



MAJOR ELECTRICITY USERS' GROUP

28 March 2007

Ms Jo Buckner
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Energy Efficiency and Conservation Authority
By email to feedback@eeca.govt.nz

Dear Jo

Submission on draft NZ Energy Efficiency and Conservation Strategy

1. This is a submission by the Major Electricity Users' Group (MEUG) on the *Draft New Zealand Energy Efficiency and Conservation Strategy* ("draft NZEECS") released for consultation by the Hon David Parker, Minister of Energy and Jeanette Fitzsimons, Government spokesperson – Energy Efficiency and Conservation, on 14th December 2006.
2. The key themes of this submission are:
 - a) New Zealanders are not deliberately wasteful despite the implied suggestion in the draft NZEECS – indeed it may be better to employ processes or equipment that are not the most energy efficient because other resources are used more efficiently resulting in higher GDP per capita (paragraph 4 to 9 of this submission);
 - b) A second round of consultation will be required given significant parts of the draft NZEECS have yet to be formulated and the Act requires the Minister to consult on draft proposals, not as yet to be drafted proposals (paragraph 10 to 12);
 - c) The proposed NZEECS targets are:
 - i) Incomplete (paragraph 13);
 - ii) Not supported by MEUG where they set quantitative targets (paragraph 14 to 16);
 - iii) Inappropriate when they refer to CO₂ emissions (paragraph 17 to 19); and
 - iv) A poor foundation for the proposed means (or actions) (paragraph 20);
 - d) MEUG disagrees that there needs to be an increase in mandatory rather than voluntary measures (paragraph 21 to 23);
 - e) The lack of cost benefit analysis to justify proposals is a significant concern (paragraph 24 to 27). Specific comments on the discount rate and value to assume for climate change externalities are set out in appendices 2 and 3; and
 - f) Given the conflict of interest of EECA as the delivery agent in conducting cost benefit analysis to decide funding for energy efficiency work, government departments (eg MED and MfE) should undertake all cost benefit analysis (paragraph 28 to 31)
3. In appendix 3 to this submission are MEUG comments on the 14 questions set out on page 55 of the draft NZEECS.

New Zealanders are not deliberately wasteful and sometimes not having the most energy efficient practices may be the best strategy to maximise GDP per capita

4. The opening sentence of the draft NZEECS (the foreword from the Minister of Energy) states (with underlined words inserted by MEUG):

"In New Zealand, we waste energy – large amounts of it, every day"

5. On page 7 of the draft NZEECS is the statement:

"There is increasing recognition that New Zealand cannot continue to use energy in the way it has done in the past. It is time for a concerted effort to reduce wastage."

6. These characterisations of consumers being wilfully wasteful are incorrect and unhelpful in the context of trying to facilitate energy efficiency.

7. Consumers are not wilfully wasteful. Consumers, on average, make rational energy consumption decisions based on the information at hand to compare costs of alternative options including the opportunity cost of their own time. Some consumers are not "average" with some over-investing in terms of capital and time in energy efficiency and others under-investing. One of the important factors for most (or the "average") consumer is that the information to make improved energy efficiency decisions can be affected by one or all of the following:

- a) There is little useful information available.

Often information regarding energy efficiency options is difficult to find. MEUG note that the draft NZEECS propose bundling information on particular options under one portal, eg www.solarsmarter.org.nz. This type of approach is worth investigating subject to the information services provided by government have a net public benefit and do not crowd out private sector suppliers of such information.

- b) Information that is available is of poor quality.

For example Electricity Line Business tariff structures vary widely. Some line tariff structures are cost reflective and others are not. The Electricity Commission has a work programme to develop model distribution tariffs but that isn't likely to be completed for some time.

- c) Some needed information is expensive to access.

For example electricity consumers with time-of-use meters that also have the ability to shift demand between ½ hour trading periods may not be able to make those decisions because some of the short term forecast prices are only available through subscription services (ie COMIT). The consumer only requires this information for a few trading periods per year (eg peak winter evenings) and therefore cannot justify paying a subscription for information that is available only for all trading periods in the year.

