Innovation through partnership

The NDC is a £38m partnership between the University of Aberdeen, Net Zero Technology Centre (NZTC) and industry, part of the Aberdeen City Region Deal.

A global leader in the future of sustainable decommissioning and energy integration, the NDC combines industry expertise with academic excellence to drive progress on an extensive portfolio of research and development projects across a wide range of technical, environmental, economic and regulatory fields.

In addition to the marine simulator, the NDC's advanced facilities include a supercomputer cluster, high power laser, indoor immersion tank, hydrostatic testing vessel, and several large capacity environmental testing chambers.

Always working in partnership, connecting organisations, businesses and key stakeholders globally, we are focused on transforming the decommissioning of energy assets, supporting the energy industry's transition to net zero, and creating a sustainable low carbon energy future.

- Multi-disciplinary
- Challenge-based research
- Evidence-based solutions and insights
- Industry partnerships
- International academic collaborations
- Connecting industry and stakeholders
- Leading-edge facilities
- Training and capacity building

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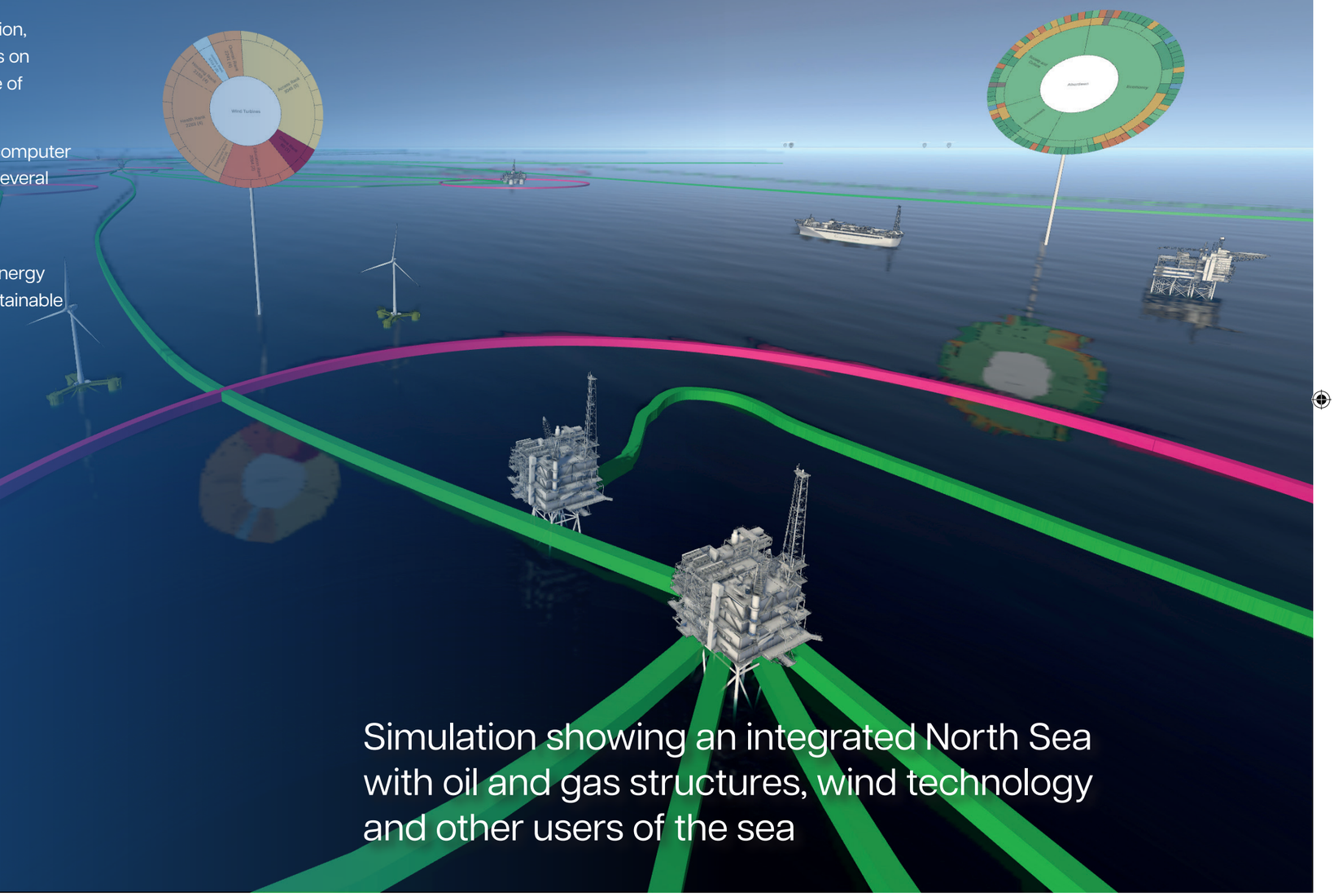
Net Zero Technology Centre
Technology Driving Transition

