



Energy Park Fife: Site Overview



4th July 2018

Fife means business.



Fife – A long connection with Energy



Coal
(1885 - 1973)



Oil & Gas
(1973 -)



Renewables
(2005 -)

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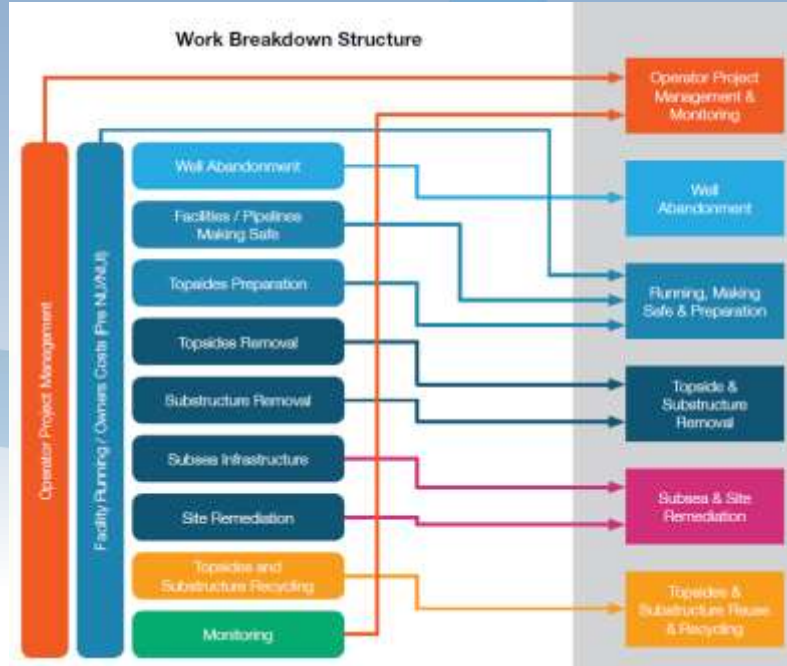
Location



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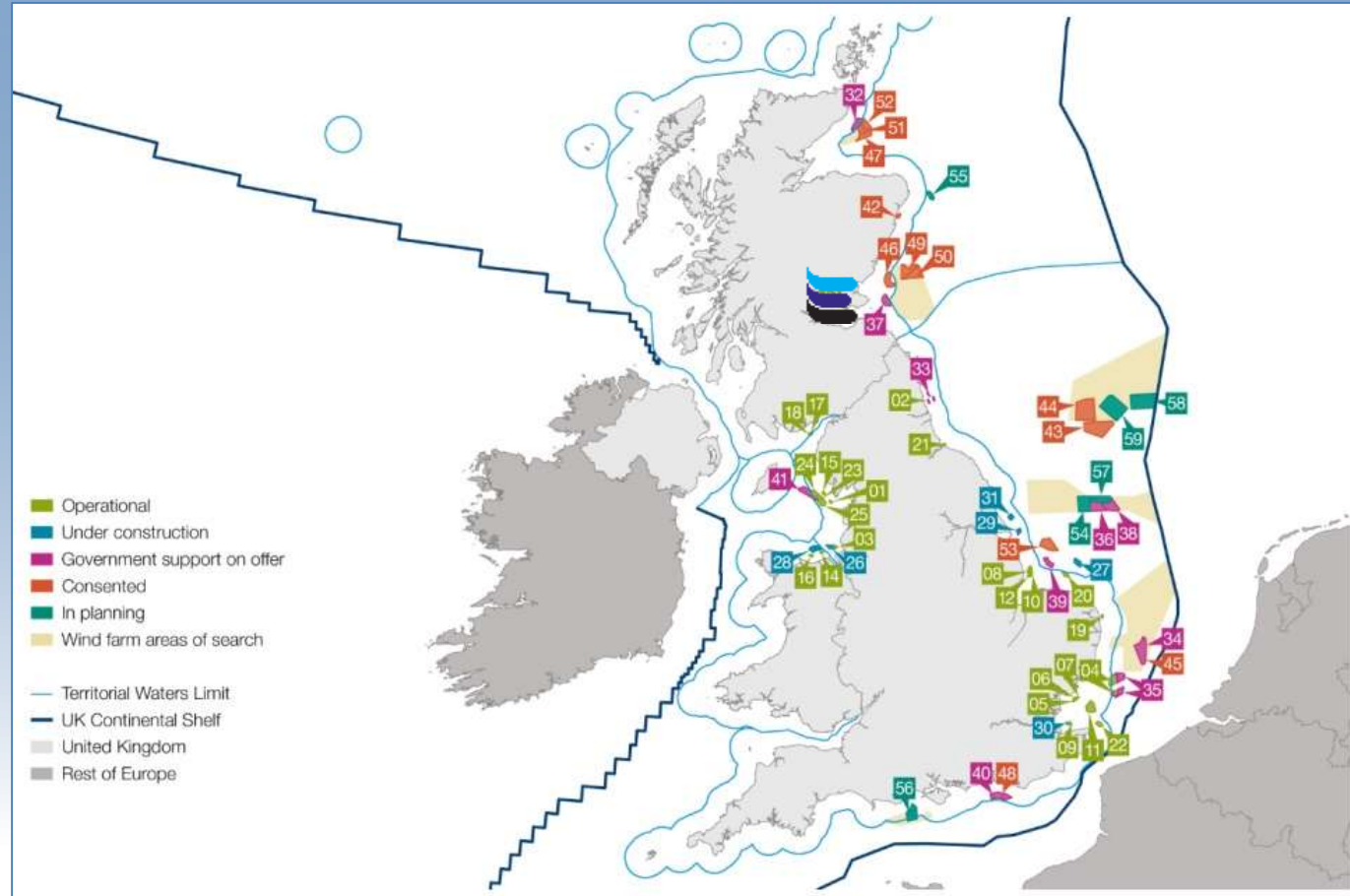
Perfect for Central North Sea