8. MEUG suggests the information barriers described above that lead to poor or incorrect information to which consumers needs to be the focus of the draft NZEECS; rather than describing the behaviour of consumers as wasteful.

9. In some cases it may be better, in terms of GDP per capita, to use processes, machinery or appliances that are not the "best" in terms of energy efficiency because using more energy will save higher valued labour and or capital costs. For countries that have a competitive advantage due to lower energy prices than competing countries, it would be self defeating if they deliberately employed high capital cost or labour intensive practices to be energy efficient. Having low priced energy means they can substitute capital and labour and divert those resources to other uses.

A second round of consultation is required

10. The draft NZEECS is very much a work-in-progress with significant work to be completed, eg:
- "The stringency levels (referring to targets) and timeframes in some instances cannot be finalised at this stage due to ongoing analysis. This work will continue over the coming months."*¹
- "Monitoring and reporting of progress on implementing the draft strategy will need to be consistent across government. It could include qualitative tracking of progress towards targets and reporting results in statements of intent, performance agreements and quarterly and annual reports. This will be agreed in the coming months."*²
- Referring to the calculation of benefits, *"Work is ongoing to refine these valuations and extend the analysis to a wider set of measures."*³
- On which agency will be responsible, *"Specific accountabilities are currently being finalised and will be included in the final strategy"*⁴
11. The Act requires the Minister to consult on a draft of the NZEECS. It's difficult to see how the Minister will obtain quality feedback from interested parties when significant matters, such as targets and supporting cost benefit analysis, have yet to be formulated. Such partial consultation arguably does not meet the requirement for meaningful consultation set out in the Act. It would be a very poor outcome and contrary to the requirement of the Act if the final NZEECS had targets and means that had not been consulted on.
12. MEUG believes a second round of consultation will be required given significant parts of the draft NZEECS have yet to be formulated. The Act requires the Minister to consult on draft proposals, not as yet to be drafted proposals.

Targets are incomplete

13. As noted beforehand (paragraph 10 to 12 above), the draft NZEECS is incomplete with some targets yet to be formulated.

Quantitative targets are not supported by MEUG

14. The idea of a government department setting quantitative targets for outputs that it has little control over could be described at best as quaint and in the extreme as reminiscent of old Soviet style central planning. The latter failed because inevitably the central planner cannot control the myriad of preferences of people in deciding what and how much they want to consume and produce. New Zealand would be better served if targets focussed on defining the extent of any market failures and then designing programmes to overcome those failures.
15. The last NEECS failed to meet the trajectory to reach planned long term targets. We are at risk of repeating that mistake. It's conceivable that politicians might decide the targets must be reached at any cost, no matter how arbitrarily they have been set or how changed circumstances might have made them obsolete. This would lead to misallocation of resources and a drain on the economy to meet these quantitative targets. The safest course for politicians is to focus EECA on the type of targets that identify market failures and make progress to remove them. This might lead to few market failures being identified and even fewer interventions being found worthwhile to overcome the market failure. In this scenario the role of EECA and others involved in energy efficiency policies should decrease. This outcome may not be politically palatable; but in this scenario it would be the best outcome for New Zealand.

¹ Draft NZEECS, p17, paragraph 4

² Ibid, p18, paragraph 6

³ Ibid, p21, paragraph 4

⁴ Ibid, p21, paragraph 10

16. A good argument why quantitative targets should be avoided was made in an article by Roger Kerr of the New Zealand Business Roundtable as follows⁵:

"The economist Milton Friedman once observed that if a private firm missed relevant targets it faced the prospect of going out of business, but if a government bureaucracy did the same thing politicians would increase its budget or its powers to avoid political embarrassment."

