

# **Auckland Conservation Board-Te Runanga Papa Atawhai o Tamaki Makaurau**

## **Proposed National Policy Statement for Renewable Electricity Generation**

To: The Chairperson [renewable.electricity@mfe.govt.nz](mailto:renewable.electricity@mfe.govt.nz)

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This is a written statement to be tabled at the hearings in lieu of oral presentation on the **Proposed national policy statement for renewable electricity generation.**

The Auckland Conservation Board is a statutory board appointed by the Minister of Conservation under the provisions of the Conservation Act 1987. Conservation boards provide community advice on conservation areas, policy and activities of the Department of Conservation, as well as having a role to advocate for conservation generally.

The interests of the Board are founded by the Conservation Act 1987. This is an Act to promote the conservation of New Zealand's natural and historic resources. The Board also has a role to advise and advocate for Conservation in respect of the Wildlife Act 1953, the Marine Mammals Act 1973 and the New Zealand Coastal Policy Statement

The Board is extremely pleased to see that proper consultation is being undertaken with respect to this proposed policy, and thanks the Board of Inquiry for the further opportunity to comment on these policies.

### **1. Recognising the national significance of the benefits of renewable electricity generation activities**

**Policy 1 : The benefits of renewable electricity generation activities, at any scale, are of national significance. Decision-makers must have particular regard to the national, regional and local benefits relevant to renewable electricity generation activities. These benefits may include, but are not limited to:**

- i. maintaining or increasing electricity generation capacity while avoiding, reducing or displacing greenhouse gas emissions**
- ii. maintaining or increasing security of electricity supply at local, regional and national levels by diversifying the type and/or location of electricity generation.**

1.1 The Board stresses that caution and commonsense should always prevail in the development of technology, medium and long term environmental impacts must always be considered: for example should higher capacity solar generating arrays be developed, they must be properly tested and safety standards developed to ensure they are completely safe for use close to daytime living and working areas, especially with regard to children.

1.2 The Board supports diversification to maintain security of supply, subject to careful consideration of appropriate scale and possible adverse effects, and provided that this policy gives priority for energy consumers to utilize the many and varied forms of locally available renewable and sustainable energy production, in conjunction with a greater level of energy conservation at the consumer level.

**2. 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:**

**i. the nature and location of the renewable energy source**

2.1 The Board considers it fundamental to the concepts of renewable and sustainable energy generation, that size and location must be “at an appropriate scale with due regard for the wider ecosystem, community and iwi concerns”. **“Due regard”** will mean that if there is any doubt, the wishes of the local community and iwi **WILL** take precedence.

2.2 A number of the Board’s concerns relate to the very high potential for extreme adverse and irreversible effects from unproven marine electricity generation, which New Zealand simply cannot afford. ACB note that marine energy generation has the highest current output cost, and considers there is a real risk that actual installation and maintenance costs in the New Zealand marine environment will dramatically increase output costs to the point where these devices will be totally uneconomic and projects abandoned. Ultimately the Crown will inherit the installation and be responsible for decommissioning the devices, at huge expense to the tax payers.

2.2.1 Past experience has shown that power generation units are not necessarily decommissioned when their anticipated economic and environmentally acceptable lifespan has ended: for example, thermal power generation plants were said to be viable for 35 years, but plants such as Meremere were operated in excess of that time despite poor operational condition, and presumably reduced efficiency. Even when decommissioned the Meremere station stood as a dilapidated eyesore for many years.

2.2.2 ACB submits that non operational generation units of any type, in any location should be dismantled promptly, therefore any proposal must include a comprehensive decommissioning plan to support this.

2.2.3 The Board notes the Power Projects Ltd Development of Marine Energy in NZ report prepared for EECA June 2008 says “Environmental considerations and competing uses, such as fishing and navigation, will need to be considered by project developers and there is an absence of useful data, such as marine mammal interactions with marine energy devices, whale migration routes and shipping movements. Further work will be required to measure and map these issues and to address (these) and other environmental issues.” Page 2.

2.2.4 ACB understands that the Director of Maritime NZ is the overall authority and decision maker governing safe navigation, therefore advise that Maritime NZ should have primary input into approving possible sites before any proposal can proceed through the

planning process, instead of the reverse being the case as with the Kaipara application. This is not a matter to be “considered” or “addressed” by developers, it must be the first step before proceeding with any proposal, in conjunction with other designations for protected areas including marine mammal sanctuaries and marine reserves.

