generation with a lower rate of utilisation of existing fossil fuel plant and decommissioning of older fossil fuel plant*"[7]. In

[6] The renewable electricity target is a percentage of total annual generation in gigawatt hours from renewable sources in an average hydrological year.
[7] NZES p.22

short, this means that all new generation investment needs to be renewable. Some fossil fuel generation may be needed in later years to meet peak and dry year demand.

28. Achieving the target will require a diverse range of renewable energy resources such as wind, geothermal, hydro and biomass to be developed. Emerging technologies such as wave, tidal and photovoltaics may contribute to the target in future, but not in the short term. Increased uptake of distributed generation, including small-scale renewable generation, may also make useful contributions to achieving the target in the future.

29. Modelling lead by EECA, jointly commissioned with the Ministry of Economic Development and the Electricity Commission[8] was instrumental in setting the renewable electricity target. The electricity system was modelled for the period 2007 to 2030. A number of different scenarios were modelled, ranging from no target or no constraints to 95% renewable electricity by 2030. All scenarios required the maintenance of sufficient generation to meet dry year and system peak requirements. The modelling predicts that to achieve 90% renewable electricity an increase in renewable generation of 3750 MW is required by 2025. This is an installation rate of approximately 200MW per annum. In terms of generation, the modelling predicts that by 2025 an additional 20,500 GWh of electricity generated from renewables will be needed per annum. According to the model electricity demand will be 53,500 GWh by 2025 (including transmission and distribution losses).

30. The most recent modelling by government of the 90% renewable electricity target is the 'Sustainable Path' scenario contained in the Electricity Commission's draft Statement of Opportunities. This estimates new generation for the purposes of transmission planning. The model takes into account the renewable electricity target, maintaining security of supply, and plant retirement. It provides a forecast of approximately 4000 MW of new renewable generation required by 2025 or approximately 240 MW per year.

31. It is clear that significant new renewable generation, from a base of 6100 MW, will be required to turn the target into reality.

32. Over recent years New Zealand has relied heavily on demand growth being met by fossil fuel generation. Since 2001, about 1100 MW of electricity

[8] The Energy Efficiency and Conservation Authority, Ministry of Economic Development , Electricity Commission, *Understanding the Implications of the Higher Proportion of Renewable Electricity by 2030*.

generation capacity has been added to the New Zealand electricity system. Of this, 625 MW is fossil fuel based generation, while 475 MW is renewable. But this can no longer continue; for the foreseeable future all new generation will need to be renewable. Accordingly, renewable electricity projects will need to proceed in order for New Zealand to achieve the target, and a supportive central and local government regulatory framework is a crucial component to that development.

Manawatu – Wanganui Region Renewable Energy Potential

33. EECA has commissioned an assessment of the energy potential in the Wanganui – Manawatu region which identifies that the region has good potential for the development of renewable energy.[9] In fact the region has one of the best wind resources in New Zealand; the wind speeds in the region being among the highest in the country. The report identifies 4 main areas with wind energy potential; the northern part of the west coast, the east coast hills and coastline, the Tararua ranges, and some elevated and exposed areas on the Central Plateau around Waiouru. The report estimates that an additional 200-400MW of wind energy may be developed. This report was completed in July 2006. Indications are now that more than this may be developed in this region.

34. The report also identifies that the region has potential for hydro electricity development amounting to approximately 600MW in mini, small and medium scale projects (outside Department of Conservation lands and Native Forest areas). The region also has some wave electricity potential.

The role of wind energy and the Manawatu – Wanganui Region

35. New Zealand has sufficient undeveloped hydro, wind and geothermal resources to achieve the target but each different type of generation plays a unique and critical role. A diversity of generation must be maintained in order to ensure security of supply. The target can not be reached by one form of renewable generation alone.

36. While New Zealand needs to continue to develop all forms of renewable energy to meet the target, there are two reasons for emphasising the importance of wind energy here. The first is the major role that wind energy is expected to play in taking New Zealand towards achievement of the target, and the second

[9] Renewable Energy Assessment Manawatu – Wanganui Region 20 July 2006

is the excellent quality of the Manawatu – Wanganui wind resource which I have referred to above.

37. While indicative only, and subject to change depending on actual growth rates and economics of proposals, EECA's modelling indicates that wind generation is expected to take by far the largest share of the *new* generation required to meet the renewable electricity target.[10]. The Electricity Commission's Sustainable Path Scenario modelling shows around 2100 MW of this figure being provided by wind energy.

