DEME
OFFSHORE

**DEME Offshore is the leading global solutions provider in the offshore energy industry. We are the offshore energy pioneer, with a successful track record spanning more than three decades. Our activities started with landfall construction and rock placement. We took our first steps into the renewables sector more than 20 years ago, when 1.5 MW turbines were considered impressive. Today, we are the number one offshore wind contractor in the world, capable of installing the latest generation XL foundations and 15 MW+ wind turbines, as well as offshore substations, inter-array and HVDC export cables. We also have vast expertise in heavy lift, umbilicals, interconnectors, geoscience and decommissioning services.**

DEME Offshore is part of the DEME Group, a global leader in marine engineering, dredging, infra and environmental works. Benefiting from close synergies between our core activity lines, DEME Group provides a broad range of advanced technology, equipment and vessels, managed by expert teams.

# WE ARE THE OFFSHORE ENERGY PIONEER, WITH A SUCCESSFUL TRACK RECORD SPANNING MORE THAN THREE DECADES.

### More than 70 offshore wind farms in Europe and a strong global portfolio

To date, we have installed more than 2,700 wind turbines and contributed to more than 70 offshore wind farms. While we started off in the North Sea, our portfolio has steadily expanded and we are currently constructing offshore wind farms in Asia and the US. As well as carrying out challenging Transport and Installation projects, our talented teams and expert crew are able to handle the most complex EPCI and Balance of Plant projects. In addition to DEME Offshore's strong presence in the European offshore energy industry, we have established dedicated companies in both Asia (CSBC-DEME Wind Engineering Co, Ltd.) and the US (DEME Offshore US in Boston), and several key partnerships such as in Canada, Mexico, Vietnam and a joint venture with Penta-Ocean Construction Co., Ltd. of Japan.

### Iconic pipeline and interconnector projects

Alongside DEME Offshore's track record in the renewables sector, we have also been involved in some of the most iconic and large-scale pipeline projects in recent history. We have been working on the Nord Stream 1 and 2 pipeline in the Baltic Sea, the Laggan and Tormore project situated north-west of the Shetland Islands in the UK and many more.

# OUR PEOPLE

**With our marine engineering roots dating back more than 140 years, and by focusing on the offshore energy sector for decades, our people understand the offshore business inside out. They are used to being creative and finding smart solutions for even the most technically challenging projects.**

These inventive minds enable DEME Offshore to develop advanced engineering solutions for our customers. We aim to lead the industry - to show the possibilities - rather than follow.

# A WORLD LEADER

## IN INNOVATION, TECHNOLOGY AND EQUIPMENT

**Our experts have developed technologies and equipment which are being seen in the industry for the first time. These include the 350-tonne Offshore Foundation Drill for drilling XL monopiles and the 60 m high 'MODIGA', which encapsulates drilling and installation operations, protecting them from adverse marine conditions to extend operational working times.**

DEME Offshore's **monopile gripper** has already proved a success at several foundation installation projects. This versatile tool improves piling accuracy and enables our specialist vessels such as 'Innovation' to install monopile foundations all year round. Our in-house developed **CBT 1100 trenching tool** also dramatically reduces cable installation times and in turn, costs. For our oil & gas clients we developed a **resusable modular jacket design** which has been implemented offshore at two unmanned gas platforms. The **inclined fall pipe system and mass flow system** on our fallpipe vessels enable us to maximise accuracy and productivity during rock placement operations.

