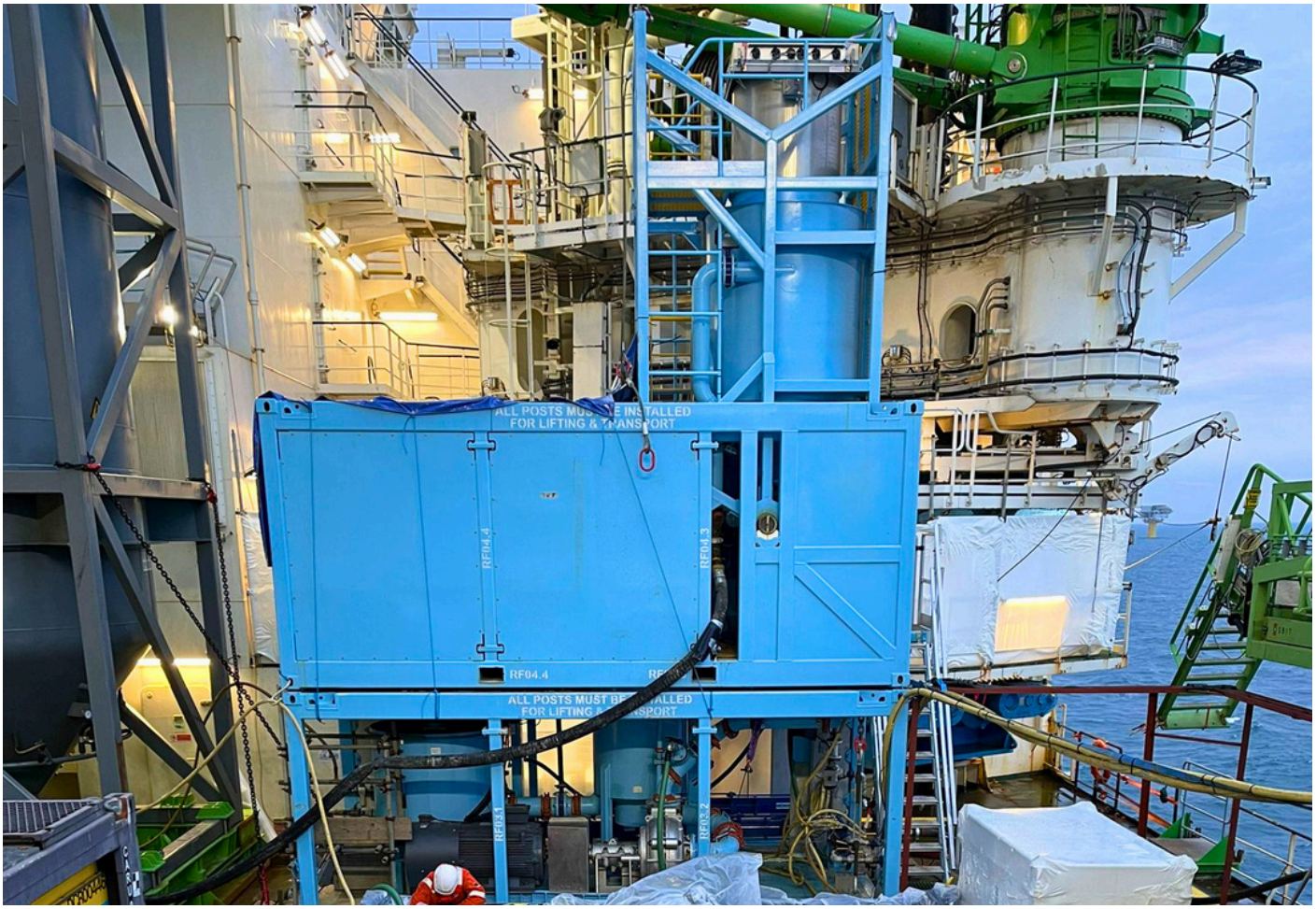
FOUNDOCEAN

Moray West Wind Farm

Flexible. Adaptable. Forward Thinking.

FoundOcean carried out grouting operations on the Moray West offshore wind farm, which comprises 60 offshore wind turbines fixed on XXL monopile foundations.

This was a collaborative project across the Venterra Group, with multiple partners contributing their expertise to enable safe and efficient offshore installation at scale.



Project

The Moray West offshore wind farm is located off the east coast of Scotland in the Moray Firth, and became fully operational in 2025. The wind farm has a total installed capacity of 882 MW and is capable of powering up to 1.3 million homes.

Moray West was developed by Ocean Winds, a joint venture between EDP Renewables and Engie.

