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**Submission on the Proposed National Policy Statement for Renewable
Electricity Generation**

To: The Chairperson
Board of Enquiry

This is a submission on the proposed National Policy Statement for renewable electricity generation (the proposal) that was publicly notified on 6th September 2008.

The specific provisions of the proposal that the Centre's submissions relate to are:

- The presumption inherent in the description of the "Matter of National Significance".
- The Objective, and in particular the setting of the target that 90% of New Zealand's electricity will be generated from renewable sources by 2025.
- The assumption that there are benefits of renewable electricity generation which outweigh the costs.
- All the proposed policies which flow from these assumptions.
- The definition of renewable energy.
- The section 32 analysis.
- The need for such a Proposal.

1. Our first submission, in opposition to the National Policy Statement, is:

In relation to:

Preamble (1):

The second paragraph includes the assumption that the first challenge facing New Zealand in this context is:

- *To respond to the risks of climate change by reducing greenhouse gas emissions caused by the production and use of energy*

The Centre submits that the climate is always changing and there is always some risk associated with such changes.

However, there is no evidence supporting the claim that greenhouse gas emissions caused by the production and use of energy are creating risks which could justify the costs liable to be associated with meeting the 90% target, if all costs are taken into account, including the costs of foregone opportunities to use non-renewable electricity generation such as nuclear power or coal.

Indeed, there is growing evidence that the planet is entering a cooling phase, in which case some slight warming from a slightly higher concentration of greenhouse gases may offset some of the cooling. Contrary to popular belief a warmer global climate is more benign than a colder one – as witnessed by the flowering of human civilizations during the Medieval Warm Period, the Roman Warm Period and the Minoan Warm Period. The Medieval Warm Period was followed by the Little Ice Age, which led to massive starvation, general privation, the Black Death, and of course the Polynesians ceasing their migrations to New Zealand.

The IPCC's alarmist claims no longer represent the scientific consensus if only because NONE of their models (and the scenarios they generated) predicted the present stabilizing and even cooling of the planet over the ten years since 1998. If the models could not predict the temperature over the first ten years of their 100 year projection why should we unquestioningly assume their next ninety year scenarios will be right, given the costs and risks involved.

The debate goes on, with passionate advocacy from both sides, but a lucid summary of the increasingly prevalent skeptical view is contained in the *Open Letter to Senator John McCain* written by Viscount Monckton of Brenchley. Viscount Monckton is a mathematician with expertise in modeling and was a science policy adviser to the Thatcher government.

The four part letter can be read here:

http://www.americanthinker.com/2008/10/an_open_letter_from_the_viscou_1.html

The second part of the open letter concludes:

Science and the climate: *conclusion*

Sir, every one of the reasons that you have advanced for alarm and consequent panic action has been demonstrated to be hollow and without any scientific foundation or merit. Yet, if your proposal to close down three-fifths of the economy of the United States is to be justifiable, then not only the false scientific propositions but also the false policy propositions that you have advanced must be shown to be true. Here, then, are

ten propositions, with each of which you appear to agree, each of which is actually false. All of these propositions must be proven true before *any* action is taken to tamper with the climate, still less the fatal, self-inflicted wounds that you would invite your nation to make to her economy:

1. "The scientists, politicians, and media behind 'global warming' are honest":
They are not;
2. "The debate is over and all credible climate scientists are agreed":
They are not;
3. "Temperature today has risen exceptionally fast, above natural variability":
It has not;
4. "Changes in solar activity do not much impact today's global warming":
They do;
5. "Greenhouse-gas increases are the main reason why it is getting warmer":
They are not;
6. "The fingerprint of anthropogenic greenhouse warming is clearly present":
It is absent;
7. "Computer models are accurate enough to predict the climate reliably":
They cannot be;
8. "Global warming is to blame for present and future climate disasters":
It is not;
9. "Mitigating climate change will be cost-effective":
It will not;
10. "Taking precautions, just in case, would be the responsible course":
It would not be.

All these rebuttals are supported by detailed scientific arguments in Viscount Monckton's "Open Letter" referred to above.

The Centre does not expect the Board of Enquiry, or the Government itself to reverse the nation's position on Climate Change as a result of these submissions.

