



Northumberland

County Council

CABINET

13 SEPTEMBER 2022

OFFSHORE RENEWABLE ENERGY CATAPULT TECHNOLOGY DEMONSTRATION CENTRE: OUTLINE BUSINESS CASE

Report of: Rick O'Farrell, Interim Chief Executive

Cabinet Member: Councillor Wojciech Ploszaj, portfolio holder for Business

Purpose of report

In accordance with the Energising Blyth Programme - Local Assurance Framework, the report seeks the approval of the Town Deal Outline Business Case (OBC) for the OREC Technology Demonstration Centre (formerly Bearing Technology) which is pending approval by the Department of Levelling Up, Housing and Community (DLUHC). The OBC has been externally appraised with a recommendation to proceed to Full Business Case (FBC). It was approved by Town Deal Programme on 27 July 2022.

Recommendations

Cabinet is recommended to:

- (1) Approve the Outline Business Case (OBC) for the OREC Technology Demonstration Centre to enable progression to Full Business Case.**
- (2) Delegate authority, in accordance with the Local Assurance Framework, to the Council's s151 Officer following consideration by the Energising Blyth Programme Board to approve the Full Business Case, subject to a satisfactory subsidy control solution and report the capital implications to Capital Strategy Group for inclusion in the Capital Programme.**

Link to Corporate Plan

This project is part of the Energising Blyth Programme supported by the Town Deal. This is a placemaking 'whole town' programme which contributes across most of the Council's Corporate Plan Priorities but particularly to the living, enjoying, thriving and connecting strategic priorities.

Key issues

The Covid-19 economic crisis has severely shaken private sector confidence and has made UK companies and SMEs wary of investing in new products and services, despite the opportunity presented by a potentially large international market.

This raises the risk of the UK missing the opportunity as overseas competitors gear up to compete. The Technology Development Centre (TDC) would rapidly accelerate new products and services from Northumberland to this huge global market. In the face of such challenges, public sector support is essential to catalyse innovation in the offshore renewable energy supply chain. Without any such investment other clusters and regions would overtake the regions current competitive advantage.

As reliability is a key driver in the Offshore Wind Industry, representative demonstration of capability has long been a significant barrier to entry for SMEs – especially those working with novel technologies in known failure-prone applications. ORE Catapult seeks to address this innovation barrier by providing innovation support and representative validation on one site through the use of the open access TDC.

The lack of availability of privately run facilities operating independently under open access agreements serves to identify the market failure in this sector caused by the high cost of validation without support from partially publicly funded operations such as ORE Catapult.

Historically, the private sector has not invested in such open access facilities to support multiple companies and services providers across the region to rapidly validate and scale up their technology for commercialisation. Therefore, this investment addresses a clear market failure in the UK supply chain to accelerate new technology to market ahead of potential European competitors.

The development of the TDC will provide, key regional research infrastructure facilities for the Northumberland region, including access to key expertise in delivering essential manufacturing and skills development projects in partnership and collaboration with Industry, Supply Chain (Regionally & Nationally) and Academia.

The ultimate aim of the project is to deliver local employment and economic growth by building an industry relevant Technology Centre that will attract companies, workers and learners to Blyth, allowing the Energy Central Campus Learning Hub (Phase 1), (a partnership between ORE Catapult, Advance Northumberland and Port of Blyth) to deliver an inclusive local agenda for future energy skills, supply chain, disruptive innovation and research and development, maximising the return on investment in the other town developments such as NEP3, the Energy Central Institute (Phase 2).

This will further elevate Blyth's importance as a long term established UK hub for green energy sector businesses and offers significant potential for further growth:

- Blyth has a number of key energy sector assets in place including: a deep-water seaport; specialist R&D and testing facilities at ORE Catapult, specialist workforce training facilities at the Port of Blyth and the availability of major coastal development sites (some with Enterprise Zone status) ready to accommodate energy sector investment, businesses, and jobs.
- The main opportunities for Blyth, the North of Tyne area, and the wider North East to grow the energy sector are in offshore wind and the transition to low carbon energy, driven by the developments at Dogger Bank and the drive towards a reduction in carbon-intensive production and consumption as evidenced by investments such as the British Volt giga factory.
- The development of Dogger Bank is one of the key potential growth drivers for Blyth and the North East, with significant levels of investment expected in offshore wind generation to ensure the UK can meet its climate change targets. As such employment in the offshore wind sector is expected to increase significantly from existing levels. In the North East, employment is forecast to increase nine-fold should the projects in the pipeline come forward. However, without unique facilities proposed by this project it would occur elsewhere across the North of England.