38. Modelling from the Ministry of Economic Development suggests that wind energy could provide around 8% of total electricity generation in 2025[11]. In 2007, wind generated 2.2%[12] of New Zealand's electricity, so a significant increase is expected. There is potential for more; EECA's scenario modelling shows a 16% share for wind generation by 2030[13].

39. While there is a range of expected share of electricity generation to be borne by wind, it is clear that wind energy will play a major role in meeting the renewable electricity target and will be required initially to grow quickly from a low base. Wind, in particular, is the one resource expected to take a greater share in the future than it does now.

40. Hydro electricity too will play an important part in enabling New Zealand to reach the target. Modelling predicts an additional 630 MW of hydroelectricity by 2025.

41. New Zealand is fortunate in that it is able to maximise use of its excellent wind resources, chiefly because wind generation integrates well with its hydro based electricity system. Wind generation allows hydro resources to be stored while the wind blows, to be used later when demand increases, or when the wind is not blowing. Equally, hydro generation works well with wind, because hydro generation can be adjusted to match demand.

Effects of the renewable electricity target and other measures on emissions

42. As stated earlier, if demand and supply were to continue growing in the same way that they have done in recent years, electricity related greenhouse gas

[10] This figure includes Tararua 3 and White Hills.
[11] www.med.govt.nz (NZES, FAQs)
[12] Ministry of Economic Development, New Zealand Energy Data File, June 2008 p.96
[13] Concept Consulting, NZEECS Renewable Electricity Target; Modeling Results June 2007.

emissions are predicted to double by 2030, but it is possible to reduce emissions significantly through a combination of the proposed NZES and NZEECS measures.

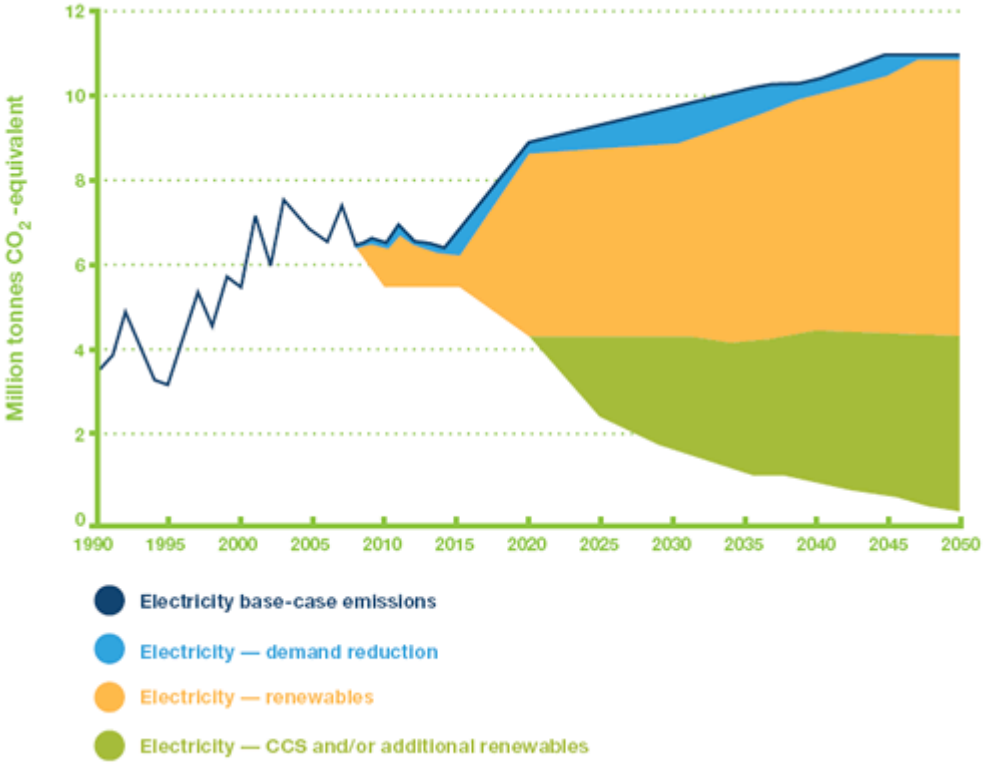
43. The government's commitment to reducing greenhouse gas emissions is illustrated by the fact that it has chosen to utilise a number of measures designed to work together to achieve the required reduction; the renewable electricity target, the promulgation of a national policy statement on renewable energy, an emissions trading scheme and the limiting of new baseload fossil fuel generation over the next ten years. These measures are designed to work together to achieve results in the short and long term. No one of these methods alone will achieve the required result.

