marine energy matters

Issue 1 - Autumn 2011

Welcome

Welcome to MEM's first newsletter - we thought it was time as the company approaches its third birthday! We hope you find it informative and will at least stimulate a nodding of the head in agreement - or perhaps a different emotion! It aims not only to inform you of MEM's recent activity in the wave and tidal sectors but provide some industry insights, updates and information about current key developments alongside some opinion from ourselves.

So where is the wave and tidal industry nearly three years after MEM's conception? Well, I guess the words 'It's all been about the technology stupid' come to mind and certainly there have been many developments. However, those closest to the industry realise there is far more to creating an industry than simply developing technology. An industry needs market incentives, places to deploy technology, supply chains, standards to build to and perhaps most significantly, funding and commitment to make it all happen.

Sometimes it's hard to remember what progress looks like in a burgeoning industry and we should take a moment to reflect on our achievements. Three years ago, I remember counting the number of devices deployed in a working environment at large scale on one hand. Today there are around 15 developers at this stage of development. We now have multiple wave and tidal test facilities globally and seabed lease options for commercial operation. Numerous areas have undertaken resource assessments and at least some early stage power production tariffs are available. Very considerable investment in the knowledge base has also occurred globally, setting the foundations for this developing industry.

However, despite these major achievements, the global investment landscape is in a very different place to that of three years back with this sector not being immune to the pressures on public sector budgets - so perhaps we have a different pace ahead of us.

Colin Cornish
Managing Director

This issue

Strategic Marine Renewables Development

In a previous era, the city of Bristol (UK) grew up around international trade enabled by one of the highest tidal ranges in the world, peaking at over 14m. Therefore, not surprisingly the river Severn has been the focus of initiatives to consider tidal range energy generation. The international trade has grown and much now takes place nearer the estuary at Avonmouth (as those who regularly travel the M5 motorway will know). Aware of the potential for the Bristol area, the city council recently asked MEM to consider Bristol's future role in marine renewables. Along with partners, RegenSW, MEM considered the physical location, available marine resources and the developing local sector players to assist in the formulation of a draft, high level strategy for the area. There is much work to be done but Robin McDowell of Bristol City Council commented:
"Bristol has some unique marine energy assets and is home to some key organisations, including Marine Current Turbines and the Rolls-Royce owned Tidal Generation Limited. We want to ensure our future strategies maximise the potential for the sector's development."

Industry News

The University of Exeter have announce a Falmouth Bay nursery site (FabTest) for device testing in Cornwall. This new test site will act as a pre-test area for developers before moving on to Wave Hub.

Cardiff based Tidal Energy Limited have been granted permission to undertake a 1 year test of their DeltaStream device in Ramsay Sound, west Wales.

Aquarmarine show off their 2nd generation Oyster 2 as it is prepared for installation at EMEC. The first device will be joined by others to create a 2.4 MW array.

The UK seeks industry input before creating an Offshore Technology Innovation Centre to help develop the industry.

Marine Conservation Zones - marine spatial planning gets serious

Over the last 2-3 years we have seen the beginnings of marine spatial planning in the UK largely through the introduction of conservation areas such as Special Areas of Conservation (SACs) and more latterly development towards Marine Conservation Zones (MCZs). MCZs will not become active until 2016 but they really mark a step change in marine spatial planning both in terms of planning scale and process. MEM has been representing the renewables industry in one of the largest projects covering the south west of England including the south west approaches of the UK.

MCZs will possibly cover 20% plus of sea area within the UK's Economic Development Zone out to a maximum of 200 nautical miles or mid channel/sea border with another country. They generally cover a representation of sea floor habitats (a proxy for the biodiversity likely to occur) and Features of Conservation Importance (FOCI) which are physical records of important features. The process of defining MCZs has been stakeholder led, although the involved parties were given a set of pre determined ecological criteria. Working alongside socio-economic and conservation groups MEM represented the renewables sector and aided the developing an MCZ network for the south west. The UK government will make a final decision on MCZs next year, after further consultation.

So what does this mean for renewables?