In the next decade, there is a relatively even split between wells in the South and Central North Sea compared to the Northern North Sea.



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Location to UK Offshore Wind



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Development History



- **SE** acquired EPF in **2006**, previously offshore fabrication use since 1970's
- Development agreement with **Fife Council**, 2006
- **54ha** site with existing fabrication yard and sheds
- Fabrication yard currently operated by Burntisland Fabrications Ltd (BiFab)
- **32 acre** development site
- **£27M** invested to end 2016 – Phase 1 delivered new roads, utilities infrastructure, major buildings refurbishment, earthworks and emergency repairs to Quayside 1. Phase 2 focused on maximising the asset through access and environmental improvements, utilities upgrade and full reconstruction of both quays.
- **£5.76M** recent approval currently being implemented with yard improvement works, enhanced moorings and environmental protection works underway

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“A world leading facility on the East Coast of Scotland with a proven track record in delivering excellence in the Energy Sector”



ENERGY PARK
FIFE SCOTLAND





ENERGY PARK
FIFE SCOTLAND

Demonstration Zone

Energy
Park Fife

Supply Chain Zone

Engineering Zone

BiFab

Levenmouth Business Park

- 16 ha inland business park
- Supply chain capability



Engineering Zone

- Major fabrication, engineering and construction capability
- 20 ha development opportunity
- 345m direct quayside access to north sea



APULT
here Renewable energy

Dock Zone

Innovation Zone

Hydrogen
Office

BiFab:

- Currently working on Beatrice OWF development (26 jackets)



Ferguson Transport and Shipping:

- Opened new facility at Energy Park (Sept '16)



Fife Renewable
Innovation Centre

Fife
Renewable Energy

Site Specifics: Marine Access

Berth facilities:

- Quay 1: 184m; Quay 2: 176m.

Water Depth at Quaysides:

- 4.7m below chart datum
- (5.7m CD max available post dredging)

Bearing capacity:

- Quay 2: 20Te/m2

MetOcean conditions:

- Approximately 85% availability of berths

Track Record:

- 22,000 t max structure
- c.£1bn worth of contracts delivered since 2006



Samsung 7MW turbine – Blade unloading



Bifab: GDF Suez Cygnus Accommodation Module (4,700t)