Since the funding award, a considerable amount of work has been undertaken to develop the Outline Business Case (OBC). This OBC is now fully prepared and ready for submission to the UK Government to serve two purposes. Firstly to provide sufficient confidence to the Government that this is an attractive and robust project; and the ask of £2 million will commence at the end of the calendar year. Secondly to provide a solid foundation for finalising the full business case, thereby securing approval of the project.

This report summarises the five cases (Strategic; Economic; Commercial; Financial; Management) contained within the OBC whilst highlighting the implications within each for the County Council.

The governance and assurance framework for the performance management of the Energising Blyth Programme was approved by Cabinet in July 2021.

A dedicated Programme Board of internal senior officers chaired by the interim Director of Regeneration has been established to provide strategic direction and exercise control and oversight to ensure successful delivery of the Programme, ensuring that the Council's accountable body responsibilities are met in full.

The Council's Cabinet is the final decision-making authority in relation to NCC's role as accountable body with responsibility for the final decision to accept all twelve projects into the Energising Blyth Programme, and to approve the business cases for individual projects requiring such capital funding from the Programme.

BACKGROUND

1. Northumberland County Council and its partners have been successful in attracting both Future High Streets and Town Deal funding to transform Blyth town centre. This substantial funding will stimulate confidence and further investment, create new jobs, bolster economic growth and transform the town ensuring it realises its full potential. This significant programme of renewal is underpinned by creative engagement with the community of Blyth demonstrating demand and support for positive change.
2. The Local Assurance Framework requires the completion of a 'Green Book' Business Case for all projects within the programme through 3 key stages, Strategic Outline Business Case, Outline Business Case and Full Business Case. The OBC has been externally appraised and approved by the Town Deal on 29th June 2022. This means that the project details through all '5 cases' within the OBC are largely finalised. There is little difference between the OBC and FBC in terms of the depth and substance of the project information included.
3. The main purpose of the FBC stage is to confirm any outstanding project details that were not finalised at the time of the OBC submission. This will include, confirmation of post-tender costs, draft construction contract, confirmation of funding, planning permission and programme. The FBC will not include a subsidy control solution. OREC have requested approval in principle prior to incurring expenditure of external legal advisors and any funding approval will therefore be subject to the solution being identified.
4. By Full Business Case, the Summary Document should be approved by DLUHC and the first-year funding received by NCC, allowing timely project delivery once the FBC and grant funding agreement are in place. The grant funding agreement can only be progressed upon receipt, review and agreement of OREC's subsidy control solution. Each subsequent year's funding will be released to NCC by DLUHC based on project progress and will enable payments to the applicant in accordance with the Grant Funding Agreement and subject to monitoring, reporting and evidence.

TECHNOLOGY DEMONSTRATION CENTRE

5. Since 2003 when the ORE Catapult Blyth site was established, it has grown to be recognised as having world leading open access facilities and specialist resources to provide complex validation and research services to the entire Offshore renewable energy sector - from major OEMs to novel and disruptive technology providers. The current facilities allow fatigue and dynamic testing of offshore wind turbine blades, cables, powers systems and full turbines up to 15MW. However, the current suite of facilities does not provide an optimal environment to convene industrial expertise with the knowledge, skills and learning capabilities required to accelerate development of novel products in the North East. The introduction of the TDC will allow this type of collaborative work and skills development to take place under one roof.

