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aotearoa wave and tidal energy association

Submission to the House Standing Committee on Industry and Resources

Inquiry into the development of a non-fossil fuel energy industry in Australia: case study into selected renewable energy sectors

Dr. John Huckerby
Executive Officer, on behalf of the Executive of AWATEA

Aotearoa Wave and Tidal Energy Association (AWATEA)

Level 8, Equinox House
111 The Terrace
Wellington
NEW ZEALAND

PO Box 25456
Panama Street
Wellington 6146
NEW ZEALAND

Telephone:	+64 (0) 4 499 0060
Fax:	+64 (0) 4 499 0059
Mobile:	+64 (0) 274 946 581
E-mail:	mail@awatea.org.nz

Submission by e-mail, followed by hard copy by mail

The Non-Fossil Fuel Energy Industry in Australia

Brief Submission

Note

The Aotearoa Wave and Tidal Energy Association (AWATEA) of this brief submission only became aware of the Inquiry on 11 June 2007. This submission is intended as a 'placeholder' to enable the Association to make a fuller submission in writing or in person, if requested by the Standing Committee.

Summary

AWATEA is the industry association for marine energy in New Zealand, albeit with a number of Australian members. There is no equivalent Australian-based organization.

- Investment in marine energy developments in Australia preceded those in New Zealand
- There are two active marine energy device deployments in Australia; the first in New Zealand is likely with one year. The pace of activity in Australia has slowed since 2003
- Both Australia and New Zealand have world-class wave and more patchily distributed tidal energy resources. Physical measurements of wave and tidal resources are sparse but New South Wales and Victoria lead the way in measurements and summary atlas documents
- Future forecasting of intermittent renewables, including wave and tidal energy, will be crucial to the electricity sector
- Research and development appears to be unco-ordinated in Australia with little overt support from the federal Government. Individual states are more active. Recent energy and climate change policy documents in New Zealand offer a more co-ordinated approach
- The proposed contestable deployment fund ($8 million) is a first outside Europe and is already stimulating domestic and international interest and activity
- Both Australia and New Zealand have the opportunity for leadership in marine energy, an opportunity now past with respect to wind, for which both countries are now largely technology takers
- The Exclusive Economic Zones of both Australia and New Zealand may shortly be substantially enlarged and both countries have largely coastal populations
- Water has a significant inland water problem. Marine energy projects can be used to generate potable water as well as or instead of electricity

AWATEA will provide fuller comparative information in support of marine energy at the request of the House Standing Committee.

Introduction

The Aotearoa Wave and Tidal Energy Association (AWATEA; www.awatea.org.nz/index.html) is the industry promotional association for marine energy in New Zealand. AWATEA was established in April 2006 and currently has approximately 50 Corporate, Professional, Non-profit and Individual members. Although the members are predominantly new Zealand-based, two Australian marine energy project developers and one non-profit research institution are members. AWATEA is committed to growing its Australian membership in the absence of any equivalent organization and has a longer-term strategic objective to become an Australasian industry promotion organization (subject to membership approval).

Investment in marine energy developments in Australia originally preceded developments in New Zealand. The two device deployments – by SeapowerPacific in Fremantle (the CETO devices) and by OceanLinx in Port Kembla – have led the way. The first New Zealand-based device deployment is likely to occur within the next 12 months. However, the pace of activity in Australia has slowed in the last 4 years, possibly as a result of the abandonment of the Mandatory Renewable Energy Targets (MRET) scheme. This is against a background of accelerating investment by Governments and the private sectors in a number of countries, most notably the United Kingdom (and particularly in Scotland).

Resources

Both Australia and New Zealand are endowed with world-class wave resources, particularly on west- and south-facing coasts and more patchy tidal resources. These resources are, however, poorly measured and poorly understood. The Governments of Victoria and New South Wales have probably done the most to characterize its marine resources. The Victorian atlas of marine energy resources and the number of wave buoys in Victorian and NSW waters are valuable ways of promoting uptake of marine energy. The production of a marine energy atlas in Canada has led to a significant uptake of proposed projects on both Pacific and Atlantic coasts. Similar initiatives would serve Western Australia, South Australia and New Zealand well. Being able to forecast intermittent renewables and integrate the forecasts for wind, wave and tidal energy production will be important themes for the electricity sector going forward.