Targets referring to CO₂ and greenhouse gas emission reductions are inappropriate

17. Changes in greenhouse gas emissions feature in:
- a) The example targets, ie ⁶
 - reduction in CO₂ intensity ratios
 - reduction in net New Zealand CO₂ emissions to 1990 level by 2012
 - b) Estimates of the impacts of proposed means, eg
 - Greenhouse gas savings of 0.3 MT pa for the "Our workplaces" sector ⁷
 - Greenhouse gas savings of 2.4 Mt pa for transport sector ⁸
 - Greenhouse gas savings of 0.3-0.7 Mt pa for "Planning and partnerships" ⁹
18. MEUG believes these are inappropriate because those targets and impacts are related to climate change policies and are not strictly within the purpose of the Act. Climate change or changes in greenhouse gas emissions are not mentioned in the Act at all. The purpose statement of the Act is clear:¹⁰
- "The purpose of this Act is to promote, in New Zealand, energy efficiency, energy conservation, and the use of renewable sources of energy."*
19. The final NZEECS targets need to be set and performance measured in terms of energy efficiency, energy conservation and the use of renewable sources of energy. The government has other related climate change strategies; however those should be developed in a separate climate change response strategy.

Proposed targets to date are a poor foundation for proposed means

20. As only a few example targets have been published in the draft NZEECS for consultation, it's difficult to see how the means in the draft have been derived. Most of the means in 2007-2008 are existing activities. From 2009-2012 onwards new means are proposed. However unless there is agreement on what the target or objectives are; how can those proposals be considered?

⁵ Roger Kerr, NZ Business Roundtable, article in the Otago Daily Times, *Energy Efficiency: Another Central Planning Failure*, 21 April 2006

⁶ Draft NZEECS, targets as listed in table on p63

⁷ Ibid, p29

⁸ Ibid, p33

⁹ Ibid, p42

¹⁰ Energy Efficiency and Conservation Act 2000, s. 5, Purpose

MEUG disagrees that there needs to be an increase in mandatory rather than voluntary measures

21. On page 60 of the draft NZEECS is the statement:
- “The usual starting point to encourage effective consumer choices is to address significant market failures such as making sure prices are fully cost-reflective, information gaps are filled and split incentives are managed. These and other voluntary measures in the last strategy have now paved the way to move further. In this draft strategy, a stronger emphasis on incentives and mandatory measures (where cost-effective) is proposed.”*
22. MEUG disagrees that the NZEECS needs to have a greater proportion of mandatory versus voluntary measures because as far as MEUG is aware there has been no comprehensive analysis of the market failures referred to above (prices are not cost reflective, information gaps and split incentives) across all energy sectors. There has been and is some current work to explain the difference between desk top studies of energy efficiency and observed actual levels – but these are not comprehensive analysis of perceived market failures.
23. It is therefore premature to argue voluntary measures to mitigate market failures have failed and hence mandatory measures are needed. MEUG suggests a thorough analysis of whether perceived market failures are “real,” the magnitude of those and an assessment of mitigating those failures by voluntary means should be undertaken.

The lack of cost benefit analysis to justify proposals is a significant concern

24. There is little cost benefit analysis to support the proposed actions in the draft NZEECS. For example to promote renewable sources of energy¹¹, the strategy lists nine actions (or “means”) for 2009-2012, six of which are carried over from 2007-2008 and as far as MEUG aware have never had cost benefit analysis to justify their implementation. The remaining three means are new proposals but there is no cost benefit analysis in support of those either.
25. This isn’t a trivial matter because the proposals may lead to significant government and private sector expenditures. For example one of the new proposals for renewable energy is¹²:
- “Build industry capacity and support market growth for selected small-scale renewable energy technologies. This includes such activities as installer and designer training, product accreditation, standards and marketing.”*
26. The draft NZEECS doesn’t provide any further information if the government is seeking industry to develop this or whether the government will impose some mandatory requirements. It is possible millions of dollars could be spent by government and the private sector implementing this proposal when the magnitude of any benefits to the economy, which parties will benefit and who should pay for this work are not clear.
27. Of the limited cost benefit analysis that has been undertaken MEUG have concerns with the base case use of a 5% discount rate and the assumption that climate change externalities should be valued at \$15/t CO₂. As these assumptions are important across all of government cost benefit analysis on energy and climate change policies, MEUG has commented in some detail in the submission on the draft NZ Energy Strategy. Those comments are included in appendices 1 and 2 of this submission.