44. The renewable electricity target is critical to achieving New Zealand's goal of returning its electricity related emissions back to 1990 levels. Modelling completed by EECA[14] shows that to return annual electricity related emissions to 1990 levels, the proportion of renewable electricity needs to be over 90% by 2025. The modelling also illustrates that a lower renewable electricity generation share of 80% by 2025/30 will maintain emissions at or below 2005 levels, but this will not be sufficient to reach 1990 levels as agreed to under the Kyoto Protocol.

45. Figure 1[15] further illustrates this point; it shows that the required reduction in emissions to 1990 levels relies heavily on renewable electricity making up an increasingly greater share of total electricity generation.

[14] Concept Consulting, NZEECS Renewable Electricity Target; Modeling Results June 2007
[15] NZES p.36

Figure 1: Emissions reduction opportunities in the electricity sector



46. It is clear that the achievement of the renewable electricity target plays a significant role in New Zealand's ability to adequately reduce emissions and climate change effects.

The role of energy efficiency

47. Maximising the contribution of cost-effective energy efficiency and energy conservation is vital if New Zealand is to realise its goal of a reliable and resilient energy system that delivers sustainable, low emissions energy services.

48. Improving New Zealand's energy efficiency and energy conservation efforts will help to keep electricity demand in check. In fact the more we can keep electricity demand in check the more likely New Zealand is to reach the renewable electricity target.

49. Modelling undertaken by EECA shows that if annual electricity demand can be reduced from 1.5% to 1% or lower, less new capacity is required to meet demand and the renewable electricity target (approximately 2,700 MW of renewable generation, or 150 MW per annum), and therefore there is less need for more expensive renewables to be developed. Also, under this scenario, cumulative CO_2 emissions over 2007 to 2030 would be 6% lower.

50. Energy efficiency and conservation measures, along with technologies such as solar water heating, are vital and necessary parts of New Zealand's future energy mix. However, on their own these measures and technologies will not be enough to offset the need for new generation or to meet the renewable electricity target.

51. Whilst New Zealanders need to improve energy efficiency, avoid energy waste and reduce energy use, New Zealand also needs new renewable energy developments.

THE RESOURCE MANAGEMENT (ENERGY AND CLIMATE CHANGE) AMENDMENT ACT

52. The Resource Management (Energy and Climate Change) Amendment Act 2004 introduced the following matters into Part II, section 7, of the Resource Management Act 1991, which EECA considers to be relevant:

> *"(i) The effects of climate change*
>
> *(j) The benefits to be derived from the use and development of renewable energy*"

The following definition of "*renewable energy*" was added to section 2 as part of the Amendment Act, "*energy produced from solar, wind, geothermal, hydro, biomass, tidal, wave, and ocean current sources*"

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

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

54. With regards to section 7(j), the benefits to be derived from the use and development of renewable energy can be summarised as follows:

- Providing security of energy supply by increasing supply and providing a more diverse system,
- Avoiding future high prices of oil and other fossil fuels,
- Reducing reliance on imported fossil fuels
- Benefits for New Zealand's renewable energy industry.

- Helping New Zealand to meet its international objectives under the Kyoto Protocol and reducing greenhouse gas emissions.
- For locally sited developments, reduction in reliance on the national grid and reduction in transmission losses
- Assisting to meet the renewable electricity target
- Avoiding future trade barriers to products with high levels of embedded fossil fuels used in their production

Benefits of Wind Energy

- Wind electricity assists with long-term electricity supply security by adding to, and diversifying, New Zealand's electricity generating base.
- Wind electricity complements New Zealand's existing renewable generation sources, typically allowing hydro resources to be stored during dry periods.
- Diversity in energy supply through the development of renewable energy, such as wind electricity, reduces exposure to energy supply disruptions or price shocks that are associated with fossil fuels. Once a wind farm is built, the cost of producing electricity from the wind depends primarily on the average annual wind speed which is relatively constant from year to year. In contrast, thermal generation costs can rise sharply as a result of fuel supply interruptions and changing fuel prices. Consistently lower priced energy is a key component of national economic growth and development necessary to maintain our standard of living.
- Wind is a relatively reliable natural resource over timeframes greater than one month. The inter-annual wind electricity variation is typically 10%, compared to rainfall variation which is approximately 20%.
- Wind is a sustainable resource. Utilisation of wind does not deplete other finite resources. It is also benign as regards air quality, avoiding the emission of contaminants into the air such as sulphur dioxide, nitrous oxide or carbon dioxide.

