Summary and analysis of submissions on the Draft New Zealand Energy Strategy and the Draft New Zealand Energy Efficiency and Conservation Strategy

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Introduction

In 2009, the Minister of Energy and Resources decided to update the 2007 New Zealand Energy Strategy (NZES) and the New Zealand Energy Efficiency and Conservation Strategy (NZEECS) to ensure the two strategies are in line with government policy.

The draft strategies were released by the Minister of Energy and Resources for public comment on 22 July 2010. Consultation on the drafts was carried out as one process in which submissions were due by 2 September 2010.

The two draft strategies were presented in one document to reduce stakeholder confusion about the relationship between the two documents. The NZES is the primary statement of government energy policy and the NZEECS focuses on the promotion of energy efficiency, conservation and renewable energy.

The two draft strategies are distinct to satisfy legal requirements. The NZEECS is a statutory requirement of the Energy Efficiency and Conservation Act 2000, whereas the NZES is a non-statutory statement of government policy.

Submissions covering either or both strategies were received from 3,844 submitters. In most cases, one submission covered both drafts. There is no separate submission count for each strategy. Submissions comprised

- 359 'unique' submissions
- 3,373 submissions using a template generated by Greenpeace
- 34 Greenpeace templates modified to include an additional focus on hydro
- 78 submissions using a template generated by World Wide Fund for Nature - New Zealand (WWF-NZ).

A number of submitters using the Greenpeace and WWF-NZ templates went beyond the standard template to provide additional comments. These were collated and analysed along with the 'unique' comments.

The three submissions received more than 10 days after the 2 September 2010 deadline were not analysed. Late 'form' submissions were also not processed (<50). A number of submitters wished to be heard verbally or offered to discuss issues in more detail with the Government if desired; however, the process called for written submissions only and no subsequent meetings have been held.

Submissions were summarised by the Ministry of Economic Development (MED) with assistance from the Energy Efficiency and Conservation Authority (EECA), and analysed by officials from relevant policy agencies[1] led by MED. This report was prepared for the Minister of Energy and Resources by MED, with particular involvement from EECA, and involvement from other officials in relevant policy areas.

[1] Officials were involved from the Ministry of Economic Development, Energy Efficiency and Conservation Authority, Ministry of Transport, Department of Building and Housing, Ministry for the Environment, Ministry of Research, Science and Technology, Te Puni Kokiri, Ministry of Agriculture and Forestry, New Zealand Transport Agency, and the Housing New Zealand Corporation.

The Draft NZEECS was publicly notified in accordance with section 15 of the Energy Efficiency and Conservation Act 2000, as a draft replacement national energy efficiency and conservation strategy. Sections of this report dealing with the NZEECS were prepared in fulfilment of the requirements of section 16(4) of that Act.

Note to readers

The document begins with a list of officials' recommendations for changes to the strategies, for easy reference. This is followed by the summary of submissions on the Draft NZES, beginning with a discussion of general themes from submissions, and answers to the questions asked in the draft strategy. Subsequent sections summarise comments relating to the priorities and areas of focus in the Draft NZES. Officials' comments and recommendations for changes follow each section.

The summary of submissions on the Draft NZEECS begins with a summary of general themes. The relatively few responses to the questions posed in the Draft NZEECS have been captured under this heading. This is followed by a summary of comments relating to each energy end-use sector described in the Draft NZEECS.

There is some overlap between the two strategies: Note that general comments about energy efficiency were summarised under the NZES 'Efficient Use' priority. Comments on the development of renewable energy were analysed under the NZES 'Develop renewable energy resources' and 'Embrace new energy technologies' areas of focus.

Summary of recommendations

As a result of the submissions, officials recommend that the Minister:

1. **Agree** that the final strategies retain essentially the same goals, format and structure, and remain brief and concise, presenting an overview and explanation of the Government's direction and strategy for energy to contribute to economic prosperity.

2. **Agree** that the strategies provide a clearer explanation of:

    - How the Government's approach – getting markets to work more effectively – will enable energy to contribute more to economic prosperity,

    - Why petroleum development is significant for New Zealand's economic prosperity, and

    - Why the strategies take a high level, principles-based approach rather than listing all Government programmes, and where people can go to find out what Government programmes are in place.

3. **Agree** that the strategies will signal the Government's commitment to working with relevant stakeholders.

4. **Agree** to reflect in the NZES that the Government has heard from iwi and Māori submitters seeking recognition in the strategy of the Treaty of Waitangi, and acknowledge that Māori have many interests in natural energy resource management arising from their ownership and management of many resources, and in caring for environmental sustainability.

5. **Agree** that the NZES will state that the priorities and areas of focus are in no particular order.

6. **Note** that a range of detailed changes to the strategies consistent with the overall policy direction will be made to pick up on minor specific suggestions and update the text.

Fuels

7. **Agree** that the NZES better articulate the economic and other benefits of petroleum development for New Zealand.

8. **Note** that the NZES will reflect the work underway to strengthen and extend safeguards against the risk of oil spills in the marine environment.

Renewable energy

9. **Agree** to signal the Government's continued commitment to reducing unnecessary barriers, including regulatory barriers, to the development of renewable energy resources.

Embrace new energy technologies

10. **Agree** to signal in the NZES that the Government will continue to facilitate the development of new energy technologies (including renewable energy technologies), as part of its role in encouraging innovation from industry.

Efficient use priority

11. **Note** the NZES will signal the importance of energy efficiency; leaving the policy detail with respect to particular sectors to the NZEECS. .

Environmental responsibility priority

12. **Agree** that the NZES will acknowledge the Government's commitment to pursuing economic outcomes that are consistent with the best practice environmental management.

NZEECS general

13. **Note** the NZEECS will note where information can be found about existing and new Government energy efficiency programmes (as they are not listed in the NZEECS).

14. **Note** the NZEECS will articulate the Government's intention to use a careful mix of policy measures, including information, incentives and codes/standards, to improve energy efficiency.

Transport

15. **Signal** in the NZEECS the Government's intention to consider options to improve the fuel economy of New Zealand's vehicle fleet (including fleet management), with a view to acting to accelerate improvements to fuel economy, in line with transport and economic growth goals.

16. **Note** the NZEECS will acknowledge the issues to improving energy efficiency in the aviation sector.

Business

17. **Agree** the NZEECS will note that improving energy efficiency in business is a high priority.

18. **Note** the NZEECS will reinforce the role of larger businesses and industry groups in showing leadership and encouraging best practice in energy management.

19. **Note** the NZEECS will acknowledge that industry developed a bioenergy strategy in 2010.

Homes

20. **Agree** the NZEECS will state the principles and considerations underpinning Government policy and programme decisions for homes, noting energy efficiency has a role in supporting health outcomes and energy affordability.

Products

21. **Note** in respect to products the NZEECS will:

    - Emphasise that the Government will ensure robust economic analysis informs standard development,

    - Emphasise that standards continue to be developed in close partnership with affected industries, and

- Signal the value of working with our major trading partners when developing minimum energy performance standards and energy rating labels.

Electricity system

22. **Agree** the NZEECS will signal the Government will take a proactive and coordinated approach to emerging electricity system technologies, with a view to determining what role Government could have in promoting new electricity industry development as well as addressing market failures and system constraints on new technologies. The issues include:

    - The future role of distributed generation,
    - The impact of new renewable generation technologies on the electricity system,
    - System requirements of smaller scale generation technologies,
    - Demand management opportunities including opportunities for more efficient use of electricity,
    - The risks, opportunities and growth path of smart grid infrastructure, and
    - Smart metering opportunities and risks.

Public sector

23. **Note** the NZEECS will promote the leadership role of central Government in championing best energy efficiency practices, in line with prudent management of public assets.

24. **Note** the NZEECS will clarify, what is meant by ‘the public sector’ including local Government’s role, and how Government’s procurement reform will support this objective.

25. **Note** the reference to Housing New Zealand Corporation will shift to the ‘Homes’ sector.

Summary of submissions on the Draft New Zealand Energy Strategy

Overview of general themes

A wide range of perspectives was evident in the submissions, from general approval from private sector organisations and major energy firms to opposition from environmental organisations and most individuals.

Petroleum sector submitters were pleased to see the strategic and commercial significance of oil and gas reserves recognised. Some other businesses and business associations also welcomed the draft strategy's approach to maximising all energy resources. These private sector groups also welcomed the emphasis on secure and affordable energy achieved through competitive markets. The Coal Association of New Zealand stated that the draft NZES was significantly 'more realistic' than the 2007 strategy.

Many business organisations were generally pleased with the overall mix of supply and demand side priorities and with the areas of focus. The Energy Management Association of New Zealand and Greenhouse Policy Coalition, for example, described the strategy as well balanced. Some major firms, including Shell NZ and Todd Energy supported the closer integration of the NZES and the NZEECS, commenting that the joined up approach made for a clearer statement of overall strategy.

Many other organisations and most individuals, particularly many renewable energy companies and environmental organisations, were disappointed that a response to climate change, promotion of renewable energy solutions and energy efficiency were no longer at the centre-stage of energy policy.

The 3,485 Greenpeace and WWF-NZ template submitters expressed strong opposition. Greenpeace form submitters stated: 'The Draft Energy Strategy is an inadequate and inappropriate response to the challenge of tackling climate change and to providing a sustainable, clean and secure energy future for New Zealand.'

The 78 WWF-NZ template submitters stated the strategy lacked clearly stated time-bound objectives, and lamented the absence of a plan to protect New Zealanders from future rising costs of oil and to lower greenhouse gas emissions.

The five Māori organisations who made submissions on the strategy (including two iwi authorities and the Māori Party), called for more attention to environmental considerations and requested greater involvement for Māori / iwi Treaty partners in relation to resource management and policy making.

In general, local government was critical of the emphasis on mineral fuel development, although Taranaki Regional Council specifically supported the fuels development.

Many submissions generally supportive of the strategy also requested more explicit and tangible supporting actions, saying this would provide a more coherent direction to the sector. For example, the Bioenergy Association of New Zealand described the draft as a 'sound base document from which an energy and energy and efficiency and renewables strategy could be developed.'

Responses to Question 1

Does the proposed NZES effectively promote and support the appropriate development and use of energy resources? If not, what changes do you propose?

Some submitters supportive of the draft strategy wanted it to provide more tangible actions to promote their particular perspective or segment of the energy sector. Changes proposed included:

- Adding the development of regional energy agencies,
- Developing and adopting innovative practices, policies, and regulations,
- Adding tangible development targets and strong measures to increase investment in distributed generation including economic incentives,
- Exploring the pros/cons of the optimum import and export of energy,
- Enhancing the energy related competitiveness of domestic manufacturing, and
- Adding a fifth priority – developing industry.

Organisations and individuals opposed to the emphasis on maximising all energy resources largely wanted more emphasis on the development of renewables. Changes proposed included:

- More integration of energy and climate change policy settings,
- Developing a plan to reduce energy demand and increase renewable energy use in response to climate change,
- Targets for the phase out of fossil fuels in the transport sector,
- Incentives such as feed-in tariffs,
- More consultation with the public and research into environmental effects,
- A Select Committee inquiry into the likely impacts of oil shortages,
- Adoption of Tradable Energy Quotas,
- More Government leadership and less reliance on market solutions,
- Strengthening the price signal provided by the Emissions Trading Scheme, and
- More specific time bounded objectives and targets.

Responses to Question 2

What barriers to investment in energy resources are not addressed?

Barriers to investment quoted by submitters largely related to their area of business. There was a clear distinction between large and small firms' perceptions of the extent of barriers facing their energy projects.

Renewable energy companies identified a range of barriers affecting their business. The current structure of the electricity market was regarded as a barrier to new entrants. A lack of consumer knowledge and desire for alternatives affected sales for emerging renewable technologies. Other issues raised included industry capability; access to capital and project management skills; and the capability and capacity of local authorities with respect to understanding and regulating renewable energy technologies. These submissions revealed a general perception that there is not a level playing field for investment in energy sources and technologies.

Some local government submitters admitted that their own capability and capacity restraints may be creating barriers in the consenting process.

Six energy management companies referred to a range of barriers facing their businesses, including excessive testing regimes and high costs for solar technologies.