¹¹ Draft NZEECS, p49 to p51

¹² Ibid p51

Cost benefit analysis should be conducted by government department(s) responsible for policy rather than the delivery agent, EECA

28. Funding EECA to achieve the outcomes of the NEECS is a significant cost to taxpayers (last fiscal year approximately \$14m). In any other sector where there was a claimed market failure, funding to this level would be a treated as a significant item and subject to robust process to ensure work is well targeted to overcome identified problems.
29. For example in the electricity sector suggestions of market failure have been a recurring theme since the electricity market started in October 1996. At stake is whether the \$2.98 billion¹³ per annum consumers pay for the energy portion of their accounts is supplied competitively or not. Over the 10 ½ years the market has been in existence some resources have been employed to consider market failure issues; but no where near the \$14m per annum spent on EECA. Compared to expenditure on work to investigate and mitigate possible market failures in the "competitive" part of electricity market (ie excluding the line monopoly part of the supply chain), the funding on energy efficiency and conservation perceived market failures appears excessive.
30. One of the problems is that the service delivery agent for energy efficiency interventions is also responsible for cost benefit analysis to support the draft NZEECS. It seems inconceivable that EECA would conclude that there were few market failures that required intervention and that the level of intervention should be reduced – even though that may actually be the best outcome. The problem is EECA cannot be responsible for deciding the level of funding and at the same time be the beneficiary of that funding.
31. MEUG believes that given the conflict of interest of EECA as the delivery agent in conducting cost benefit analysis to decide funding for energy efficiency work, government departments (eg MED and MfE) should undertake all cost benefit analysis.

Concluding comments

32. MEUG members would welcome an opportunity to brief or answer questions of Ministers or officials on the contents of this submission.

Yours sincerely



Ralph Matthes
Executive Director

¹³ Refer MED, Energy Data File, September 2006, table G.13: Electricity end use for the 2005 March Year. This table is an estimate of the total cost to consumers across all sectors excluding GST. The \$2.98 billion refers to the energy portion of consumer invoices only. Consumers pay a further \$1.34 billion pa for line charges making a total delivered cost of \$4.32 billion pa.

Appendix 1: Extract from MEUG submission to MED on the draft NZES¹⁴ regarding discount rate for cost benefit analysis

Paragraph numbers and footnotes in the following extract are in the same sequence as the MEUG submission on the draft NZES.

“Defensible discount rate for policy analysis

46. MEUG is very concerned that recently some cost benefit analysis of energy policy and climate change policy options have used a base case discount rate other than the conventional 10% rate used by most government departments⁸. For example EECA used 5% for the draft NZEECS concurrently being consulted on. The Cabinet paper forming the basis of why EECA used 5% is unconvincing. Field study research⁹ indicates that the public commonly use discount rates much higher than 10% when making energy savings decisions. This suggests that people have alternative uses for their funds that are far higher than 5%. EECA's reasons for asserting that it can spend people's money in this area better than they can spend it themselves need to be scrutinised closely given its conflict of interest on these questions.
47. Treasury are currently considering whether the conventional 10% discount rate should be amended and if different rates might apply to different sectors or issues. This is a complex area and MEUG suggests Ministers should act cautiously to requests to use “better” discount rates. It may well be that Treasury find a lower rate is justified. Making an assumption of a lower discount rate in advance of that work being completed does not give confidence in the decision making process.
48. MEUG recommend that the standard government 10% discount rate continue to be used to evaluate energy policy options until the current review by Treasury is completed.”

⁸ MEUG accepts that in some cases different government institutions can have different discount rates. For example the 7% discount rate used by the Electricity Commission for the Grid Investment Test as defined in the Electricity Governance Rules is similar to but not exactly the same as the Social Rate of Time Preference approach for determining the discount rate government should apply when considering policy options.