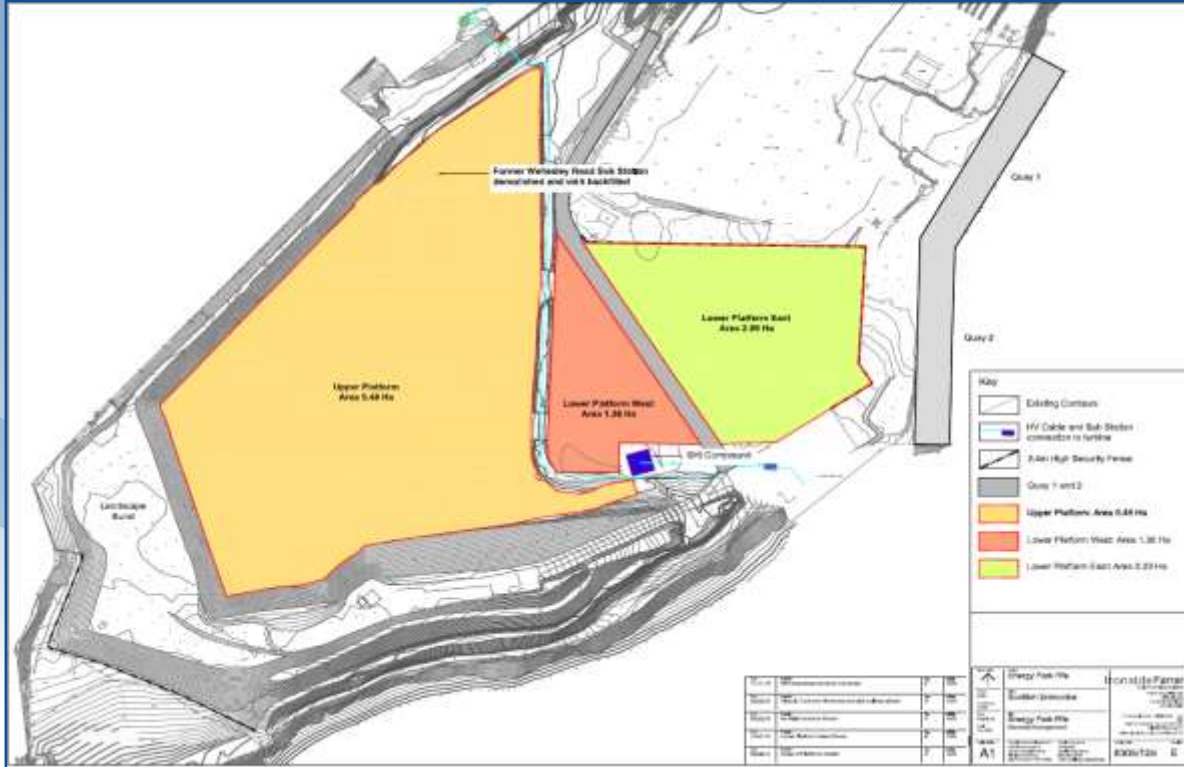
Bifab: Premier Oil Solan Topside (3,500t)



Bifab: Premier Oil Solan Jacket (8,000t)

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Ongoing Development & Investment Activity



Site:

- Platforming programme 2015 - £1.3m

Sizes:

- Lower Platform (Green/Red) 4.35 ha
- Upper Platform (Orange) 9.38 ha

Ground Loading Capacity:

- Lower Platform 30 – 40 Te/m²
- Upper Platform 7 Te/m²

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Continuing Investment

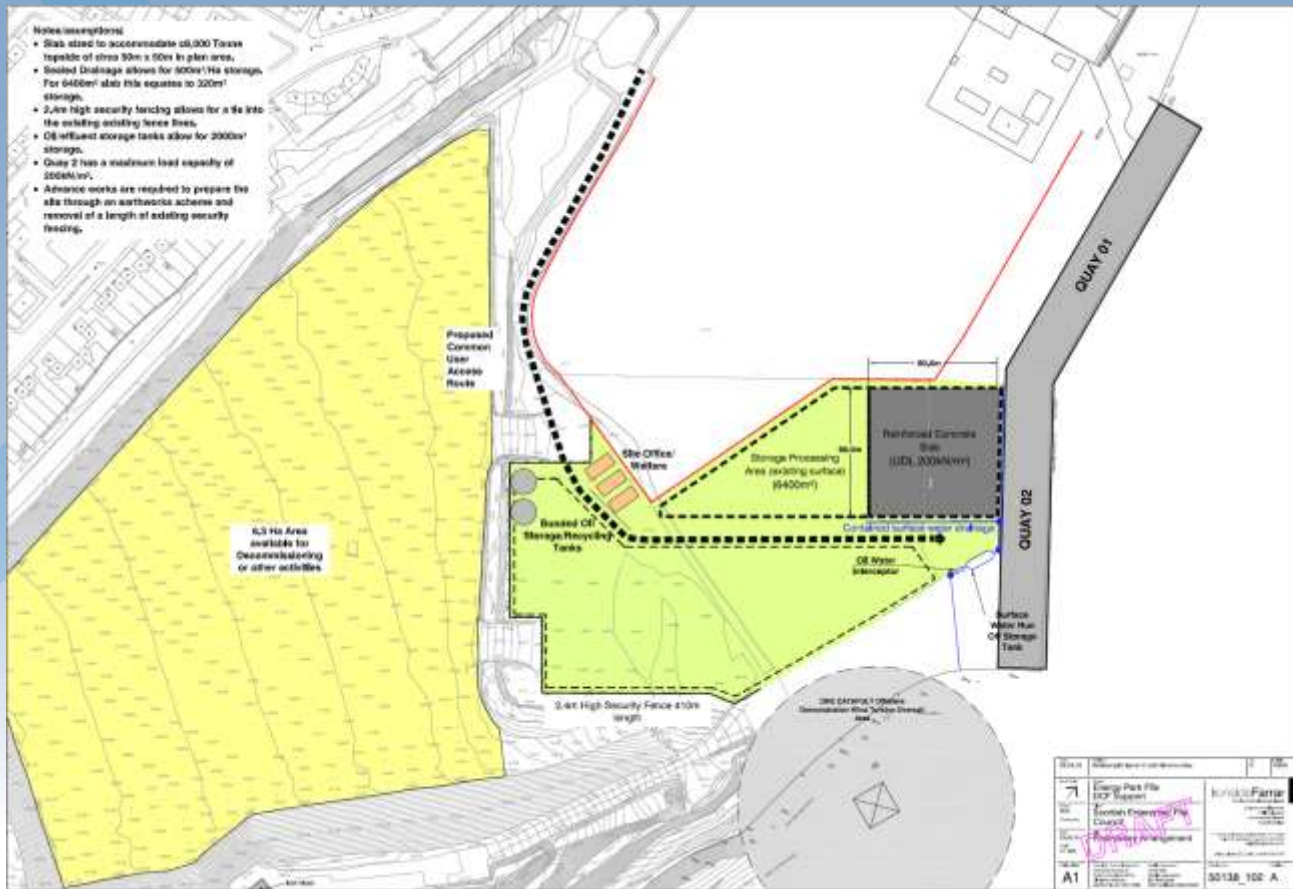


- **Yard Infrastructure Improvements:** 7,500 sq m concrete slab and integrated drainage, to accommodate manufacture/deployment of greater quantities of goods for offshore wind sector.
- **Mooring Solution:** Installation of a mooring solution to enable resilient, concurrent use of Quays 1 and 2, providing a safer operating environment.
- **Slope Stabilisation:** Installation of gabion retaining walls to stabilise the slope of the bing located on the waters edge of the development site, to address health and safety issues and prevent further washout/collapse of material into the Forth Estuary.

