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LiVE @ Floating Offshore Wind 2022

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Principle Power lands Dolphyn FEED deal

ERM Dolphyn has contracted Principle Power to advance the front-end engineering design (FEED) for a 10MW floating wind-to-hydrogen demonstrator project off the coast of Aberdeen.

The scheme will employ a modular design integrating electrolysis and a turbine on a moored Principle Power WindFloat semi-submersible platform to produce hydrogen from seawater.

ERM Dolphyn (Deepwater Offshore Local Production of HYdrogeN) has signed the contract following the grant of £8.62m from the UK government via the Low Carbon Hydrogen Supply 2 Competition.

Principle Power's senior business development manager in Europe Gregory-Campbell Smith, who will address delegates tomorrow afternoon at the Floating Offshore Wind conference on the design and manufacturing of floating substructures, said the company is pleased to continue its years-long collaboration with ERM on the Dolphyn project.

"We are eager to further develop partnerships across the entire supply chain, supporting floating offshore wind applications to support and accelerate growth in the UK and globally. Moving to FEED on the Dolphyn project is a significant milestone towards our collective carbon-free future," he added.

ERM partner David Caine said: "To meet net-zero ambitions around the world, hydrogen from offshore floating wind needs to be a significant component in any viable long-term solution for heat, electricity generation, and transport.

"The ERM Dolphyn project is an innovative integrated system combining all the technologies required to enable offshore wind resources to contribute towards hydrogen production at scale. Principle Power has been instrumental in this process, and we are delighted to extend our collaboration."

The demonstrator is due to go live in late 2025. Subsequent phases include 300MW-plus sites to be built around the UK and overseas, with gigawatt-scale projects planned in the early 2030s.

ERM is aiming to deploy up to 4GW of Dolphyn concept wind farms.

Sector push for uniformity

The UK floating wind industry is expected to call for increased standardisation across the supply chain in Aberdeen this week as sector development takes off.

Scottish Renewables chief executive Claire Mack, who will welcome delegates to the sold-out event tomorrow morning, told reNEWS that floating offshore wind offers a "massive pipeline of opportunity for the Scottish and UK supply chain".

"There are many barriers to supply chain investment, so it is vital that the UK and Scottish governments, industry and supply chain come together to maximise the opportunity," she said.

DeepWind cluster manager Paul O'Brien, who will chair a session on floating substructures tomorrow, said the industry needed to ensure foundations are designed from the start at the "lowest cost" to the industry.

"Where we can concentrate on the mass manufacture of certain items we should do that," he stated.

TRENDING ON reNEWS.BIZ

Crown Estate refines Celtic Sea lease areas
The Crown Estate has refined the areas of search for its upcoming 4GW floating wind lease round in the UK Celtic Sea. The seabed authority has reduced the size of zones and removed some sites. It is understood that bids will be judged on price and supply chain, together with social and environmental commitments.
Click here

CIP lines up Stiesdal foundations for Pentland floater
Copenhagen Infrastructure Partners has selected Stiesdal Offshore's TetraSub as the floating foundation technology for its 100MW Pentland floater off north Scotland.
Click here

EMEC concludes 100MW floater design
The European Marine Energy Centre has completed the concept design for a 100MW floating offshore wind test and demonstration site. It plans to secure a lease for the six-berth project 20km off the west coast of Orkney.
Click here

Partners plan Norwegian concrete floater factory
Swiss engineering firm Implenia and WindWorks Jelsa have signed a memorandum of understanding to build a factory in Norway that will produce and assemble concrete platforms for floating wind turbines.
Click here

Cerulean Winds floater primed for total UK build

Cerulean Winds is planning to get its first 14.7MW turbine in the water within two years should it be successful in Crown Estate Scotland's INTOG leasing round.

Director Mark Dixon told reNEWS that delivery agreements are already in place to build and assemble 100% of the single floating unit in the UK.

Development work on the remainder of a proposed 1.5GW project to feed Ping Petroleum's FPSO platform for its Avalon field in the North Sea would start in mid-2024.

The developer has hired French bank Société Générale and US bank Piper Sandler to advise on a debt and equity raise respectively.

Cerulean Winds has filed bids for up to four 1.5GW projects into INTOG.

Cerulean would seek a demand-side connection for when wind resource is low so that it could continue to supply Ping Petroleum. Any surplus power could be used for "green fuels infrastructure" or fed directly to industrial users onshore, Dixon added.