⁹ Refer Shane Frederick, George Loewenstein and Ted O'Donoghue, *Time Discounting and Time Preference: A Critical Review*, 30 January 2002, section 6.2.1 Field studies: “Some researchers have estimated discount rates by identifying real world behaviors that involve tradeoffs between the near future and more distant future. Early studies of this type examined consumers' choices among different models of electrical appliances, which present purchasers with a tradeoff between the immediate purchase price and the long-term costs of running the appliance (as determined by its energy efficiency). In these studies, the discount rates implied by consumers' choices vastly exceeded market interest rates, and differed substantially across product categories. The implicit discount rate was 17-20 percent for air conditioners (Jerry Hausman 1979); 102 percent for gas water heaters, 138 percent for freezers, 243 percent for electric water heaters (H. Ruderman, M. D. Levine, and J. E. McMahon 1987); and from 45 percent to 300 percent for refrigerators, depending on assumptions made about the cost of electricity (Dermot Gately 1980).”.

¹⁴ Refer MEUG to MED, *Submission on draft New Zealand Energy Strategy*, 28 March 2007

Appendix 2: Extract from MEUG submission to MED on the draft NZES¹⁵ regarding estimating the value of climate change externality for cost benefit analysis

Paragraph numbers and footnotes in the following extract are in the same sequence as the MEUG submission on the draft NZES.

“Assessing a range of values for climate change externality

49. Various government agencies have applied different values to describe the presumed negative externality due to climate change effects, eg:
- a) The Energy Outlook to 2030 published in September 2006¹⁰ tested a sensitivity analysis assuming \$15/t CO₂ charge.
 - b) The draft New Zealand Energy Efficiency and Conservation Strategy concurrently being consulted on assumes¹¹:

“When assigning a benefit value, a wide range of economic, social and environmental factors are taken into account, including carbon abatement at \$15 per tonne of CO₂.”
 - c) The Electricity Commission draft assumptions for the second Statement of Opportunities round (to be completed mid 2007) assumes \$15/t CO₂ charge for 2 scenarios (gas and coal/LNG) and \$40/t CO₂ charge for the Renewables scenario and SI surplus scenario¹².
50. These various estimated values for a climate change externality are all based on guesses and or the lapsed \$15/t CO₂ tax. The basis of the latter is also unclear although anecdotally it appears to have been set at a rate below the EU ETS reported bi-lateral market rates during 2005. If this is correct, then based on the latest EU ETS trades, the value of the negative externality government agencies should now use is less than NZ\$2/t CO₂.
51. MEUG suggest a more rigorous and consistent approach by government agencies to assessing the range of values for including climate change externality in cost benefit analysis. Assessing this value is a complex exercise.
52. For example it is arguable that as changes in New Zealand's greenhouse gas emissions profile are so small (both increases and decreases) relative to total global emissions that there is no measurable externality effect. Even if there were moderate warming over the next century that arguably could, on average, be a wind fall benefit to the health of New Zealanders and therefore a positive externality. Stern showed under extreme scenarios and assumptions (eg extremely low discount rates with very low probability catastrophic events) that a negative externality could be advanced – but those were under extreme assumptions and a large number of economists have since rebutted the Stern report assumptions and results.
53. MEUG recommend research is undertaken to determine the range (both negative and positive) of externality values to be used by government for climate change effects in cost benefit analysis.”

¹⁰ MED, New Zealand's Energy Outlook to 2030, September 2006, p43

¹¹ Minister of Energy and Government spokesperson on Energy Efficiency and Conservation, draft New Zealand Energy Efficiency and Conservation Strategy – Making it happen, December 2006, p21

¹² Refer EC website, <http://www.electricitycommission.govt.nz/opdev/modelling/gpas/index.html#gs>, under the heading “Fuel limits and prices, carbon taxes.”