Climate Change-Section 7(i)

55. In regard to section 7(i), the effects of climate change, EECA notes that renewable energy will have a positive effect on climate change, by being benign in respect of greenhouse gas emissions compared with alternative sources of generation.

56. It is widely accepted that one of the principle contributors to accelerated climate change are greenhouse gas emissions generated from human activities, such as the burning of fossil fuels for electricity generation and transportation. Accordingly, in order to minimise the adverse effects of greenhouse gas emissions any new electricity generation needs to come from renewable sources of energy, rather than coal or other fossil fuels.

57. Each year New Zealand publishes a statement of the difference between 1990 emission levels and the levels predicted to arise during the Kyoto commitment period (2008 – 2012). The 2008 Net Position Report projects a smaller deficit than that predicted in 2007. The 21.7 million units predicted deficit includes the modelled effect of the proposed Emissions Trading Scheme and the New Zealand Energy Strategy and the New Zealand Energy Efficiency and Conservation Strategy. It retains the effects of the solar hot water heating programme and the bio fuels obligation which were calculated in the previous year's assessment. While there are no separate figures available for electricity it is clear that the NZES and the NZEECS form underlying assumptions of the calculations. In the electricity sector this means that recognition of the role that renewable energy will play in helping to reduce New Zealand's emissions in planning and policy is essential if New Zealand is to achieve its goal of reducing emissions to 1990 levels.

PUBLIC SUPPORT FOR RENEWABLE ENERGY

58. A public opinion survey of attitudes towards energy issues undertaken in 2004[16] indicated that New Zealanders overwhelmingly supported renewable energy generation. The survey examined approval ratings for different types of energy resources and, although direct comparisons can not be drawn, the results of a more recent survey[17] indicate an increasingly positive view of renewable energy in general and in particular wind energy, between 2004 and 2008.

59. The results from the 2008 survey reveal that New Zealanders consider where their energy comes from as being important enough to personally do something about or think about what they could do (i.e. become actively involved) and

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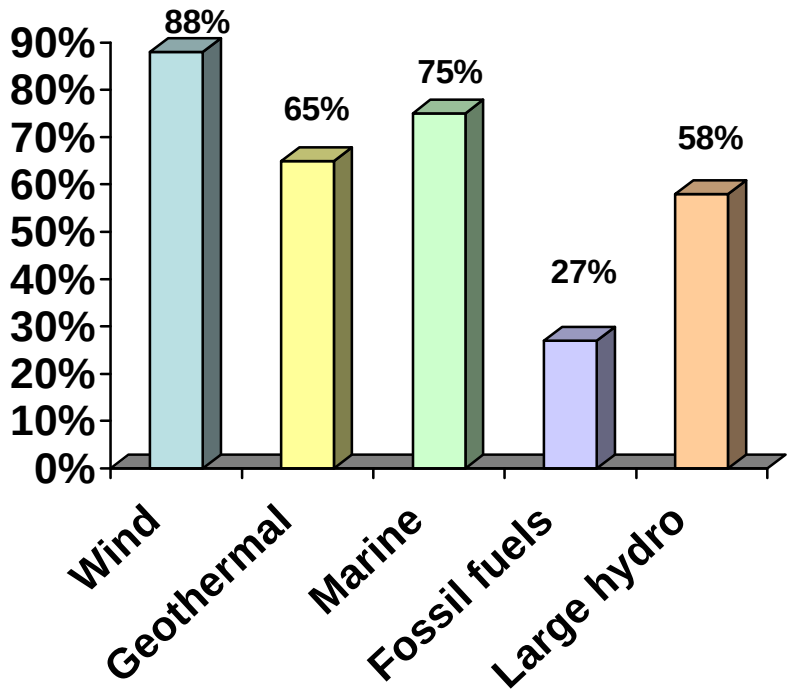
[16] UMR Research, *Omnibus Results May 2004* http://www.eeca.govt.nz/eeca-library/renewable-energy/wind/report/umr-omnibus-results-wind-research-report-04.pdf

[17] EECA commissioned AC Nielsen to conduct a survey comprising s sample of 1,000 online interviews of the general public between January and March 2008. The survey is part of EECA's ongoing research strategy that will examine consumer attitudes to renewable energy and energy efficiency and will provide a benchmark to allow an analysis of public perceptions over time. Final results will be available on the EECA website in due course.

consider that where energy comes from will have an impact on future generations.