Orsted consortium to up ante at Salamander

The Orsted-led consortium developing the 100MW Salamander floating wind farm off east Scotland is preparing to kick off an environmental impact assessment and pre-front end engineering design (FEED) study of the project.

The partners, which include Simply Blue Group and Subsea7, have selected a contractor for the EIA work, due for 2024 submission.

Consultancy firm Wood has meanwhile won Salamander's pre-FEED contract, which involves interface with the foundation designer and design services for the subsea and onshore cables and grid.

Bird surveys are due to be wrapped up in the first half of 2023, following the recent completion of geophysical and environmental studies at the site, 35km off Peterhead, by Ocean Infinity.

Salamander has been entered into the 500MW innovation pot of Crown Estate Scotland's ongoing Innovation and Targeted Oil & Gas (INTOG) leasing round, the results of which are due early next year.

Project director Huw Bell told reNEWS that the floating farm "was a really strong bid", with the partners having already committed significant investment.

The project, which has also signed memoranda of understanding with Ocergy and Global Energy Group, expects to secure planning consent and a Contract for Difference in 2025 prior to a final investment decision in 2026.

The wind farm will start generating power between 2028 and 2029, Bell added.

■ Simply Blue floating wind project development manager Kerry Hayes will be speaking about lessons learned from pilot floating wind projects at the conference on Thursday afternoon.

Future looks bright for North Star's rising cadet programme

Offshore wind support vessel operator North Star has reported a sharp rise in applications for the next generation of seafarers.

The Aberdeen-headquartered company, which also has bases in Lowestoft and Newcastle, currently has 94 people undergoing various stages of training at nautical colleges around the UK.

Cadets spend time on board some of North Star's 41-strong fleet as part of its three-year training programme, which has been running for 26 years.

North Star has pinpointed the boost in applications on it securing four long-term charters for its first hybrid-propulsion offshore wind service operation vessel (SOV) fleet, as well as positive media coverage of the UK's thriving renewables industry.

First-year cadet Lewis McGougan, whose father is an O&M manager at the Moray East offshore wind farm, will attend the conference tomorrow to support North Star. "Watching my dad's career over the past decade has inspired me. From being taken by him to visit the impressive structures, to now championing offshore wind, I have always been very interested in the exciting developments the industry has made," he said.

sse Renewables

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We're working with our supply chain network and local partners across international markets to develop the next generation of floating wind prospects in abundant deep-water sites.

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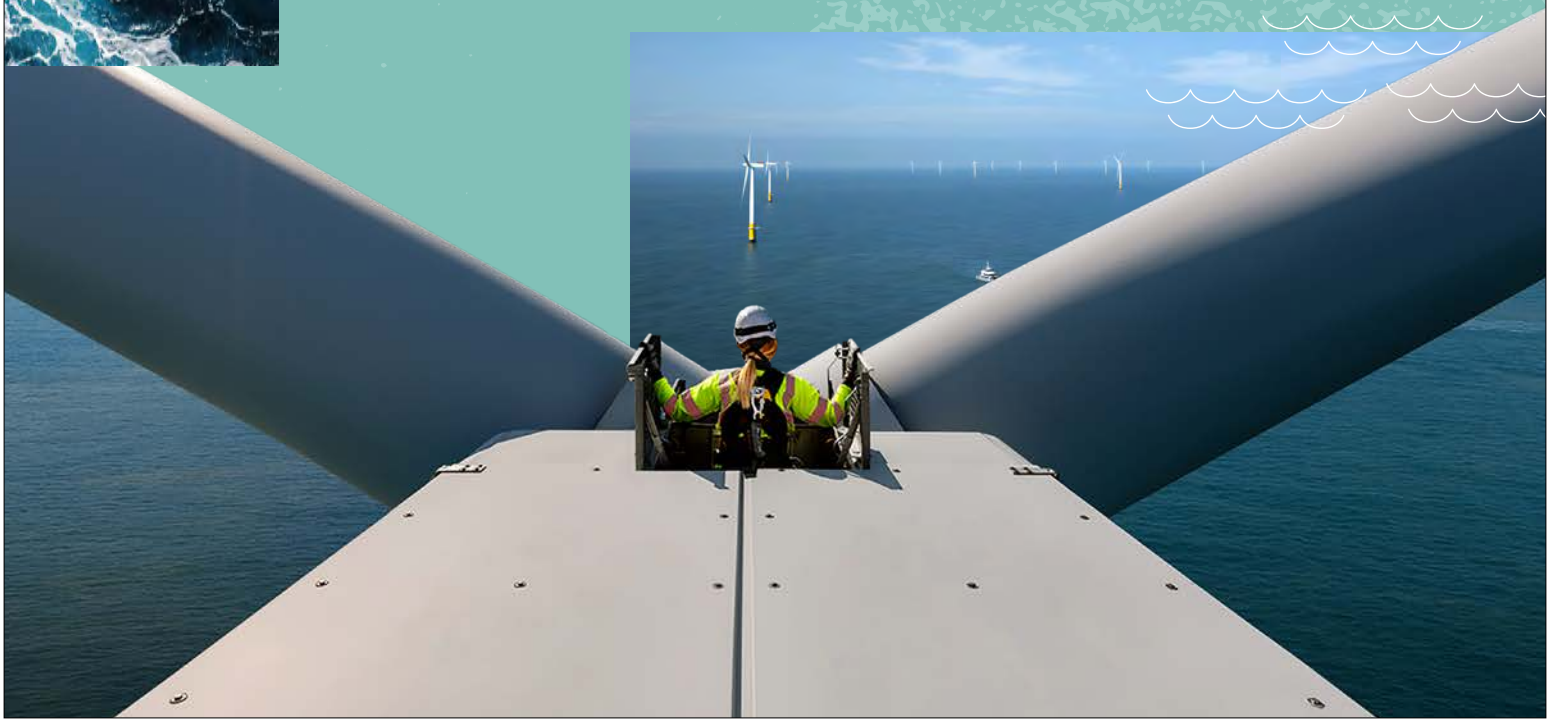

