# blue energy: taking the plunge

15 March 2007

Icon Room
Te Papa Tongarewa
Wellington

awatea

**Jeanette Fitzsimons, MP: Government Spokesperson on Energy Efficiency and Conservation**

## Speech to the AWATEA 2007 Conference, Te Papa, Wellington, 15th March 2007

Thanks you for inviting me back, and it's good to see a number of faces I met at your September mini-conference, and others who have been to see me about their plans over recent months.

I remain very positive, and excited, at the prospects for marine energy in NZ. It is a perfect fit with our history as a maritime nation; the NZ love of the sea and sea going craft; the goals of the NZ Energy Strategy to get as close to 100% renewable electricity as we can; and to the Prime Minister's aspirational goal to be carbon neutral and truly sustainable.

The question for energy policy is whether we can provide for any need for new generation with wind and geothermal developments until marine energy is ready to take its place. My own hope is that we never have to build another fossil fueled power station, and nor do we need to build LNG import facilities, both of which run counter to our goal of sustainability, and expose us to the international prices of both petroleum fuels and carbon.

So I have a strong interest in seeing a diversity of marine energy devices developed and deployed sooner rather than later, subject to good planning, carefully sustained industry growth and excellent environmental precautions.

We have some precedents which I believe we can learn from. To help the marine sector though its infancy, you can look to your 'sibling' technologies, and in particular to the rapid and recent rise of wind generation.

The Brooklyn wind turbine installed by ECNZ in 1993 was the precursor to the NZ wind industry and project developments we see today.

That first wind turbine didn't and stil doesn't generate a lot, but it had considerable direct and indirect benefits:

- ECNZ gained experience with installing and operating a new technology;
- ECNZ gained a good knowledge of costs (capital and operating);
- Experience was gained about turbine performance, and how that could be used to predict performance at other sites;
- A small industry capability was built up, including consultants (many of which have been 'exported overseas), maintenance contractors, network operators etc; and
- The turbine provided an opportunity for the community to get up close and experience the technology for themselves.

It was nearly a decade before the wind industry moved much beyond the scale of the Brooklyn turbine. To be honest, there was a lot more overseas experience to support the development of the early NZ wind industry than there is for marine energy and we must expect it to take a few years to get wave and tidal power to where wind is now. We are seeing first and second-generation prototypes being tested, but the technology is not yet converging to a mature state. There is still a lot of technological development and proving to go through, and then there is the hurdle of costs.

This is intended to be realistic rather than negative, and is a plea to avoid shortcuts in the race to be first or biggest. The resource and the technologies need to be well proven if the industry is to retain the confidence of the public and investors in the longer term. There is room for a diversity of technologies and companies in the NZ electricity market – that is the beauty of a small scale dispersed resource.

Having said that, we want to accelerate the uptake of this renewable resource to the degree that we can.

This requires building industry capability, without boom-bust cycles and with an initial but gradually declining level of public funding

I want to say a word about competition. It sharpens the mind and drives efficiency and provides a good discipline, as well as being fun. But I'm glad to see that although many of you in this room have interests in particular technologies and enterprises which are competing, you have chosen to work together as an industry, recognising that the achievement of one will benefit the whole industry.

Marine energy also may be competing with other marine sector users, such as the fishing industry. Whether you see that as a challenge, or an opportunity is up to you.

- You might focus on wind and hydro energy as a competing technologies, or you may look at the synergies between these renewable energies that are intermittent on different timescales, and develop strategies for mutual backup;
- You might look at the inshore fishing industry as a competitor for sea space, or you may strengthen links with the local industry which could have considerable maintenance, survey and servicing capabilities to offer you.

I don't underestimate the challenge ahead of you, but I commend you on taking up these challenges. The marine energy industry will need to build on all of the benefits it can, if it's to be successful; just because a marine energy technology is used overseas, it does not mean that it is ideal for NZ.

Again, look at the example of wind energy; off-shore wind farms are becoming common place in Europe, but it is unlikely they will be developed in NZ for a considerable time, if at all. NZ is endowed with a fantastic quality wind resources, so we are focusing on our inland wind farms which typically exceed the best sites in Europe whether on or off-shore. So what is my point ? Well, NZ is often termed a technology adopter; but, we are at our best when we are a technology adapter. We need to combine the best of international experience in marine energy, and meld it together with our unique circumstances.

This is even more important with marine technologies, compared to other renewables, because marine technologies are very site specific. You know this better than I do; we can all see the variety of technologies being optimised for different site specific conditions. The quality, location, and intensity of the marine energy resource varies hugely.

So, it's not just about waiting for technology, or accepting the technologies available today; it's about getting to know our resources in-depth. As an example, we often hear about tidal currents being entirely predictable, but those who know Cook Strait well will have heard the stories of the main current running in one direction for 20 hours or more. We need to move beyond the

superficial knowledge of our resources if we are to make progress, it is the resource that everything else is built on. By understanding our unique circumstances, we will find the natural advantages that will help marine energy get a foothold in NZ – this will be a benefit to us all.

The resource knowledge doesn't stop at calculating how much energy a project can generate, it is also about ecological impacts. All energy projects have local effects, and this includes marine projects. You may see the RMA as simply another hurdle that you have to cross, but it is also provides a chance for you to highlight the beneficial aspects of your projects. It may be that the de-facto no-take zone that is created around a marine energy project actually improves local fish stocks. There are a raft of similar synergies that need to be explored, synergies that will help you both individually and collectively.

Finally, I hope you will think carefully about the role of marine energy in the NZ Energy Strategy and the Energy Efficiency and Conservation Strategy, and make a submission on how they can best accommodate marine energy. The minister's announcement of the marine energy contestable fund is not the end of it. You may well have views on how the fossil generation industry can best incorporate the price of carbon, without which renewables are not fairly competing. What do you think of the suggested ways of encouraging renewables, such as feed-in tariffs? What are the main issues for you of interface with the grid and the market and how can they best be resolved? Is there any research of sufficient public benefit that government should be funding it? Are there problems of resource allocation that we should look at?

I look forward to seeing the great progress you make; I won't measure that progress simply in marine projects built, but also in the quality of your RMA consent applications, the capacity and capability of your industry, the extent that you work together collaboratively on resource monitoring, and the degree to which you work with, rather than against, those in the wider maritime industry.

Very best wishes for a great year.

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