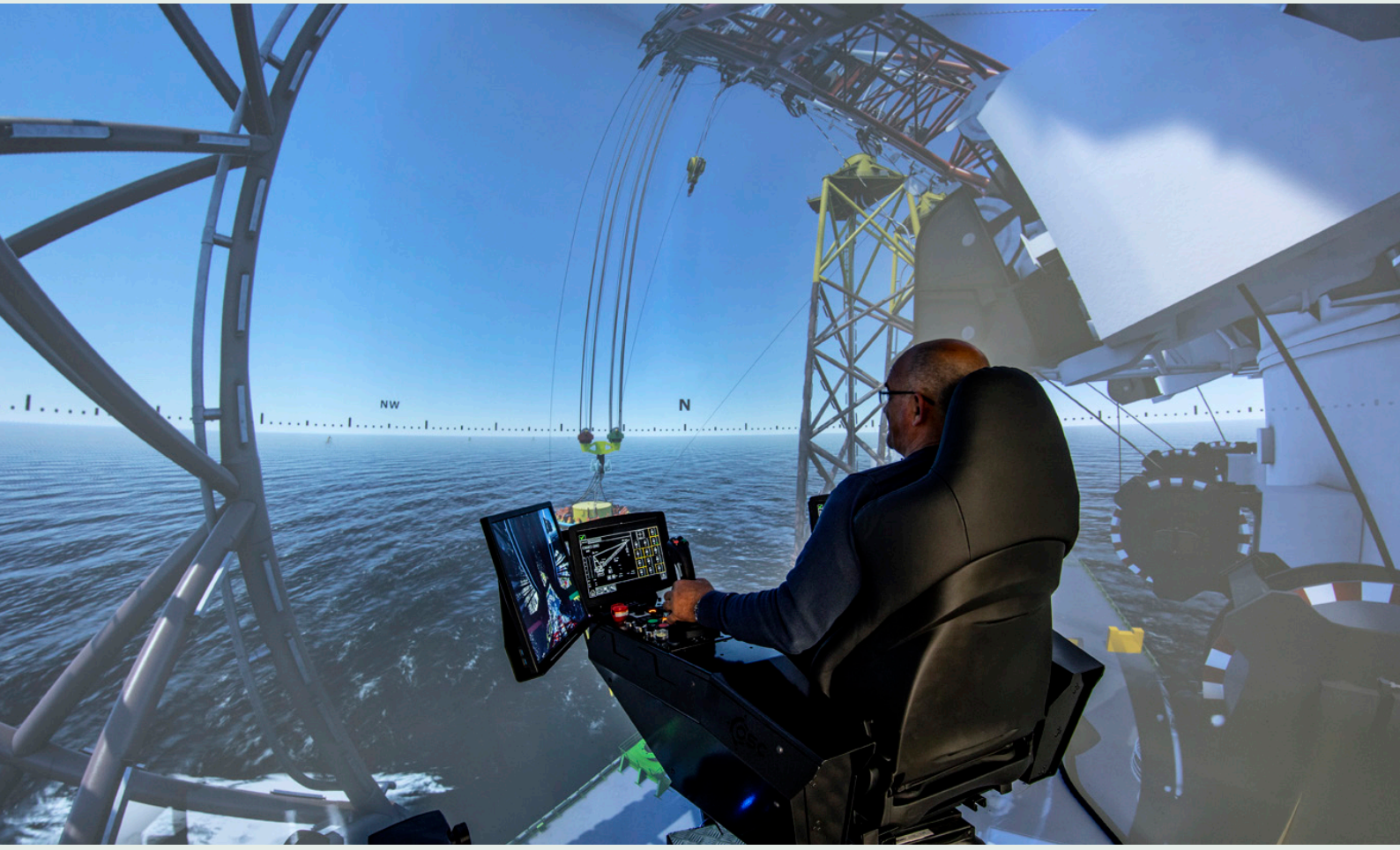
# SAFETY AND SUSTAINABILITY

**Safety and Sustainability define DEME Offshore and are the solid foundations on which the company is built. They are both embodied in our culture and we have a set of specified goals to make sure we maintain the highest safety and sustainability standards.**

One of our company's core values is 'Safety'. We strive to provide a safe and healthy working environment for all the people involved in our operations. We set the highest safety standards everywhere we operate around the world.

Sustainability is equally important to DEME. We aim to reduce emissions by 40% by 2030 and we have also adopted many of the UN's Sustainable Development Goals where we think we can make the biggest difference.