Good COP news for UK suppliers

Developer backs local companies to supply major share of 100MW Pentland project in line with new government CfD ruling, writes **Dan Woodland**

Copenhagen Offshore Partners (COP) is targeting 40% to 60% UK content for the 100MW Pentland floating wind farm off north Scotland, following selection of Stiesdal Offshore's TetraSub as the project's chosen substructure.

COP, which is developing Pentland on behalf of Copenhagen Infrastructure Partners, is looking to maximise the opportunities to the supply chain by employing a large number of local companies to support the design, fabrication and installation of the project.

Senior director Richard Copeland told reNEWS that the company is in talks with UK-based tier-one suppliers as well as Scottish ports and other lower tier contractors who are looking to engage in procurement activities.

He added that COP is adopting a multi-EPC approach in awarding contracts to tier-one groups. Agreements on offer will include the fabrication of floating substructures, turbines and the turnkey design, procurement and installation of onshore and offshore cables.

A "meet the developer" event for Pentland was held in Aberdeen this week in which suppliers were invited to learn more about the work package opportunities available during the project's development.

Future supply chain meetings are also planned for early 2023, prior to the project being entered into the government Contracts for Difference round, which is expected in March.

BEIS confirmed earlier this year that sub-300MW floating wind projects pitching for a CfD in the next auction will be quizzed on their supply chain commitments, and must score at least 50% on their questionnaires in order to be eligible for a 15-year contract.

Copeland said that he supported the government's decision to change the CfD application process rules.

"The whole point of doing projects like Pentland is to enable future success in the supply chain and to demonstrate the technology," he stated.

In August, the developer submitted a planning application for Pentland to Marine Scotland for the construction of up to seven 14MW-plus turbines 7.5km off Dounreay in Caithness.

Each floating platform will require as many as nine taut or semi-taut moorings to be tethered to the seabed using a combination of drag, drilled and grouted anchors.

Up to seven 66kV array cables and two export cables will be installed to transport electricity to an existing 133kV onshore substation adjacent to the Dounreay nuclear power station.

A planning application for the onshore infrastructure elements, including the substation, cable corridor and cable and transition joint bays, is expected to be submitted to the Highland Council this month.

Meanwhile, the developer is wrapping up works on further UXO and shallow geotechnical surveys, with a final investigation expected next summer.

"We have a very, very good understanding of the site in Scotland and all of our onsite investigations have been completed," Copeland said.

Procurement processes, technology selection and onshore infrastructure design are at an "advanced stage", with contracts expected to be announced in the coming months.

A final investment decision is due by the end of 2023, with construction starting in 2024, subject to securing a CfD.

The wind farm has secured a grid connection date in August 2025, which will facilitate first power later that year ahead of becoming fully operational in 2026. ■

Welcome to Floating Offshore Wind 2022

RenewableUK chief executive **Dan McGrail** *(left)* outlines the agenda for this week's Aberdeen event with a call on government to prioritise the sector as a high-value manufacturing industry

A warm welcome to Aberdeen and to one of our most eagerly anticipated events of the year, Floating Offshore Wind 2022. This offers a great opportunity for the biggest players in the most innovative part of our sector to come together to do business.