However, we do submit that the controversy which continues over the risks of climate change, and the appropriate policy responses, indicates that the Board and the Government

should at least entertain the possibility that in a few years time we might all be more concerned about global cooling and what to do about it, than we are now about global warming and what to do about it.

Presumably, greenhouse gas emissions would no longer be on the agenda except in those rare instances where a greenhouse gas is a genuine pollutant.

This recognition of the possibility of a change in overall policy has drawn the Centre's attention to the fact that the RMA does not appear to provide for the withdrawal of a National Policy Statement.

This would appear to be a serious deficiency in the legislation. After all, as a result of this and other National Policy Statements, many councils will change their plans to incorporate the objectives and policies as required by the National Policy Statement.

But many National Policy Statements are based on current scientific knowledge and technology that can be superseded at any time. Developing an NPS is a reasonably quick process and enables governments to respond to changes in our knowledge and understanding.

However, we need to be able to respond equally rapidly to new knowledge and understanding that renders existing National Policy Statements and their incorporation into RMA documents obsolete.

We submit this is a general deficiency in the RMA legislative framework which is illustrated by this particular proposed NPS.

The Centre Seeks the Following Changes to the Proposal:

In particular, we request that the Board acknowledge that the Science relating to Anthropogenic Global Warming is NOT settled and that a new Policy Statement may be required and that in General the Act needs to be amended to provide for a process which enables government to rapidly respond to changing knowledge and technology in ANY field relating to resource management.

2. Our second submission, in opposition to the NPS, is:

In relation to:

Preamble (2)

In considering the risks and opportunities associated with various electricity futures, the government has determined that 90 per cent of electricity generated in New Zealand should be derived from renewable energy sources by 2025 (based on delivered electricity in an average hydrological year).

The main difference between market-led economies and centrally planned economies is that decisions in a market-led economy are informed by the price system, and it is now well established that this leads to a more efficient allocation of resources than can be achieved by decision makers working without the information provided by prices.

The Soviet economies had to operate without the price system and hence depended on setting targets. Target setting does not work and may not be cost-effective, if only the last steps towards the final target (e.g. moving from say 85% renewable electricity generation to the targeted 90%) may impose excessively high costs on the economy. Indeed, given that such an economy would have only ten percent of its electricity generated from non-renewable resources that would almost certainly be the case. How would that ten percent of generation capacity be distributed around the nation in such a way as to maintain efficiency?

Achieving such targets demands authoritarian central planning on a national scale.

What would have been the outcome if in the year 1900 the New Zealand government had determined that 90% of shipping to and from New Zealand should be powered by a renewable energy source – namely wind – rather than the non-renewable energy sources driving the steam ships emerging at the time? What government powers would have been required to enforce such a target and the associated policies? Would we now be thankful for such interventions?

The Centre Seeks the Following Changes to the Proposal:

The Centre recommends that the use of targets (as in the Preamble and the Objective) should be abandoned and that cost-effective price signals should be used to encourage any changes in resource allocation deemed necessary by Government.

3. Our third submission, in opposition to the NPS, is:

In relation to:

Recognising the national significance of the benefits of renewable electricity generation activities.

Policy 1

The first paragraph claims that:

The benefits of renewable electricity generation activities, at any scale, are of national significance.

The Centre asks “Why?”. Why is a solar panel driving an electric fence on the outer edge of my farmland of national significance? And why are the benefits of a tidal power scheme in the Kaipara Harbour of national significance if the benefits are far outweighed by the costs and adverse environmental effects?

Why can renewable energy claim “intrinsic virtue” simply by its being renewable?

The policy then claims that the benefits of renewable energy may include:

i. maintaining or increasing electricity generation capacity while avoiding, reducing or displacing greenhouse gas emissions.

If this is such an important benefit surely this National Policy Statement (or some other statement) should consider the benefits of nuclear power in achieving this objective.

This statement reflects some muddled thinking about the role of “fuel” or the “energy source” in the generation of electricity. There is no known method of generating electricity that is 100% renewable. The word “renewable” refers only to the energy input or fuelling of the generator. For example, wind is a renewable energy resource, but a large-scale wind turbine assembly is built of many hundreds of tonnes of concrete and steel both above and below ground, and of course the turbines and blades are all built of other non-renewable resources.