**ACB consider that marine power generation is fundamentally at odds with the designation and purpose of a Marine Mammal Sanctuary, Marine Protected Area or Marine Reserve.**

2.2.5 ACB wish to draw the attention the Board of Enquiry to the results of many years of investigative research undertaken by Professor Michael Walker, who was the recipient of an O.N.Z.M. for services to science in the Queens Birthday honours list, concerning how marine mammals and migratory bird species navigate using small amounts of magnetite:

“Seeking Nature's Inner Compass” published in *Science* 9 November 2007: Vol. 318. no. 5852, pp. 904 – 907 DOI: 10.1126 / science.318.5852.904.

2.2.6 ACB further refer the Board of Enquiry to the NIWA report released in March which established that 98% of West Coast juvenile snapper came from the Kaipara Harbour: <http://www.niwa.co.nz/news-and-publications/news/all/2009/2009-03-03>.

The effects of EMF emissions from large diameter marine tide turbine generators are largely unknown and the NZ marine environment is NOT an appropriate test bed for unproven technology.

2.2.7 The Board again reiterates that this policy MUST clearly specify that any application for electricity generation (aside from micro scale units to support huts, visitor facilities or scientific installations) will NOT be considered in or near a Marine Mammal Sanctuary, Marine Protected Area, Marine Reserve, National Park, Conservation Stewardship Area or any inter coastal area where migratory birds feed, in the flight path of migratory or local birds or in the main entrance channel to harbours where marine mammals and elasmobranchs (sharks and rays) may feed or breed.

2.2.8 With further regard to Policy 2 (i) nature and location, the Board submits that Renewable Energy Generation policy MUST clearly differentiate between projects using proven technology e.g. solar panels or wind turbines, on private land largely removed from public view, where the local community have few concerns and environmental values are not greatly compromised, compared to highly invasive proposals implying exclusive occupation of public domain such as the Mokihinui hydro dam proposal, or the proposed unproven Kaipara tide turbines with excessive impacts on natural values and high potential for irreversible environmental damage.

**Policy 2 - ii. Logistical or technical practicalities associated with developing, operating or maintaining the proposed renewable electricity generation activity**

2.3 ACB emphasizes that there must be provision for MfE to establish a national council of coastal, environmental & marine scientists and ecologists to advise on the wider range of adverse effects which may not be adequately addressed by the applicant's assessment, and to have policies which include robust and transparent processes for independent peer review of reports and recommendations, especially with regard to new and unproven technology such as marine tide turbines.

2.4 The Board again wishes to emphasise that it is completely inappropriate and technically unnecessary to permit the testing of new and unproven technology in the New Zealand environment, or to contribute public funds towards such testing when there are well established and fully funded test facilities already established in the northern hemisphere, it is a totally unnecessary duplication and waste of scarce funding.

2.5 ACB advocate for a single properly funded national agency rather than diverse regional authorities as more appropriate to consider the implications and adverse effects of any large scale proposals. As the Board has previously noted, that where any adverse effects and discharges are likely to transcend notional boundaries, it is not appropriate or effective for a sole local or regional authority which may have different interpretations or standards of environmental protection to its neighbours, to consider applications of major environmental significance and to progress these without even obtaining independent peer reviews of related reports.

2.6 ACB considers that in a small country such as NZ, it is unsustainable for multiple regional and local authorities to develop individual guidelines and processes to deal with applications for new and unproven technology, and clear direction must be provided at national level, to adopting international best practise developed by the European Marine Energy Centre , with the adoption of their standards of technical detail required before the installation of any test units, including a full decommissioning plan.

**iv. 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.**

2.7 The Board again emphasizes that new power generation schemes must be small and sustainable, tailored to meet the needs of the local community and under their control, with the long term benefits accruing to the quality of life in the community. If local power generation becomes widespread then expensive large scale, invasive upgrading of the national grid will not be necessary.

**3. 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.**

3.1 The Board strongly supports this policy, and again draws attention to the practicalities of small scale surface electricity generation using solar panels, wind turbines, and micro hydro generation schemes which can readily be removed leaving no trace at any time should they breakdown, prove harmful in any way, or are superseded by more efficient and safer technology. This is why large scale marine installations with high capital costs and a proposed life of 45 years, which cannot or will not be readily removed, are totally inappropriate in the New Zealand environment.

