Energy transition and net zero

Steve Welch caught up with **Peter Brooke** of **Fugro** to talk about how the energy sector is handling the transition towards renewables and what the future holds

Peter Brooke

Peter Brooke is Fugro's Regional Director Strategic Sales & Marketing, Europe & Africa. His role focuses primarily on supporting their client facing staff and proposal specialists win value-based projects from their diverse client base.

Steve Welch: Could you tell me a little about your background in the sector?
Peter Brooke: Renewables is a booming sector and the learning journey continues on a daily basis. Ever since my days as a young apprentice in East Africa, I have had a passion for the environment and the eco-systems we co-exist with. Conservation and environmental protection is something I'm extremely passionate about, and so I have been delighted to see a shift towards a cleaner energy future in which I can play my part.

As Regional Director, I cover both marine and onshore infrastructure sectors, supporting clients that require Fugro's Geo-data expertise, and offshore wind in particular has rapidly become our highest revenue generator. Many of the clients we have worked with for years have themselves been transitioning from less sustainable energy sectors towards renewables, and the trust we have built with them over decades of collaboration continues to thrive as we support the energy transition.

SW: Could you provide a brief summary of your organisations offering to the market?
PB: Fugro is unique in that it supports the energy and infrastructure sectors throughout the entire project lifecycle.

In offshore wind we are heavily involved with our clients in the pre-construction phase, collecting early metocean data and the provision of consultancy services targeting environmental impact, site feasibility and early site screening. Our unrivalled site characterisation services – both geophysical and geotechnical – provide our clients with valuable insights into the ground engineering challenges facing them ahead of the construction and operational phases.

During the construction phase, Fugro provides support on drilling and installation of piles, as well as the accurate positioning of subsea assets, through our range of patented vision-based, contactless solutions such as Inclinocam. Supporting our clients does not stop there, as we provide near real-time instrumentation and asset monitoring services. This enables clients to extend the life of their assets and reduce overall costs through effective, predictive and sustainable maintenance programmes.

Many of our solutions are managed through our Remote Operations Centres (ROC), with the use of uncrewed surface vessels (USV) and digital data transfer through our cloud platforms. It is key that our clients have access to their data in the quickest time possible, so they can make informed decisions, faster.

SW: What are your reflections on 2020/21?
PB: There is no question these have been a tough couple of years, and the strain on our workforce is clear to see. However, we responded rapidly to the challenges brought about by Covid-19, and the welfare of our people was always our number one priority.

Throughout the early days of the pandemic, our field crews in particular reacted in a positive way to the extra restrictions placed on their daily workload, allowing us to support our clients with minimal disruption.

Fugro had proudly started its journey to remote and autonomous operations many years ago, but the pandemic accelerated this process significantly, bringing greater attention to this aspect internally from our Innovation Team, but also from our vast array of clients, whose demands for remote technology and digitalised deliverables increases every day.

SW: How is the energy sector handling the transition towards renewables and what does the future hold?
PB: From my perspective, the resistance within the energy sector to acknowledge climate change

Remote Operations Centre (ROC) Aberdeen

challenges is waning. Evidence is abundant of the impending disaster should we not act, and this has forced governments and industry alike to take a hard look at themselves and their current working practices.

Pledges to take greater steps to reduced emissions – such as the UK Government's newly unveiled Net Zero Strategy – are encouraging, but of course these need to be backed up by comprehensive action. However, with genuine ambition for radical improvement, governments, industries and business leaders can work together to drive significant change in the coming decades.

Within Fugro, we are determined to help contribute to a safe and liveable world by supporting all our clients on their transitional journey and unlocking valuable insights from the Geo-data we acquire. Our own journey will mean acquiring this data with a constantly decreasing carbon footprint.

SW: Can you tell us about the role of technology in energy transition and reduced emissions?

PB: Our own experience tells us that our clients demand site appraisals, construction support solutions and operations and maintenance activities be carried out in as environmentally friendly manner as possible. Technology has already adapted to support this drive and it is critical that innovation continues in this direction going forward. Whether this is with remote activity, reduced emission operations, digital twins or automation, sustainability will be at the forefront of technological development in the industry going forward.