Research and development organisations submitted that barriers to new energy technologies included price volatility and uncertainty for investors, which in the absence of Government support, makes new technology projects too risky for many investors. Entrenched structures and market dominance within energy markets can also deter new investors and new technology entrants. They noted that disenfranchised communities can block energy projects through the consenting process, and they considered more work could be done to connect communities to the benefits of energy investments.

Greenpeace and others regretted that the specific measures to address barriers to investment in renewable energy and energy efficiency mentioned in the 2007 strategies had been removed.

Many individual submitters made specific reference to the barriers facing investment in energy efficiency and renewable energy technologies, such as:

- A lack of consideration of environmental impacts,
- The emissions price signal was not strong enough,
- Government subsidies to the fossil fuel industry,
- High initial start-up costs of renewable energy technologies, and
- A lack of public information and knowledge about the true cost of traditional energy sources.

Responses to Question 3

> *Do you have any comments on the goal, priorities and 12 areas of focus? What would you change, and why?*

Many perceived the four priorities and 12 areas of focus to be in 'priority order' and wanted the rankings of the priorities reversed to put the environment first and mineral fuel development last.

Fuels sector submitters were supportive of the goal and the focus on development of resources. Some approved of the concise statement of the goal and priorities, and commended references to resilience and to security of supply throughout the document.

Business New Zealand commented that to provide a stable investment climate, the strategy needed to be made durable by, if possible, being pitched at a sufficiently high level so as to be as independent as possible from politics.

The NZ Geothermal Association considered that while the current focus on oil and gas is essential, the primary focus of the strategy should be on developing a long term sustainable energy supply and on demand management.

Most submitters focused on their particular area of concern. Federated Farmers wanted the strategy to recognise the rights of landowners; the Seafood Industry Council was concerned that its sector can continue to access secure and affordable fuels; and Fish & Game wanted the strategy to openly acknowledge the finite nature of the remaining free flowing rivers.

Critical comments (the majority) were primarily driven by concerns regarding the strategy's emphasis on maximising all energy sources rather than directing the energy sector towards a more renewable focused future in response to climate change. These comments came from a range of sectors but mostly from environmental organisations, the renewable energy sector and individuals.

Ngaitai Iwi Authority considered the phrase within the goal: 'the environment is recognised for its importance to our New Zealand way of life' to be a token statement of environmental values and inadequate in expressing the sustainable management of the environment and recognition of the Treaty of Waitangi.

Submitters concerned about the energy's sector's role in New Zealand's response to climate change argued the goal, priorities and areas of focus should be changed in these ways:

- Making the transition to a low carbon economy the goal of both strategies,
- Expanding the goal statement to include a social dimension,
- Being more ambitious about phasing out oil,
- Giving highest priority to energy conservation, efficiency and renewable energy,
- Giving more attention to demand management,
- Putting greater focus on the role that partners will play in implementation, and
- Aligning the areas of focus with sustainability principles.

Comments on the priorities and areas of focus are discussed in more detail later in this report.

Responses to Question 4

> *Where the draft NZES proposes the Government will support or encourage industry activity, how do you consider the Government can best provide this support or encouragement?*

Comments on how the Government can best provide support or encouragement included:

- Reducing regulation,
- Restoring direct financial support to energy intensive business,
- Providing incentives for energy efficient products,
- Providing more tertiary sector funding, and
- Enabling consumer owned electricity companies to invest in long term projects.

Business New Zealand strongly supported the market-led approach, saying the Government's role was to identify and remove market failures, ensure market participants face strong incentives to compete aggressively, and to facilitate timely investment and support of new technologies in which New Zealand has a comparative advantage.

Major fuel companies, major energy using firms, and exporters argued there was a clear role for greater partnership with Government.

Almost all the local authorities called for a strengthened relationship with central Government with regard to achieving energy outcomes. Palmerston North City Council, for example, noted that central Government's role is to provide the strategic direction and policy for the sector while local government is largely responsible for implementation – hence the relationship between the two should be strengthened. Other local authorities argued that greater support and encouragement for good energy outcomes can be achieved by better land use and planning consent practices supported by more central Government direction.

One business sector research association (Heavy Engineering Research Association) and two Crown research institutes argued for long term Government support for R&D investment so that research is undertaken that supports New Zealand's economic development in a timely way.

Responses to Question 5

Do you have other comments?

Māori organisations and groups argued that the strategy must recognise the principles of partnership embodied in the Treaty of Waitangi. Māori also called for greater recognition of the contribution of the Māori economic base to long term energy outcomes.

The Waikato Regional Energy Forum, the Northland Regional Council, and farming associations lamented the limited focus on the agricultural sector arguing it had much to gain and contribute to energy outcomes, in particular greater energy efficiency.

A number of organisations expressed a desire to be further involved in the strategy's development and implementation.

Environment Canterbury raised concerns with the lack of regulation of environmental effects in the New Zealand offshore Exclusive Economic Zone. A number of submissions argued that the strategy posed a risk to New Zealand's clean green brand.

Recommendations

1. **Agree** that the final strategies retain essentially the same goals, format and structure, and remain brief and concise, presenting an overview and explanation of the Government's direction and strategy for energy to contribute to economic prosperity.

2. **Agree** that the strategies provide a clearer explanation of:

   - How the Government's approach – getting markets to work more effectively – will enable energy to contribute more to economic prosperity,
   - Why petroleum development is significant for New Zealand's economic prosperity, and
   - Why the strategies take a high level, principles-based approach rather than listing all Government programmes, and where people can go to find out what Government programmes are in place.

3. **Agree** that the strategies will signal the Government's commitment to working with relevant stakeholders.

4. **Agree** to reflect in the NZES that the Government has heard from iwi and Māori submitters seeking recognition in the strategy of the Treaty of Waitangi, and acknowledge that Māori have many interests in natural energy resource management arising from their ownership and management of many resources, and in caring for environmental sustainability.

5. Agree that the NZES will state that the priorities and areas of focus are in no particular order.

6. **Note** that a range of detailed changes to the strategies consistent with the overall policy direction will be made to pick up on minor specific suggestions and update the text.

Priority: Develop resources

Area of focus 1: Develop petroleum and mineral fuel resources

174 submitters commented on this area of focus: 11 from the fuels sector, 12 from local government, 16 from environmental organisations, 5 from Māori organisations, 12 from other business organisations and the wider energy sector, and 118 individuals.

Summary of comments

Fuels sector submitters in general welcomed and were encouraged by the Government's focus on oil and gas exploration. Reasons given included:

- The focus provides their sector with confidence in the Government's interest,
- Oil has the potential to be a significant revenue earner,
- Natural gas is vital for security of energy supply, and
- Oil and gas will continue to be needed for some time.

Several submitters welcomed the Government's commitment to funding seismic surveys in frontier basins and said long term geological research funding should continue. Some commented that further initiatives to stimulate exploration would be welcome.

In contrast, a large majority of individual and environment submitters were opposed to this area of focus. Some expressed their opposition very strongly. Their arguments included that fossil fuel development:

- Is inappropriate given New Zealand's responsibility to respond to climate change,
- Poses a direct risk to the environment (noted by 3,407 form submissions) and to biodiversity (e.g. from oil spills),
- Undermines the integrity of New Zealand's clean green reputation, which has significant economic value for New Zealand (noted by 3,407 submissions),
- Is inappropriate from an intergenerational equity standpoint, and
- Does not make economic sense and/or the benefits to the country are not proven or clear.

These submitters wanted the Government to:

- Remove or downgrade this area from its spot as 'number one',
- Eliminate subsidies (e.g. seismic data acquisition),
- Place a moratorium on mining in the marine environment until a robust regulatory regime is in place,
- Phase out coal, i.e. create a transition plan away from coal towards a renewables future, and clearly state coal will not be used for electricity generation (this last from 78 WWF- New Zealand template submitters), and
- Set an objective to reduce reliance on imported oil and fossil fuels – encourage initiatives to do things smarter and more effectively.

Some Māori organisation submitters criticised what they saw as the Government's unilateral actions in managing the country's energy resources, requesting that the Crown act in partnership with its Treaty partners. Several Māori organisations and about 20 individuals voiced strong opposition to the way Government granted the exploration permit to Petrobras in Te Whanau a Apanui territory and called for Māori to be involved in decisions relating to oil exploration.

Local government submitters were in general sceptical or concerned about the direction taken with fuels development and the difficulties they may face in processing consents. Taranaki Regional Council, however, was supportive of further energy development in its area.

Various submitters were sceptical of the economic and other benefits from petroleum development. Some wanted better evidence. Some said the benefits should be assessed over longer timeframes with future generations in mind. Some commented that economic growth from mineral wealth is short-term and 'boom and bust', leaving poor communities behind. One considered the involvement of foreign-owned companies brought few benefits to New Zealand.

A small minority of individual submitters supported mineral and petroleum development. One suggested an even more proactive approach be taken; and another suggested the establishment of a state-owned oil exploration company. IPENZ and WINTEC noted that skills development was needed and requested more investment in tertiary education to support training and development in these industries. WINTEC wished to avoid the fragmentation and duplication that exists in other tertiary education areas.

One petroleum sector submitter noted New Zealand needs to remain competitive relative to other countries when reviewing its regime, saying that even slight adjustments can be important. Another submitter noted that the Government needed to improve the economics of existing fields and support exploration activity.

Gas sector submitters requested the Government's involvement in ensuring gas supplies are developed and ensuring there are incentives for investment. Some submitters requested Government involvement in the promotion of investment in gas production. There was a plea for regulators to ensure sufficient gas infrastructure to support future production and it was noted that the position taken by the Commerce Commission will influence investment in infrastructure. One submitter wanted the Government to ensure third party interests cannot stand in the way of development.

Gas hydrates attracted few comments. One energy sector submitter advised caution in including hydrates in the present energy strategy, as the technical and commercial viability is far from clear and the area should be seen as a long term research project. An environmental group wanted the Government to outline its intent on the use of New Zealand's methane hydrate deposits.

Officials' comments:

Submitters' comments on details of mineral and petroleum policy have been noted by officials working in these areas.

Responsible management of mineral fuels is not fundamentally at odds with New Zealand's clean, green reputation. New Zealand has been developing and using mineral fuels for a very long time. New Zealand now has an all-sectors price on carbon through its Emissions Trading Scheme (ETS), which will send a price signal to users of fossil fuels within New

Zealand, a point supporting our clean, green reputation. Ensuring that development of all types of energy resources takes place with environmental safeguards under a robust resource management regime also places New Zealand in a good position.

The Government's position regarding the development of coal is consistent with the position taken for all other energy developments. That is, under normal circumstances, the development of energy resources shall ultimately depend on their economic viability.

Currently the Huntly coal-fired power station plays an essential role in maintaining the reliability of New Zealand's electricity supply. Decisions to phase out Huntly lie with Genesis Energy as owner of the plant, and will depend on development of other resources and the economics of electricity supply in the future.

The economic benefit to New Zealand from petroleum production is significant. In the year to December 2010, crude oil was our fourth largest mercantile export. A study undertaken last year by Venture Taranaki found that the petroleum industry directly employed 3,730 full-time equivalents and contributed $1.9 billion to the New Zealand economy in 2009. When the indirect and induced effects were added, these figures increased to 7,700 full-time equivalents and an economic contribution of $2.5 billion.

Oil exports contribute substantially to New Zealand's trade balance with the rest of the world, while gas production makes an important economic contribution as a low cost source of energy. Exploration and production activity draws large amounts of investment capital and sophisticated technology into the country and provides high wage, high skill job opportunities for New Zealanders.

Petroleum developments are subject to a specific health, safety and environment regime administered by Maritime New Zealand, the Department of Labour, the Ministry for the Environment and the Ministry of Transport in conjunction with regional councils.

The oil spill in the Gulf of Mexico has reinforced the importance of keeping New Zealand's petroleum sector as risk free as possible. The Government is committed to ensuring that all petroleum exploration and production activities have rigorous environmental and safety controls. Petroleum operations are subject to a specific health, safety and environment regime that is administered by Maritime New Zealand, the Department of Labour, the Ministry for the Environment and the Ministry of Transport in conjunction with regional councils. This regime provides safeguards and requirements that ensure risks are managed and that drilling practices minimise effects on the environment.

