

Press release

RWE collaborates with Sarens and Tugdock to investigate innovative floating wind deployment and integration solutions for the Celtic Sea

- **Collaboration between the UK's leading power producer RWE and engineering specialists Sarens and Tugdock**
- **Study investigates methodology of launching steel and concrete floating foundations to identify supply chain opportunities**
- **Study will look at innovative technical solutions in the Celtic Sea region to unlock local potential**

Wales. 4. October 2023

RWE, Wales' largest renewable energy generator, has funded a study to investigate the quayside offload and launch of two types of floating offshore wind platforms – one steel and one concrete – alongside the integration of next generation wind turbine generators onto these platforms. Their aim is to maximise local supply chain opportunities by utilising local port infrastructure such as that at Port Talbot and Milford Haven (two of Wales' deepest ports).

The study will consider the use of this innovative solution at the Port Talbot facility in South Wales, run by Associated British Ports. This is being upgraded to facilitate manufacturing, assembly, and integration of floating offshore wind turbines. The study outcomes will build on previous studies including one undertaken using the Port Of Milford Haven Marine Simulator. The resulting information will inform activities at other suitable ports in the region, such as the Port of Pembroke, owned and managed by Port of Milford Haven Authority.

The study will investigate using Sarens' established crane and barge technology alongside Tugdock's innovative submersible platform utilising a hybrid of both approaches.

These technical solutions will look to address the logistical challenges ports will face in order to accommodate commercial-scale floating offshore wind deployment. A variety of land and marine equipment will be considered to manoeuvre structures into the water offering novel solutions to the fast-growing floating offshore wind industry.

RWE is one of the world's leading offshore wind companies, and has pioneered the development

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of offshore wind in the UK for more than two decades. The company is now pursuing the Crown Estate's UK Round 5 seabed auction to secure at least 1 gigawatt of floating offshore wind in the Celtic Sea – an area bordered by the coasts of South Wales, South West England and South East Ireland.

Sarens, a global leader in large crane fleet services, heavy lifting and engineering transport, is using their extensive experience and knowledge to seek new innovation solutions to solve future deployment problems.

Tugdock, a Cornish-based company, has developed an innovative technology which combines a steel frame and patented air lift bags to act either as additional buoyancy or as a submersible platform for lifting or launching heavy marine structures. With an effective load capacity of up to 25,000 tonnes and a modular design, the technology can be easily transported by road and is well placed to support the deployment of commercial-scale floating wind.

Sarens and Tugdock announced their new collaboration earlier this year.

The Celtic Sea has some of the best wind resources in Europe and is a key focus for the Crown Estate in the development of new floating offshore wind capacity. RWE is currently investigating various floating wind technologies and floating wind seabed leases around the world, to provide the most appropriate means of generation for these prospective gigawatt-scale projects.

Philippa Powell, the Celtic Sea Project Director at RWE said: “We are set to participate in the upcoming Crown Estate's UK Round 5 seabed auction. Commercial scale floating wind leasing offers the potential for multi-billion pound investment into the region; innovation is one of the key mechanisms that we are pursuing to try to ensure that the potential of this opportunity is realised locally.

“Working with Sarens and Tugdock is another example of our approach to identify local suppliers to help unlock the huge potential offered by seabed leasing in the Celtic Sea. We see huge potential in a combined Sarens-Tugdock solution, that is flexible and exportable.”

Carl Sarens, Director of Technical Solutions, Projects & Engineering at Sarens, added: “This is the perfect start to our new partnership with Tugdock. It is great to see such a prestigious company as RWE showing confidence in our innovative approach. We are excited to be working with RWE to help accelerate the deployment of floating offshore wind technology in the Celtic Sea.”

Lucas Lowe-Houghton, Director of Strategy and Growth at Tugdock said: “The sheer scale of floating offshore wind turbines and their sub-structures creates a significant logistical challenge for ports around the world, many of which are constrained by size, water depth or tidal range. Our unique technology has been designed to meet this challenge head on.”

Beyond the Celtic Sea, RWE's ambition is to safely develop, build and operate cost-competitive

RWE

commercial-scale floating projects around the world. To gain early experience, RWE has actively participated in two high-profile demonstration projects and has secured a commercial-scale floating offshore wind lease off the California coast. RWE is also exploring floating wind opportunities in Asia-Pacific, Europe and the Americas.

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Sarens

With state-of-the-art equipment and value engineering, Sarens offers clients creative and intelligently engineered solutions to tackle today's heavy lifting and transport challenges. With more than 100 entities in 70 countries, Sarens is the ideal partner for all projects, regardless of their scale or location.

Sarens employs more than 4,600 talented professionals who serve their clients' projects worldwide. Safety and excellence in all that the company does is paramount. On projects, it is Sarens' priority to ensure a safe environment for client staff, Sarens teams and the equipment involved.

Sarens has been a market leader for over 60 years with over four Sarens family generations closely involved in the business. The entrepreneurial spirit, and continued dedication to the work they do, are the pillars of their success. Taking heavy lifting and engineered transport seriously is not only a family tradition, but also embedded in their DNA.

For further details about the Sarens Group, visit www.sarens.com

Tugdock

Tugdock is an innovative company developing their patented submersible buoyancy products. Tugdock technology acts as additional buoyancy or as submersible platforms for lifting, launching, or stabilising heavy marine structures.

Tugdock Buoyancy Modules (TBMs) provide a means of additional buoyancy for draft reduction and to provide stability for Wind Turbine Generator (WTG) integration. The TBM product can be considered as temporary works equipment that is fixed to the wind turbines floatation structure (floaters) in modules and used during berthing, integration, marshalling, and removed prior to tow-out. The product can be re-installed for wet storage or for in-port operations and maintenance activities in shallow ports or harbours. For example a wind turbine 'Floater' that normally needs 15 metres of port water depth only needs 6 metres water depth when Tugdock technology is used.

Tugdock Submersible Platform/s (TSPs) provide a means for loadout and launching of floating sub-structures. The TSPs are used in combination for the loadout by positioning the platforms adjacent to the quayside and driving on the floater from the quay onto the TSP to take the full load of the floating sub-structure and then submerging the TSPs deck below the surface of the water to enable the floater to float off. Another application is that a single large TSP can be used to provide a rapid unrestricted pre/assembly area at or away from the quayside e.g., a 100m x 100m build platform, in effect a floating build quay. The TSP could be located close to the wind farm site locations anywhere with 5 metres of water. www.tugdock.com.

In February 2023, Tugdock announced a partnership with Sarens, the global leader and reference in crane rental services, heavy lifting and engineered transport. To support the further growth of Tugdock, Sarens have invested in the start-up company, which is based in Cornwall, UK.

RWE

RWE is leading the way to a green energy world. With an extensive investment and growth strategy, the company will expand its powerful, green generation capacity to 50 gigawatts internationally by 2030. RWE is investing more than €50 billion gross for this purpose in this decade. The portfolio is based on offshore and onshore wind, solar, hydrogen, hydro, batteries, biomass and gas. RWE Supply & Trading provides tailored energy solutions for large customers. RWE has locations in the attractive markets of Europe, North America and the Asia-Pacific region. The company is responsibly phasing out nuclear energy and coal. Government-mandated phaseout roadmaps have been defined for both of these energy sources. RWE employs around 19,000 people worldwide and has a clear target: to get to net zero by 2040. On its way there, the company has set itself ambitious targets for all activities that cause greenhouse gas emissions. The Science Based Targets initiative has confirmed that these emission reduction targets are in line with the Paris Agreement. Very much in the spirit of the company's purpose: Our energy for a sustainable life.



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