



reNEWS

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#ICOE2016



Time running out to prove technology, says DCNS boss

The tidal industry needs to develop commercial-scale arrays at competitive cost levels within five years or investors will lose patience, DCNS vice president for energy and marine infrastructure Thierry Kalanquin told ICOE 2016. **p2**

Irish downpayment for indigenous marine team

The Sustainable Energy Authority of Ireland has awarded €4.3m in grant funding to new marine energy projects. **p3**



Laminaria team focus on storm survivability

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P2 deal adds test options at EMEC

The European Marine Energy Centre has acquired the Pelamis P2-002 wave energy converter that previously underwent tests at the Orkney facility.

The 750kW machine was put through its paces at EMEC's Billia Croo site between 2012 and 2014 by former owner ScottishPower Renewables and is currently moored at Lyness.

SPR had been assessing the technology prior to Pelamis Wave Power going into administration in 2014.

EMEC is exploring whether to use the P2 as a test rig for materials, components or

other open-sea trials. Director Neil Kermode said: "We want to see (PWP's) legacy live on and I believe that there will be opportunities to use the P2 device within other R&D programmes."

Wave Energy Scotland, meanwhile, is to decommission the Pelamis P2-001 device ordered by Eon in 2009. The plan is to share the knowledge gained from more than 15,000 hours of operation at EMEC.

Some of the dismantled 1500-tonne device will be retained for further testing and some will be sold for

refurbishment. The steel tubes and other components will be sold as scrap.

Contaminated components such as biodegradable mineral oil will be disposed of by specialists.

WES staff have been in contact with the original manufacturers to help identify the components that warrant analysis to determine their performance during sea testing.

Director Tim Hurst said: "Pelamis created a wealth of knowledge and experience in technology development and operational management."

Tocado takes offshore leap

Dutch tidal outfit Tocardo has signed a deal with EMEC to deploy a 2MW demonstration array off Orkney.

The pre-commercial project at the grid-connected Fall of Warness tidal test site will feature eight Tocardo T2 250kW turbines. Installation will begin next year as part of a 20-year campaign, the company told ICOE 2016.

The T2 hardware has already proven its mettle

in the Netherlands at the Eastern Scheldt storm surge barrier (pictured). The EMEC deployment will validate the technology in a volatile offshore environment, according to Tocardo.

Chief executive Hans van Breugel said: "The EMEC project is a breakthrough for Tocardo's careful roll-out of our technology, moving from near inshore towards offshore. With multiple



turbines operational in low, moderate and extreme high tidal flows we now feel comfortable to go offshore."

Photo: Tocardo

THURSDAY'S HIGHLIGHTS

Custodians of the future

Raising finance for wave and tidal technologies can be hard. DP Energy, EMEC and Canada's FORCE share what they would do differently if they could start again.

Pentland Level 3, 09.30-10.30

Tidal showcase

Does size matter? Tocardo, Scotrenewables, Sustainable Marine Energy and OpenHydro are on hand to discuss tidal turbines big and small.

Pentland Level 3, 11.00-12.30

Can marine compete on cost?

The crucial question. A look at what wave and tidal technology needs to achieve grid parity, and what that means for research.

Sidlaw, 11.15-12.30

Speed date

The European Marine Energy Centre's quick-fire lunchtime session featuring technology developers at the Orkney test site gets a second date.

EMEC stand (95), 12.30-13.30

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STAYING THE COURSE:

Scottish Energy Minister Fergus Ewing told ICOE 2016 that political support for marine energy remains strong despite recent high-profile setbacks. The sector is on the verge of "great success" and will deliver jobs and growth for Scotland, he insisted.

"We believe the blue energy economy can be an engine to drive forward prosperity. We are under no illusions that the journey from concept to commercialisation is a long one... but we are increasingly confident we will arrive at the destination."

Photo: Matt Pulzer/RenewableUK

Time running out to prove technology, says DCNS boss

The tidal industry needs to develop commercial-scale arrays at competitive cost levels within five years or investors will lose patience.

DCNS vice president for energy and marine infrastructure Thierry Kalanquin told ICOE 2016 that the transition from R&D to commerciality is an "urgent priority" for the sector.

The French company, which owns Irish tidal developer OpenHydro, has spent €250m on marine renewables over the past 10 years without seeing a return, he said.

"We are looking everywhere to develop commercial farms, and we need to develop a commercial farm next year, not in the next decade. If we have to wait that long we are dead," he said.

"We have five to seven years to bring our technology to real competitiveness but

it is achievable," he added. Kalanquin also called on governments to support tidal arrays rather than pilot projects.

"We listen to ministers, we appreciate the policy on pilot projects but the policy for commercial farms is nowhere," he said.

"Our shareholders are looking for policy for commercial farms. Investors don't like uncertainty and don't have to clarify the path to industrialisation as is clear for onshore wind, offshore wind and solar."

