Marine Energy in Australia and New Zealand

Regulatory Barriers and Policy Measures

Glen Wright
All-Energy Australia
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Marine Energy in Australia

- ~15 companies in Australia
- ~10 marine energy plants in various stages of development: a further 9 at the proposal stage
- Most are small pilot projects

“The future success of ocean power in Australia is dependent upon government policies to support the development and deployment of these emerging technologies.

The sector requires a comprehensive policy framework for emerging technologies to take them from research to full scale demonstration.”
Barriers to Development

- Technical
- Financing
- Regulatory and policy barriers
- Bottom line is cost

Cost of producing a marine energy system is very high, though cost will fall as technologies mature – need a helping hand!

Capital cost ($/kW) of wave and ocean current generation is currently $7000 and $5200 respectively: $1498 for coal (without CCS).

1 CSIRO, ‘Projections of the future costs of electricity generation technologies: An application of CSIRO’s Global and Local Learning Model’ (2011) 64-68.
No specific legal regime/measures for marine energy projects in Australia

Victoria has been considering policy for some time (note recent change of government)

Existing federal laws applicable to renewable energy projects generally, e.g.:
- Environmental Protection and Biodiversity Conservation Act 2009
- Renewable Energy Target legislation
- National Electricity Market
Federal legislation:
- Australian Maritime Safety Authority Act 1990
- Coastal Waters Acts 1980 (delineating state/federal)
- Sea Installations Act 1987 (permitting for installations)
- Historic Shipwrecks Act 1976 (nearly 8,000 shipwrecks)

State legal regimes, such as:
- coastal management legislation
- climate change legislation
- planning law
- environmental protection
- regulation of pipelines
- port management legislation
Issues with Existing Regime

- Environmental impact assessment
- Exploration and exploitation licensing
- Transmission network connection
- Split jurisdiction
- Fragmented/Ad-hoc approach
Environmental impact assessment

- EIA is an expensive process: requiring an excessively detailed report for low impact technologies and small pilot projects adds cost and inefficiency.

- Other technologies have homogenised; marine technologies are still numerous and diverse – need for flexibility.

- Wide range of marine energy technologies = diverse range of environmental impacts.

- Tidal fence and overtopping systems: large-scale alteration of the surrounding landscape, impact on water flows.

- Freestanding/submerged turbines: minimal impact.

Maui’s Dolphin
BioWave device
Environmental impact assessment

Portugal

- Established a 320 km² pilot zone for marine energy test projects: less detailed EIA required

Scotland

- Government conducted detailed EIA in high-energy areas to establish baseline data and likely impacts: takes burden off marine energy companies

Australia

- Exploration licensing regime for coal/gas/geothermal applies less stringent EIA requirements for exploring/assessing resource
Exploration Licensing

- Well-established system of exploration/mining licences for coal, gas and oil (including offshore), and even geothermal - relatively uniform across jurisdictions
- Exploration for resources on ‘a use it or lose it’ basis
- EL also provides a framework for drilling and testing: differing requirements based on activity
- No such system is in place for marine energy: company may spend time and money ‘prospecting’, but will not have exclusive rights
- Particularly a problem for tidal systems: only a handful of potential locations
- State governments have approached licensing differently, developing the licensing process as and when applications arise: lack of uniformity and uncertain regulatory landscape
- EL could be used to guarantee rights over a resource and provide a framework for testing and prototype deployment
Transmission Network Connection

- All large energy generators need to connect to the transmission network: building this infrastructure is expensive.

- Scotland: “significant constraint to the future development of marine renewables”\(^1\).

- Coal power stations benefit from existing network: renewable energy generators have to bear cost of building new lines.

- BUT, can’t operate the transmission lines – gift to operator.

- Future generators will want to connect using this infrastructure, but will not have to pay the company that built it = unfair distribution of costs.

- Recent rule-change proposal in Australia to fix this problem was drastically toned down: basic structure of the regime left in tact.

\(^1\) Scottish Marine Renewables SEA (2007).
Transmission Network Connection

UK

- Special offshore transmission regime
- Transmission network owners bid to build, own and operate offshore transmission platform and line

Texas

- Similar system
- ‘Competitive Renewable Energy Zones’
- Transmission companies tender for infrastructure projects
Split Jurisdiction

- Maritime jurisdiction split between state/federal governments

- 3 nautical miles

- Projects within 3 nautical miles of the coast regulated by state legislation and the EPBC Act (and other federal legislation)

- Projects beyond this limit regulated by Sea Installations Act 1987 and other federal legislation

- Potentially dealing with two separate regulatory regimes, depending upon how far from the coast the project is situated

1 Offshore Constitutional Settlement (1979) and Coastal Waters Acts
Ad-hoc Approach

- Lack of a considered regulatory framework means that local authorities are often uncertain which legislation to apply for site tenure and development approval.
- Tendency to ‘invent’ regulation = delay and added cost.
- Inappropriate requirements, e.g. excessive EIA requirements ‘just to be sure’.
- Various relevant bodies for licensing/unclear delineation.
- Clear method in commercial legal practice is unlikely to emerge: likely that further fragmentation of approach will occur.
Ad-hoc Approach

Scotland

• Dedicated licensing system for marine energy projects

UK

• Established the Marine Management Organisation and a licensing process for marine energy

Portugal

• One dedicated management body for its pilot area

Spain

• Collated and integrated applicable legislation into a single administrative procedure
New Zealand

- Similar position to Australia: no specific regime
- Marine energy regulated by Resource Management Act 1991
- Crest Energy: first large-scale tidal project recently approved (200 1Mw turbines)
  - ~5 years
  - Long-winded EIA
  - Maori claim issues
- No ELs: very limited tidal locations – likely to be competition/dispute
- Limited grid connection options
Policy Measures

- Measures to actively encourage marine energy:
  - Feed-in tariffs. e.g.:
    - France: €150/MWh for 20 years
    - Portugal: €260/MWh for first 4MW installed, down to €76/MWh for 20-100MW installed
    - Ireland: €220/MWh
  - Multiplied Renewable Energy Certificates (not relevant until marine energy projects are in operation)
  - Grants, subsidies and tax breaks, e.g.:
    - UK: £22million Marine Renewables Proving Fund
    - NZ: NZ$8 million Marine Energy Deployment Fund
Summary

- Ease current regulatory burden:
  - Gradated EIA requirements
  - ‘One-stop’ system for licensing
  - Prototype/RE zones
  - New rules for grid connection

- Measures to actively encourage marine energy:
  - Feed-in tariff
  - Multiplied RECs
  - Further grants, subsidies and tax breaks
Thank You

Glen Wright

glen.w.wright@gmail.com
0406007306