The Government is also developing legislation to manage the environmental effects of activities like petroleum exploration and mining within New Zealand's Exclusive Economic Zone and Extended Continental Shelf.

A recent review of the adequacy of New Zealand's health, safety and environment regime for offshore petroleum operations concluded that it incorporates a number of key characteristics of international best practice. The review has identified some areas where the regime could be strengthened, particularly considering the planned expansion of New Zealand's offshore petroleum sector.

Recommendations

7. **Agree** that the NZES better articulate the economic and other benefits of petroleum development for New Zealand.

8. **Note** that the NZES will reflect the work underway to strengthen and extend safeguards against the risk of oil spills in the marine environment.

Area of focus 2: Develop renewable energy resources

3,485 'template' and 180 'unique' submitters commented on this area of focus: including from energy consultancies, renewable energy businesses and associations, the fuels sector, transport businesses and associations, the electricity sector, other industries (energy users), Māori organisations, recreational organisations, health organisations, environmental organisations, local government, a polytechnic, a research organisation, and individuals.

Summary of comments

Almost all submissions were in favour of Government support for developing renewable energy and the majority of that support was very strong. Many submitters sought more detailed action plans to support the development of renewable energy.

In support of renewable energy

Submitters outlined a range of arguments for Government support of renewable energy, summarised as:

- Greater use of renewable energy will help reduce New Zealand's greenhouse gas emissions (cited as the primary reason by most submitters),
- Diverse energy supplies will increase competitiveness in energy markets,
- Baseload renewable options such as geothermal, wood and marine energy can increase security of supply,
- A diverse electricity supply system will increase security of supply,
- A strong set of policies supporting renewables will give investors the confidence they need to invest in clean energies and technologies,
- Government support would improve the economics and other conditions for commercial deployment of renewable energy technologies,
- Growing renewable energy industries contribute to economic development, through job creation, intellectual property (IP), technologies and services for export, and
- Developing renewable energy will enhance New Zealand's green branding.

Opposition to some types of renewables

Three submissions expressed concerns about visual and health impacts of wind generation. Preserve Pauatahunui argued wind power had disruptive impacts which made it less desirable than other options.

34 submitters modified the Greenpeace template submission to express their opposition to further hydro electricity generation, in particular to the proposed Mokihinui development. Many urged the Government to prepare a renewable energy strategy that supported the development of resources like wind, marine, geothermal, biomass and solar, where these did not compromise the values of the receiving environment.

90 per cent renewable electricity target

The 90 per cent renewable electricity target received general support:

- Some electricity sector submitters also supported the proviso that it not affect security of electricity supply,

- More than 100 submitters (from a range of sectors and individuals) wanted the strategy to include an action plan for reaching the target, and

- 3,417 submitters expressed doubt the target would be achieved under the strategy as drafted, or under current market conditions. They requested Government develop a plan, policies and incentives to achieve the target. 'New Zealand stands to miss the historic opportunity to kick-start the move to a clean economy, as front runners in a global race towards a low-carbon future', stated the Greenpeace form submission.

Some submitters, particularly environmental organisations and individuals, requested a 100 per cent renewable electricity target.

Mighty River Power underlined the importance of a stable, coherent policy environment delivering clear economic signals (as through the Emissions Trading Scheme) as a prerequisite for development. Mighty River Power also noted that without limiting renewable electricity development, options arising from future gas finds should not be foreclosed.

Solid Energy considered the goal may be desirable but not economically practical, and it may be an inappropriate way to reduce greenhouse gas emissions that can be successfully mitigated or offset in other ways without detracting from energy security and affordability.

Meridian Energy submitted that the role of new hydro should be considered.

Technologies and fuels discussed

Many submissions suggested specific energy sources or technologies were worthy of targeted support, especially bioenergy, marine, micro-generation (solar photovoltaic (PV), wind and solar water heating), and distributed generation. Some of these submitters wanted the Government to 'pick winners'.

Vector, Energy Trusts of New Zealand, Alphatron Pacific Ltd, Black Diamond Technologies Ltd and the Sustainable Electricity Association of New Zealand commented that solar PV should be given more emphasis in some way.

Buller Electricity requested that other new resources / technologies also be mentioned, specifically: off-shore wind; roof top solar technology (the technology itself and innovative financing options such as feed-in-tariffs); tidal energy; wave energy; micro-gas turbines; hydrogen fuelled vehicles and energy systems; and enhanced demand-side participation and integration with the wholesale market.

Other submitters opposed picking winners and argued for general support for all renewable energy technologies.

Many submitters were concerned by the lack of targets, timeframes and action plans for renewable energy. Other targets proposed included:

- 50 per cent of homes with solar water heating by 2015,

- Targets for renewable energy storage and base load, and

- Targets for transport – renewables and energy intensity.

Suggested measures to support renewable energy development

Many submissions requested the introduction of Government support to overcome capital cost barriers, including:

- Feed-in tariffs:
    - Several submitters (including 12 organisations) requested feed-in tariffs be adopted, and 78 WWF- New Zealand template submitters considered feed-in tariffs were a useful policy for increasing local electricity generation. Many submitters suggested feed-in tariffs would encourage the development of distributed generation (DG), particularly renewable DG, and lead to various benefits, including increasing the percentage of renewable generation, reducing transmission losses and improving security of supply.
    - One submission rejected feed-in tariffs as unnecessarily expensive.
- Subsidies or other Government funding
    - Carter Holt Harvey Pulp & Paper (CHH) opposed subsidies or grants for bioenergy due to concern about unintended consequences of such financial support. CHH suggested Government support focus on monitoring international technology developments, assisting the development of short rotation energy crops, and removing barriers to investment in processing biomass that leaves New Zealand as logs.
- A Government bank for renewable energy developers, etc.

A number of submitters, including from the electricity and renewable energy sectors and from local government, requested the Government put greater focus on ensuring distributed generation is developed at a greater rate. Many believed this was required if the 90 per cent renewable electricity target is to be reached. Others considered smart meters and smart grid technologies were required to support distributed generation.

One submission noted the draft strategies' focus on removing resource consent barriers, suggesting these were not the only barriers to new renewable energy technologies. Another submission suggested that there were no 'unnecessary regulatory barriers'.

A number of submissions discussed means of 'removing barriers'. Suggestions included (in no particular order):

- A long term, favourable policy environment,
- Information,
- Access to the grid,
- Research (including into resource potential / location),
- Building commercial relationships and international links,
- Streamlining consents for small and medium-sized plants,
- Ensuring property rights with new / existing developments (though one submission opposed such property rights),

- A more effective Emissions Trading Scheme / carbon pricing mechanism,
- Training and education infrastructure,
- Measures to support investor confidence,
- Measures to support grid connection,
- Complimentary energy efficiency and conservation measures,
- Articulate national benefits of new renewable technologies in the upcoming National Policy Statement on Renewable Electricity Generation, and
- Government leadership, e.g. micro-gen installations on Government buildings.

Officials' comments:

Rationale for Government support for renewable energy

Internationally, reducing greenhouse gas emissions is a primary driver for significant investments in sustainable energy initiatives[2], including as part of economic stimulus packages.

Supporting development of renewable energy will contribute to the Government's commitments to mitigating climate change. Significantly, it is complementary to the New Zealand Emissions Trading Scheme (ETS). Development of economically competitive renewable energy may be a lower cost way of reducing emissions than other means of abatement.

Diversifying energy markets (electricity, heat and transport) would increase security of supply; attract new developers, and increase competition, which in combination could exert downward pressure on prices.

Globally, there is significant investment potential. Opportunities in skills, technologies, IP, and energy products could be turned into exports. If Government support for renewable energy development leads to sound domestic markets and then to exports, it can create wealth as well as contributing to energy and climate change objectives. Expertise in geothermal energy is currently exported. Wave Energy Technology New Zealand (WET-NZ), through a United States partner, received a grant from the US Government to build a pilot of its patent-pending wave power device in Oregon after obtaining a grant from the New Zealand Marine Energy Deployment Fund.

Policies that support utilisation of renewable energy sources can help maintain or improve New Zealand's international credentials for environmental management, which in turn would add value to markets such as tourism, reduce risks for export markets, and increase attractiveness to help secure overseas clean tech funding and venture capital for New Zealand firms.

90 per cent renewable electricity target

[2] US$162 billion was invested in 2009 in sustainable energy, up from US$46 billion in 2004. (Source: United Nations Environment Programme and New Energy Finance, 2010, 'Global Trends in Sustainable Energy Investment')

The 90 per cent level was set following a cost benefit analysis undertaken in 2006. This analysis remains fundamentally sound. New Zealand has been tracking well towards this target – achieving 74 per cent in 2010 – with the majority of recently-consented generation being geothermal and wind energy.

The Ministerial Review of Electricity Market Performance 2009 reaffirmed the market-driven approach to the Electricity Sector. Such an approach is not compatible with a mandatory requirement to reach the 90 per cent target.

A 100 per cent renewable electricity target would jeopardise security of supply unless the role played by natural gas-fired 'peaking' plants in instantly creating additional supply could be replaced by a sufficient quantity of renewable fuels to achieve this function. This is likely to be very expensive.

The Government will continue to articulate the national benefits of renewable energy in its resource management reform and to remove any unnecessary regulatory barriers. For example, the recently gazetted National Policy Statement on Renewable Electricity Generation ensures that the national benefits of renewable electricity generation are fully taken into account in resource consent decisions.

Which technologies / fuels?

Government support should be weighted according to potential benefits to New Zealand. New Zealand could focus on enabling the biggest opportunities – bioenergy, geothermal, marine and wind, and capitalising on its natural resources and existing expertise.

The Government's current position on solar photovoltaics (PV) is that that there are more cost effective, renewable energy resources that should be developed first. However, New Zealand has a considerable solar energy resource and as PV prices continue to fall it may be an area of opportunity in the future.

Feed-in tariffs

Feed-in tariffs is a policy tool used in many other jurisdictions, particularly in Europe, to increase the production of renewable electricity where there are low levels of investment in renewable energy and few other options. However, this problem is not replicated in New Zealand. New Zealand has significant and continuing investment in cost effective large scale renewable generation, without a Government subsidy.

In New Zealand small-scale generation is expensive and cannot compete with large-scale alternatives. Proponents of feed-in tariffs argue that a tariff will provide an investment incentive to new investors to overcome the cost differential.

The increased electricity price paid to producers through feed-in tariffs is passed on to electricity consumers. For example, in 2006 the Stern Report noted that Germany's feed-in tariffs cost 2.4 billion Euros, making up 3 per cent of a household's electricity costs. Feed-in tariffs place upward pressure on electricity prices.

As investment is already occurring in renewable electricity without Government intervention, there does not appear to be a need for feed-in tariffs in New Zealand at this point.

Small scale distributed generation continues to face additional barriers to entry into the market, and these barriers should be removed where they are unnecessary. For example,

the Electricity Authority is currently investigating mandatory terms and conditions, including pricing guidelines and principles, for retailers buying power from small-scale generation.

Recommendations

9. **Agree** to signal the Government's continued commitment to reducing unnecessary barriers, including regulatory barriers, to the development of renewable energy resources.

Area of focus 3: Embrace new energy technologies

107 unique submissions were received relating to this area of focus: including 9 from the renewables sector, 12 from environmental organisations, 7 from local government, 4 from 'other' business, 3 from Māori, 4 from the fuels sector, 11 from various other sectors, and 55 individuals. 78 template submissions also commented.

Summary of comments

In general, submissions on this area of focus were strongly in favour of a more proactive role for Government in research, development, deployment and commercialisation of new technologies. A 'wait and see' approach is not a strategy, noted one submitter.

Most submitters supported embracing new renewable energy technologies and opposed supporting further development/exploitation/utilisation of fossil fuels. Submitters argued this would reduce greenhouse gas emissions, relieve our dependence on fossil fuels, and realise wealth creation opportunities for New Zealand companies and industries, including through export earnings. Opposition to supporting research and development (R&D) for fossil fuel industries was based on their release of greenhouse gas emissions, and a view that that industry's maturity meant it had sufficient available capital for its own investments.