¹⁵ Refer MEUG to MED, *Submission on draft New Zealand Energy Strategy*, 28 March 2007

Appendix 3: MEUG answers to the consultation questions on page 55 of the draft NZEECS

Questions	MEUG comments
1. Within each sector, do we have the right mix of actions?	<p>Unlikely because first, haven't specified targets (ie actions (or means) should follow assessment of appropriate targets)</p> <p>Second, each action should be subject to a cost benefit analysis to ensure it has merit (positive NPV) and is the best option of all alternatives. There has been little cost benefit analysis undertaken and therefore cannot assess if the mix of actions is optimal.</p>
2. Do you have suggestions for prioritizing actions within each sector?	<p>Rank according to maximum net present value.</p> <p>This implies a cost benefit analysis should be undertaken for all proposed actions as a guide as to which should be implemented. The draft NZEECS does not include a cost benefit analysis for all the actions proposed.</p> <p>Even where a cost benefit analysis has been undertaken there are some concerns with the robustness of the assumptions used, eg:</p> <ul style="list-style-type: none"> - The discount rate assumed; - The range of values for perceived climate change externalities; and - The counterfactual assumed.
3. Have we assigned accountability for actions to the right agencies? If not, who should be responsible for those actions?	Cannot provide a comment because accountabilities have yet to be decided
4. Do you consider that the proposed approach towards setting targets and performance indicators, as described on page 63, is appropriate? If not, why?	<p>The appropriate test of whether the targets have been developed is to check if they comply with the requirements of the Act. Section 10 (2) (c) describes the required characteristics of targets. Most of the process or output proposed targets are measurable. In the cover letter to this appendix MEUG note that some of the proposed targets are not reasonable, eg are related to climate change policy objectives rather than the strict purpose of the Act or are quantity targets that as a class are unreasonable to set.</p>
5. Do you agree with how progress towards meeting targets and progress indicators will be monitored?	No comment.
6. How can local government and non-government agencies work with central government to improve the uptake of energy efficiency and renewable energy? What is needed to enable this to happen?	No comment.
7. What contribution do you think non-government organizations and business organizations can make to improve energy efficiency and enhance the uptake of	As a channel for promoting public awareness ¹⁶

¹⁶ This is consistent with the responsibilities of the Minister under s.7 (c) of the Act for "promoting public awareness..."

	renewables?	
8.	Have we got the right emphasis on improving technical efficiency versus influencing and modifying New Zealander's energy purchase and use behaviours?	No comment.
9.	<p>What role do you see, if any, for energy conserving behaviour to reduce energy use and carbon emissions? Should such behaviour be encouraged:</p> <ul style="list-style-type: none"> • All the time? • To reduce peak electricity demand? • To provide greater electricity security in dry years? • If oil supplies are disrupted? 	Appeals to the altruism of households and businesses to change behaviour might have some effect. However MEUG suggest improved pricing signals to better reflect costs will be more durable in terms of changing consumer behaviour.
10.	Limited targets are currently proposed for the transport sector. There is an opportunity to include more specific transport targets that apply at a local level, e.g. increased modal share of public transport. What transport targets would be appropriate to include in the final strategy?	No comment.
11.	Do you think there is an opportunity to increase the energy efficiency of freight movement? If so, how do you think this could best be achieved?	The freight industry has commercial imperatives to keep the sum of their business costs as low as possible. Part of the costs that they must optimize is energy use; but it's not the only cost. It's difficult to see how an individual freight industry participant making optimal decisions for their business will not also lead to the most efficient outcome for NZ. There is an issue about whether climate change externalities are reflected in prices businesses face and MEUG are recommending more work on that issue (refer appendix 2 of this submission). MEUG note that while several government agencies assume the externality has a negative value, there are also arguments that the correct value for this externality may be positive or near to zero.
12.	Do you think we need one renewable energy target or specific sector targets? What measures are needed to achieve a target or targets?	Quantity targets are not supported. Some economy wide indices might be possible. Sector specific targets are likely to have the problem of lack of data to ensure equivalent targets can be established across different sectors.
13.	Are there other targets we should be using for the electricity sector, eg a low-carbon electricity system target?	No comment.
14.	Are there any big opportunities that have been overlooked in this draft?	No comment.