60. Renewable energy sources are favoured highly over fossil fuel sources and wind energy is identified as the most supported type of electricity generation, with 88% support, as is shown on the graph below.



61. Specifically in regard to wind energy, 91% of the respondents consider wind energy will have a positive impact as an energy source for New Zealand in the future along with established energy sources like hydro and geothermal. All forms of renewable energy are perceived as having a constant positive impact from now into the future. Fossil fuel sources are seen as having largely negative impact, both now and in the future.

EECA'S SUBMISSION

62. EECA is generally supportive of the content of the Chapter 3 Infrastructure, Energy and Waste of the Proposed One Plan and its recognition of renewable energy, and its benefits. EECA accepts many of the recommendations of the planning evidence and recommendations report. EECA wishes to highlight the following submissions.

63. Scope and background - EECA's proposed amendments to paragraph 4

In its submission, EECA seeks amendments to this explanatory paragraph to highlight the national significance renewable energy specified in the New Zealand Energy Strategy and the importance of the region's wind and hydro resources. The submission sought the inclusion of maps attached to this paragraph to show the areas of interest. The maps are maps from EECA's Renewable Energy Assessment for the Manawatu – Wanganui Region and are attached to this submission. EECA submits that these maps can be attached to this explanatory paragraph to be used for information purposes to emphasise the region's potential, rather than to be used for specific land use planning.

EECA submits that it is important in this explanatory paragraph includes reference to the region's excellent renewable energy potential and that the following wording and accompanying maps should be included:

> ***"The Manawatu- Wanganui Region has the potential for the development of renewable energy facilities. The region has some of the best wind resources in New Zealand. The map attached as schedule X shows the general areas that have potential for wind farms. The southern part of the North Island is the windiest area in New Zealand. The Tararua ranges, the northern part of the west coast hills, the east coast hills and coastline, and central plateau around Waiouru all have high wind speeds.***
>
> ***There is also potential to develop hydro electricity resources, both large, small and mini hydro .The map attached as schedule XX shows locations of identified hydro electricity development potential. There is some potential for wave energy along the coastline. This potential is both regionally and nationally significant and will be recognised and enabled".***

64. EECA seeks the following amendments to paragraph (b) of Policy 3-2 Adverse effects of other activities on infrastructure (amendment bolded and underlined

> *(b) ensuring that any new activities that will adversely affect the efficiency or effectiveness of infrastructure* are not located near existing* ***or consented*** *infrastructure*, and that there is no change to existing activities that increases their incompatibility with existing infrastructure.*

65. I note that the planning report interprets this submission by EECA as requesting that para 3-2(b) only apply to consented infrastructure. EECA's submission was that it apply to existing infrastructure and also to consented

infrastructure. The reason for this was that the existence of consented but not yet constructed infrastructure forms part of the permitted baseline and may be taken in to account when assessing the effects on that infrastructure of other activities.

66. EECA seeks the following amendments to 3.4.2 Policy 3-4 (bolded and underlined):

Energy-Policy 3-4: Renewable energy

(a)The region's potential for the development of renewable energy development is recognised, and the development of renewable energy resources will be promoted.

67. As stated earlier it is important that in particular the excellent resource wind resource in the Manawatu –Wanganui region is recognised. In addition it is important that the regional council recognises its particular function with respect to infrastructure and its ability to influence district councils to make appropriate provision so that this infrastructure is integrated. It is EECA's experience that there is a great variety of response by district council's to providing for energy and energy efficiency. Some district council's do not recognise a function to address these issues at all. It is clear that the function to ensure integration falls with the regional council and EECA submits that part of this function is to recognise the particularly high quality wind resource in the Manawatu–Wanganui region, to ensure that district councils do so too, and to enable a level of consistency of approach by district councils across the region.

68. **EECA seeks the following amendments to Policy 3-3 Adverse Effects of Infrastructure on the Environment (bolded and underlined):**

*Effects to be avoided – **Inappropriate** ~~The following adverse~~ effects of infrastructure **on**,etc*

EECA seeks the inclusion of the word inappropriate to recognise the wording of the Act. The Resource Management Act does not require absolute protection of these features and aspects but protection from development that is inappropriate.