Driving informed decision making



Simulation showing an integrated North Sea with oil and gas structures, wind technology and other users of the sea

Partner with us.

We invite you to work with us to accelerate and shape that future - today.

www.ukndc.com | enquiries@ukndc.com

The National Decommissioning Centre

@decomcentre

The National Decommissioning Centre

A new level of marine simulation

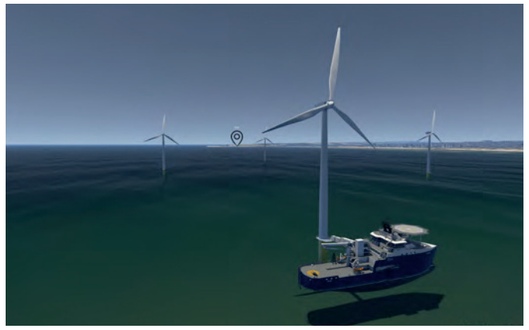
Our marine simulator provides a highly advanced, user-controlled virtual environment for simulating offshore and subsea operations.

The marine simulator at the National Decommissioning Centre (NDC) provides a safe virtual environment for the scenario planning of decommissioning programmes and the trialling of new offshore technologies in real time and in different environmental conditions. Use of the simulator and its advanced 'smart cities' capability is not tied to oil and gas decommissioning. It provides a cutting-edge tool to assist with basin-wide decision making, including planning for offshore and floating wind installation, as well as broader energy integration projects in the North Sea.

Key features include:

- Walk-in 9m diameter, 300-degree visual immersive environment with four control stations providing real-time, real-physics simulations, data modelling and date visualisation
- Extensive library of bespoke and standard assets, vessels, cranes, and facilities for safe virtual trialling of offshore technologies and scenario planning.

All simulations are based on real time physics calculations, and users can create and modify simulations in runtime, and import CAD data directly. All objects included within the simulation have full effect for the user-controlled environment – for example, vessels are fully affected by waves, currents and weather – to create dynamic, fit for purpose and realistic simulations designed to drive improved decision-making at all levels.



A virtual model of the North Sea

Our advanced marine simulator's 'smart cities' capability is powering the 'Smart Energy Basin' project to model energy infrastructure in the North Sea.

Designed to help make more informed and better decisions based on accurate modelling, the NDC's Smart Energy Basin project will create a virtual model of the entire North Sea basin.

Beginning with an exemplar area East of Shetland, it will help users to:

- better understand interactions between energy companies
- identify opportunities to improve efficiencies
- identify opportunities for reuse and repurposing
- investigate how optimal energy transition can be achieved

The Smart Energy Basin project could prove to be the ultimate tool to improve the efficiency of decommissioning and support energy transition. It will enable date visualisation to show the spatial distribution of any parameter – for example greenhouse gas emissions, power usage, vessel traffic or local renewable capacity – across the entire basin. It will help to improve decision-making across both oil and gas and renewables.

"As an industry, we're starting to look at decommissioning as one of the many stepping stones towards the North Sea's part in the energy transition. The simulator offers a safe space for discussion allowing stakeholders to engage in better decision making processes around the energy transition, and through to energy integration. It allows stakeholders to look at the mature basin as one 'user', helping facilitate the conversations that need to happen between the parties which need to be involved."

Innes Jordan, Decommissioning Project Manager, CNOOC International

Projects

- Dublin Offshore – Load reduction device
- Oasis Marine – Offshore vessel charging system
- Aubin – Variable buoyancy anchor deployment analysis for floating wind applications
- Blackfish Engineering and Skua Marine Ltd. – C-Dart quick mooring connector
- T-Omega - Deployment and sea holding of a novel offshore wind turbine
- Windstorm Renewables – wind enhancer system for vertical axis turbine