TP Ocean's Fiona Buckley said the five to seven-year timeline will be challenging for marine. "The industry has still to perfect vital sub-components such as power take-offs. We don't have enough time ahead of us as offshore wind did," she said.

Edinburgh tidal developer

Nova Innovation's non-executive chairman and former SSE chief executive Ian Marchant said utilities will come back on board when the technology is proven.

"Utilities don't want projects that come in at three times the cost and twice the delivery time," he said.

"Utilities are risk averse and we haven't got the debate right about being risk averse and investing in new technology. Utilities need to cut a little bit of slack."

Atlantis Resources chief executive Tim Cornelius said his company's MeyGen 6MW Phase 1A, 6MW Phase 1B and 10MW Sound of Islay projects to be developed by the end of the decade show commercial-scale tidal arrays have arrived in the UK.

"The next three years will be the best in the history of tidal," he said.



Programme Day 3

Thursday, 25 February 2016

SIDE EVENTS:

• Business Partnering Service
Atrium, Level 1, 12.30-13.30

• OCEANERA-NET Joint Call 2016
Lowther, Level -1, 13.15-17.30

POST-EVENT

Friday, 26 February 2016

• Wave Energy Converter Technology Requirement Specification and Performance Metrics
Menteith Room, EICC Level -1, 09.00-17.00

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DNV stamp of approval for Stingray

Columbia Power Technologies has secured preliminary approval from certification company DNV GL for its Stingray wave power device. The US company said on Wednesday that the hardware has achieved DNV GL's Statement of Feasibility level.

The process involved Columbia Power completing a full risk assessment of the technology and agreeing actions to mitigate any risk of failure. Chief technology officer Reenst Lesemann said: "We are extremely pleased with the achievement of this important milestone. It points to... the experience and expertise of our product development and delivery team."

"Our team found the certification process rigorous but extremely beneficial towards ensuring that we have a firm understanding of the risk management requirements and processes."

"We are also appreciative of the support from the US Department of Energy and US Navy in reaching this advanced stage in our commercialisation plan."

EMO to keep constant watch at Cape Sharp

EMO Marine Technologies has been awarded a contract to provide monitoring equipment on the 4MW Cape Sharp Tidal project in Nova Scotia, Canada.

The system allows for constant monitoring and is intended to assist with both deployment and recovery phases.

The EMO MUX package sends multiple underwater video and sensor data streams along a high-bandwidth fibre-optic cable from the subsea platform to the 'Scotia Tide' deployment barge at the surface.

OpenHydro is partnering with Emera on the Cape Sharp project, which could grow to 16MW in 2017. The final goal is to generate up to 300MW in 2020.

IN BRIEF

■ The government of Nagasaki prefecture in Japan will publish a business plan next month for development of three offshore renewable energy test sites, two for tidal and one for wind. The former, modelled on Scotland's EMEC, will be divided into a nursery site at Hisakajima near Goto for prototypes and one for commercial-scale devices at a site between Enoshima and Hirashima islands near Saikai. Construction could start in 2018.

■ Multi-millionaire founder and chairman of Glastonbury-based developer Wavepower, Adam Norris, said he is open to taking majority stakes in developers, makers of components such as power take-offs or companies involved in the deployment of marine devices. Norris said Wavepower had previously negotiated with Swedish developer Seabased about an acquisition but the deal fell through.

■ The European Commission's Ocean Energy Forum has unveiled proposals to create an insurance fund for wave and tidal demonstration projects. A policy paper sets out plans to create an up to €70m fund backed by finance from European institutions to underwrite project risks such as equipment failure and availability. The scheme could be launched next year.

■ Offshore Renewable Energy Catapult has launched an interactive digital portal to support the growth of the UK's marine energy supply chain.

The Marine Energy Supply Chain Gateway (MESCG), supported by funding from Scottish Enterprise, RenewableUK, and the Welsh government, brings together regional supplier databases. The Blyth-based R&D centre said MESCG will offer a practical resource for market entrants by putting buyers in touch with sellers.

■ French marine data intelligence provider Open Ocean has upgraded its Metocean Analytics tool to include high resolution current data for projects in the Bay of Fundy in Canada. Nova Scotia's Acadia Tidal Energy Institute in Wolfville assisted on the upgrade.

■ Irish company Exceedence has secured a €90,000 contract from Wave Energy Scotland to develop and test a hydraulic power take-off concept based on a flexible compliant polymer spring tube.

Irish downpayment for indigenous marine team

The Sustainable Energy Authority of Ireland (SEAI) has awarded €4.3m in grant funding to new marine energy projects.

The 15 developers that will benefit from the cash, part of the organisation's prototype development fund, were revealed yesterday at the International Conference on Ocean Energy in Edinburgh.

