The growth of offshore wind lies in the data

Collecting ocean data is an important part of operating an offshore wind farm, but doing so sustainably in order to protect the natural environment is also crucial. We asked James Ives, CEO of XOCEAN, what solutions his company can offer to allow data to be collected reliably and efficiently and in a carbon neutral way.

James Ives

PES: Welcome to PES James. For background firstly, can you give our readers a brief introduction to XOCEAN and your place in the wind industry?

James Ives: Using Uncrewed Surface Vessels (USVs), we provide turnkey ocean data. From mapping the seabed to environmental monitoring, we offer a safe, economic and carbon neutral solution to ocean data delivery. The company operates across from the offshore wind lifecycle, supporting clients during the development, construction and operational phases.

PES: Your services for wind farm operators lie mainly in data collection, is that right?

JI: That's correct; nearly 90% of our business is currently in data delivery for renewables, mainly offshore wind, and over the next decade we'll support the development of over 100 gigawatts of new offshore wind capacity.

PES: How important is data collection offshore; what are some of the challenges and how do you help overcome these?

JI: The UN's Global Sustainable Development Goals include Goal 14, which is to conserve and sustainably use the oceans, seas and marine resources. Oceans cover 70% of the planet and provide food, energy and water. We recognise that the key to sustainable development of the oceans is data, and the importance of data to boost economic growth while protecting the oceans is recognised by the World Economic Forum.

Traditional methods of delivering ocean data rely heavily on crewed vessels that complete lengthy missions, which presents three clear challenges: the requirement to send a fully crewed vessel offshore results in people being offshore for a number of weeks at a time. These vessels typically consume a significant amount of fuel, resulting in significant carbon emissions, and finally, these two factors combine to result in a costly solution to the end users of the data.

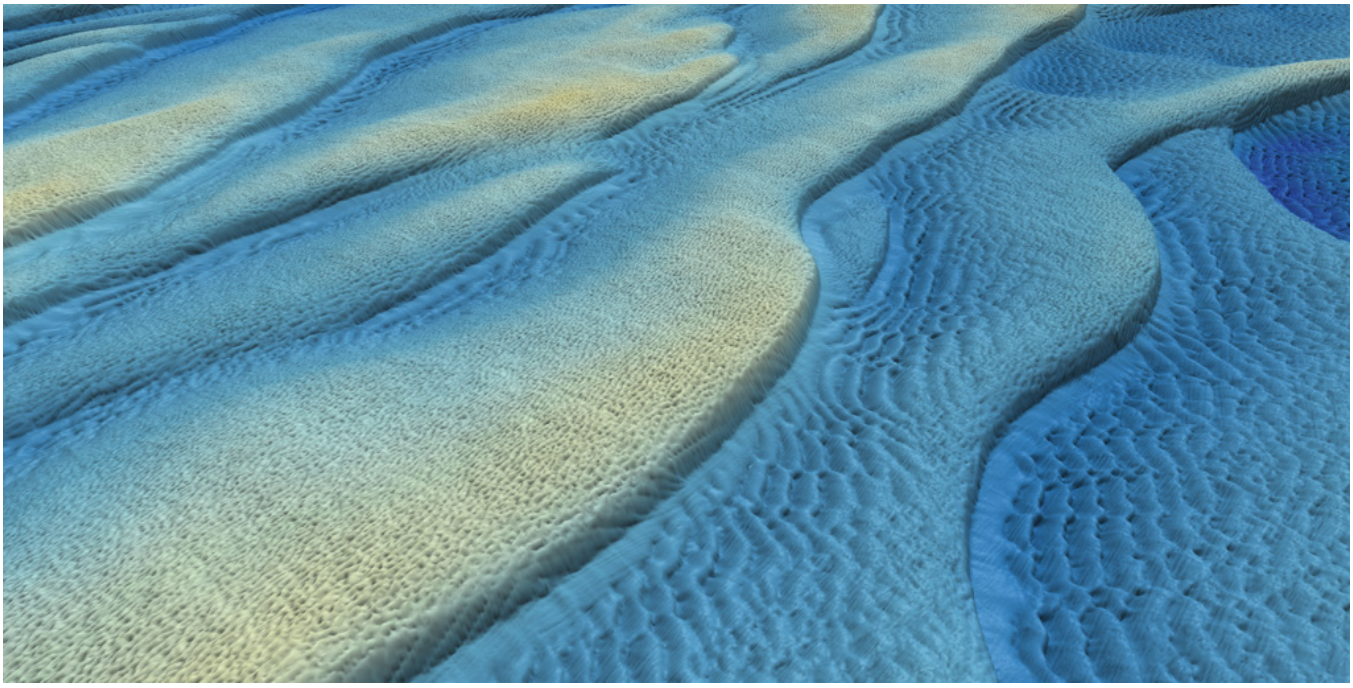
We use USVs to deliver exceptionally high quality data to our clients, with no requirement for people to go offshore. Coupled with this, the uniquely designed hybrid powered USV results in significantly lower carbon emissions over the duration of the survey. Our calculations show this to be as low as one thousandth the level associated with an average-sized crewed vessel. As a result of both factors, we can offer a significantly more cost-effective solution to our clients, delivering ocean data for a fraction of the budget typically associated with doing so.