Initiatives are in place throughout the company and one of these is our investment in a futureproof fleet. Many of our new vessels have dual-fuel engines, enabling them to run on LNG and other future fuels. They also have a Green Passport and Clean Design notation and several have a waste heat recovery system that converts heat from the exhaust gases to electrical energy.




LIVING STONE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GREEN JADE

# OUR SPECIALIST FLEET

**To prepare for the future, we have embarked on a multi-year fleet investment programme which has allowed us to have the most versatile and high-tech fleet in the industry today. Our fleet includes innovative offshore installation vessels, state-of-the-art cable layers and DP2 fallpipe vessels which are already very well known in the industry, but we can also call upon a modern fleet of more than 100 vessels. This enables our teams to choose the ideal vessels and equipment spread for each project.**

**'Orion' - revolutionary floating offshore installation vessel**
DEME's revolutionary offshore installation vessel 'Orion' is the first floating monohulled vessel able to perform XXL monopile foundation installation operations in the industry. The vessel is equipped with a tailor-made, integrated motion compensated pile gripper, which enables the crew to upend the monopiles. This technology, coupled with the vessel's DP3 capability, allows the monopiles to remain vertical and stable, despite motions and waves. Several noise mitigation systems are also integrated in order to reduce underwater noise during hammering. With a total installed power of 44,180 kW and at 216.5 m long, 'Orion' has a 5,000-tonne crane and a deadweight that has been maximised so it can handle the future generations of monopiles, jackets and components.

Sustainability considerations are a vital part of the vessel's design. 'Orion' has dual fuel engines enabling it to run on LNG, a Green Passport and Clean Design notation. It is the first foundation installation vessel in the industry operating on LNG, significantly reducing the $CO_2$ footprint of the operations. Another environmental innovation is a waste heat recovery system that converts heat from the exhaust gases to electrical energy.

**'Living Stone' – the most advanced cable installation vessel in the industry**
DEME operates the most advanced cable installation vessel in the industry. Equipped with DP3, 'Living Stone' has a unique, dual-lane Cable Installation System, which has been developed by our expert engineers. With a 10,000-tonne cable capacity, the dual-lane system means one cable can be installed while fully preparing the second one on deck. As 'Living Stone' has two turntables it is ideally suited for installing bundled HVDC cables.

**'Viking Neptun' – DP3 vessel with two large cable turntables**
Our fleet will shortly be joined by another DP3 offshore installation vessel, the 'Viking Neptun'. Built to the highest Norwegian quality standards, 'Viking Neptun' has a turntable capable of handling 4,500 tonnes of cables below deck, but DEME is boosting its capacity and investing in a second, 7,000-tonne cable turntable on deck. Continuing DEME's efforts to provide a future-proof, sustainable fleet, the vessel is fully compliant with emission standards and features the latest environmental technology, including a battery pack for best-in-class fuel efficiency and more sustainable operations. The 145 m long vessel is also equipped with a large, unobstructed deck and a 400-tonne Active Heave Compensated Knuckle Boom crane, making it ideal for the construction of floating wind farms.

**DP3 monohull heavy lift vessel 'Green Jade'**
Our extensive fleet will be further strengthened with the arrival of the groundbreaking, DP3 monohull heavy lift vessel 'Green Jade'.
Just like 'Orion', this new vessel features an unparalleled combination of exceptionally high transport, load capacity and lifting heights. 'Green Jade' will be equipped with a 4,000-tonne crane, and is also built to handle the next generation of mega wind turbines, foundations and components in a single shipment.

**Jack-ups upgraded**
Additionally, our two DP2 jack-up installation vessels 'Sea Installer' and 'Sea Challenger' are both getting a major crane upgrade when their capacity is increased to 1,600 tonnes, preparing them for the next generation of offshore wind turbines.