The manufacture and placing of the concrete itself generates large tonnages of greenhouse gases and a life-cycle analysis is required to demonstrate what forms of generation are actually the most “renewable” and which generate the least “greenhouse gases” or have the lowest “carbon footprint.”

Clearly, some are more “renewable” than others.

Hydro electricity generators are driven by streams of liquid water, and water has a much higher energy density than air, and the hydro dam (a curved beam between supports) is a

much more efficient structure than the vertical cantilever of a wind turbine. It seems highly probable that a total “renewable” analysis would demonstrate that a hydro dam has a higher percentage of “renewable benefits” than a wind farm and yet wind seems to be much more favoured than hydro because of the focus on the energy source rather than the total generation.

In the absence of such comparative analysis it is difficult to see how this National Policy Statement can assist plan writers and decision makers in making better decisions about the use of the different forms of renewable energy.

The contribution of these supporting structures to “carbon footprint” equations is not insignificant.

For example, Dr Mikhail Chester, and his adviser, Associate Professor Arpad Horvath, set out to produce the first comprehensive environmental life-cycle assessment of passenger transportation modes in the U.S.¹

Just as the wind driving the wind turbine is “renewable”, they point out that the zero emission transit bus may eliminate pollutants from its tailpipe, but that’s only part of the problem. The manufacturing of its parts, maintenance, the required infrastructure—*asphalt roadways*—also require energy and produce harmful emissions.

When factoring in the life-cycle of each mode, Dr Chester found that energy and greenhouse gas emissions increase the normally measured “vehicle-only emissions” by 1.3 times for automobiles, 1.4 times for buses, 2.6 times for light rail, 2.1 times for heavy rail, and 1.3 times for air. Pollutant and volatile organic compound emissions (sulfur dioxide, carbon monoxide, nitrogen oxides, particulate matter, and lead) rise 25 times for automobiles, 7 times for buses, 220 times for light rail, 98 times for heavy rail, and 11 times for air travel, above those generated by the vehicle itself.

The Centre Seeks the Following Changes to the Proposal:

¹ Link [“Environmental Life-cycle Assessment of Passenger Transportation: A Detailed Methodology for Energy, Greenhouse Gas, and Criteria Pollutant Inventories of Automobiles, Buses, Light Rail, Heavy Rail and Air.”](#)

The proposal should be supplemented by research that compares the total “renewability” of electricity generated by the different modes of renewable electricity generation. Otherwise decision makers are no better informed than they are now.

4. Our fourth submission, in opposition to the NPS, is:

In relation to:

Policy 1 (Pt 2)

(ii) maintaining or increasing security of electricity supply at local, regional and national levels by diversifying the type and/or location of electricity generation.

Geothermal power is driven by geothermal heat which is a reliable, stable and secure source of energy provided the total field is properly managed. Similarly, provided the network of hydro dams have sufficient storage to see us through dry periods hydro generated electricity is also reliable, stable and secure.

But the other forms of renewable electricity generation listed in the definition (p4), namely, solar, wind, tidal, and wave power, are not reliable, stable and secure, and the more they potentially contribute to demand the more they contribute to the unreliability, insecurity and insecurity of supply. The sun shines only during the day, clouds frequently obscure the sun, and the intensity of solar radiation varies throughout the hours of the day. Wind power is particularly fickle – the power output varies by the cube of the change in wind-speed. Halving the wind-speed generates only one eighth of the power.

The tides turn four times a day and the times of day vary from day to day. Then there is the cycle from neap to spring tides through the month. Wave power also depends on the wind.

If these unreliable and volatile sources of power are distributed widely then they require additional transmission lines to enable the managers of the grid to reroute power rapidly from one site to another.

Finally, if wind or other unreliable sources of electricity generation generate more than say 12 – 15% of total demand then each watt of such power must be backed up by a reliable generating source which must also be able to respond rapidly to changes in demand.

Such standby systems are by definition inefficient because they do not operate continually and hence their investment lies idle for much of the time. If the cost of these back-up facilities is taken into account then wind, and other unreliable renewable generators become an

extremely expensive means of generating electricity unless they are kept to a small percentage of total demand.