Submissions from the fuels sector supported further research and development into carbon capture and storage (CCS) technology.

Most types of energy sources/technologies were advocated by different submitters as worthy of support, including marine energy, biofuels (ethanol and biodiesel), new geothermal technologies (such as hot rocks), solar photovoltaic, electric vehicles, gas hydrates, energy storage technologies, CCS, gas hydrates, and thorium. Some promoted specific devices or fuels developed by their company. One submitter considered New Zealand could be a test bed for alternative-energy transport.

Several submitters suggested New Zealand should position itself as a leader in new renewable energy technologies, and could do so through smart international partnerships, finding niche opportunities, and encouraging successful companies. Various companies were quoted as good examples, such as Windflow, Designline, Wellington Drive Technologies and Flotech.

A number of industry submitters considered Government support was needed as much, if not more, at the deployment stage and asked the Government to lower market barriers to new technologies. An environmental submitter requested the Government set up a Green Investment Bank (to overcome deployment and commercialisation hurdles). AWATEA considered the Marine Energy Deployment Fund was very important for its young industry; the NZ Geothermal Association asked that Government make funds available to all new renewable technologies, rather than a select few.

One business submitter urged Government to focus on commercially viable technologies.

Submitters also requested Government provide support for resource proving/mapping. A few suggested research be funded into the economics and co-benefits of developing renewable energy technologies.

IPENZ considered the strategy 'does not adequately reflect the significant and commendable paradigm shift signalled by the Minister of Research, Science and Technology in his announcements enabling commercialisation of research, science and technology to boost economic growth'. The submission noted that R&D support should be targeted towards New Zealand's existing strengths, not the full range of new energy technologies being developed internationally.

Carbon Capture and Storage (CCS) research and development

Several fuels sector submitters welcomed the strategy's mention of CCS as a new technology and its potential to capture carbon dioxide from mineral fuel combustion in large plants and store it underground, thereby reducing the greenhouse gas emissions from fossil fuel use.

Many other submitters mentioned their opposition or scepticism towards CCS as:

- unproven and technologically challenging (e.g. Royal Society of New Zealand),
- unavailable in the short to medium term (e.g. 78 WWF-New Zealand submitters), and
- unlikely to be economically viable.

These submitters voiced strong concerns that the strategy appeared to rely on CCS yet it was an unproven technology, and have unrealistic expectations for CCS's ability to reduce greenhouse gas emissions.

Officials' comments

Given the substantial global investment in renewable energy technologies, strategically considered support for developing local industries could play an important role in creating wealth for New Zealand.

In all energy research areas, New Zealand is a small player with small research budgets. Retaining strong links and developing partners with international energy R&D is particularly important for New Zealand researchers and companies wishing to carve out opportunities with the potential to benefit New Zealand.

New Zealand should position itself to take advantage of energy technology developments in areas where we may occupy a strategic advantage, due to a combination of our resource base and existing industries and skills base.

Any Government support initiatives would need to be designed relative to the technologies' different development stages. Barriers at the research and development phase are very different to those at the demonstration phase, and different again when it comes to commercialising and deploying these technologies.

Access to venture capital is poor in New Zealand. Government support for innovation, R&D, and demonstration, to support the development of examples and case studies is useful.

Resource mapping is a foundation investment to attract developers and investors, but is rarely conducted by private industry as it might not recoup the investment. Furthermore, developing resource mapping capabilities and technologies may also lead to product and skills development that can be exported. That said, the Government – through EECA and the former Electricity Commission – has already contributed significantly to renewable energy resource assessments and mapping.

Internationally, there is a huge focus on CCS research. It is acknowledged that CCS is in a relatively early phase of development and the application of CCS is likely to be some years away. There may be niche opportunities for CCS within New Zealand. Given New Zealand's large lignite and coal resource, it is in our interest to retain an active watch on international CCS developments, so that we may be able to take advantage of advances as they occur.

Recommendations

10.. **Agree** to signal in the NZES that the Government will continue to facilitate the development of new energy technologies (including renewable energy technologies), as part of its role in encouraging innovation from industry.

Priority: Secure and affordable energy

Area of focus 4: Competitive energy markets deliver value for money

57 submitters made comments on this area of focus: 6 from local government, 5 from the fuels sector, 5 from energy management, 5 from the electricity sector, 8 environmental groups, 1 research and development organisation, 4 other businesses and organisations, 7 from various other sectors, and 16 individuals

Oil and gas markets

Few comments were received on the affordability or security of oil and gas, or the functioning of oil and gas markets in New Zealand.

Some submitters, concerned about peak oil scenarios, requested the Government develop a plan to prepare for future oil price increases.

Gas sector submitters wanted the Government to ensure that competition in the gas market is effectively promoted. Several submitters referred to constraints in the Northern Pipeline affecting competition. There was a request to review gas distribution operational rules, which were regarded by one submitter as too limiting. One submitter requested Government support for the development of an LNG terminal. A submitter requested that regulatory development of the New Zealand gas market adopt standard international practice where practicable, to provide consistency for the industry.

The LPG Association submitted that local authorities have different ‘trigger limits’ for requiring householders to apply for resource consents for installing LPG cylinders on their property. These vary from 50kg to 200kg. The association requested a higher and consistent level be set across councils, and that other cost barriers to gas use imposed by councils be minimised.

Electricity market

Concerns over the affordability of energy (of electricity in particular) were raised by submitters working with poorer consumers, i.e. the Electricity Efficiency Community Network, Hutt Mana Charitable Trust, Domestic Energy Users Network (DEUN), and the Waikato Regional Energy Forum.. DEUN expressed ‘no confidence’ that competition would keep prices down: ‘Charging high prices to captive consumers is called “price discrimination” and is a feature of competitive markets’. In general, these submitters wanted the Government to set stronger controls over pricing.

Some submitters expressed a lack of faith in the current market. A number of other submitters pointed to various aspects of the market that appear to not be functioning. Buller Electricity Limited stated that vertical integration inhibits wholesale competition and therefore longer term investment signals, while also reducing incentives for demand-side participation.

One submitter noted in some locations there will be potential for lines companies to undertake developments that help to ensure security of supply and integrity of the local network.

The introduction of feed-in tariffs was requested by 20 submitters, including some from the renewables sector, local government, and individuals.

Officials' comments

Comments relating to specific policy areas are noted by officials working in those areas. The Gas Industry Company has already been tasked with addressing competitiveness issues relating to infrastructure.

Recommendations

There are no recommendations for this section.

Area of focus 5: Oil security and transport

94 submitters commented on this area of focus: including 13 from environmental organisations, 7 from local government, 7 from the transport sector, a number from various other sectors, and 48 from individuals.

Summary of comments

All sectors (including transport sector submitters) consistently expressed support for the draft strategy's position that diversifying transport energy sources will help New Zealand's energy security and resilience.

Common concerns were the risks to New Zealand's future oil supply and the risk of future price rises or price volatility. Some commented that these factors would impact on the affordability of transport options.

32 submitters (including 23 individuals, the Green Party and the Māori Party) expressed concern about peak oil. They argued that peak oil was understated in the strategy and that the Government needed to act now to mitigate the future effects of oil supply constraints. They argued that this mitigation could not be left to market forces. 12 of these submitters requested a Parliamentary Select Committee inquiry be held into peak oil and its short and long term impacts on New Zealand's society and economy.

The draft strategy's position of leaving consumers to respond via price signals was not supported by many. One submitter noted that the uncertainty created by oil price volatility could discourage major investment in alternatives. Many submitters wanted the Government to be more proactive in leading a transition away from dependence on oil for transport.

Common requests were for Government policies that deliver:

- support for development of alternative fuels and vehicle technologies (including LPG),
- local production of biofuels, particularly biodiesel,
- electrification of vehicles and public transport, particularly from renewable fuels,
- improvement of fuel efficiency of vehicles and fuel flexibility (ability to use biofuels), and
- greater support for public transport, walking and cycling.

A typical comment:

> *'Set out a clear strategy for facilitating a transition away from New Zealand's current reliance on petrol and diesel for transport. Initial priorities should include expanding public transport in order to provide real alternatives when oil prices rise, and introducing fuel economy regulations (as has been done in several other countries) to gradually make cars sold in New Zealand more efficient.'* WWF-New Zealand template submission (78 submitters).

Aviation sector submitters considered little attention had been paid to aviation fuel issues in the draft strategy. It was noted that biofuels could play a role in aviation and requested the strategy outline the need for Government policy to facilitate the long term development of sustainable alternative aviation fuels. 'Alternative fuels will be of great importance to New Zealand's future connectivity because of our dependence on international air links.'

The Aviation Industry Association was concerned about the certainty and security of the distribution of supply and requested recognition of importance of 'ongoing security of distribution and storage'. It submitted that if the Wiri pipeline were breached for example, major disruption could result.

Several submitters disputed the assertion that oil exploration would help protect New Zealand from exposure to international oil supply disruptions.

The New Zealand Institute of Forestry suggested there was an economic benefit to improving New Zealand's energy self-sufficiency and requested detailed financial analysis of the economic benefits of reduced imported energy dependence.

Ngaitai Iwi Authority expressed concern about security of access to rural areas, which are dependent on heavy trade vehicles for supplies and have limited high speed broadband, and requested the strategy include investment into local self-reliance models.

One individual submitter proposed the focus be on 'transport security' rather than 'oil security'.

Officials' comments

Submitters discussed two types of security: physical (short term) versus economic (long term) security. An example of the first is the security of the Refinery to Auckland Pipeline (RAP) from failure. Most submitters however focused on the long term economic impacts of ensuring New Zealand continues to have an affordable supply of fuel for transport, and how the increased cost of fuels/transport can be managed.

Drilling for oil is not primarily intended to improve New Zealand's energy security. The primary benefit is its economic return to the country. There is an indirect benefit to energy security, arising New Zealand's international obligations to contribute to global oil security under its membership of the International Energy Agency (IEA). The more oil produced in New Zealand, the smaller the oil stocks New Zealand has to contract to hold in other countries in the event of an international oil emergency.

The IEA and the US Geological Survey (USGS) provide the most credible information on the global oil market. The IEA's World Energy Outlook 2009 states that global oil production is not expected to peak before 2030, and will be large enough to support the projected rise in demand until 2030.

Investigating various approaches for encouraging better fuel economy and fleet management will improve transport energy efficiency (see Recommendation 15). Adoption of fuel economy measures will also support this area of focus.

Recommendation 16 (in the NZEECS transport section) contributes to this area of focus.

Recommendation

There are no recommendations for this section.

Area of focus 6: Reliable electricity supply

71 submitters commented on this area of focus: 5 from the electricity sector, 9 from the renewables sector, 12 environmental organisations, 3 research organisations, 3 from local government, 4 from the fuels sector, 3 'other' business, 2 from the health sector, 1 Māori entity, and 29 individuals.

Summary of comments

Various submitters noted it was important to secure long term gas supplies for electricity (a point raised by fuels and electricity sector submitters, and others such as Rio Tinto and the Domestic Energy Users Network).

Solid Energy suggested that alternative gas supplies will be needed (e.g. coal seam gas, or underground coal gasification).

The electricity sector, renewables associations, such as NZ Wind Energy Association and AWATEA (marine energy), and others noted a need for a robust transmission and distribution system, to support both reliable supply and a competitive and well-functioning market.

Alphatron Pacific Ltd (renewables) and IPENZ both believe that we do not currently have security of supply.

Federated Farmers requested the security of supply goal have specific regard for the issues of private landowners regarding the hosting of electricity infrastructure.

Individual submitters raised a range of issues, including:

- Support for a diversity of renewable generation to improve security/reliability,
- Requests for new actions in this area – the draft mentions only the 2009 Ministerial Review, and
- Support for smart metering, policies to support on-site and distributed generation, feed-in tariffs, a more decentralised grid and more demand side management initiatives.

Officials' comment

The low level of comments on this area of focus suggests most issues have been dealt with through the Ministerial Review of Electricity Market Performance 2009, which is being implemented during and beyond 2010.

The importance of gas as a feedstock for electricity is acknowledged by the Government. The exploration and development of gas resources is part of the Petroleum Action Plan.