6. The offshore wind sector is expected to grow significantly over the next decade, and it is therefore important for the region to position itself to take maximum advantage of the opportunity. SMEs and inward investment are an important driver of economic growth and innovation and are often the creators of new and disruptive business models in fast moving emerging markets. This Project will harness innovative ideas for offshore wind technologies.
7. The Offshore Wind Sector Deal originally estimated that offshore wind could support 27,000 jobs across the UK by 2030, covering all aspects of a wind farm; project management, construction and operations and maintenance - the latest estimate from Renewables UK is 69,000 jobs in Offshore Wind and closer to 500,000 generally in net zero technologies.
8. The TDC will significantly benefit clean energy sector businesses in the North East, including, associations and supply chain partners. The renewables energy sector is a large and significant business and employment cluster for Northumberland, concentrated in Blyth.
9. The sector in Blyth currently comprises 115 businesses and 2,500 employees accounting for 43% of all energy sector businesses in South East Northumberland. The project will bridge the gap between research and commercialisation. It will be the UK's first and only integrated technology demonstration facility for new emerging challenges to be faced in next generation large scale turbines/systems by OEM's.
10. Across the wider North East LEP area, there are 2,460 businesses. Significant national, regional, and local growth in the sector is forecast.
11. The TDC will address the following challenges:
 - Reduce the Levelised Cost of Energy (LCoE)
 - Regional supply chain growth
 - Open access technology demonstration facility
12. The Strategic objectives for the project are:
 - Acquisition of the building and land from Port of Blyth to construct a state-of-the-art Technology Development Centre, by July 2023
 - Relocate and upgrade the capacity and capabilities of the 1MW, 3MW and 6MW facilities by the end of August 2023.
 - Create and establish aerodynamic and rotating component modelling capacity and capabilities by the end of March 2024
 - Establish and provide a co-ordinated approach in addressing industry skill and learning needs with clean energy industries, employers, and the Energy Central

Campus - Learning Hub and Institute.

- Showcase the alignment of the Technology Development Centre and ORE Catapult business strategy

13. A considerable amount of work has been undertaken to develop the Outline Business Case (OBC) and Summary Document, which is now fully prepared and ready for submission to the UK Government.

Strategic case

14. The development of the TDC will provide, key regional research infrastructure facilities for the Northumberland region, including access to key expertise in delivering essential manufacturing and skills development projects in partnership and collaboration with Industry, Supply Chain (Regionally & Nationally) and Academia.
15. The ultimate aim of the project is to deliver local employment and economic growth by building an industry relevant technology centre that will attract companies, workers and learners to Blyth, allowing Energy Central Campus Learning Hub (a port based partnership between ORE Catapult, Advance Northumberland and Port of Blyth) to deliver an inclusive local agenda for future energy skills, supply chain, disruptive innovation and R&D, maximizing the return on investment in the other town developments such as NEP3, the Energy Central Institute.
16. The project contributes to and aligns with the Energising Blyth Strategy and the Town Investment Plan to promote Blyth, by 2030, in becoming a thriving UK an international centre of renewable energy and advanced manufacturing growth and innovation that will create new jobs, an increase in workers skill sets and improved training opportunities for Blyth and the wider North East region as outlined and delivered against three of the core strategic priorities i.e., Growing Town, Inclusive Town, and Clean Growth Town.
17. The region has made the clean growth agenda central to its strategy in terms of accelerating development of the regional economy. With a predicted investment of £40 billion in offshore wind by 2030 in the UK there is a clear opportunity for Blyth to secure significant economic growth by capturing supply chain investment. This clearly aligns to supporting the priorities of the North of Tyne Combined Authority strategy specifically in relation to:
 - Innovation, demonstration, and research assets which support the growth of the sector
 - Infrastructure needs of the offshore wind and subsea supply chain
18. Aligned with OREC business strategy, the overall vision is to provide the unique regional infrastructure required to accelerate technology development which in return will maximise economic impact in the North East region. It will further enable

OREC to deliver on our role of unlocking UK economic benefits in offshore renewables, enabling innovation-led growth in energy technology and achieving net zero targets, driving regional supply growth, innovation, and competitiveness.

Economic case

19. The economic case assesses the benefits and costs of the potential delivery options for the project based upon its agreed critical success factors and strategic objectives. This assessment is undertaken in a standardised way in accordance with Treasury guidance to both define the preferred delivery option and to illustrate the extent to which the project provides value for money.
20. The critical success factors for the CPP are:
 - Strategic fit
 - Contribution to net zero targets
 - Value for money
 - Supplier capacity and capability
 - Responding to market demand/business needs
 - Achievability
 - Affordability
21. The six delivery options for this project explored in the OBC were as follows:
 1. Do nothing/Business as Usual (reference case)
 2. Do minimum (invest in re-modelling existing space in other existing facilities)
 3. New facility built on ORE Catapult site (preferred option)
 4. New facility built on different site
 5. Physical Improvements only
 6. Develop a larger scale facility

This long list of options was assessed against the Critical Success Factors and the Strategic Objectives set.
22. Option 3, The preferred option for this project is to acquire an existing building (Port of Blyth Shed D) and adjoining land from Port of Blyth. The building will be renovated to create the required specialist testing areas, central workshop, offices, amenities and a skill learning and training facilities.
23. This option provides the greatest cost and risk certainty when compared against the cost and programme risk associated with breaking ground to construct a building and installing services somewhere else on the ORE Catapult existing site (which is limited and land locked) or on another brown field site.
24. The preferred option indicates a cumulative GVA (present value) of £11,271,211, a Benefits/Costs Ratio (BCR) of 2.4 and Net Present Value (NPV) of £6,571,211 as a result of 20 new direct jobs and 10 indirect jobs created due to the R&D leverage in the emerging new bearing technology in the offshore wind sector.