New Zealand has developed an industrial and economic profile largely based on the low cost of energy initially supplied from our extensive hydro powered generators, which have been reasonably distributed through both the North and South Islands. This low cost electricity generation continues to make a major contribution to our competitive advantage in many markets.

If we embark on a target of 90% renewable electricity generation it seems probable that we shall sacrifice this competitive advantage with a consequent loss of income and employment.

If these industries and jobs simply relocate to other markets where low cost electricity is available because they have elected to generate the lowest cost electricity, without regard to the “renewable” nature of the energy source, then there is no benefit in terms of global greenhouse gas emissions. On the other hand, if these industries and jobs relocate to markets which have adopted the new generation of nuclear power plants, then they will be meeting any greenhouse gas obligations as well – if any still exist.

The Centre Seeks the Following Changes to the Proposal:

The policy should be rewritten to recognize that renewable electricity generation that is dependent on an unreliable energy source has the potential to destabilize the network and introduce high levels of entropy into a system whose customers increasingly demand lower and lower levels of entropy as well as overall system reliability.²

The policy statement should also be rewritten to require plan writers and decision makers to have particular regard to the total cost of all renewable electricity generation, taking into account the full costs of any necessary standby generation plants.

5. Our fifth submission, in opposition to the NPS, is:

In relation to:

² Entropy is used here in the classical sense as a measure of disorder. For much of the last century electricity users tolerated quite high levels of entropy but modern electronic and computing equipment requires much lower levels of entropy. Achieving this high level of order comes at a cost of “lost energy” and accounts more much of the claimed “waste” in our networks. Unlike resistance losses such anti-entropic losses are normally “virtuous”.

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

Policy 2

When considering measures to avoid, remedy or mitigate the adverse environmental effects of renewable electricity generation activities, consent authorities must have particular regard to the constraints imposed on achieving those measures by:

- *the nature and location of the renewable energy source*
- *logistical or technical practicalities associated with developing, operating or maintaining the proposed renewable electricity generation activity*
- *the nature and location of existing renewable electricity generation activities*
- *the location of existing structures and infrastructure including, but not limited to, roads, navigation and telecommunication structures and facilities, the local electricity distribution network, and the national grid.*

The Centre wonders if any local authority has the information or skill base to carry out these analyses and further wonders how this NPS will assist them in doing so. For example, an analyst could look at a proposal and conclude:

- It's too remote.
- It's too difficult.
- It's the wrong kind, and
- It overloads existing infrastructure.

But another analyst could look at the same project and conclude:

- It is remote so it has fewer adverse effects on neighbours.
- It is difficult but "renewable generation" has so many benefits it should go ahead anyway.
- It may not be the best kind but it will supplement other generation so we should approve it anyway, and
- It will require new or upgraded roads but new roads are a benefit.

How would this NPS assist decision makers in deciding which positions are correct?

The Centre Seeks the Following Changes to the Proposal:

The Centre submits that this policy points up a fundamental problem with the proposed NPS which may not be solvable by simply modifying the document.

6. Our sixth submission, in opposition to the NPS, is:

In relation to:

Having regard to the relative reversibility of adverse effects associated with particular generation types

Policy 3

When considering proposals to develop new renewable electricity generation activities, decision-makers must have particular regard to the relative degree of reversibility of the adverse environmental effects associated with proposed generation technologies.

The Centre wonders what this actually means. We have asked several experts in the field and none have been able to determine what this means with any confidence, and consequently its meaning would probably be determined by a Court, and possibly deliver a surprise to everyone.

Some think it means decision makers must have regard to the cost and dangers of “decommissioning” a plant, but this is normally raised in relation to nuclear power plants. If this test is applied to hydro dams then it possibly means none will ever get built because the decommissioning cost would be so high. On the other hand, some said the real cost would be zero because who would ever tear down a dam?

However, Chris Simmons and Laura Cooper of Chancery Green, resource management and environment lawyers observed:³

This policy appears to prefer development of wind and developing generation types (such as tidal or wave) over hydro generation.

If so, surely such an intention should be spelled out clearly so that any reader can understand the real intentions of the policy makers.

Another expert thought it might refer to reducing the noise level of windmills if a wind-farm exceeded its noise standards or had an unexpected effect on livestock or native birds or whatever.