3.2 The Board submits that it is environmentally unsound and inappropriate to suggest mitigation or monitoring adverse environmental effects when these could be extreme such as disorientation, endangerment and failure to locate customary breeding and feeding areas, loss of these areas i.e the first that is known will be when an entire species such as Kuaka / Godwits fail to return to customary habitats and disappear forever.

3.3 The Board supports a consistent national approach to such issues and recommends that a national authority or agency such as Maritime NZ (formerly the Maritime Safety Authority) should contract electrical and marine engineers, naval architects and surveyors who are properly qualified to understand the wide ranging issues of electricity generation in sea water combined with steel structures and other dissimilar metals which could include aluminium, copper, lead and zinc, also the issues of anti corrosive marine paint systems, and of anti fouling paints which are required to be applied on top of the anti corrosive coatings.

3.4 While ACB has no objection to medium size wind farms when they are appropriately sited to not be visually intrusive, and design of the towers is such that they do not intrude unnecessarily on the landscape. Nor does it have concerns about noise pollution when wind farms are sited away from residential areas.

3.5 ACB's primary concern is that bird flight paths must be properly identified and accurately mapped before any site proceeds to the design stage. Of particular concern are raptors, i.e native hawks whose flight mode utilises the thermal updrafts created by hills and ranges, and spiralling flight using wind currents created by the topography. This is the same terrain suitable for windmills and turbines to generate power. Early investigation of flight paths is essential to remove the risk of bird kill that has been experienced in some parts of Europe.

#### **4 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:

**i. the identification and assessment by generators of potential sites and energy sources for renewable electricity generation**

**ii. research-scale investigation into emerging renewable electricity generation technologies and methods.”**

4.1 The Board again states that high level national policy must be underpinned with a robust regulatory framework to clearly identify sites and potential energy sources of environmental significance that should NEVER be considered for electricity generation of any type.

4.2 The Board again submits that public investment in research of renewable electricity technologies in the NZ context, should concentrate on development of affordable, more efficient, well proven methods such as small scale solar, water & wind power equipment, for example composite roofing materials encapsulating solar energy cells and water heating channels, so that residential and commercial roofing can economically be replaced to provide unobtrusive solar power generation and water heating.

4.3 The provision of low cost or free net metering equipment to enable surplus power generated to be returned to the national grid and remove the requirement for storage batteries, must become top priority. Storage battery technology is another major area for development, also lighter, more compact and efficient wind turbines which can more easily be erected with lower environmental impact.

4.4 The ACB is fundamentally opposed to the building of any more large scale dams due to their extreme adverse effects on ecological water flows, however it considers that micro hydro generation of the Pelton wheel type used at Whatipu Lodge on the West Coast of Waitakere City adjacent to the Whatipu Scientific Reserve, for example, could be widely employed without disrupting ecological flows.

4.5 The Board again advocates that it is totally unnecessary and a waste of taxpayers money, for developers to duplicate marine tide turbine testing in NZ when there is a fully developed test facility at Stromness, funded by a number of European governments. Any such local site testing, if appropriate sites are available, should only be done with a single fully developed and tested turbine unit to confirm how it will perform in the specific environment, and to establish that the developer can safely deploy and decommission the entire unit. The Board considers it a matter of fundamental policy, that by definition any “renewable” energy device of any type, MUST be demonstrably able to be safely decommissioned and completely removed at any time leaving no trace. This should be the first test for any installation of any scale.

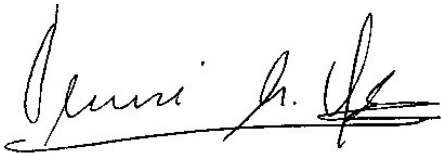
## 5. Supporting small and community-scale renewable electricity generation

### 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.**

5.1 Individual or community small scale generation must be enabled without expensive compliance regimes. To facilitate this ACB advocate that public funding in New Zealand is best directed towards the development of public domain designs and engineering specification for integration into the building code to allow renewable energy generation to be incorporated as standard best practise in any new building or renovation, to enable individuals and local communities to be self supporting for basic needs, to reduce their living costs and to protect the environment in a sustainable fashion.

**Denise Yates**

A handwritten signature in black ink, appearing to read 'Denise Yates', with a horizontal line underneath.

Chairperson

Auckland Conservation Board

Date 8 June 2009

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