The global floating wind market is continuing to grow apace, with the total pipeline of projects at every stage of development now reaching more than 180GW. In the coming decades, there will be significantly more floating than fixed-bottom wind farms worldwide, given the vast areas of deep water which this technology can unlock.

We are proud that the UK is a global leader with the world's first commercial-scale floating wind farm, Hywind Scotland, and the world's largest floating wind farm, Kincardine, as well as a total pipeline of over 30GW. It is significant that the majority of projects in the world's biggest commercial leasing round, ScotWind, are floating.

The Climate Change Committee says the UK will need to build around 100GW of offshore wind by 2050 to reach net zero, and up to half of this will be floating.

The government has already announced £160m to develop port infrastructure for floating wind, and we are urging ministers to build on that commitment and prioritise this as a high-value manufacturing technology – as they do for the automotive and aerospace industries.

This will require something more than a conventional approach by ministers if we are to capitalise fully on the industrial opportunities we could unlock for British supply chain companies.

The signs so far are good. Government has set us a world-leading target of installing 5GW of floating wind by 2030, and we are working closely with ministers and colleagues to achieve this.

The Floating Offshore Wind Task Force, which I co-chair, was set up in June by industry and the UK, Scottish and Welsh governments. It aims to tackle barriers to floating wind development and speed up cost reduction, as well as ensuring the UK maximises jobs and investment in the sector.

Floating wind has the potential to create 29,000 jobs in the UK and generate £43.6bn of economic activity. A key step is speeding up the offshore consenting process, so recent commitments by the government to do this represent real progress.

In this year's Contracts for Difference auction, ministers ringfenced £24m for floating wind for the first time, enabling the TwinHub project in the Celtic Sea to go ahead.

We need to ensure these annual auctions are designed in a way that secures maximum new capacity as quickly as possible. Projects in the Celtic Sea are smaller than ScotWind and we must enable schemes of all sizes to compete for CfDs. This will help us to build up the supply chain in Wales and south-west England as well as Scotland.

The UK's energy sector already has a stellar track record in subsea engineering, and we can bring this expertise to bear as we roll out floating wind, seizing an enormous industrial opportunity.

Like all innovative technologies, the cost of floating wind will come down rapidly as we achieve economies of scale, learn-from-doing, and innovate – just as we saw with fixed-foundation offshore wind which is now the UK's cheapest source of power bar none. Studies show that there is the potential to see significant cost reductions as early as 2030.

As a developing technology, moving faster could enable UK companies to capitalise on this export opportunity to countries where floating wind will have a key role.

So there is much to play for as we meet here in Aberdeen to chart the course of the next phase of floating wind development. ■

THE INTERVIEW reNEWS

Shell made a splash this year with 5GW of floating leases secured in the ScotWind auction. Development director for offshore power **Denise Neill** *(left)* explains the next steps

Q Shell is co-developing CampionWind and MarramWind, two of the UK's largest floating wind farms with a combined capacity of 5GW. How does it intend to deliver such large projects in the coming years?

A Shell has decades of experience delivering complex offshore projects, including in the North Sea. Floating wind is a natural extension of our offshore capabilities. I and the other Shell team members working on the ScotWind developments to date have all played our role in Shell's Upstream business. We have brought that experience and the setup we have here in Aberdeen, combined it with ScottishPower's expertise in building large-scale wind projects, to start work on the development of MarramWind and CampionWind at pace.

To give an example, following the award of the two licence areas in January we swiftly mobilised a project team who recently completed 9900km worth of seabed surveys. The speed and scale of this work is industry leading, and a vital first step in realising these floating wind farms.

Crucial to the successful development of these projects is establishing a robust supply chain. We have committed, with our Venture partners ScottishPower Renewables, to a supply chain development fund of £50m to support the growth of the floating offshore wind industry in Scotland. Overall, we aim for more than 40% of our supply chain expenditure on these ventures to be in Scotland.

Q Can the company apply any of its findings from its Tetraspar Demo in Norway to scale up floating wind in the short term?

A Tetraspar is a concept we are testing near Stavanger in Norway together with partners RWE, Stiesdal and TEPCO. It can be assembled without the same infrastructure needed for fixed foundations. When configured in its floating formation, the platform is anchored to the seabed with mooring lines. In shallower waters, it can also be "fixed" to the seabed using a gravity-based structure. The unit is connected to the Norwegian grid and has been in operation at an offshore test centre for a year. Certainly we will learn from this as we take steps to deploy floating wind technology globally and at scale to provide more renewable power to our customers.