³ A Wind Turbine in every Backyard? Review of the proposed NPS for Renewable Electricity Generation.

The EECA suggests wind turbines are easily removed.⁴ But given the size of their foundations others disagree.

A gas turbine is probably more easily dismantled than a large wind-farm. Once again, the question is whether the listed factors have the appropriate weightings attributed to them. For example, should reversibility be given more consideration over security of supply or vice-versa? Unless decision makers are provided with information regarding such weightings the National Policy Statement provides little guidance to plan writers and decision makers.

The Centre Seeks the Following Changes to the Proposal:

Rewrite the policy to clarify the meaning, and in particular to make it clear there is no intended bias against hydro which after all is the most cost effective and reliable source of renewable electricity generation in most parts of New Zealand.

The policy should also address the issue of weightings so that decision makers know whether the government requires “reversibility” (whatever it means) to be given more or less consideration than say “security of supply”.

And what about stability of supply? Does entropy count?

7. Our seventh submission, in opposition to the NPS, is:

In relation to:

Enabling identification of renewable electricity generation possibilities

Policy 4

By 13 March 2012, local authorities are to notify, in accordance with Schedule 1 of the Act, a plan change, proposed plan or variation to introduce objectives, policies and, where appropriate, methods, into policy statements and plans to enable activities associated with:

- *the identification and assessment by generators of potential sites and energy sources for renewable electricity generation*
- *research-scale investigation into emerging renewable electricity generation technologies and methods.*

⁴ EECA, *Guidelines for local authorities: Wind Power*, Publication date: August 2004, p6.

The Centre submits this is an onerous duty to impose on the territorial authorities of New Zealand, especially those local authorities in rural areas where populations are small and resources are scarce. If this is a requirement of a National Policy Statement then surely government should fund such research.

The Centre Seeks the Following Changes to the Proposal:

If Government wants Local Authorities to carry out this work in the National Interest then the NPS should acknowledge that Government is prepared to fund it.

8. Our eighth submission, in opposition to the NPS, is:

In relation to:

Supporting small and community-scale renewable electricity generation

Policy 5

By 13 March 2012, local authorities are to notify, in accordance with Schedule 1 of the Act, a plan change, proposed plan or variation to introduce objectives, policies and, where appropriate, methods, into policy statements and plans to enable activities associated with the development and operation of small and community-scale distributed renewable electricity generation.

The Centre wonders why a genuinely effects-based RMA plan would impede the introduction of small and community-scale distributed renewable electricity generation. The effects of such generators would be minor and should be able to be managed within any effects-based rural zone.

Sadly, of course many District Plans and Regional Policy Statements are no longer effects-based but are based on lists of activities that are given specific classes of consent. If a proposed activity is not on the list it is “deemed to be non-complying.”

This might be a useful opportunity to remind territorial authorities that if their plans do not enable the development of such small-scale generation (renewable or not) then it is probably not an RMA document but is still in the tradition of the *Town and Country Planning Act*.

The ARC’s Proposed Policy Change 6 introduces the notion that urban activities should not be permitted outside the Metropolitan Urban Limit (MUL). Their practice to date suggests the

ARC would regard electricity generation as an urban activity⁵ that should be located in a rural zone and especially in a rural area outside the MUL.

The Centre Seeks the Following Changes to the Proposal:

This policy should point out that an effects-based RMA document should not create special impediments to proposals for community based small scale generation facilities and that if the planning documents do impede such developments then this is likely to be symptomatic of a more general problem.

9. Our ninth submission, in opposition to the NPS, is:

In relation to:

Interpretation

In this national policy statement, unless the context otherwise requires:

“Renewable electricity generation” means generation of electricity from solar, wind, hydro, geothermal, biomass, tidal, wave, or ocean currents resources.

The Centre believes this definition is narrow and will generate many challenges and disputes. We note that in many jurisdictions Waste-to-Energy plants are regarded as renewable energy or given the same favourable treatment in that they reduce greenhouse gas emissions, promote recycling of metals etc, and of course reduce the amount of waste going to landfill, while reducing the nation’s dependence on fossil fuels. Certainly, a modern waste-to-energy plant would appear likely to make a much more useful contribution to New Zealand’s demand for electric power than a tidal power station in the Kaipara Harbour.