Research and Development

From an external perspective it appears that there is little or co-ordination in marine energy research and development in Australia and little overt support from federal Government sources. Individual States and Territories seem to be more active, particularly Western Australia and Victoria. Federal Government initiatives reported by the Australian Greenhouse Office (on AWATEA's mailing list) are somewhat out-of-date. Little has happened since MRETs were abandoned. Consequently a momentum that appeared to have developed in Australia between 2000 and 2003 has become fragmented. Most research and development now seems to be somewhat *ad hoc* and predominantly privately funded.

The situation is a little better in New Zealand where the Government has published a series of energy strategy and climate change documents that attempt to develop a coherent approach to future energy investments. Marine energy has been recognized as having significant potential and the Minister appears to have a good understanding of the possible opportunities. The recent announcement of an NZ$8 million contestable fund for marine energy device deployments, which will reportedly be available later in 2007, is the first such capital grant scheme outside Europe. AWATEA's submission on the draft energy and climate change documents is relevant to this submission and can be accessed on the AWATEA website: www.awatea.org.nz/docs/NZES_submission.pdf

Technologies and Projects

Australia leads New Zealand in device deployments as noted above and it is acknowledged that the OceanLinx project (formerly Energetech) was beneficiary of Government funding. The CETO project was originally a privately owned project, which has now been acquired by a United Kingdom company. There are a number of other device development projects, most notably the BioPower Systems project in Sydney, which is currently testing scale model devices and has been the recipient of Government funding.

OceanLinx's development is instructive. This Australian-developed technology was first deployed at Port Kembla but the company is now committing to projects in the United Kingdom, United States (Atlantic and Pacific coasts) and is investigating opportunities in other countries. They have recognized the worldwide potential for marine energy and the opportunity to develop an export industry. European developers are beginning to look globally to disseminate their technologies. If Australia and New Zealand are to avoid being technology takers, as we are largely for wind turbines and solar panels, there is an opportunity now to develop an industry (and not just concepts for devices), which could secure a predominant the Asia-Pacific market. Such an industry will encompass as wall as device developments but also fabrication, deployment, operations, maintenance and related services.

Marine Energy in Australasia

Marine energy has significant potential for both Australia and New Zealand. Both countries are likely to significantly increase the size of their Exclusive Economic Zones under the forthcoming United Nations Commission on the Law of the Sea decisions. Fully 94% of New Zealand EEZ's will be open sea. The proportion will be smaller in Australia but its maritime area will be larger in area. Harnessing and securing the natural resources, including marine energy, in these areas will be a focus for the Governments of the two countries for the coming decades. Both countries also have predominantly coastal populations and infrastructure. Given Australia's current inland water crisis, the potential for marine energy devices to generate potable water, as well as or instead of electricity, must be attractive.

The Committee is calling for a comparative study of a number of renewable energy sectors but such a comparison requires detailed study and analysis beyond the time available for this submission. AWATEA

believes that marine energy will soon be a viable technology, well able to compete with more established technologies, such as wind turbines and solar PV panels. Marine energy will, in due course, provide a valuable contribution to the energy supply portfolios in both countries.

Grasping the opportunity for this domestic supply option and building a potential export industry (of devices, components, skills and capabilities) will require some concerted effort by all Governments, entrepreneurial industries and individuals in both countries.

Lastly, it might seem strange that a New Zealand-based organization (albeit with Australian members) is promoting a Government response to a potential export industry in Australia. However, it is clear that the New Zealand energy sector and the present NZ Government is currently ahead of our trans-Tasman counterparts in recognizing the potential for marine energy and mounting a collective response.

Just as the rugby field divides us, it also unites us in a common competitive effort, which sees us as the leading rugby nations in the world. A similar competitive effort could yet see Australia and New Zealand become a dominant force in marine energy.

Building on this Submission

AWATEA is willing to present its submission in person at the request and invitation of the House Standing Committee.