Q This year saw the award of the first Contract for Difference for floating wind in the UK at £87.50 per megawatt hour. What does the government need to do to further encourage growth in this emerging market?

A We need the right policies in place to help encourage development of vital clean energy projects, like offshore wind. The UK CfD framework has been highly successful at delivering significant volumes of low carbon generation, and driving down costs as it does so. CfDs are one tool to derisk investment. Other frameworks, such as seabed leasing fees and the planning and connection regime, are increasingly important to address risk and cost associated with UK projects.

Q How does Shell view the current floating wind leasing round opportunities in the UK, such as INTOG and in the Celtic Sea?

A Whilst we cannot comment on current leasing round opportunities, I believe Shell's intent to grow its global renewable portfolio is clear. Opportunities like INTOG will play an important role in helping to achieve the electrification of our offshore operations.

Q What other floating wind developments does Shell have in its pipeline and when are these likely to come online?

A Shell has deployed 256MW and has 2GW of offshore wind power generation capacity under construction, and over 9.2GW in the funnel of potential projects across Europe, Asia and North America. Our offshore wind project pipeline ranges from conventional bottom-fixed developments to floating wind, and from wind-power-to-hydrogen developments to multi-technology projects combining offshore wind with floating solar and batteries. A specific example of a floating wind project in our portfolio is a development with CoensHexicon that could bring 1.3GW of floating wind power to South Korea, subject to ongoing planning and commercial milestones.

renewableUK scottish renewables

FLOATING OFFSHORE WIND

Day 1 Highlights

Selected Stream A and Stream B events, plus networking opportunities

Conference opens

Welcome remarks from Scottish Renewables chief executive Claire Mack and the keynote speech from Tim Pick, offshore wind champion and co-chair of the Offshore Wind Acceleration Taskforce

9.15–9.30, Hall C

A1: Entering the global age of floating wind

Where are the global centres of gravity for floating wind and what do we need to see from industry and policymakers?

Panel discussion

Rebecca Williams *GWEC*
Pablo Necochea *Vestas*
Alan Hannah *Copenhagen Offshore Partners*
Gabriel Davies *Ørsted*
Melissa Read *Shell*

9.30–10.30, Hall C

Coffee & networking

10.30–11.00, Hall C

A2: ScotWind – delivering 25GW of opportunity

Panel discussion on ScotWind project timelines, supply chain commitments and direct investments

Panel Discussion

Colin Maciver *Crown Estate Scotland*
Richard Eakin *ScottishPower Renewables*
Nicholas Ritchie *Ørsted*
Andrew Lewin *SSE Renewables*
Alice Etheridge *National Grid ESO*
Iain Sinclair *Global Energy Group*

11.00–12.00, Hall C

Lunch & networking sponsored by Mainstream

12.00–13.00, Hall C

B3: Substructures: design & manufacturing

How will the industry crack serial production of floating wind substructures and provide local content? How can the UK stay competitive in a growing global market?

Panel Discussion

Paul O'Brien *DeepWind*
Carlotta Gradissimo *Mainstream Renewable Power*
Greg Campbell-Smith *Principle Power*
Colin Ortlepp *Kishorn Port Ltd*
Audrey Goulven Priori *Bouygues Travaux Publics*
Mark Goalen *Houlder*

13.00–14.00, Conference Room 1AB

A4: Sustainability in floating offshore wind

What is the resource demand of FOW developments and what innovations are taking place to increase the sustainability of the sector?

Panel Discussion

Charlotte Stamper *European Metal Recycling*
Anne Velenturf *University of Leeds*
Lorna Bennet *ORE Catapult*
Richard Dibley *Stromar*
Steve Regan *Ardersier Port Energy Transition Facility*
Michael Forbes *Renewable Parts*

14.30–15.30, Hall C

B5: O&M – the unanswered question?

How do you run FOW projects, people and vessels? Is tow-to-port a feasible option? What are the new techniques for major component replacement? Are there safe methods for site maintenance?

Presentation

Sally Lockwood *Generating Better*
Ilmas Bayati *PEAK Wind*
Adam Blake *SSE Renewables*
Maurizio Collu *University of Strathclyde*
Wouter Maas *Fugro*

16.00–17.00, Conference Room 1AB

Drinks reception

17.00

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