Commercial case

25. No market testing has been completed at this stage of the project, however OREC have previous experience in similar construction/delivery projects and do not see the delivery of the project as a risk. Over the next stage of the project OREC will engage with key suppliers for the construction and delivery of the project to refine the delivery plan.
26. Early discussions will be undertaken with local architects' companies to define the most cost effective and sustainable solutions. In addition, engagement will be undertaken with the construction supply chain in compliance with Public Contracts Regulations 2015 (PCR2015), ensuring the scope is clear and that price and schedule can be achieved as early as possible. Suitable risk/contingency provision has been included within the budget to account for the current volatility within the construction market.

Build/construction options

27. The following options have been considered:
 - **Option 1 – In house Build** – This would only be considered if a third-party option was not available.
 - **Option 2 – Procure third party contractor** – Whilst a third party would be procured to undertake the construction work, there would also be certain parts of the test equipment that would require the suppliers of the equipment to support with the installation.
 - **Option 3 – Hybrid of option 1 and 2 -**
28. Option 3 is the preferred option, OREC would engage with third party contractors and equipment suppliers where necessary to carry out key elements of the work. OREC will utilise its core team of technicians and engineers to support with specific elements of the building works for OREC equipment e.g., 1MW test rig.

Project delivery/operation options

29. The following options were considered:
 - **Option 1 – In house service delivery** – Deliver the project under the management systems in place
 - **Option 2 – Procure third party service provider/operator** – Whilst the project could be delivered by a third party this model is likely to increase the risk as some of the works are bespoke designs by OREC.
30. Option 1 is the preferred option, due to the technical complexity of the project OREC are the best place to manage the project delivery to ensure that the all-project requirements are met.

Procurement Process

31. The project procurement will be broken into 3 different areas:

Property acquisition

- Acquisition of land and property

Services

- Design and refurbishment of the acquired land and property
- Design and install of bespoke equipment
- Hire of Tooling and plant to enable the installation of equipment and test rigs

Materials

- Procurement of the ORE Catapult designed parts for retrofitting to existing equipment
- Procurement of tools and parts to enable the installation of equipment and test rigs

32. All procurement activity will therefore be compliant with the Public Contracts Regulations 2015, which ensures a fair, open, transparent and proportionate approach to the delivering goods, services and works.

33. No market testing has been completed at this stage of the project; however ORE Catapult has robust procurement standards as outlined below and has experience in working with suppliers capable of delivering complex technical solution. In the next phase of design ORE Catapult will engage with suppliers as part of the tendering process, issuing prior information notices and carrying out pre-market engagement, as deemed appropriate.

Procurement Method

34. The Head of Procurement has established a robust and fully compliant procurement process. Its purpose is to help improve value for money through a consistent and professional approach to purchasing and/or procurement, which in turn enhances ORE Catapult's reputation with suppliers as a quality customer.

35. All contracts in excess of the threshold are advertised on the UK Government websites Find a Tender website via our e-procurement portal ProContract. The Contract Notice informs potential bidders of the detail of the individual tender and is usually the basis on which a supplier will decide whether or not to express an interest.

36. Where a purchase falls outside of the scope of the Public Contracts Regulations 2015 ie under threshold, the procedure employed remains consistent with regulation 109, with a sufficient degree of advertising to enable the market to be opened up to competition as appropriate, which may include advertising relevant

opportunities on the UK Government website Contracts Finder via our e-procurement portal ProContract.

37. All tenders are evaluated based on most economically advantageous tender (MEAT) criteria to identify suitable qualified suppliers of the goods, services or works. Finally, all records are maintained for audit purposes and as is necessary to comply with any funding arrangements or the Limitations Act (as applicable).

