The National Decommissioning Centre

Innovation through Partnership

1495 UNIVERSITY OF ABERDEEN

Net Zero Technology Centre

Technology Driving Transition

National Decommissioning Centre and Nuclear Decommissioning Authority Partnership

Dr Sergi Arnau– Project Manager

ABERDEEN CITY COUNCIL

Aberdeenshire COUNCIL

The Scottish Government Riaghaltas na h-Alba

HM Government

ONE OPPORTUNITY NORTH EAST

#ABZdeal

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What is the National Decommissioning Centre?

Partnership between the Net Zero Technology Centre (formerly OGTC) and the University of Aberdeen

- Launched Jan 2019
- Net Zero Technology Centre investing £12.7m over 7 years as part of the Aberdeen City Regional Deal funding
- UoA investing £5.8m over over 7 years in buildings, facilities, staff time and PhD support
- ***Aim of matched funding from industry***

Supplemented by approx. £4m of infrastructure funding from the Scottish Government's Decommissioning Challenge Fund

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Our ambition

To be the global leader in research and development that transforms decommissioning and mature field management

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Unique global hub

Connecting

Port clusters, R&D institutions and innovation centres across the UK and internationally

Multiplying

The capability of universities and other organisations, such as the UK Catapults

Developing

A world-class supply chain that delivers for the UK and internationally

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Research Partnerships

Shell

Working with Shell on developing a framework for Post Decommissioning Monitoring of structures left in place.

Powered by CATAPULT Offshore Renewable Energy

Offshore Renewable Energy Catapult

Working with the ORE Catapult on the simulation and optimisation of various aspects of offshore floating wind systems, including a feasibility study on electrification of oil and gas assets using offshore floating wind.

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Research Anchor Partnerships

Chevron

Working with Chevron on environmental science including fish stocks around structures and risk assessment around mercury as well as degradation of structures left in place (3 PhDs and 1 Post Doc)

Nuclear Decommissioning Authority (NDA)

Scoping work with NDA on decommissioning cost benchmarking, decarbonising decommissioning, remote operations in hazardous environment, underwater laser cutting and alternatives to cement.

Background to the NDC/NDA Partnership

- The Steering Group discussed areas of mutual interest to the nuclear and O&G sectors
- Steering Group meetings and focus groups held over about 3 years
- Cross-industry workshops hosted by NZTC to home in on high level areas of interest across all areas including:
    - Maintenance/inspection
    - Digital technologies
    - Cost estimation/benchmarking
    - Emissions reduction
    - Remote operations
    - . . . .
- Delivery mechanism proposed was through a partnership between the NDA and the NDC.

Update on the Partnership

- Partnership signed in January 2022
- Meetings held with the NDA group of companies to discuss and prioritise the research topics identified which included
  - Cost benchmarking
  - Emissions reduction
  - Underwater laser cutting
  - Alternatives to conventional cements
  - Remote operations in hazardous environments
  - Use of artificial intelligence and machine learning for risk assessment
- Monthly NDA-NDC Projects Group Meeting set up to review and sign off project proposals
- Reporting dashboard set up for stakeholder engagement and internal reporting

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NDA-NDC PARTNERSHIP
DASHBOARD

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Key Figures

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Projects Under Consideration

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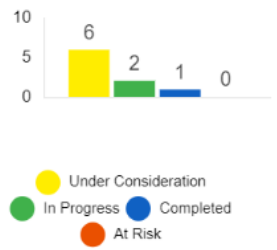
Active Projects

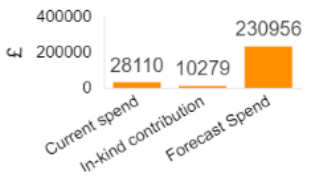
Projects



2022 Financials

£600,000.00

Total Value of Partnership



Summary of Progress

- Anchor Partnership signed
- General Areas of collaboration agreed
- Kick-off meeting held
- Introductory meeting held with NDA/Magnox
- Follow on meeting held with Magnox
- Connection with Simon Sjentzer (Ardersier Port).
- Connection with ORE Catapult.
- Project proposal template created.
- Dashboard for reporting created.
- Meeting with Carl Dalby, Risk specialist (NDA).
- Hot Robotics Symposium at the National Nuclear laboratory

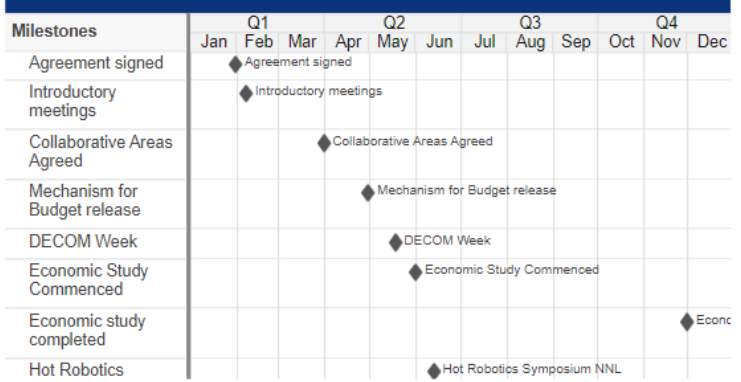
Resources

- Press release (Fi…
- Project Template
- Nuclear Academi…
- NDA PhD

Areas of Collaboration

Areas	Links to NDA Strategy	Initial Focus
Decarbonising Decommissioning	Critical Enablers: Socio-economic Critical Enablers: Sustainability	Need to determine how to
Cement Alternatives	Critical Enablers: Research, Development and Innovation Critical Enablers: Sustainability Integrated Waste Management: Radioactive Waste	Determining what area to f
Decommissioning Benchmarking	Site Decommissioning & Remediation: Decommissioning Critical Enablers: Public and Stakeholder Engagement Critical Enablers: Socio-economic	Regional Impact Study on
Remote Ops in Hazardous Environments	Critical Enablers: Research, Development and Innovation	Gamechangers joint challe
Underwater Laser Cutter	Critical Enablers: Research, Development and Innovation	Review of current situation

2022 Milestones



Update on the Partnership

- Two studies running or completed:
  - Study on the economic impact of the nuclear decommissioning sector on the Scottish has started with additional input from University of Strathclyde
  - Short study on underwater laser cutting undertaken
- Project proposal to develop a risk dashboard has been sanctioned and about to start.
- Project proposals being developed on
  - Low emission cements
  - Remote operations in hazardous environments
  - Decarbonising decommissioning (this work will run in parallel with a large Scottish Government funded project being undertaken by the NDC)

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Added Value to the NDC from the Partnership

- Access to knowledge and technologies outside the oil and gas sector
- Working on Wind/Nuclear/Oil and Gas projects at a national level
- Joined PhD calls with the NNL and NDA
- Joint events

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Added Value to the NDA from the Partnership

- NDC can pull in expertise from any of the Schools within the University of Aberdeen to support a project (Business School, Chemistry, Engineering and Computing Science already engaged)
- Project on underwater laser cutting draws on £800k of research funded by NZTC and industry and investment of £565k from the Scottish Government's Decommissioning Challenge fund for the laser

- Risk dashboard project draws on very similar work undertaken by a team from UoA working with an oil and gas operator
- Remote operations work will utilise the NDC's £1.6m simulator
- Alternative cements work draws on more than 5years of research in this area at UoA
- Decarbonising work will draw on a complementary £1.1m Scottish Government funded project

Summary

- Clear overlap in priority areas between the sectors
- Opportunities to share insights through regular meetings
- Opportunities to draw on previous work in the other sector to accelerate innovation and implementation

Questions?