Waste-to-Energy plants can be located close to the source of fuel and the centre of demand – a considerable benefit.

The Centre believes it is also necessary to define “biomass” when used within this context.

Does the term include “biofuel” or should “biofuel” be listed separately? In some US States biomass includes the chicken waste from factory chicken farms. Others exclude it.

⁵ The ARC has been arguing that converting green-waste to compost is an urban activity that must operate within the MUL. (*See Living Earth vs ARC* before the Appeal Court [2008] NZCA 349.)

Are rubber tyres “biomass”? Does the policy encourage the use of say milled and sawn *manuka* as a biomass energy source or is it intended that biomass be limited to “waste wood” from the milling of forests?

The Centre Seeks the Following Changes to the Proposal:

The Centre submits that the definition of Renewable Electricity Generation be extended to include Waste-to-Energy generation, and that the definition of biomass be extended to clarify the many areas of dispute that have arisen overseas.

10. Our tenth submission, in opposition to the NPS, is:

In relation to:

Evaluation under Section 32 of the Resource Management Act 1991.

The Centre has a serious, albeit generalised objection to the section 32 analysis.

On the one hand, we recognize the section 32 document supporting the proposal has been useful in directing our attention to matters on which the Board of Enquiry seeks information and analysis from submitters and does provide some explanations regarding the intentions of particular policies.

However, the analysis of the actual benefits and costs (in monetary terms) appears to be limited to the costs and benefits of the use of an NPS as opposed to other means of achieving the objective. The document makes a brief reference to a report which estimates the cost of achieving the target of 90% renewable generation but provides no information regarding the assumptions on which that estimate is based. Given that these estimates are not part of the proposal we assume they are not open to submission.

Surely, the section 32 analysis should demonstrate that pursuing this target will generate a net public benefit, backed up by the analysis. Otherwise, should circumstances change how will we know when the net public benefit has turned into net public cost?

For example, without knowing the weighting given to reducing greenhouse gas emissions how should we respond to a general conclusion that the planet is now entering a cooling phase and that warming should be a desirable outcome rather than something to be avoided? (Many have already reached that conclusion given the miserable winter of 2008).

Others have suggested that under those circumstances we can convert the lignite coals of Southland and Otago into diesel so we would be able to buy diesel at the pump for \$1 per

litre. Should the fact that the lignite is not renewable mean that it cannot be considered under any circumstances?

Or what if we found a gas field able to supply extensive natural gas for 1,000 years. Should concern for people in 1,000 years time outweigh the demands of current generations?

If the claimed objections to nuclear power should disappear via a joint programme with Australia, should we continue to reject nuclear power as a viable option for electricity generation in New Zealand?

We should be developing some kind of model which enables us to change the inputs as circumstances change and to assess the change in outcomes.

At present much of the document seems to assume that there is some inherent or intrinsic virtue in choosing renewable energy sources over non-renewable sources.

Some animists are genuinely opposed to mining any resource on the grounds that we should not “rape the Earth Mother.”

We submit this view is not widely held, although we have to recognize that when the former Parliamentary Commissioner for the Environment declared that subdivision around the Waitakere ranges was “Death by a Thousand Cuts” we wondered who was being killed and who was doing the cutting. Such blatant anthropomorphism may generate good headlines but seldom generates sound policy.

The Centre Seeks the Following Changes to the Proposal:

The Board of Enquiry should have access to a much more thorough and extensive section 32 analysis than the limited document presented here.

11. Our eleventh submission in opposition to the NPS is:

A General Conclusion.

Given the large number of internal conflicts, uncertain meanings, and unjustified assumptions, and given the large number of other policy documents guiding such decisions, we wonder if such an NPS may create more problems than it solves.

We also question whether there is a problem which needs to be addressed. The Reference Group report of May 2006 and the evaluation under Section 32 of the RMA did not identify any serious problem with current RMA practice, at least in relation to the specific issue of consenting of renewable energy generation plants.

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Therefore, the Centre submits that an additional policy intervention relating to renewable electricity generation is probably not required.

End of submissions.

I wish to be heard in support of the Centre's submission.

If others make a similar submission, I will consider presenting a joint case with them at a hearing.

Owen McShane (by email)

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