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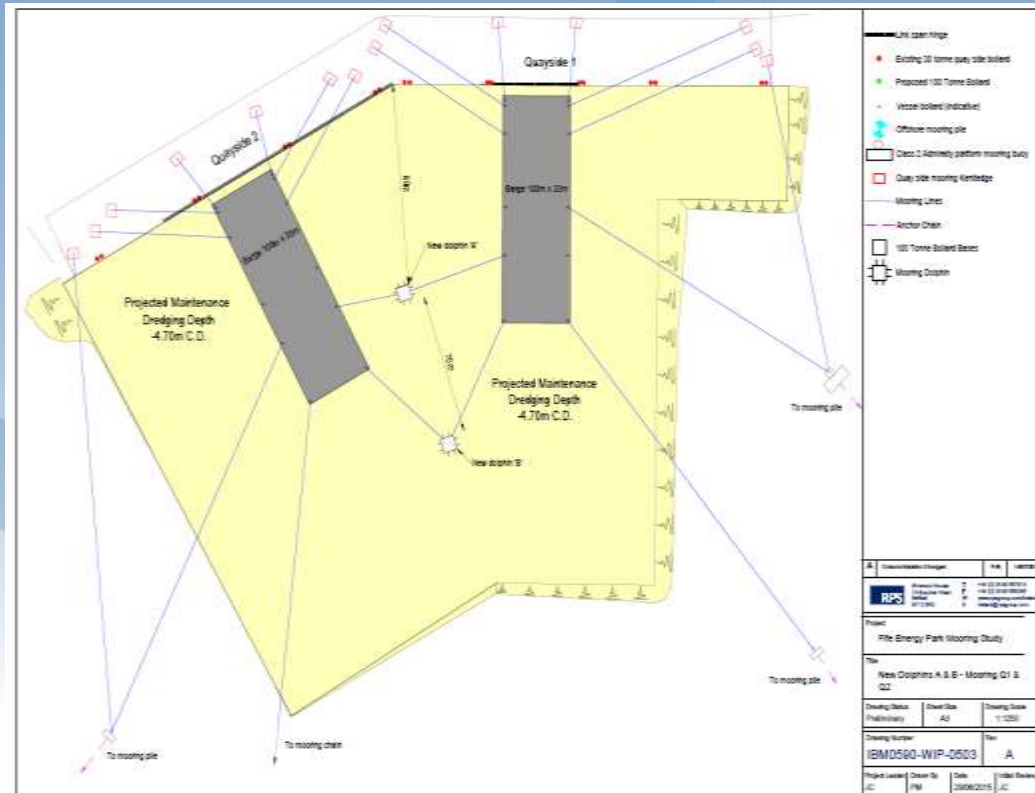
Decommissioning

1. Support from Scottish Governments Decommissioning Challenge Fund
2. Design, cost and consent facility at EPF
3. Market Engagement
4. Supply Chain collaboration

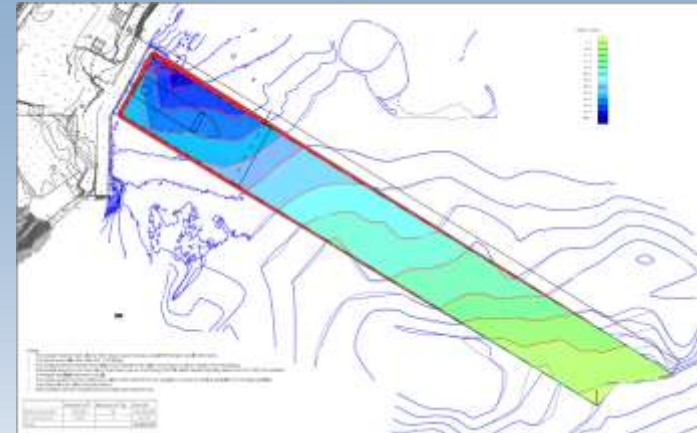


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Marine Access – Current Investment



Construction of dolphin piles to ensure concurrent use of both quay. (May/June '17)



Emerging discussions – dredged pocket off quayside. Access for next generation of installation vessels

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FIFE SCOTLAND

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- Fife Council led project with support from Scottish Enterprise
- Levenmouth Business Park offers range serviced employment sites and is ideally placed for supply chain companies to co-locate and support activities taking place at Energy Park Fife
- Ideal for businesses that would benefit from being located within Energy Park Fife but don't require direct quayside access.
- Phase 1 – 12 ha of an overall 16.5 ha development.
- £3m Investment Programme providing roads and utilities infrastructure
- Less than 1 mile from Energy Park Fife.
- Adjacent Methil Docks (operated by Forth Ports), can provide additional support for the movement of equipment and materials if required.