69. **EECA opposes Policy 3-3 paragraph (b) Other Effects and seeks the following amendments (bolded and underlined):**

(b) *Other effects – All other adverse effects of infrastructure* will be managed in a manner that* ***remedies or mitigates*** ~~*tolerates minor*~~ *adverse effects and takes into account etc*

70. Again, EECA submits that the wording should reflect the "remedy or mitigate" wording of the Act. There is no justification for requiring the adverse effects of infrastructure to be minor as this is not a requirement in the Resource Management Act. Adverse effects should be avoided, remedied or mitigated.

Conclusion

71. In conclusion, our society is consuming increasing amounts of electricity in order for us to maintain and improve our lifestyles. If we are to take sustainability seriously we need to increase the proportion of renewable energy in the provision of electricity as well as improving electricity efficiency and conservation.

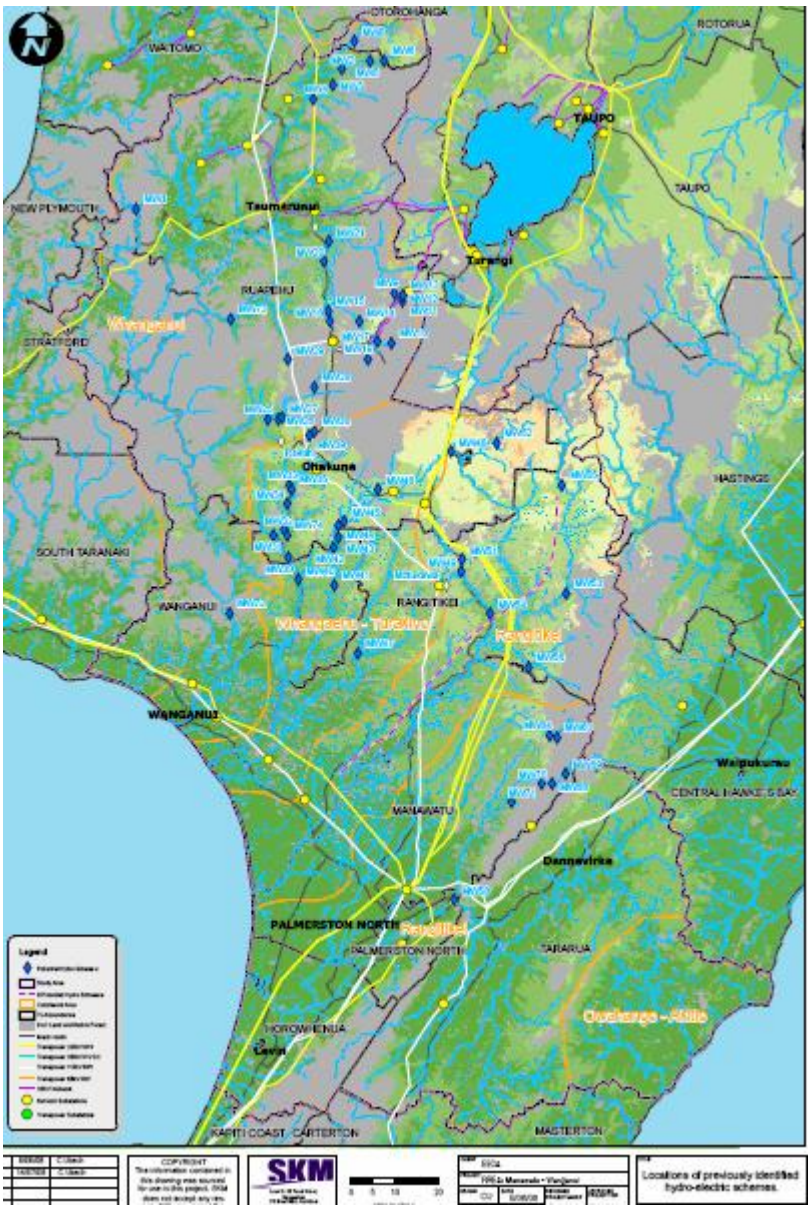
72. EECA seeks the recognition within the Proposed One Plan of the importance of the New Zealand Energy Strategy and the New Zealand Energy Efficiency and Conservation Strategy and specifically the renewable electricity target. The benefits of renewable energy and the need to reduce the effects of climate change underscore this government policy.