PES: Can you talk us through the services you offer?

JI: XOCEAN delivers data using state-of-the-art, industry-leading sonar equipment. This includes multibeam echosounder (MBES) to accurately determine seabed morphology, and backscatter from this sonar to deliver seabed sediment classification. We use side scan sonar (SSS) and magnetometer to identify infrastructure, features, targets, debris or obstructions on the seabed within the survey area. We also use shallow seismic penetration to determine shallow geology.

PES: Without giving away all your secrets, please explain how the technology works.

JI: The USVs are monitored remotely by a team of fully qualified mariners, who are responsible for the safe navigation of the vessels. The data quality is assured by our online team of hydrographic surveyors, who monitor data acquisition constantly throughout the survey to ensure that data of the highest quality is delivered. Our processing and interpretation team provide the final deliverables and reporting required directly to our clients.



PES: What are the benefits of these that make XOCEAN stand out from competitors?

JI: Using our USV as the platform from which data is acquired, we avoid the use of costly fuel and labour, and this drives outstanding cost benefits for our clients. Our USVs make data collection safer, by keeping pilots and crew onshore; more sustainable, through the release of 1000x fewer emissions, and; more cost effective than traditional survey vessels. We can also mobilise very quickly to survey locations anywhere in the world, owing to our clever design that allows us to transport the USVs in standard 20ft shipping containers, we can reach any location in the world very quickly!

PES: How are you able to address concerns around safety and efficiency, which are always on the mind of wind farm operators but particularly so as the wind farms themselves move further away from shore?

JI: Our fleet of USVs is monitored by technical teams and by qualified STCW certified Officers utilising over the horizon satellite technologies. The primary role of the highly qualified USV Pilots is to manage the safe navigation of the vessel, they have all the controls available to them as they would if they were onboard a traditional vessel. The team of experts provide 24/7 coverage delivering continuous watchkeeping.

PES: What about accuracy, ease of sharing data and analysis?

JI: We are focused on providing the highest standard of data quality to our clients. To achieve this we use industry-leading equipment and without having the time pressures traditional vessels are under, we increase the density of the data collected. Our cloud-based Cyberdeck allows data to be shared and analysed in real time.

PES: How important is it to be innovative in this industry?

JI: The importance of the energy transition cannot be understated. As costs associated with offshore windfarm development rise, developers are keen to find ways to de-risk projects and inform key decisions at earlier stages in the development process. We work collaboratively with developers to identify cost-effective ways to deliver data that will enable informed decision making and mitigate risk at earlier stages of offshore windfarm development projects.

With increasingly ambitious targets for installed offshore wind electrical capacity being demanded in increasingly shorter time frames, the importance of being innovative is critical to driving sustainable development at the pace that is required.

PES: What's next for XOCEAN?

JI: We are currently building our 29th uncrewed surface vessel and we are keen to deliver our next 100,000 operational hours supporting the critically important work being undertaken by the world's leading offshore wind development companies, as we collectively strive to deliver energy independence at global level.

With a solid European base in place, we are expanding our operations in both the US and Australia, and we will continue to invest in the expansion of our fleet of USVs; our continued expansion of our global footprint means we are continuing to recruit the brightest people who are keen to play their part in the energy transition also. If you're an offshore professional, qualified mariner, experienced geophysicist, hydrographic surveyor or data processor seeking a new direction in your career, check out our careers page at xocean.com or email careers@xocean.com.

http://www.xocean.com/