The importance of providing sufficient transmission for new renewable energy situated in locations remote from the main grid is recognised by the System Operator, and is taken into consideration in its forward work programme.

Companies intending to produce coal seam gas or develop underground coal gasification would be expected to base their investment decisions on the operation's economic viability. At this stage it would be unwise to rely on these options for New Zealand's gas supply.

Recommendation 22 (in the NZEECS electricity system section) relating to emerging electricity system technologies contributes to this area of focus.

Recommendations

There are no recommendations for this section.

Priority: Efficient use

Area of focus 7: Better consumer information to inform energy choices

Area of focus 8: Enhance business competitiveness through energy efficiency

Area of focus 9: An energy efficient transport system

Area of focus 10: Warm, dry, energy efficient homes

Responses from 188 submitters were recorded under the energy efficiency priority of the NZES: 43 submitters commented on 'better information', 20 submitters commented on 'business', 59 submitters commented on 'transport' and 66 submitters commented on 'homes'. About half were individuals and the rest were from a spread of the various sectors.

Summary of comments

(General themes from submitters' comments in relation to this priority are summarised here. Specific comments on the areas of focus are summarised under the relevant part of the NZEECS later in this document.)

All submitters on this priority expressed support for energy efficiency as a Government energy priority. There were many requests for energy efficiency to receive a higher priority in the strategy relative to other priorities.

There was strong advocacy for more energy efficiency policies, for more specific mention of policies, for existing policies to continue, and for reinstatement of the energy efficiency policies listed in the 2007 NZEECS. Some comments related specifically to submitters' own business interests. There was also general support for policies in the transport, homes and business sectors.

While some submitters agreed better consumer information will inform energy choices, a larger group argued there was too much reliance on information measures compared to use of incentives or regulation. Many requested greater use of harder hitting policies such as efficiency regulations, financial incentives, cost reflective pricing, etc.

Many submitters supported the *Warm Up New Zealand: Heat Smart* programme and wanted it, or similar financial incentives for homes, to continue. Submitters from the health sector in particular stressed the importance of improving home energy performance in addressing energy poverty and health issues.

Submitters on transport energy efficiency were strongly supportive of this area of focus. They considered transport energy efficiency could contribute in a significant way to the reduction of New Zealand's greenhouse gas emissions. Many submitters requested more funding for public transport, more support for walking and cycling infrastructure, and less focus on road construction, particularly of motorways. Many submitters, including some from the transport sector, suggested the Government adopt a wide range of fuel economy measures. Many also supported the development of alternative fuels and new vehicle technologies. Some wanted a greater focus on urban planning and others requested a central Government focus on inter-modal freight efficiency, including between regions and local authority jurisdictions.

Some submitters considered smart meters would be a useful tool to assist consumers monitor and reduce their energy use, and submitted that the Government should ensure that the introduction of smart meters achieved this purpose.

Officials' comments

Many of the calls for greater priority and effort with energy efficiency appear to stem from the implied priority order of the NZES priorities, i.e. 'Efficient use' is presented as the third of four priorities. This appears to be have been taken by many submitters to mean a downgrading in priority status (which is not the case).

Further, the lack of explicit mention of continuing specific energy efficiency policies and programmes in the NZEECS led to some submitters requesting the efficiency programmes listed in the 2007 strategy to be reinstated (whereas many have been fully completed, others are continuing, some have been discontinued, and other new policies have been developed since 2007).

Better communication about programmes run by EECA, MOT and NZTA will help overcome this perception as will an explanation of the differences between the 2007 strategy and this version.

Many submitters argued improvements to energy efficiency would help reduce New Zealand's energy-related emissions profile. The price signal provided by the Emissions Trading Scheme is expected, over time, to provide a signal that will encourage people to make energy efficiency improvements.

Recommendations

11. **Note** the NZES will signal the importance of energy efficiency; leaving the policy detail with respect to particular sectors to the NZEECS.

Priority: Environmental responsibility

3,485 'template' and 180 unique submitters commented on the environmental responsibility priority: including 18 from environmental organisations, 7 from the renewables sector, 6 from the fuels sector, 10 local government organisations, 6 from other business organisations, 6 from the electricity sector, 3 from health organisations, 2 from recreation groups, 5 from Māori organisations, 2 from research organisations, 3 from energy consultancies, 2 from energy management organisations, and 105 individuals.

Summary of comments

The overall theme from submitters was that environmental responsibility is fundamental and that Government should drive environmental best practice. Beyond this, there were two divergent views on how well the strategy deals with environmental responsibility:

1. The strategy does not go far enough nor is the strategy specific enough with regards to environmental responsibility.

    - Almost all submitters to this priority wanted the strategy to state this priority more strongly in some way. Some environmental organisations stated environmental responsibility should be more integrated within the strategy. Some opposed the apparent lower ranking of the priority (because it is presented last). 18 submitters specifically requested environmental responsibility be the top priority.

    - Some Māori organisations wanted an intergenerational strategy to transition from the status quo to a better way of living within our environmental needs.

    - Some felt the environmental responsibility priority was in direct opposition to the focus on petroleum and mineral fuel resources. For many, this perceived inconsistency reduced the integrity of the strategy and the Government's commitment to environmental responsibility. Some submitters described the treatment of the priority as 'window dressing' and 'merely cosmetic'.

2. The strategy suggests that trade-offs need to be made but does not clearly state how achieving environmental goals would not compromise economic prosperity.

    - This view came mostly from fuel companies. Solid Energy, for example, submitted that 'New Zealand must also ensure that our current leadership position [with the Emissions Trading Scheme] does not leave New Zealand exposed to economic costs significantly above those of our trade competitors'.

Officials' comments

Many individual and environmental submitters perceived the Government's focus on economic growth to be at odds with environmental responsibility, particularly in relation to climate change. Yet in the areas of renewable energy development and energy efficiency, the goals of economic growth and environmental responsibility are well aligned.

Recent domestic debates have pitted the economy against the environment (and vice-versa), rather than acknowledging the significance and complexity of their interaction. Multiple policy goals create complexity – tensions between the achievement of these goals are inevitable. However, there are 'win-wins' and focusing on areas where both economy and the environment benefit is a positive way forward.

Recommendation

12. **Agree** that the NZES will acknowledge the Government's commitment to pursuing economic outcomes that are consistent with best practice environmental management.

Area of focus 11: Best practice in environmental management for energy projects

92 submitters commented on this area of focus.

Summary of comments

Definition of 'best practice' unclear

Many of the environmental organisations and some individuals criticised the lack of clarity in the strategy's use of the term 'best practice'. They wanted it better defined, or backed up by codes and standards, or linked to measurable plans and enforced. Some considered best practice needed to be broader than the environment, and extended to include health, cultural and local community interests. One submitter noted that the 'definition of best practice offered seems much more concerned with New Zealand's image than the welfare of the environment'.

Many submissions endorsed the 'polluter pays' principle for the energy sector. Others considered there was a need to incorporate environmental costs into the price of energy.

Resource management framework: Resource Management Act (RMA)

Various industry submitters supported the streamlining of the RMA, as this would help renewable energy projects to get off the ground, and would help limit New Zealand's greenhouse gas emissions. Contact Energy: 'Refinements to the RMA which facilitate efficient investment in renewable generation will be important in contributing to limiting greenhouse gas emissions from the sector.'

A few electricity and renewabEle energy submitters wanted a streamlined RMA process for small to medium sized renewable energy projects.

Contact Energy requested more certainty be given to owners of assets that are already consented under RMA processes.

Various submissions from environmental organisations and individuals wanted the Government to strengthen the RMA to reflect the true cost of climate change and biodiversity loss from energy development and use. Some environmental submitters cited concerns about RMA processes, wanting to ensure local communities were not disadvantaged and could be involved in the processes.

Local government submitters expressed various diverse concerns with the strategy's treatment of environmental responsibility, in general noting that environmental protection was important. Kapiti District Council submitted that the strategy does not recognise the fundamental importance of the environment to sustaining human life. A couple of councils championed greater disclosure of environmental performance by central and local government.

Two Māori organisations advocated the development of an 'environmental covenant' by which all decisions about energy, natural resources, bioprospecting and the environment would be measured before policy is developed.

National Policy Statements

Submissions from the electricity industry, renewables industries, industry and local government were looking forward to the National Policy Statement (NPS) on Renewable Electricity Generation (now gazetted), noting that strong policy within the resource management framework could positively influence investment in renewable electricity

generation. IPENZ suggested the NPS include a threshold whereby small generators would not be considered to be nationally significant.

The Pacific Institute of Resource Management noted its concern that an NPS on renewable electricity generation may result in a technology focus rather than effects-based assessment. It preferred that further development of renewable resources be promoted via the development of national policy statements on greenhouse gas emissions, freshwater and biodiversity conservation.

Various other submitters also wished to see development of national policy statements on freshwater management, biodiversity and climate change adaptation to provide better guidance on environmental protection.

Environmental responsibility regarding minerals and petroleum

Prompted by concern over the Gulf of Mexico oil spill, many submitters requested stronger safeguards to prevent oil spills in New Zealand waters. Many noted that the strategy is silent on environmental safeguards for offshore petroleum exploration and development, coal mining, and methane hydrates exploration and extraction. A number of submitters called for a moratorium on all new deep sea oil drilling.

Some commented that environmental responsibility is not just about managing the development of energy sources, arguing that merely pursuing offshore drilling projects damages New Zealand's international reputation. As noted earlier, there were calls for a deliberate strategy to phase out fossil fuels from some environmental and individual submitters.

On the other hand, the Coal Association of New Zealand called for Government to expand incentives for clean-coal technologies.

The Green Party called for strengthened environmental assessment criteria in the Crown Minerals Act and that exemptions for public consultation are eliminated.

Officials' comments

Comments relating to resource management issues will be referred to relevant officials.

The oil spill in the Gulf of Mexico occurred after the draft strategy was written, and work underway to strengthen New Zealand's environmental protection in offshore areas will be reflected in the final strategy.

The term 'best practice' attracted various responses. The term has been deliberately used in a general sense, and refers at a high level to New Zealand's resource management framework as set out primarily in the Resource Management Act. It is not intended to duplicate that framework.

Recommendations

There are no recommendations for this section.

Area of focus 12: Reduce energy-related greenhouse gas emissions

3,373 'template' and 84 'unique' submitters commented on this area of focus: including 12 from environmental organisations, 6 from the fuels sector, 1 from transport, 2 research organisations, 2 from the electricity sector, 4 'other' businesses, 3 from the health sector, 2 Māori organisations, 4 from the renewables sector, and 48 individuals.

Summary of comments

Most submitters argued that energy strategies are strongly linked to climate change policy. For example, Shell Exploration NZ noted: 'energy strategies and climate change are inextricably linked because of their rapidly growing global interdependence'.

Most were concerned about New Zealand's response to climate change and wanted a stronger response from the energy sector. A number felt the strategy did not convey a sense of urgency around the need to respond to climate change.

Some noted the strategy did not adequately explain how the energy sector would contribute to New Zealand reaching the Government's stated emissions targets. Submitters wanted the targets to be supported by measurable plans (i.e. proactive policies). They considered there was little indication that a strategy to reduce greenhouse gas emissions had been well integrated into the overall strategy.

Some submitters wanted the Government to set stronger emissions targets. Some recommended the Government develop sector-specific targets rather than just economy-wide targets (including a target/s for the energy sector).

A few commented that New Zealand is only a small emitter on the world stage so reducing our emissions is not a big deal. A few considered climate change was not a problem. The Major Electricity Users Group: argued the strategy presumed 'the world will be better off if New Zealand lowers energy related emissions, which may not be correct'.

Many other submitters considered New Zealand had an ethical responsibility to play its part in reducing emissions. Many individual submitters and about 3,373 form submissions called for New Zealand to start 'real work' to achieve a 40% reduction in greenhouse gas emissions (on 1990 levels) by 2020. This work should include mandatory emission reductions and a focus on developing renewable energy.

Emissions Trading Scheme

The general view was that a stable Emissions Trading Scheme is essential but is unlikely to be effective as the primary means of reducing emissions, and it needs to be complemented by other policies.