Within the South West project area we have been working hard to understand how Marine Conservation Zones can be co located with renewables. Indeed the Atlantic Array, a 1500 MW wind park is likely to be co-located with an MCZ. Still part way through this process, the general planning assumption has been marine renewables should be compatible with MCZs, without significant additional licensing and mitigation requirements over and above those required within a normal EIA driven process for a non designated site. However, the industry can expect some additional licensing costs, as individual MCZs and the whole network will need to be taken into account within the EIA process. Marine Renewables will not be permitted in a relatively small number of "Reference Areas" where virtually all deposition or extractive activity will not be permitted.

Future Marine Spatial Planning

As the UK's Marine Management Organisation (MMO) roles out Marine Spatial Planning over the next few years, the MCZ development process provides some very useful learning in approaching what will be a an increasingly difficult task of ensuring offshore renewables development can occur whilst considering needs of other sea users and the natural environmental. Having been part of MCZ process, MEM is convinced that a participative process involving all stakeholder groups is likely to result in more effective planning than the traditional "define then consult" practise of regulation development.

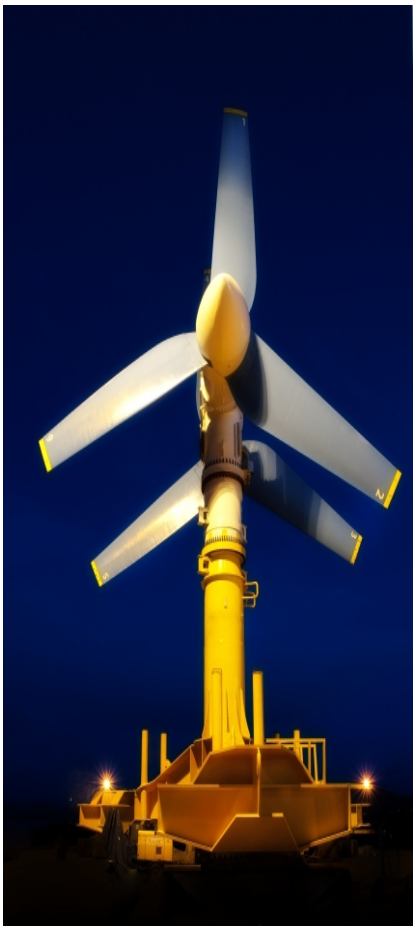
Fishing Community Liaison

MEM's work as Fishing Liaison Officer for the Wave Hub project has brought significant learning in how best to engage with a community that often sees itself as being 'disadvantaged' by the offshore renewables sector. When working with the fishing community a different mindset is needed as quite frankly many fishermen have a very different set of beliefs, work patterns and daily life than most of us landlubbers. So things have to be approached differently if new kid on the block, the renewables sector, is to be successful in engaging with this traditional industry.

Like most industries there are the public figures and industry bodies/associations, although at times there can be strife between them. Some of the local Producers Organisations can be a wealth of information and a communication medium that should not be ignored. However, there is no substitute for getting to know key fishermen in the area, even if this does mean a few embarrassing moments leaning over the side of a boat because of a more fragile constitution!

The topic of 'compensation' lingers not too far beneath the surface of discussions and will sooner or later raise its head. Individual fishermen sometimes perceiving the next gold rush is in town and they will want part of it. However, in our experience, most fishermen want to see a sustainable future for themselves rather than quick cash and so there are areas where developers can work with fishermen to develop a more sustainable industry alongside renewables. Some fishermen will look at how they can help service the renewables industry, but its our experience that the majority wish to continue fishing rather then embark on a new career servicing the offshore renewables sector. The first steps in communicating with the fishing community are crucial and can be intimidating, but transparency and interaction on the harbour wall, as well as with the fishing organisations and associations is the most productive route to a long term relationship. But be prepared for a some colourful language and deviations from the roadmap along the way.

If you or your project needs help in liaising with the fishing sector MEM offers advice from the strategic approach to acting as the developers Fishing Liaison Officer.



Industry News

Carnegie Wave Energy have successfully recovered their Ceto demonstrator device after in sea testing off Garden Island, Freemantle, Western Australia.