This is their second offshore wind project in the Moray Firth, the other being the 950 MW Moray East project, making excellent use of the North Sea's high winds and the onshore port infrastructure surrounding the Caithness coastline.

WIND FARM FACTS

OWNER/DEVELOPERS	OCEAN WINDS
JOINT VENTURE BETWEEN	ENGIE edp Renewables
MAIN CONTRACTOR	SIEMENS
POWER GENERATION UP TO	882MW
WATER DEPTH RANGE	54M
AREA COVERED	225KM^2
TURBINES	60

Site Construction

The project was consented in 2019, and construction took place between February 2023 and April 2025. The site consists of 60 monopile wind turbines and two substations, located 22.5km from the coastline. FoundOcean delivered specialist grouting services to this project in 2024, carrying out foundation pile grouting on the 60 monopiles.

In order to harness wind energy most effectively, turbines are becoming larger and larger. This project was no exception. Siemens Gamesa supplied their 14-222 DD turbines, each with a capacity of 14.7 MW and a rotor diameter of 222 m – the same length as two football (soccer) pitches laid end-to end! These turbines are known as XXL monopiles, each one weighing up to 2,000 tons and being installed in a water depth of up to 54 metres.

FoundOcean's Role

Our crew was mobilised at the Port of Nigg, ready for their 12-hour day and night shifts. The piles for the foundations had been pre-installed, and the vessel was able to transport four transition pieces (TPs) – during each installation cycle.

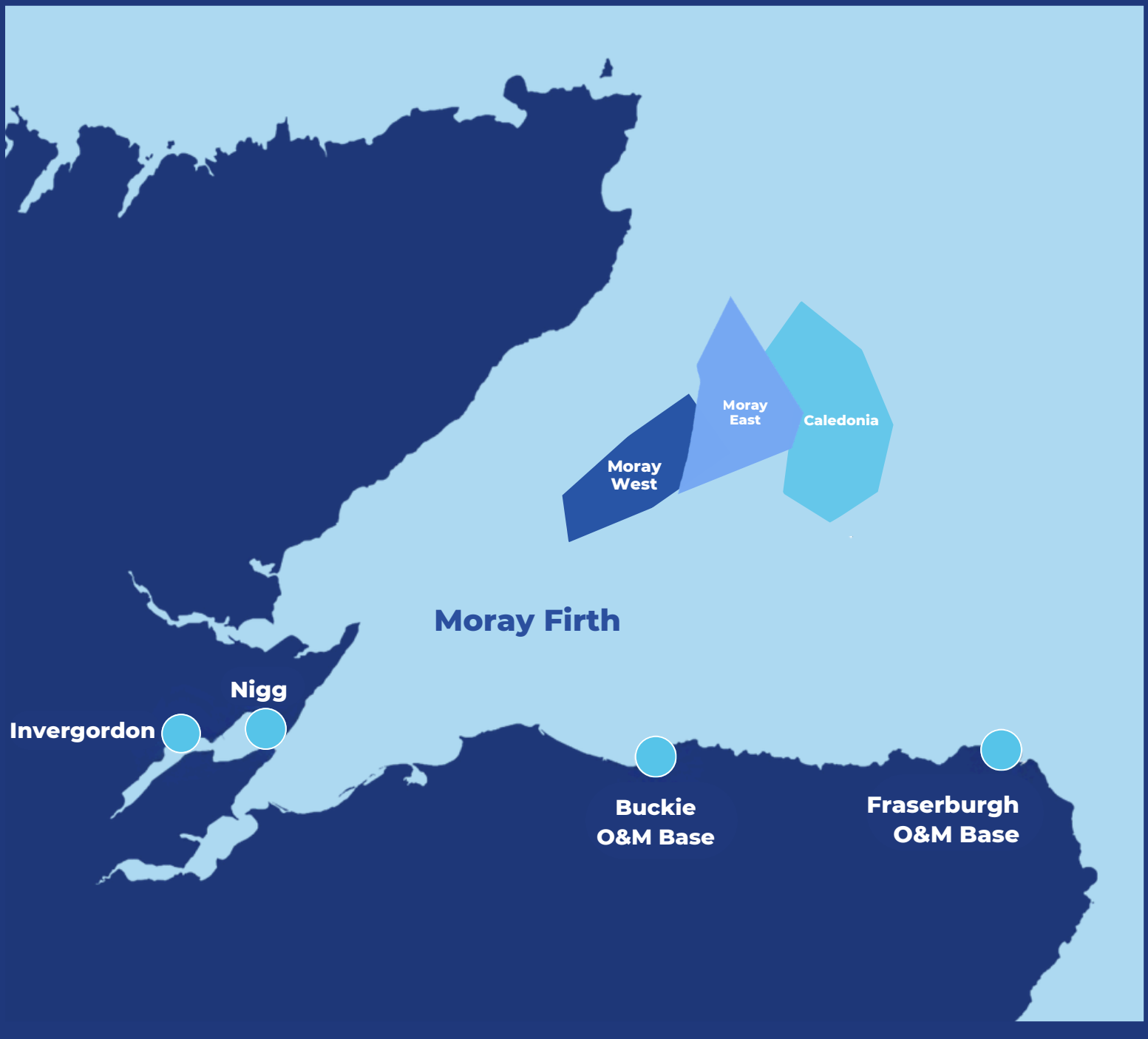
The TP would be lowered onto the pile, then oriented to the correct position, bolted and torqued. Once that was complete, our technicians would be instructed to grout. Prior to grouting they would flush out the annulus (the space between the two cylindrical structures) with water to check the grout lines for any blockages and the annulus seal. Once the annulus was grouted up to the fill level, they would retrieve the hose back to deck and wash out all the equipment, ready to grout the next one. Each foundation required 27m3 of grout – around 51 tonnes of cement.