Trustpower considered a clearly defined and reliable long term price for carbon is needed to encourage development of new technologies and initiatives to reduce and / or remove emissions.

Mobil Oil New Zealand noted that the New Zealand Emissions Trading Scheme in its current form is unlikely to have a significant impact on transport-related emissions.

Energy-related policies cited as particularly useful for reducing emissions included mandatory emissions reductions, renewable energy development and improvements to energy efficiency, particularly vehicle fuel efficiency and minimum energy performance standards for products.

On the other hand, the Greenhouse Policy Coalition requested more Government support/protection for businesses in the Emissions Trading Scheme beyond the current phase-out programme.

Officials' comments

The Ministry for the Environment's climate change policy unit leads the development of climate change policy across all sectors. Sector-based targets, if developed, should form a part of climate policy as a whole, so that the most cost-effective measures across all sectors are targeted first.

The Government's first climate change goal has been to implement the Emissions Trading Scheme. Its second goal is 'Identifying and implementing practical complementary measures to help New Zealand make the transition to less emissions intensive economy.' This is where measures that support renewable energy use and energy efficiency assist.

A significant percentage of greenhouse gas emissions come from energy use and energy policy is inextricably linked to climate policy. Further use of renewable energy and improvements in energy efficiency will contribute to a reduction in New Zealand's energy-related greenhouse gas emissions. The climate change benefits associated with renewable energy and energy efficiency provide additional reasons for the Government to assist industry-led development of healthy, profitable local industries in renewable energy and in continual improvement in energy efficiency. Development of both these areas creates a 'win-win' situation for both the economy and the environment.

Recommendations

There are no recommendations for this section.

Summary of submissions on the Draft New Zealand Energy Efficiency and Conservation Strategy

General comments and themes

88 submitters made general or overarching comments about the proposed NZEECS, including: 9 from the energy management sector (energy efficiency companies and associations), 11 environment organisations, 8 other business organisations, 9 from local government, 6 from the renewables sector, 5 from the fuels sector, and 34 individuals.

Summary of comments

There tended to be divergent views between business organisations and others about the viability and appropriateness of a market-led approach, and where market failures exist. Environmentally centred individuals and groups tended to support the development of a sustainable/low carbon society while business organisations were more focused on energy policies that supported economic growth by helping them reduce costs and achieve competitive advantage. Many submitters were concerned that both strategies did not do enough to manage the risks associated with climate change and energy security issues, such as peak oil and oil price volatility.

Submitters overall supported a high or higher priority for energy efficiency. Various submitters requested the Government articulate stronger positions on particular issues including:

- The pursuit of health outcomes,
- Working with local government,
- Fostering distributed generation,
- Addressing opportunities in the rural sector, and
- Working with large energy users.

There was a general impression amongst many submitters that the NZEECS was not based on a sufficiently long term perspective and tangible set of actions. Business organisations made a particular request for the Government to ensure a stable long term policy environment, which would support greater investment in energy efficiency. Many submitters listed specific policy measures that they wanted the Government to continue, reinstate, or develop.

Very few submitters discussed the economy-wide target or level of ambition set out in the draft NZEECS. Genesis Energy submitted it would be more consistent with the Government's overall economic growth goals if the NZEECS framed its headline objective in energy intensity terms rather than in energy savings terms. This would make it clearer that the policy objective is not necessarily to decrease energy consumption in absolute terms but to support greater economic activity from each unit of energy produced and consumed.

Green Party MPs Metiria Turei and Dr Kennedy Graham in their submission strongly opposed ‘the deletion of all specific, measurable means by which the draft NZEECS policies will be achieved as required under section 10(2)(d) of the EECA Act’. They submitted that the

Government had not met its statutory requirements, and had not outlined any actions of substance, 'leaving a vacuum'. They considered that as the draft NZEECS failed to explain what the Government would do to achieve its goals, it would achieve nothing.

Officials' comments

Market based solutions, rather than prescriptive Government regulations, tend to provide greater opportunities for partnerships with business and community groups, and be more economically efficient.

The absence of functioning markets, market failures and barriers to investment in energy efficiency and renewable technologies provide a case for Government action.

The draft strategies note there are a number of reasons to promote renewable energy and energy efficiency, including climate change and energy security concerns.

The NZEECS *Governance* section outlines a process for delivering the strategy. Government agencies identified in the strategy will be expected to develop appropriate policy measures and programmes that contribute to the realisation of NZEECS targets and objectives. These measures will be considered by Cabinet and recorded in public documents such as statements of intent. In short, specific time-bound actions will be developed to be consistent with the NZEECS. This will avoid the NZEECS becoming quickly out of date – a problem identified by officials with the existing strategy.

The Ministry for Economic Development's legal team has reviewed the draft NZEECS to ensure it met legal requirements. The final NZEECS and the process followed to develop the replacement NZEECS will also be reviewed to ensure it meets statutory requirements.

Recommendations

13. **Note** the NZEECS will note where information can be found about existing and new Government energy efficiency programmes (as they are not listed in the NZEECS).

14. **Note** the NZEECS will articulate the Government's intention to use a careful mixture of policy measures, including information, incentives and codes/standards, to improve energy efficiency.

Transport

101 submitters commented on transport energy efficiency (under NZES transport efficiency and the NZEECS), including: 10 from the transport sector, 9 environmental organisations, 15 local government organisations, various other sectors, and 54 individuals.

Summary of comments

All submitters who commented on this area supported transport energy efficiency and sought greater Government focus on improving transport energy efficiency. Many submitters listed specific policy measures in some detail.

Several submitters (including Mobil Oil, Motor Industry Association, IPENZ and WWF-NZ) noted that improving transport energy efficiency would assist in reducing New Zealand's greenhouse gas emissions. They anticipated the Government will turn to this sector to make emissions reductions at some stage, as in other countries.

Submitters proposed improving transport energy efficiency by:

- Increasing investment in public transport, walking and cycling,
- Developing policies to improve fuel economy,
- Reducing roading investment that encourages vehicle use,
- Encouraging alternative fuels and vehicles, including biofuels and electric vehicles (from renewable electricity),
- Developing specific policies to improve freight energy efficiency, including better integration of modes, and
- Providing guidance for urban planning to consider energy impacts.

Priorities for public transport, active modes, and roads

Almost half of the submitters, particularly environmental, local government and individual submitters, requested more investment for public transport. Some particularly wanted improvements to rail transport, including electrification in specific areas.

There was also strong support for greater investment in walking and cycling. One health advocate requested 'active, affordable and integrated' transport services, noting the positive connection between walking, cycling and health outcomes.

Many submitters also requested the Government reduce roading investment to refocus the spending on more efficient transport modes.

Fuel economy

There was very strong support from a range of sectors for the adoption of measures to improve fuel economy. There was strong support for vehicle fuel economy standards, and various submitters also raised a range of other suggestions of non-regulatory ways that the Government could improve the fuel economy of the fleet. Suggestions included:

- Promote fuel economy labelling more, to support consumer vehicle choices,

- Create incentives (not penalties) for commercial vehicles to use more fuel efficient cars, such as offering fringe benefit tax discounts for fleets that have implemented a programme of fuel efficient driving or ACC/insurance discounts for fleets that demonstrate proven reductions in accidents or claim costs,

- Reduce the road user charges (RUC) for light, efficient diesel vehicles to help increase their uptake,

- Support reduced speed programmes in urban areas (also supports safety),

- Expand and incentivise driver training programmes (including SAFED), particularly for fleets,

- Encourage voluntary uptake of biofuels in fleets,

- Partner with non-government organisations to deliver programmes, and

- Encourage public sector fleet managers to show leadership.

Biofuels in transport

The use of biofuels received good support overall. Some submitters suggested a tactical approach to implementing biofuels blends, encouraging uptake of flex-fuel vehicles in large light vehicle fleets, or in the heavy commercial fleet rather than across the entire vehicle fleet. A Government leadership role was suggested, such as procurement policy specifying a minimum E10 and B10 biofuel compatibility for all Government purchases, including flex-fuel where E85 models are offered. Gull Petroleum and others requested certainty around the excise tax exemption for ethanol blended with petrol and the Biodiesel Grants Scheme. Gull considered biofuels are only viable in the current market due to those schemes.

Freight energy efficiency

Several submitters (mostly those involved in freight and local government) supported specific Government policies to improve freight energy efficiency, particularly through mode integration, (for example, high productivity motor vehicle routes should complement rail routes). Submitters such as the Road Transport Forum noted that a more energy efficient road freight transport system is largely reliant on specific policies and the regulatory environment.

Local government submitters in particular noted urban planning had an impact on transport energy use, and with objectives to encourage compact cities and good urban design, energy use could be reduced. Some requested more guidance. Some individual submitters wanted stronger Government signals around the negative effects of urban sprawl, and they wanted the energy impacts of rural subdivisions and highway projects such as the Puhoi to Wellsford motorway to be assessed.

Aviation energy management

Aviation submitters requested that air transport not be neglected. They requested the strategies note the strategic importance of air transport for New Zealand and give positive recognition to the industry's initiatives to improve fuel efficiency (in the air and on the ground) as well as their efforts to source sustainable alternative fuels. They requested the strategies outline long term programmes and incentives towards low carbon/energy efficient infrastructure.

Relationship to transport planning documents

Several submitters referred to the 2008 New Zealand Transport Strategy (NZTS) and to the 2009 Government Policy Statement on Transport Funding. One submitter considered it was not clear how the 4 per cent energy intensity target for transport related to the 2008 NZTS targets, and submitted it should be 10 per cent. There was confusion among stakeholders about the current state of the NZTS and its relation to the energy strategies. Some pointed to inconsistencies between the three documents. They noted the transport energy efficiency policies in the NZEECS needed to be backed up by transport funding.

Officials' comments

The range of comments and depth of interest by submitters in transport energy efficiency is noted, and will be conveyed to the Minister of Transport for his consideration.

The focus of the draft NZEECS is on energy related targets rather than travel targets. The development of transport targets should be considered as part of the broader transport policy and strategy.

The energy benefits of public transport, active modes and travel demand management should be recognised in the NZES and NZEECS. However, the detail of policies and actions must be developed, in light of broader transport policy objectives, by local and central Government transport agencies and decision-makers.

The broad breadth of support for, and range of non-regulatory options proposed by submitters with respect to, improving the fuel economy of the fleet merits particular attention and possible Government action.

Many submitters questioned: 'What is next after the biodiesel grants scheme and excise exemption end in 2012?' The Ministry of Economic Development is currently reviewing biofuels policy.

As a policy, ensuring high levels of compatibility across the whole fleet is not practicable. However, almost all new petrol vehicles are compatible to E10. In the near term, niche applications for biofuels will be able to handle high blends and national fleets can manage lower level blends.

Improving the efficiency of freight is one of the New Zealand Transport Agency's (NZTA) five strategic priorities. The NZTA has a large role in inter-regional freight, for example linking up aviation hubs and ports. It is working to join up and integrate its planning and investment to improve the efficiency of freight and is developing freight efficiency performance indicators. The second iteration of the National Infrastructure Plan is underway and linking freight into it is important.

The Government has typically taken less notice of aviation because of the relatively small amount of fuel used and low levels of emissions from this sector compared to domestic transport as a whole. However, the strategic importance of aviation to New Zealand's connections with the rest of the world, and the risks and opportunities around its energy use, are important. However, several changes to the text could easily be incorporated and appear reasonable.

The current Government Policy Statement on Transport Funding (GPS) refers to the 2008 New Zealand Transport Strategy as providing context and its targets as aspirational[3]. The

[3] GPS sections:

NZEECS transport targets are derived in a different way to those in the NZTS and they should not be compared.

The draft NZEECS targets are based on energy modelling work undertaken by the Ministry of Economic Development, and reflect both the expected improvements in energy efficiency from technology improvements, such as the changing of the fleet over time, as well as resulting from ongoing Government policies to improve energy efficiency. The energy intensity based targets in the draft NZEECS were developed from a top down model based on an analysis of the whole economy and then its constituent parts.