Nova Scotia Department for Energy has launched a Tidal Development Feed In Tariff of CAD$0.65/kWh.

Atlantis have successfully redeployed their AK1000 tidal turbine at EMEC.

BIMEP, the Spanish wave device test facility near Bilbao makes progress in awarding its €10.4m cable contract.

Investment - new thinking needed?

Speaking at a recent conference in London, MEM Director Colin Cornish outlined the development of the global marine technology Industry as findings from a major knowledge gathering project undertaken by MEM. Whilst the industry continues to develop Colin highlights the investment issues ahead.
"Leaders in the wave and tidal industry are now facing the very high costs of large scale prototype development, with even bigger costs to come once we start deploying pre commercial arrays. These costs are going to be increasingly difficult to meet at a time when government funding is under pressure worldwide. The wave and tidal sectors are very challenging environments for conventional investment models as the figures required are large, often over quite long time frames. Add this to the current lack of suitable market mechanisms and perceived high risks means marine renewables are often not serious cash contenders for the private investment sector community so some new financial thinking is needed to bring this sector forward. The good news is that some of large engineering organisations are now seriously engaged in the industry, particularly the tidal sector."

MEM News
Project Developer Joins MEM

Project developer and general marine energy specialist Nicola Meek, joins MEM as an associate from October 1st. Nicola has been involved in the marine energy industry for 10 years initially as a founding member of the Orecon team working on all aspects of device development and latterly specialising in project development. More recently Nichola has been working with PRIMaRE within the Knowledge Transfer Team - aiding businesses in the marine energy sector.

Other Company News

MEM plays key role at MERiFIC launch event. MERiFIC is a £4m EU collaboration project between French and UK regions focussing on marine energy development around peripheral regions and island communities.

Recognising the need for rapid, low cost, project development tools, MEM is developing a GIS based decision making tool for site selection and EIA development.

MEM's Global Technology Review is available from our website.

Visit our recently launched new web site: www.marine-energy-matters.com

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So Where Now?

During our relatively short company life, the industry has made considerable progress. There are now a handful of technologies on the brink of being ready for pre-commercial operation and a supply chain is emerging. However this progress has brought the industry leaders to the largest hurdle..... finance. Without funds for development, the industry will start to stagnate. In a time of austerity and budget restrictions the industry has lost some of its main source of support - the public sector. UK Government funding has been cut, resulting in £40m of MRDF being lost and not directly replaced. The recent announcement of £20m for two demonstration arrays provides a very modest level of support and is a drop in the ocean when compared to the sums required to commercially exploit a single technology, let alone a new industry. At the same time as government funds are being withdrawn, the private investment sector is not very active in what it sees as a high risk investment environment. The industry being currently unable to meet the criteria required by a more cautious investment community.

With no obvious source of cash great enough to support the industry, key players are rightly worried and there are signs that the industry is already starting to brace itself for a financial winter. One of the leading wave energy device developers has recently announced that at least 20 jobs will be lost in the short term following a disappointing funding round. A few projects have already fallen by the wayside and there is some evidence of installations in the UK being less optimistic about returns. On the positive side, the Government is talking warmly about Marine Energy Parks (MEP) for the UK and is currently consulting on an Offshore Energy Technology Innovation Center (TIC), which will hopefully set the foundations for perhaps more modest but sustainable development of the industry.

Global Technology Review 2011

A project first started back in 2009 looking at the progression of devices and developers, MEM's Global Technology Review was released in Spring 2011. Based around MEM's internal WATTs (Wave And Tidal Technology) database and a set of marine energy specific Technology Readiness Levels (TRLs), the project identified as many active developers as possible. Using the TRLs MEM rated each organisations development status. The same process was undertaken in early 2011, two years later, and the collective results compared. The results give an indication of industry progression enabling leading countries/regions to be compared. Some of the results were surprising. They showed that over the two year period tidal stream developers based in the USA (where in-river testing has lower development costs) have made great strides and are catching the leading UK based developers. When comparing wave and tidal developers it is clear that the tidal sector is pushing ahead of the wave community.

Another review will be released in early 2012 documenting the progress the industry has made during 2011.