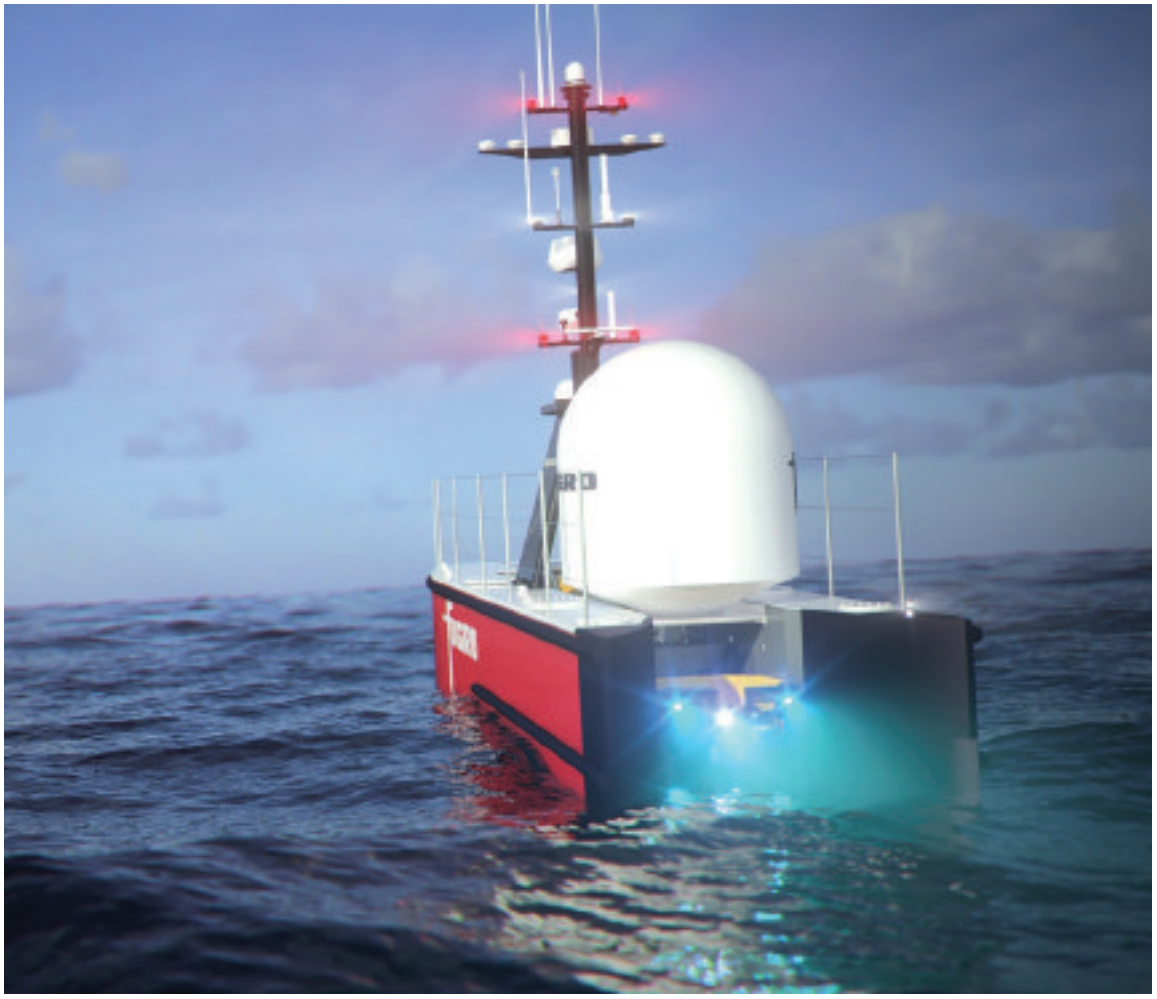
One of these innovations is the rise of USVs, which can carry out key tasks in remote offshore locations while being controlled from a ROC onshore. These USVs can be deployed for a multitude of different operations, including maintenance missions, the acquisition of asset data, and surveillance and marine exploration. USVs can be designed to be smaller and more compact than traditional vessels, requiring less energy to power them.

At Fugro, we have recently launched our 3rd Blue Essence USV, a 12 m remotely controlled vessel that is operated from an onshore ROC. This not only dramatically reduces the carbon footprint during the site characterisation and maintenance phases of a project but allows our mariners to work in a much safer, hazard-free environment.

SW: How does Fugro use these sort of technologies in their own projects and what benefits are there?

PB: Remote technologies are used across our business as we develop autonomous data gathering technology in the marine and land environments. As a world-leader in Geo-data, we pride ourselves on being pioneers in the drive toward autonomous and remote operations. We are proud of the talent we have at a global, regional and local level who support our incessant innovation drive. Our investment in research and development means we are continuously evolving our services to bring the most cutting-edge capabilities to our clients.

Our USV technologies are deployed on a range of projects at varying



Animated visual of Blue Essence USV with Blue Volta electrical remotely operated vehicle (eROV)

offshore sites. Our vision is to continue to provide the analytics and advice to our clients, based on Geo-data that is acquired in the safest, fastest, and most sustainable way possible be that on land or in a marine environment. Most importantly we aim to deliver this valuable Geo-data through our digitisation programmes. The efficiency generated saves our clients significant time during the design phase as critical Geo-data reaches their design teams in ever decreasing timeframes.

SW: How can engineering firms work with governments and policy makers to drive sustainable practice?
PB: It is critical to the success of energy transition that governments, non-profit organisations, industry and academia – openly collaborate on providing the solution to any challenge. It is also a generational challenge – it resonates with all when your children are challenging you on a daily basis as to our efforts personally and professionally to save our planet.

Businesses should be clear and firm with their mission statement for sustainable practice. Again though, words are one thing and action is another – firms should be active members of public and private initiatives and find partnerships that drive innovation.

SW: For engineering and technology, what would you most like to see addressed as an outcome to COP26?
PB: From a personal and professional standpoint, to meet the ambitious net-zero targets that nation states and companies are setting themselves, the right policy frameworks must be in place. This breeds market confidence, meaning greater development of much-needed disruptive technologies which will enable faster transition. In floating wind, for example, there are plenty of successful pilot projects for nation countries and investor confidence to back-up, rather than retesting and wasting valuable time – a luxury we do not have.

We are at a point where we need to come together, and openly sharing results from pilot projects and academic research will put us in a much better place. It is time for collaboration and time is of the essence to create a safe and liveable world for us and the future generations.

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