Recommendation

15. **Signal** in the NZEECS the Government's intention to consider options to improve fuel economy of New Zealand's vehicle fleet (including fleet management), with a view to acting to accelerate improvements to the fuel economy, in line with transport and economic growth goals.

16. **Note** the NZEECS will acknowledge the issues to improving energy efficiency in the aviation sector.

32. The New Zealand Transport Strategy 2008 (NZTS) was developed to give a long term perspective and direction to the transport sector. It sets out a series of aspirational targets for the year 2040. The NZTS is a non-statutory document and provides context for this GPS.
33. The Government in general terms supports the overall intent of the NZTS, but considers that moving too quickly on modal shift will have a negative impact on environmental and economic efficiency.
34. The Government expects carbon mitigation primarily to occur via new fuels (e.g. biofuels and electric cars) encouraged via an emission trading scheme, plus some modal shift actions particularly in our major cities of Wellington, Auckland and Christchurch.

Business sector

35 submitters commented on this section, including: 5 business organisations, 6 local government organisations, 2 from the electricity sector, 2 from the energy management sector, 6 from the renewables sector, 3 environmental organisations, and 9 individuals. An additional 15 different unique submitters and 34 template submitters commented under the NZES on business energy efficiency and their comments have been considered under this section.

Submission themes

A broad cross-section of submissions strongly supported measures to promote energy efficiency in business. There was a general request for more specific policies and actions (many suggestions were provided) to achieve what some regarded to be an ambitious 21PJ target. Many individuals and environmental group submitters indicated a preference to maintain and expand on measures in the 2007 NZEECS.

Businesses, in particular, called for a range of more specific actions and incentives, including leveraged incentives for business, support for training/capacity building, and bioenergy.

There was a desire, from the renewable energy industry in particular, for more specific references to the role and opportunity for renewable energy sources to meet both business and broader public interest objectives.

Business organisations suggested that the proposed target for heat may be too low, especially given the large potential for biomass.

Businesses requested the Government provide support for, and work with, large energy users to improve their energy efficiency.

An agricultural sector submitter endorsed the opportunities available to agricultural, horticultural, and primary processing industries to consider utilising manure and organic ‘wastes’ to supply their heating, fuel and electricity needs.

Officials’ comment

Some submitters believe that the Government is backing away from its role in driving energy efficiency measures in the business sector. In practice this is not the case and ‘business’ has already been identified as an area of priority for EECA.

There appears to be scope to stimulate and harness the energy efficiency leadership of large energy intensive businesses to influence small to medium sized businesses. The concept of leveraging energy efficiency actions is closely related to fostering partnerships – sharing exposure to risks and pooling financial resources to achieve shared outcomes.

The development of an industry-led New Zealand Bioenergy Strategy has the potential to become a catalyst for partnerships between Government and bioenergy business interests and potential beneficiaries including local governments and communities.

Government has already demonstrated that it can add value by working with large businesses to cut energy related costs to become more competitive. The introduction of the Emissions Trading Scheme has provided a further financial incentive for businesses to manage their energy and emissions related costs.

Many small to medium sized businesses face a larger range of barriers to their uptake of energy efficiency. The challenge for Government is to develop a balance of policies and programmes to support both large and smaller businesses. In determining this balance it will be important for Government to consider the costs and benefits to individual businesses but ultimately it will focus on measures which maximise cost-effective energy efficiency gains across the economy.

Recommendations

17. **Agree** the NZEECS will note that improving energy efficiency in business is a high priority.

18. **Note** the NZEECS will reinforce the role of larger businesses and industry groups in showing leadership and encouraging best practice in energy management.

19. **Note** the NZEECS will acknowledge that industry developed a bioenergy strategy in 2010.

Homes

34 submitters commented specifically on homes under the NZEECS, including from various sectors and 9 individuals. An additional different 55 submitters commented on homes under the NZES and 11 commented under both strategies.

Summary of comments

The overall policy direction was generally warmly welcomed by submitters. There were strong requests for more and continuing actions to improve home energy performance, including regulation, training, promotion, and fostering new technologies like solar.

A diverse range of submitters called for more explicit recognition of health and related outcomes from the NZEECS/NZES.

Health and environmental groups argued that it would be appropriate to target more resources to geographical areas and groups experiencing energy deprivation or energy affordability problems.

Officials' comments

Energy efficiency measures targeting the household sector need to both improve the existing stock, and encourage new construction to meet future demands for comfortable, healthy and affordable homes. While minimum standards for new construction are considered necessary, there is also a lot that can be done to improve consumers' energy related choices. Industry associations, product suppliers, local government and central Government all have a role to play in promoting, and incentivising, energy efficiency in the home.

It may be useful to state more clearly what the Government expects to achieve in terms of improved health outcomes from its policies to support household energy efficiency. This should acknowledge the trade-off between energy cost savings and health benefits from insulation and heating retrofits – as well as the role of energy efficient products. It is also important to note that enabling and encouraging people to heat their homes to an adequate level is in their own, as well as the public, interest. However, as the NZEECS is a strategic document, it is not considered appropriate to specify details like acceptable household temperatures.

The current *Warm Up New Zealand: Heat Smart* programme already targets people on low incomes and in rental accommodation. However research over recent years has confirmed that the scale of energy affordability problems remains considerable. Future Government funding, policies, and programmes in the residential sector will need to consider the distribution of benefits as well as the total equation of costs and benefits associated with Government action.

Recommendations

20. **Agree** the NZEECS will state the principles and considerations underpinning Government policy and programme decisions for homes, noting energy efficiency has a role in supporting health outcomes and energy affordability.

Products

22 submitters specifically responded to this section, including 5 environment organisations, 2 energy management organisations, 3 'other' (non energy) organisations) and 10 individuals.

Summary of comments

The proposed policy direction was well received by submitters.

Some submitters from the energy management industry wanted the Government to emphasise its commitment to working in partnership with the industry, and to evaluate economics and practicalities when setting product standards.

There were requests to restore the efficient lighting programme, a mandatory energy standard for existing buildings, product retirement, and Energy Star.

There was a plea from the Royal New Zealand and Auckland Astronomical Societies and 4 individuals for a nationwide policy to mandate the installation of light shrouds on all street and exterior building lighting. The 'dark sky' submitters argued that 60 per cent of outdoor lighting in New Zealand is wasted and creates unwanted sky glow. Two cited that in 2005 the Ports of Auckland replaced 1300 floodlights with 650 environmentally friendly fully shielded luminaries, saving 15 per cent on their annual electricity usage.

Officials' comments

The strong support for the product programmes appears to reflect the long history of constructive Government engagement with product suppliers/importers and the perceived high value of energy efficiency labelling and standards to consumers. It is worth reinforcing the requirement for a robust process of economic and practical evaluation to precede new product initiatives, and to note the ongoing commitment to harmonise with Australian and other international regulatory regimes.

The products forward work programme should stay focused on well proven tenets including maximising net benefits, practicality, etc. There are pressures to consider a variety of other products for inclusion under the minimum standards and labelling regime. However, it is considered inappropriate to say in the strategy exactly when and how future individual product classes will be addressed – these details will be addressed in the work programme.

The future role and specification of smart meters and appliances needs to be considered in the context of development of smart electricity grids and is a cross-cutting issue for all appliances. The products programme should ensure that any potential standards and labelling measures support the effective operation of smart grids.

The concerns of the astronomical societies are noted and referred to officials working on lighting issues.

Recommendation

21. **Note** in respect to products the NZEECS will:

- Emphasise that the Government will ensure robust economic analysis informs standard development,
- Emphasise that standards continue to be developed in close partnership with affected industries, and
- Signal the value of working with our major trading partners when developing minimum energy performance standards and emerging rating labels.

Electricity sector

29 submitters specifically responded to this section: 5 environmental organisations, 2 fuels, 1 education, 3 local government, 4 electricity sector, 5 renewables sector and 9 individuals.

Summary of comments

Comments related to both increasing renewable electricity generation, and to improving electricity energy efficiency. The comments overlapped issues covered under electricity-related NZES areas of focus.

Electricity efficiency

Two electricity sector submitters requested that cost-reflective (real time) prices should be signalled to smaller consumers to help improve the efficiency of energy use.

An electricity industry submitter wanted greater attention to the value of peak demand management, especially as more renewable generation is developed and with the possible impact of electric vehicles on demand.

Some submitters believed demand-side innovation could help to develop energy resources and/or contribute to reliable supply.

Renewable generation

A number of submitters considered distributed generation has a positive role to play in New Zealand and wanted the Government to enable greater development of distributed generation. One renewables sector submitter argued that small-scale distributed generation could provide 10 per cent of national demand by 2020. A fuels sector submitter requested the words ‘smaller scale’ be removed because the policy should apply to *all* distributed generation at all scales.

Some argued that smart grid development and smart metering was required to support greater levels of small-scale renewable distributed generation and that the strategy did not adequately recognise this connection.

Some electricity industry submitters requested the RMA changes (in Part 2 of the RMA reform process) help prioritise renewable energy development by improving access to water. They encouraged completion of the National Policy Statement on Renewable Electricity Generation.

Others noted that a clear and reliable price signal on carbon for the longer term would encourage development of new technologies and initiatives to reduce/remove emissions and help achieve the 90 per cent renewable electricity generation target.

Marine energy sector submitters supported the Marine Energy Deployment Fund and requested that the fund continue, along with other Government support for the development of marine energy.

Various submitters requested feed-in tariffs be introduced to support greater levels of renewable generation.

Officials' comments

'Emerging' electricity system technologies and issues have the potential to lead to new renewable energy development, changes to electricity system efficiency, as well as enabling new investors and levels of competition to enter electricity markets. Examples of such technologies and issues include:

- Distributed generation,
- New renewable technologies,
- Smaller scale technologies,
- Community and new investment into local electricity generation,
- Demand management tools,
- Smart grid infrastructure, and
- Smart metering

Through the Ministerial Review of Electricity Market Performance 2009 new arrangements were implemented to promote better security of supply, competition and affordability.

One of the workstreams of the new Electricity Authority is, in a coordinated way, to examine the industry development opportunities and risks posed by various new renewable technologies, by 'smart' technologies, and what a greater role for distributed generation would mean to competitive markets.

Recommendation

22. **Agree** the NZEECS will signal the Government will take a proactive and coordinated approach to emerging electricity system technologies, with a view to determining what role Government could have in promoting new electricity industry development as well as addressing market failures and system constraints on new technologies. The issues include:
    - The future role of distributed generation
    - The impact of new renewable generation technologies on the electricity system
    - System requirements of smaller scale generation technologies
    - Demand management opportunities including opportunities for more efficient use of electricity
    - The risks, opportunities and growth path of smart grid infrastructure
    - Smart metering opportunities and risks.

Public sector

26 submitters commented on this section, including 5 environment organisations, 2 Government organisations, 3 from local government, 2 from the energy management sector and 8 individuals.

Summary of comments

Submitters requested a stronger statement of public sector commitment to lead on energy efficiency. Some requested support programmes be specified.

Many submitters queried which parts of the public sector are covered and that this be clarified. Many also requested more meaningful targets as the 10 per cent per full-time equivalent was not appropriate to many Government agencies.

Local government submitters requested the strategy clarify the role of, and expectations on, local government in terms of leading energy efficiency. They mentioned roles including urban, energy resource and transport planning, resource consents, and the energy management of council facilities.

Housing New Zealand Corporation (HNZC) questioned its proposed role in supporting the delivery of the NZEECS under this section, and proposed its housing portfolio would better fit under the 'homes' section.

Officials' comments

The draft NZEECS text already emphasises the role of Government in providing energy efficiency leadership.

In practice the Government's procurement reform programme and the drive to increase 'value for money' in the state sector places an emphasis on energy efficiency, where it is cost effective. Some of the initiatives in this area will assist agencies to improve their energy efficiency.

There appears to be a need to clarify which agencies are included in this target, whose responsibility it is to measure agencies progress and whether the target is achievable. In practice the target may also need to be tailored to ensure that organisations have meaningful and practically viable targets – e.g. targets which take account of the scale of realisable energy efficiency opportunities available to them.

As the HNZC is a major supplier of rental accommodation it would be appropriate to cite its supporting role in the 'Homes' sector.