Companies securing funding under the scheme include DP Energy, ESB, ORPC Ireland, Tocado Ireland and Blue Power Energy.

SEAI head of emerging

sectors Declan Meally said: "The objective at this major international event is to show that Ireland is open for business and is actively committed to harnessing its abundant wave, tidal and offshore wind energy resources in an environmentally sustainable manner."

"The government through its departments and agencies is dedicated to developing an indigenous ocean energy industry, which is a real opportunity that will deliver future economic and societal

benefits for the citizens of Ireland."

He added: "To that end, collaboration, both nationally and internationally, is key."

"To facilitate the development of the sector we're very keen to explore all collaborative opportunities where Ireland can offer its strengths in areas like test facilities, technology supports, supply chain availability and grid infrastructure."

Meally said that Ireland hosts a potential €15bn ocean energy resource around its coasts.

€10m EU grant to take Scotrenewables tidal floater to the next level

The European Commission's Horizon2020 programme has awarded Scotrenewables €10m to help commercialise its floating tidal energy technology.

The grant, first reported in subscriber-only newsletter reNEWS last November, will be used to fund development of a mark-two turbine, upgrading the company's current SR2000 2MW platform.

The SR2000-M2 prototype will be installed alongside the SR2000-M1 at EMEC's tidal test site at the Fall of Warness in Orkney, creating the 4MW Floating Tidal Energy Commercialisation (FloTEC) demonstration array.

Other partners in FloTEC include DP Energy, Harland

and Wolff Heavy Industries, ABB, EireComposites, Technology from Ideas, University College Cork, and SKF.

Scotrenewables tidal power business development manager James Murray said: "The ambition of FloTEC is to drive down the cost of tidal energy through the delivery of a number of targeted innovations on an enhanced variant of Scotrenewables' SR2000 floating tidal turbine."

"Engineering will commence in early 2016 and will include advanced power conversion hardware, low cost manufacturing technologies, load reduction mooring components and integrated energy storage."



ORKNEY DAY TRIP: the European Marine Energy Centre threw open its doors to ICOE delegates this week in collaboration with Highlands and Islands Enterprise. Visitors got the chance to learn more about EMEC and see the main marine renewables sites, and also met with developers and members of the Orkney supply chain.

Photo: Colin Keldie



Almost 10MW of tidal capacity will be deployed in Scottish waters this year.

Get the full story in the reNEWS Scotland 2016 special report, out with next week's subscriber-only newsletter Check out renews.biz

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Laminaria team focus on storm survivability

Belgian device developer Laminaria has signed up the European Marine Energy Centre, Innosea, Ghent University and TTI Testing to support the development of its wave energy converter.

The team has launched a programme to develop and test a 100kW Laminaria device with the aim of deploying a prototype in 2017 at EMEC's grid-connected wave test site at Billia Croo off the west coast of Orkney.

Laminaria said the main focus of the project will be on the survivability of the machine at pre-commercial scale in extreme storm conditions.

The consortium will address several technology challenges, including development of a mooring and pulley system to support the storm protection set-up, power take-off and a new anchor design.

Laminaria chief executive



GROUP EFFORT: the Laminaria wave energy converter is prepared for deployment off Belgium

Photo: Laminaria

Steven Nauwelaerts said: "We are keen to come and test our technology at full scale at the challenging EMEC site.

"We are confident that our technology can survive any storm with conservation of nominal production."

The project is funded under the OCEANERA-NET first joint call 2014.

■ OCEANERA-NET will launch its second joint call for collaborative research, development and demonstration projects today (Thursday) at a side event in the Lowther room, level -1, from 1.15 p.m. Technology areas include wave, tidal, tidal and ocean currents, salinity gradient and thermal energy conversion.

Industry cabling solution project points way ahead

The final phase of the £2.4m Tidal Array Cabling Solution project, funded by Scottish Enterprise, has been completed in Orkney.

Launched in December 2013, the aim was to develop methods of locating, securing, protecting and retrieving wires for tidal energy arrays.

Last year under the initial phase a team led by consultancy Aquatera deployed a 50-metre rigid 'U-tube' cabling protection structure, designed by Jee, at EMEC's Shapinsay Sound tidal test site.

The second and final phase, conducted over the winter at a specially licensed site, also in Orkney, tested more than 10 different technological and procedural innovations during a set of cable laying trials.

Aquatera has been supported on the project by Green Marine, which provided a specialised GM700L heavy lift barge. Other contractors included JGC on fabrication, Lupus (structural design)

TTI (mooring analysis) and Orcades Marine (procedures and onsite services) with Roving Eye, Sula and Triscom providing deployment support.

Aquatera head of offshore technology Daniel Wise said: "The results... give us real confidence that we can now further develop an approach that will transform the economics and reliability of tidal energy."

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