# OUR EXPERTISE

## FOUNDATIONS AND WIND TURBINE GENERATORS (WTG)

DEME Offshore has an unrivalled track record in the offshore wind industry, whether this relates to performing Transport and Installation assignments or complex EPCI and BOP projects for foundations, WTG and offshore substations. We have provided our innovative and comprehensive solutions for the world's largest offshore wind farms and also for some of the most challenging, such as those that require drilled monopiles into hard rock.

We have the specialist installation vessels, equipment and highly-skilled teams which means that all aspects of a wind farm project can be performed in-house, from the initial seabed preparation, to the turbine and substation installation to the inter-array and export cables.

We also specialise in suction pile anchors and foundations through our subsidiary SPT Offshore. With the growing trend of increasingly strict environmental regulations, suction pile technology offers a silent and vibration free installation method, hence no expensive noise mitigation measures or shutdowns are required. Vessel time offshore is substantially reduced, thereby reducing CO2 and NOx emissions. Suction pile anchors are also interesting for the floating offshore wind industry.

## FLOATING OFFSHORE WIND

Maintaining our tradition of being a pioneer, we are also one of the first to explore the vast potential of floating offshore wind and we have already participated in two floating projects using different technologies: one involving concrete spar foundations and one deploying a concept for a floater structure to support large, offshore floating PV solutions.

## CABLES, INTERCONNECTORS AND UMBILICALS

Installing inter-array/HVDC export cables, interconnectors and umbilicals is a core speciality of DEME Offshore. Projects include the largest EPCI contract for inter-array cables in history, to the longest AC offshore wind export cable ever installed.

We can manage the complete process, including the supply of the cables, accessories and cable protection systems, execution of seabed clearance and route preparation, pre-lay dredging, trenching, cable laying, post-lay burial and protection of crossings and construction of landfalls. After installation, we also carry out the termination and testing of the cables.

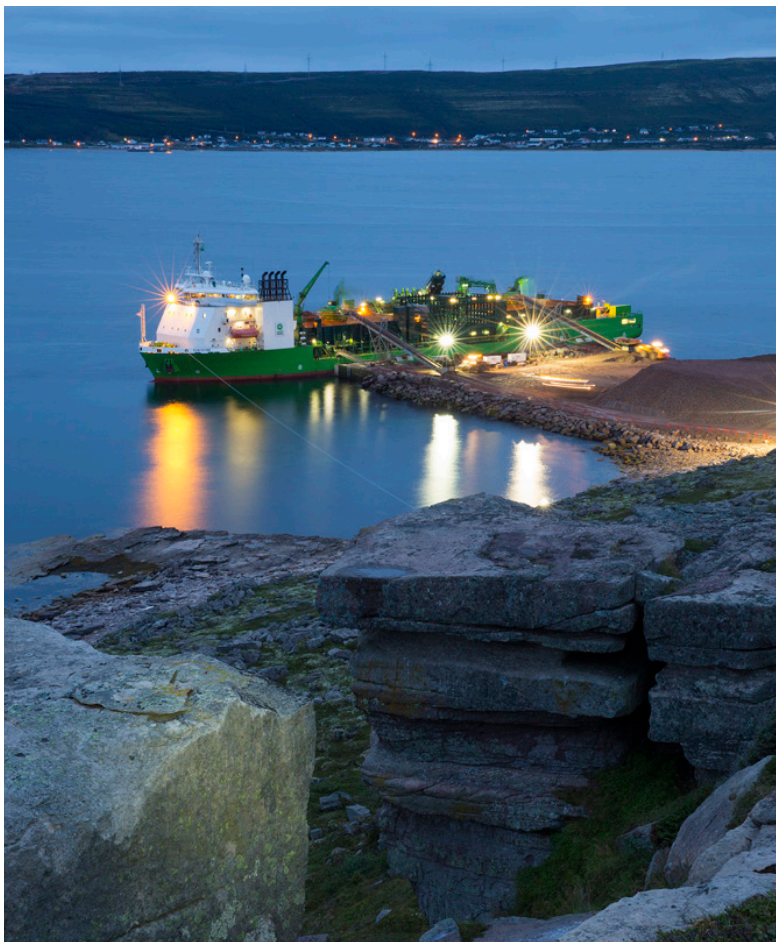

We have provided our innovative and comprehensive solutions for the world's largest offshore wind farms.