Load out at Energy Park Fife



Skilled Labour



Energy Park Fife - 340m quayside

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Demonstrate how green hydrogen can tackle two of Scotland's biggest energy challenges - low carbon transport and energy storage

- Project partners: Fife Council, Bright Green Hydrogen & Toshiba
- Using onsite wind turbine and solar panels to make hydrogen – used as fuel
- Fleet of 17 vehicles; 10 Renault Kangoo's, 5 Transit Vans and 2 Bin Lorries
- Project set for completion by end of 2016



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METHIL DOCKS BUSINESS PARK MICROGRID

Smart Grid System,
Automatic switching between grid and
renewable cableing and comms between
all buildings

4 DAY OFF-GRID
CAPABILITY

ZERO CARBON
BUSINESS PARK

EXTRA HYDROGEN
TO SELL

BACKUP POWER

BENEFITS

DATA GATHERING

COMMUNITY VEHICLE -
FUEL POVERTY TARGET
REDUCED FUEL BILLS

DECREASED CARBON FOOTPRINT

BETTER AIR QUALITY

SKILLS

EDUCATION &
SUPPLY CHAIN
OPPORTUNITIES

750kW WIND
TURBINE
(existing)

50kW
SOLAR
PANELS
(FRIC)

HYDROGEN
ENERGY
STORAGE
SYSTEM

HYDROGEN
REFUELLING

100kW
SOLAR PANELS
(BAYVIEW STADIUM
ROOF)

100kW
SOLAR PANELS
(BAYVIEW STADIUM)

TRANSPORT OF HYDROGEN

- TRANSITS
- REFUSE TRUCKS
- HYKANGOOS
- RURAL SUPPLY STUDY



Company Activity: BiFab

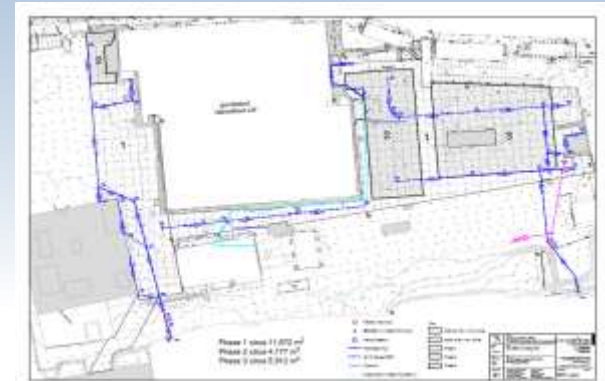
- Solan (Premier Oil) : Jacket (8,000t) & Topside (3,500t)
- Beatrice (Seaways Heavy Lifting / Siemens): 26 jackets (c1,000t) / April 18
- Acquisition by DF Barnes (JV Driver) – April '18
- Ongoing dialogue with future investment at Energy Park



BiFab:
Premier Oil
Solan Jacket
(8,000t)



BiFab: Beatrice
Jackets (1,022 t)



BiFab: Yard
Improvements
£2.4m

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Company Activity: Catapult

Typical activities

Typical Activities

- Trial and demonstrate new technologies
- Prognostic condition monitoring system (CMS) development
- Wind resource standardisation

Additional services

- Evaluate environment conditions
- Conduct training
- Practice O&M procedures
- Demonstrate remote inspection methods & technologies



Approach to the turbine



Each blade measures 83.5m and weighs 30 tonnes

ore.catapult.org.uk
@orecatapult

CATAPULT
Offshore Renewable Energy

Clone of the Levenmouth Turbine (CLOWT):

- Adding multiple sensors to build a 'virtual' turbine
- Developing a high fidelity model of the wind turbine's dynamics
- Optimisation of designs for cost reduction
- Providing unique demonstration opportunities for SMEs
- Supported by Scottish Government and ORE Catapult



Local benefit through education:

- Funding STEM educational role in Levenmouth Academy
- Providing hands-on experience for Fife College turbine technicians
- Teaching the teachers: access to Blyth test facilities
- Supporting Energy Skills Partnership:
- Develop next generation Immersive Hybrid Reality (iHR) offshore wind training system with Heriot Watt
- Shape and develop renewable energy curriculum across Scottish College Network

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Company Activity: Limpet Technology



Limpet Technology set up to commercialise Limpet® Multifunctional Safety System, combining fall arrest (based on rope tension measurement), powered climb assist and remote control lifting/lowering features



Limpet ® Offshore Personnel Transfer System

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Thank you

Want to find out more?



enquiries@investinfife.co.uk

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