FoundOcean were using two 'new' pieces of equipment on this project. One newly built: a High-Output Recirculating Jet Mixer, the HJRM28, on its maiden voyage. One newly purchased: a Hydraulic Boom Arm. The arm contributed to the speed of the process as it meant there was no waiting for crane use on the installation vessel.

GROUTING FACTS

GROUT VOLUME PER FOUNDATION	27M ^{3}	GROUT MATERIAL	HIGH STRENGTH SIKAGROUT 9800	GROUTING RATE	2 nos. structures per day
AVERAGE CONNECTION VOLUME	33M ^{3}	MIXER TYPE	HRJM28		

Moray West Offshore Wind Farm, Moray Firth
22.5km off the coast of Caithness, Scotland



Project perspective

Peter Millar was the FoundOcean Project Engineer. He says,
"It was a very successful project. The size of the XXL monopiles makes no actual difference to our job – it was still a straightforward operation for us, grouting monopile foundations.

Our own FoundOcean team members are always good to work with, but all the people on the vessel, the crew and the other contractors, everyone got on really well, and it was also very nice to see our new equipment perform how we expected."

The Venterra Group's Collective Expertise

A major standout of working on this project is that it was a fantastic opportunity to work alongside several of our Venterra Group colleagues, seeing first-hand the expertise and professionalism they bring to offshore projects.

Companies involved with the project were:

Gavin & Doherty Geosolutions, who provided the earliest geotechnical investigations, supplying ground condition data and recommendations about foundation design in the early stages of the project. This helped ensure that turbines were positioned in optimal locations and supported their safe installation.

Partrac, who ensured environmental compliance with their baseline surveys and data analysis. The data they produced was vital for informing the design process and project logistics.

Osbit, whose design expertise was vital for handling the extra-large monopiles used at the site. They designed and delivered a monopile upending hinge, enabling safe and efficient handling of the structures during the installation phase of the project.

Powered by Venterra

Our efficient and effective collaboration is evidenced by the fact that 29 XXL monopiles were installed in just 60 days!

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Balltec, who supplied the 3000 mT Quick Connect Tool which integrated CAPE Holland's innovative technology and allowed for smooth and secure monopile lifting and placement.

And **CAPE Holland**, who provided their CAPE Vibro Lifting Technology, used to upend and install the monopiles. This market-leading, innovative technology uses vibrations instead of impact hammer blows, reducing disturbances to the seafloor, noise and energy, as well improving the speed of construction.

CAPE Holland has created a fantastic YouTube video about how this equipment addresses (and solves) monopile installation challenges.

Conclusion

Moray West demonstrates how the offshore wind industry is continuing to grow. Modern projects are being delivered at scale, with careful coordination between contractors, technologies and installation processes.

This makes collaboration more important than ever. By combining expertise across the Venterra Group, this project illustrates how our integrated capabilities can support safe and efficient offshore construction.

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About FoundOcean

FoundOcean has more than 60 years' experience of subsea and offshore foundation grouting for the global energy construction industries. FoundOcean also provides life extension solutions for offshore structures which includes structural inspection, repair and maintenance services, freespan correction grout bags, and pipeline/cable support and protection services. This is why, to offshore installation contractors, FoundOcean is the subcontractor of choice for minimising the risks associated with completing projects safely and on time.

FoundOcean was founded in 1966 and is a privately held UK-headquartered company. Its specialist grouting equipment is located for rapid deployment in Europe, the Gulf of Mexico, South East Asia, India and the Middle East. FoundOcean is certified to ISO 9001, ISO 14001 and ISO 45001 by DNV and is an Achilles/FPAL registered company.

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