Financial case

38. The total capital cost of the project is £5.6m, the breakdown is as follows:

Item	Total
Property acquisition	1,386,000
Design and Professional Fees	220,000
Technology Development Centre	2,530,734
Tribology Area	112,500
Test equipment (1, 3 & 6MW Bearing test rigs)	849,500
Aerodynamic validation test rig	94,466
Contingency	406,800
Total	5,600,000

Project funding

39. The breakdown of the proposed funding sources and amounts to cover the cost of £5.6 million is set out below. There is no Capital or Revenue Commitment by the Council.

Funding source	Capital	Status
Town Deal	2,000,000	Subject to Outline Business Case approval
NTCA	2,000,000	Approved
UKRI Infrastructure Fund	1,000,000	Approved
ORE Catapult	600,000	Approved
Total	5,600,000	

Financial profile

40. The financial profile of anticipated spend and subsequent drawdown from the various funding sources is detailed below, obviously subject to approval confirmation of those financial contributions.

Expenditure	22/23	23/24	Total
Property acquisition	1,386,000		1,386,000

Design and Professional Fees	120,000	100,000	220,000
Technology Development Centre	1,285,116	1,245,618	2,530,734
Tribology Area	10,000	102,500	112,500
Test equipment (1, 3 & 6MW Bearing test rigs)	465,000	384,500	849,500
Aerodynamic validation test rig	29,600	64,866	94,466
Contingency	10,000	396,800	406,800
Total	3,305,716	2,294,284	5,600,000

Income	22/23	23/24	Total
Towns Fund	1,342,116	657,884	2,000,000
NTCA	815,400	1,184,600	2,000,000
UKIR Infrastructure Fund	1,000,000		1,000,000
ORE Catapult	148,200	451,800	600,000
Total	3,305,716	2,294,284	5,600,000

Management case

41. A dedicated and experienced Project Lead will manage the delivery process including resource, procurement, ongoing liaison with statutory/regulatory bodies, risk management, mitigation and control.
42. Regular project management meetings monitor all facets of the project and involve the implementation of clearly defined and actionable outcomes to ensure the project progresses in line with the original budget and plan. Any deviation to the plan is affected via formal change control processes with the funding provider.
43. A detailed programme plan has been developed, below are the key dates:

Activity	Dates
Detailed Design approval	October 2022
Planning Permission approval	October 2022
Main contractor appointed	December 2022
Site works commence	January 2023
Facility infrastructure works complete	May 2023
Test Rig installations and upgrade works begin	April 2023
Test Rig installations and upgrade works complete	March 2024

44. The programme plan will continue to be reviewed and updated on a monthly basis.

IMPLICATIONS

Policy	The project fully supports the NCC Corporate Plan, the Northumberland Economic Strategy and the Town Investment Plan
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Finance and value for money	Funding in relation to this project will be funded by the Town Deal grant received by NCC, and external funding
Legal	OREC have requested that project approval be progressed in the absence of a subsidy control solution to prevent them incurring costs in the event the project is not approved. Approval of funding to OREC will therefore be subject to receipt, review and approval of an agreed subsidy control solution and the grant funding agreement cannot be entered into until such time as this is available. The Local Authorities (Functions and Responsibilities)(England) Regulations 2000 confirm that the matters within this report are not functions reserved to Full Council
Procurement	Project spend will be subject to Public Sector recognised procurement procedures.
Human Resources	The project is being developed by OREC in conjunction with NCC's EB Programme Team. The revenue running costs of the establishment are summarised in the report.
Property	Implications for council property will be considered in detail at Outline Business Case stage – if applicable.
Equalities	(Impact Assessment attached) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A Available on request
Risk Assessment	A risk register is in place for the project which will manage and monitor risk.
Crime & Disorder	This project is part of the proposals in the Energising Blyth Programme which in totality include various measures intended to reduce crime and disorder in Blyth through positive regeneration measures.
Customer Consideration	There has been partner and community consultation throughout the development of the project.
Carbon reduction	The new facility will support the county's contribution to carbon reduction and clean growth objectives.
Health and Wellbeing	The Town Deal proposals include an underpinning objective to support the development of an 'Inclusive Town' supporting positive health and wellbeing outcomes through successful town centre regeneration.
Wards	All wards in the town of Blyth

Background papers:

Technology Development Centre - Outline Business Case – August 2022

Report sign off

Authors must ensure that officers and members have agreed the content of the report:

	Full Name of Officer
Monitoring Officer/Legal	Suki Binjal
Executive Director of Finance & S151 Officer	Jan Willis
Relevant Executive Director	Rick O'Farrell
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