73. EECA recognises that all forms of renewable energy development have adverse effects as well as benefits. It is important that the benefits of renewable energy are recognised and provided for in the Proposed One Plan objectives, policies and rules, alongside the adverse effects, and that the Proposed One Plan recognises and enables the development of renewable electricity.

74. In the Manawatu – Wanganui Region it is important that the Proposed One Plan recognises the extensive, high quality wind resource available in the region and the existing and potential role that the region has in contributing to government energy policy and a sustainable, low emissions energy future.

Rose Feary

Advisor Renewable Energy
Energy Efficiency and Conservation Authority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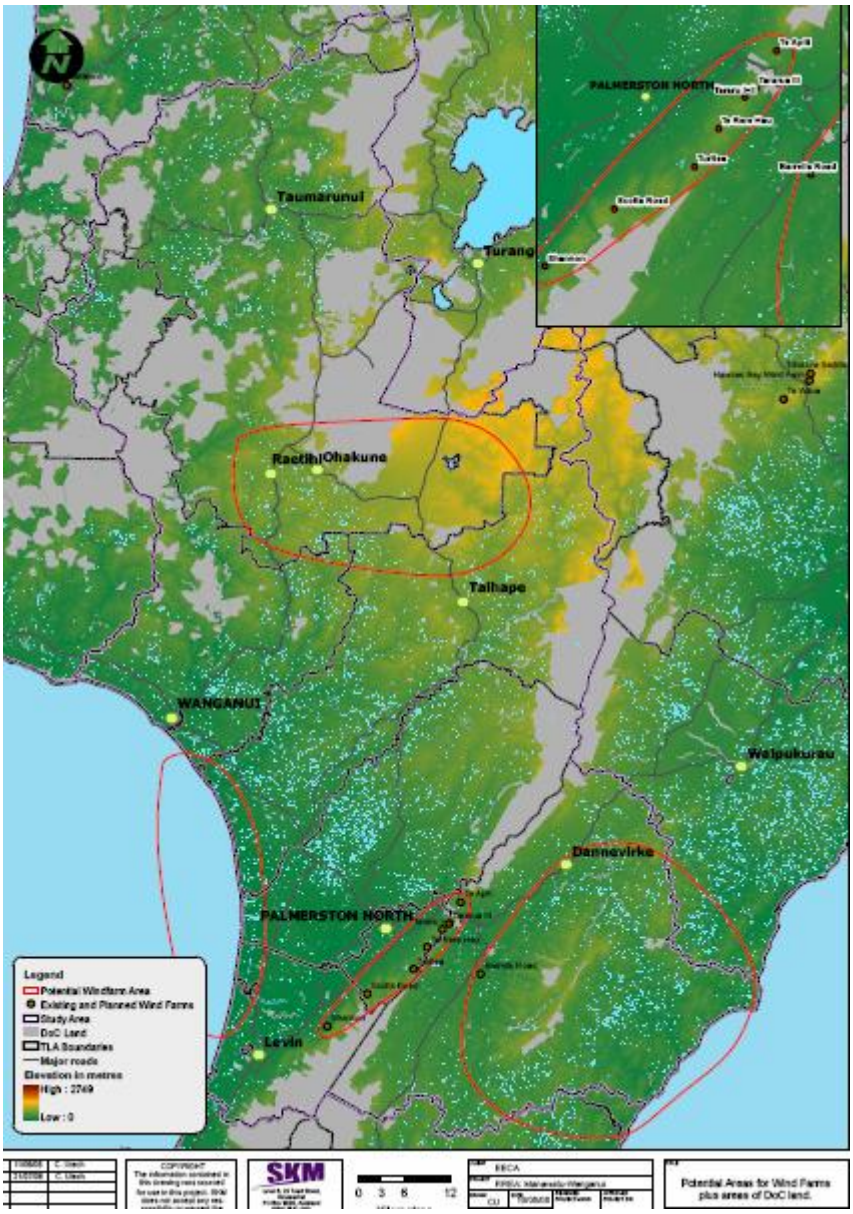
Locations of previously identified hydro-electric schemes.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Legend
Potential Windfarm Area
Existing and Planned Wind Farms
Study Area
DoC Land
TLA Boundaries
Major roads
Elevation in metres
High : 2749
Low : 0
SKM
0 3 8 12
Potential Areas for Wind Farms plus areas of DoC land.