Our dedicated DP2 fallpipe vessels make it possible to achieve pinpile precision.

## ROCK PLACEMENT AND SCOUR PROTECTION

As an early pioneer, DEME Offshore has gained a reputation as a leading expert in subsea rock placement. Our dedicated DP2 fallpipe vessel fleet make it possible to achieve pinpoint precision, even when operating in extreme water depths in excess of 2,000 m. When facing challenging conditions offshore we deploy an active heave-compensated Remote Operated Vehicle (ROV) which is fixed below the fallpipe, facilitating precision steering.

The dedicated fallpipe fleet performs pre- and post-lay (filter and armour) rock installation at cable crossings and for exposed cables, trench backfilling remedial works, as well as scour protection for WTG locations throughout the globe.



## LANDFALL CONSTRUCTION

DEME Offshore has decades of experience in the field of constructing landfalls and has been involved in all major landfall construction projects across the globe. As a full solutions provider, we manage the entire spectrum of activities, including seabed preparation, pre-sweeping, trenching, pipe pulling and backfilling. Depending on the landfall site and environmental guidelines, the most suitable technique is selected. We have an extensive track record in various landfall techniques such as the conventional beach approach, directional drilling and microtunnelling.

To complement these activities, we also operate in deeper waters performing trenching, backfilling and pre-sweeping services, which are often required to protect, stabilise and maintain the integrity of offshore pipelines.

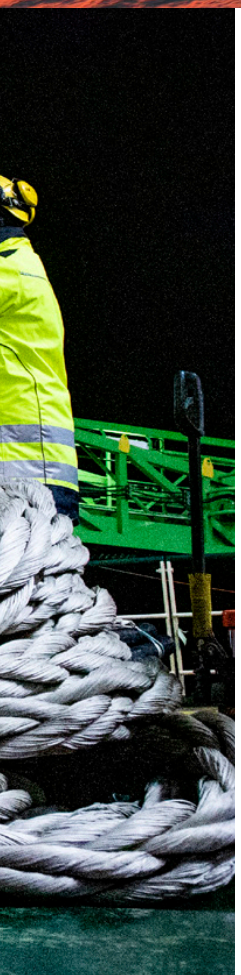

Our offshore energy track record started with rock placement and landfall construction.

**Our extensive portfolio of services covers the entire decommissioning process.**

## GEOSCIENCE

DEME Offshore has its own in-house geoscience experts and we regularly provide geotechnical and geophysical offshore and marine site investigations, as well as environmental surveys to both the renewables industry and the oil & gas sector.
We have the dedicated equipment and vessels to perform site investigations at wind farms, oil & gas platforms or along cable routes. Our specialists can provide integrated studies that combine a geotechnical site investigation and environmental impact assessment with installation monitoring, foundation and/or burial monitoring and environmental monitoring. This enables our customers to get a true understanding of the site conditions and the possible implications for their projects.

We can also carry out seabed clearance campaigns to mitigate the risks of the project and for personnel working on the future site should Unexploded Ordnance, wrecks, cables, boulders etc. be present.



## PLATFORM INSTALLATION, DECOMMISSIONING AND HEAVY LIFT

Many offshore installations around the world are reaching the end of their productive life. Decommissioning these installations presents a major challenge from a safety, environmental, technological, as well as an economical perspective. To assist our customers DEME Offshore provides an integrated approach to installation and decommissioning. Our extensive portfolio of services covers the entire decommissioning process from early planning and engineering, through to removal, transport, onshore disposal and recycling.


LIEBHERR
KEEP CLEAR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