Recommendations

23. **Note** the NZEECS will promote the leadership role of central Government in championing best energy efficiency practices, in line with prudent management of public assets

24. **Note** the NZEECS will clarify what is meant by 'the public sector' including local government's role, and how Government's procurement reform will support this objective.

25. **Note** the reference to Housing New Zealand Corporation will shift to the 'Homes' sector.

Appendix A: Number of submissions received by type of submitter

The table below shows the number of submissions received on the draft strategies by type of submitter.

Source	Number received
Individuals ('unique')	210
Individuals – form submissions – Greenpeace form	3,373
Individuals – form submissions – Greenpeace hydro variant	34
Individuals – form submissions – WWF form	78
Electricity industry	13
Renewables industries	18
Mineral fuels (oil, gas, coal) industries	10
Energy management sector[4]	13
Energy consultancy (general)	3
Environment and sustainability organisations	23
Local government	20
Transport organisations	12
Other business organisations (other sectors)	10
Other organisations and groups	4
Research and new technology organisations	7
Energy user organisations	2
Health (non-government)	1
Recreation organisations	2
Tertiary education	1
Other governmental bodies[5]	4
Māori organisations	4
Political parties[6]	2

[4] Organisations active in energy efficiency (such as insulation installation), including for-profit and not-for-profit organisations

[5] Including two health organisations (categorised as 'health'), NZ Defence Force and Housing NZ Corporation.

[6] The submissions from the Māori Party and Green Party were analysed under 'Māori organisations' and 'environmental organisations' respectively.

Appendix B: List of 'unique' submitters to the draft NZES and draft NZEECS

No.	Submitter		
1	Greenpeace - identical submission	181	Rolf Mueller-Glodde
2	WWF - identical submission	182	Frank Soldner
3	Modified Greenpeace hydro submission	183	Kathy A Cumming
4	Simon Johnson	184	Wesley Gravatt
5	Hawke's Bay Regional Council	185	Gary Vergine
6	Environment Canterbury Regional Council	186	Telina Hermiston
7	(name withheld on request)	187	Southland District Council
8	Sustainable Otautahi Christchurch	188	New Zealand Manufacturers and Exporters Association
9	Michael D Malloy	189	Hutt Mana Charitable Trust
10	Julian and Elizabeth Aaron	190	Institution of Professional Engineers NZ
11	PEPANZ	191	Whitewater NZ
12	Northland Regional Council	192	Tecnico
13	Origin	193	Ramona Radford
14	Alison Norman	194	Tom Taylor
15	Ben Lowe	195	Tom Bennion
16	Bryan Pulham	196	Tim Jones
17	Claire Rainbow	197	Tim Hewitt
18	Sustainable Dunedin City	198	Solar Action
19	Enersol Sales	199	Teresa Grant
20	NZ Logger & NZ Timber	200	Tere Harrison
21	Contact Energy	201	Tait Mathieson
22	Jenny Klosser	202	T.C.Woo
23	Environment Bay of Plenty	203	Susanne Vincent
24	Christchurch Agency for Energy	204	Fonterra
25	Frida Inta	205	Steve Goldthorpe Energy Analyst Ltd.
26	Fiona Edwards	206	Royal Astronomical Society of NZ
27	Energy Trusts of NZ	207	Ralph Sims, Prof.
28	John Locke	208	Selena Mantey-Worrall
29	Emily Drinkwater	209	William Tutawhiao Ormsby
30	Mary Gray	210	Blueskin Resilient Communities Trust
31	Energy3	211	NZ Wind Energy Association
32	Greater Wellington Regional Council	212	Sarah Indrelid
33	Lee Bremner	213	Sandy Bedggood
34	Temperaturezone group	214	Sam Holmes
35	Sigrid	215	Energy Efficiency Community Network
36	Preserve Pauatahanui Inc.	216	Transpower
37	Joanne Elizabeth Battye	217	Save the Wairau River Inc.
38	Tim Naylor	218	Ron Tannock
39	Diane Strugnell	219	Robin Wilson-Whiting
40	Richard Leckinger	220	Anthony Pittwood
41	NZ Wool Insulation Co Ltd	221	Robert Ruha
42	Alastair Jamieson	222	Raymond Kelly, Dr.
43	Meridian	223	Ra-Tane Edelsten
44	Carolyn Hughes	224	Major Electricity Users' Group

45	Jarden Howard	225	Environmental Defence Society
46	Murray Grimwood	226	Kaikoura District Council
47	Shannon Scott	227	Matt Rider
48	NZ Heavy Engineering Research Association	228	Forest & Bird NZ
49	Lee Barry	229	Lewis Verduyn
50	Energy Pacifica	230	Piero Lavo
51	Coal Association of New Zealand	231	Philip McConkey
52	Gecko Victoria University Environmental Group	232	Sustainability Trust
53	Jenny Campbell	233	Phil Cole
54	Kaitiakitanga	234	Māori Party
55	Philip Jones	235	Peter Weber
56	Green Party (Metiria Turei & Dr Kennedy Graham)	236	Peter Olorenshaw
57	Motor Trade Association	237	Peter O'Brien
58	Palmerston North City Council	238	WWF NZ
59	Ms Vivienne Kerr	239	LPG and Gas Associations
60	Wellington City Council	240	Peter Farley
61	Local Government New Zealand	241	Brandreth & Pauline Hervey
62	Willam R. Holvey	242	Paul Young
63	Terry Hohneck	243	Appropriate Technology and Living Association
64	Judy Waititi	244	Genesis Energy Ltd
65	Toia Milner-Hicks	245	Peter Baker (MagneGas)
66	Melissa Hohneck	246	Oliver Hoffman
67	Presley Purcell	247	Nina Smeets
68	Catherine Lane	248	Nigel Alderton
69	Tamati Amuketi	249	Nick Marryatt
70	Kaleb Te Haupai O Te Rangi Tutua	250	Waikato Regional Energy Forum
71	Sara Schaare	251	Natalie Jessup
72	Cindy Chase	252	Murray Riches
73	MacKenzie McCarty	253	NIWA
74	Leah White	254	Aotearoa Wave and Tidal Energy Association
75	Hinetapuarau Ioane	255	Simply Energy Ltd
76	Fabienne Brandli	256	Christchurch City Council
77	Amy Coatsworth	257	Domestic Energy Users' Network
78	Catherine Stark	258	Ngaitai Iwi Authority
79	Meehan Hodges-Tai	259	Michael Taylor
80	Yu Hao	260	Michael John Hewerdine
81	Nikki Whitehead	261	Megan Salole
82	Daniel Collins	262	New Zealand Refining Company
83	Tera Waititi	263	NZ Automobile Association
84	Janelle Pownceby	264	Otago Conservation Board
85	Tyrone Te Rurukui	265	Cycle Action Auckland
86	Nina Singh	266	Mark Apperley
87	Angela Morrison	267	Marie Amanda Brown
88	T Hall	268	Summer Secrest
89	Amy Stewart	269	Vector Ltd
90	Dylen Marks	270	Liz Willoughby-Martin
91	Mitchell Williams	271	Liz Springford
92	Ruki Tobin	272	Linus Turner

93	Ministry of Health	273	Lesley Shand
94	Wel Networks Limited	274	Otago Regional Council
95	Orion	275	TrustPower Ltd
96	Taranaki Regional Council	276	Lara Clare Wilcocks
97	Mighty River Power	277	Greymouth Petroleum
98	Auckland Regional Council	278	Kevin Wright
99	Len Houwers	279	Kerry Thomas
100	Motor Industry Association	280	Forest & Bird Wellington Branch
101	Road Transport Forum New Zealand	281	Ken New & Ruth Pemberton
102	Hamilton City Council	282	Venture Southland
103	(Name withheld on request)	283	Justin Ford-Robertson
104	Aaron Edwards	284	Joleen McEvoy
105	Parliamentary Commissioner for the Environment	285	John K Monro, Dr.
106	350 Aotearoa	286	John McCall
107	Alastair Brickell	287	John Lawson
108	Alan Jenkins	288	BusinessNZ
109	Alan F. Mark	289	Joel Carpenter
110	Alan McKay	290	Jocelyn Logan
111	Alan Thatcher	291	Joanna Morton
112	Mobil Oil New Zealand Limited	292	Energy Matters Ltd
113	Alex King	293	Sustainable Future Institute
114	Ora Taiao: NZ Climate & Health	294	NZ Defence Force
115	Solid Energy New Zealand Limited	295	Royal Society of New Zealand
116	Andrew Kenworthy	296	NZ Youth Delegation
117	New Zealand Institute of Forestry	297	Alphatron Pacific Ltd
118	Andrew Turner	298	NZ Chambers of Commerce
119	Andy Tulloch	299	Jenny Riches
120	Anna Tyrrell	300	Brian Dixon
121	Anthony Atkinson	301	New Zealand Geothermal Association
122	Victoria University Building Science Honours Class	302	Bruce Thomson
123	Arthur Williamson	303	Bryan Walker
124	Ashlee Gross	304	Fish & Game New Zealand
125	Babs Lake	305	Camilla Cox
126	Mick Barrett	306	Wood Processors Association of New Zealand
127	Susanne Becken	307	Greenpeace
128	Bede Martin	308	Charlie Devenish
129	Bera MacClement	309	Straterra
130	(Name withheld on request)	310	Chris Herbert
131	Todd Energy Limited	311	South Waikato District Council
132	Bill Sayer	312	Christopher Morris
133	BJ Chippindale	313	Cilla Beach
134	Bob Bingham	314	Seafood Industry Council
135	Brendan Stevenson	315	Pacific Institute of Resource Management
136	Sustainable Electricity Association of NZ	316	Dana Darwin
137	Brian Robertson	317	Energin Limited
138	Bioenergy Association of New Zealand	318	Black Diamond Technologies Limited
139	Aviation Industry of New Zealand	319	Chris Henderson
140	Carl White(?)	320	Gull New Zealand Limited
141	Alistair Munro	321	David MacClement
142	Roderick Young	322	David Reeve

143	William Hughes-Games	323	Greenhouse Policy Coalition
144	Gordan Banfield	324	David W King
145	Julian Hulls	325	October Law
146	Doug Jane	326	Te Runanga O Te Whanau
147	Nicholas Henry	327	Rio Tinto Alcan New Zealand
148	Wayne Erb	328	GNS Science
149	Darren Brown	329	Denis Tegg
150	Johnathan Atkins	330	Desiree Russell
151	Roger	331	Forest Owners Association
152	Genatron Ltd	332	(Name withheld on request)
153	JuicePoint NZ Ltd	333	Dugald MacTavish
154	Megan Blakie	334	Otaki Cycling Environment and Access Network
155	David F Hadley, Dr.	335	Environment Waikato
156	Finn Larsen-Doogan	336	Repower NZ
157	Samuel Stewart Ward	337	Eva Naylor
158	Claudia Norris	338	Buller Electricity Limited
159	John R Wilson	339	Energy Management Association
160	Leaf Burrows	340	Robert Smith
161	Transport Planning Solutions Ltd	341	Frances Schmechel
162	Rinnai NZ Ltd	342	New Zealand Airports Association
163	Susan Krumdieck	343	Gail Powell
164	JR Sutherland	344	Auckland Astronomical Society
165	Forest & Bird Golden Bay Branch	345	Shell Exploration NZ Limited
166	Glynn Babington	346	REFIT-NZ
167	David Hodges	347	Bridger Beavis and Associates
168	Rotorua District Council	348	Regional Public Health
169	NZ Pork	349	Gerard Straka
170	Sam Vilain	350	Housing New Zealand
171	Greg Plowman	351	Waikato Institute of Technology (Wintec)
172	Ray Dixon	352	NZ Centre for Sustainable Cities
173	Helen Moran	353	Kapiti Coast District Council
174	Nicholas Hanafin	354	Jake Roos
175	Jeffery Knewstubb	355	Federated Farmers of NZ
176	Elana McNeill	356	Ian Miller
177	Chris Lucas	357	Hoera Bristowe
178	Rory Chacko	358	Carter Holt Harvey Pulp & Paper Ltd
179	Steve Langley	359	Harjit Sidhu
180	Daniel Pouwels	360	Hannah Flatman