Floating wind design turn-key software developed by industry partners

17 June 2021 – A digital solution to design the anchoring and electrical connections of floating windfarms, optimising the performance and output of subsea connections, has been developed by a group of expert companies within offshore renewables.

The project has been developed by a collaborative partnership that comprises floating wind power developer EOLFI (part of the Shell Group), renewables engineering consultancy Innosea, electrical engineering and numerical simulation consultancy Capsim, software providers AbyssCAD, and engineering school Centrale Nantes.

The software, called STATIONIS, is a first of its kind in the field of floating wind, and provides a turn-key solution for defining the optimal mooring design and inter-array cabling of a floating windfarm.

"This is a unique all-in-one anchorage and electrical connection design software that provides the ability to design a floating wind power farm from the optimal architectural design of the anchors to the internal electric structure, to delivery at sea. It will be hugely beneficial to developers of floating wind farms," says Hakim Mouslim, managing director of Innosea, an independent engineering firm that specialises in the renewables sector and is part of Oslo-listed AqualisBraemar LOC ASA

The STATIONIS software helps to design and scale the underwater architecture of a floating wind power farm. It also supports the decision making regarding electrical equipment and anchorage for a specific architectural set-up in order to optimise the performance of the underwater connections, outputting rapid calculations of economic and technical indicators.

"STATIONIS is a one of a kind software, enabling early design considerations for moorings and cabling for floating offshore wind farms", says Thomas Soulard, Centrale Nantes

The tool can support decision-making in the development of floating windfarm projects at any stage of the design cycle and for any size and type of windfarm.

"This software improves the design quality of floating wind farms from a technical, cost and risk perspective, it's a very user-friendly decision-making tool that allows to find the optimal subsea configuration. It represents a substantial time-saver in the front-end engineering development phase," says Matthieu Pettinotti, EOLFI.

"We are very proud to have been selected to distribute this must-have software in the growing world of the floating wind industry", Norbert Contact, ABYSS CAD.

"STATIONIS delivers optimised solutions for the electrical distribution grid, calculated by dedicated heuristic methods in considering both bathymetry and mooring constraints. Dynamic parts of electrical cables are also considered by calculating their 3-D position for every extreme meteorological condition", Antoine Marzouk, Capsim.

Visit the STATIONIS website for more detail: https://www.stationis.com

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About AqualisBraemar LOC ASA

AqualisBraemar LOC ASA (OSE: Aqua) offers independent energy and marine consultancy to the global renewables, maritime and oil and gas sectors. The group has offices in 38 countries worldwide. AqualisBraemar LOC ASA operates under seven brands: AqualisBraemar LOC, OWC, Innosea, Longitude, JLA, East Point Geo and ABL Yachts.

About Centrale Nantes

Founded in 1919, Centrale Nantes is a French engineering school and member of the Ecoles Centrale Group. The school boasts excellent rankings: top ten for academic excellence (Le Figaro), 4th engineering school in France in 2021 (L'Etudiant), and top 200 worldwide for engineering (Times Higher Education). Its undergraduate, Master and PhD programmes are based on the latest scientific and technological developments and the best management practices. With strong international outreach, 43% of its student body are international students, representing more than 87 nationalities. Partnership agreements are in place with 178 universities in 48 countries and two-thirds of students follow a double degree programme abroad. At Centrale Nantes, research and training are organised into three key areas for growth and innovation: manufacturing, energy transition and healthcare. With research platforms ranging from digital simulation to prototyping with full-scale models, and a joint incubator which has 20 years of experience in supporting start-up projects, the school has two major tools for innovation and creation, working hand-in-hand with industry. Through a proactive approach of collaborative research between laboratories and industry, Centrale Nantes is developing initiatives for the creation of international chairs, of which there are 15 to date.

For more information visit: www.ec-nantes.fr
Medial Library: https://phototheque.ec-nantes.fr/ / @CentraleNantes

About EOLFI

Since 2004, EOLFI is specialised in the development and production of power from renewable energy sources, both offshore and onshore, in France and abroad. In December 2019, EOLFI joined the Shell Group. With a team of over 80 employees based in Paris, Lorient, Marseilles, Montpellier and Nantes, we cover the entire renewable energy value chain, for the development of our projects, in onshore wind power, photovoltaic solar power, floating offshore and offshore R&D projects. Recognized as a pioneer in floating wind power, EOLFI is currently developing the Groix & Belle-Ile pilot farm in Brittany.

For more information visit: https://www.eolfi.com/en

About Capsim

Capsim is an independent study office in electrical engineering. Specialised in assistance to project management and work on electrical networks or energy systems, CAPSIM operates in a large number of activity sectors ranging from industry to transport, including defence , renewable energies and research. The major assets of CAPSIM include, on the one hand its control of tools and techniques for numerical simulation, and on the other hand its experience across the entire range of electrical engineering issues. The combination of these two abilities allows it to forecast, quantify and analyse the normal or incidental behaviour of electrical networks, electrical and other energy systems.

For more information visit: https://www.capsimulation.com/

About AbyssCAD

Abyss CAD, founded in 2012, is a professional software publisher for marine industries. Our project was awarded in the contest of young innovative companies organized by the Community of the Pays d'Aix in 2012. Our goal is to become an essential enterprise in the field of software development related to human activities in the oceans (communication, energy, logistics, ...).

The specialization of our programs is their strongest point; we make a point of honor to understand the business of our clients and offer them customized and user-friendly software that meets their problems.

For more information visit: http://www.abysscad.com/index_en.html