

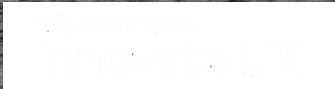
Offshore Wind Oil & Gas opportunities

BIEE / Edinburgh Business School

Andrew Jamieson

CEO

9 Nov 2016

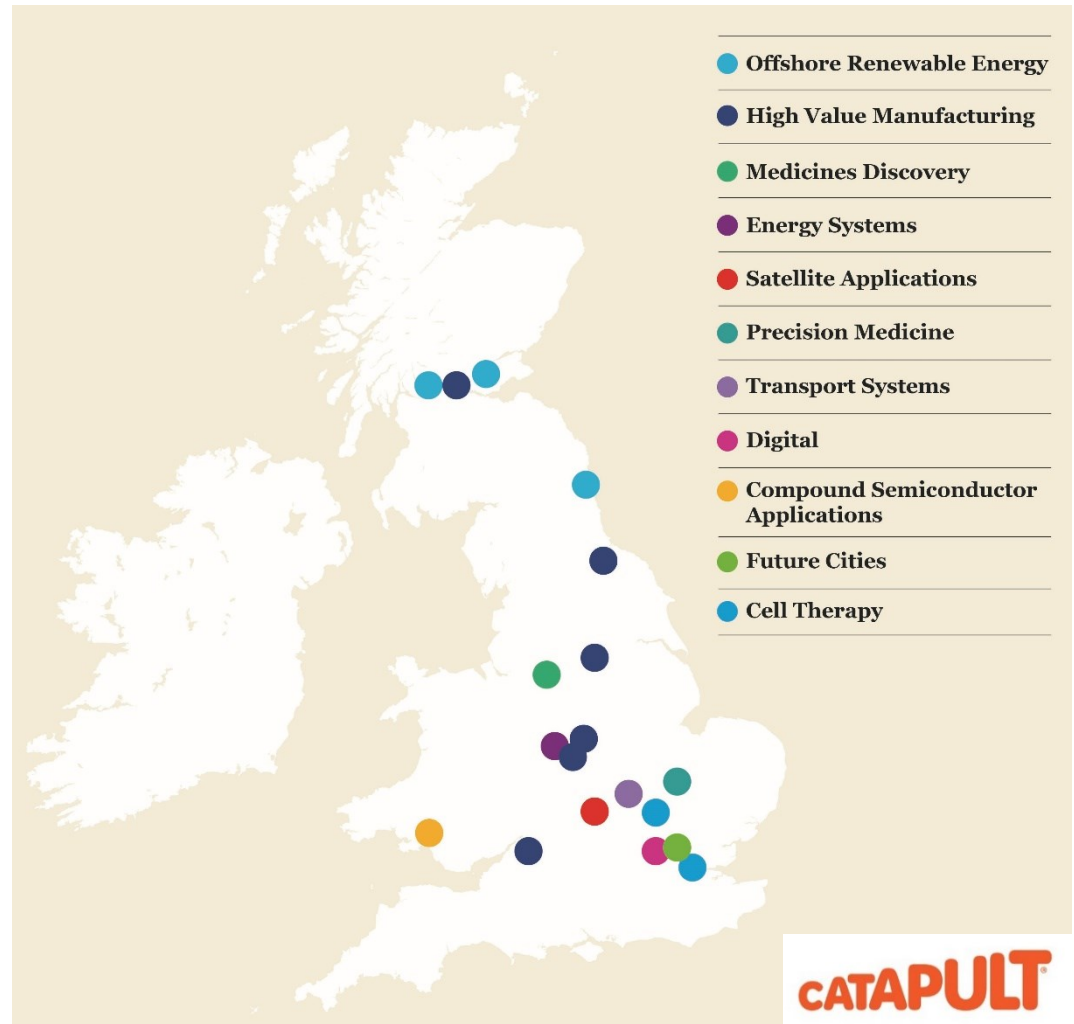


The Catapult Network

A long-term vision for innovation & growth



- 11 Catapults
- Established by InnovateUK
- Designed to transform the UK's capability for innovation
- Core grant leveraged with industry and other public funding
- Catapults all highly connected to their sectors – and each other



CATAPULT

Our Impact in 2015/16

50 Companies
whose product development we've supported through our testing and validation services

151 SMEs
we have supported

Operating £1/4bn
of world-leading test and demonstration facilities in support of UK innovation



Year-on-year uplift in competitive R&D revenue

Global Reach
18 Countries
we have worked with to develop opportunities for the UK supply chain



World Firsts

- First benchmarking platform for offshore wind turbines
- Operating largest indoor blade test facility
- World's largest open access offshore wind turbine dedicated to research
- First accelerated testing of 66KV cable

126
projects with academia

204
industry collaborations

Return on Investment
1:3:21

For every £1 of core grant invested we have leveraged £3 of additional research funding driving £21 of activity

£4.9m
invested in procuring capital equipment,

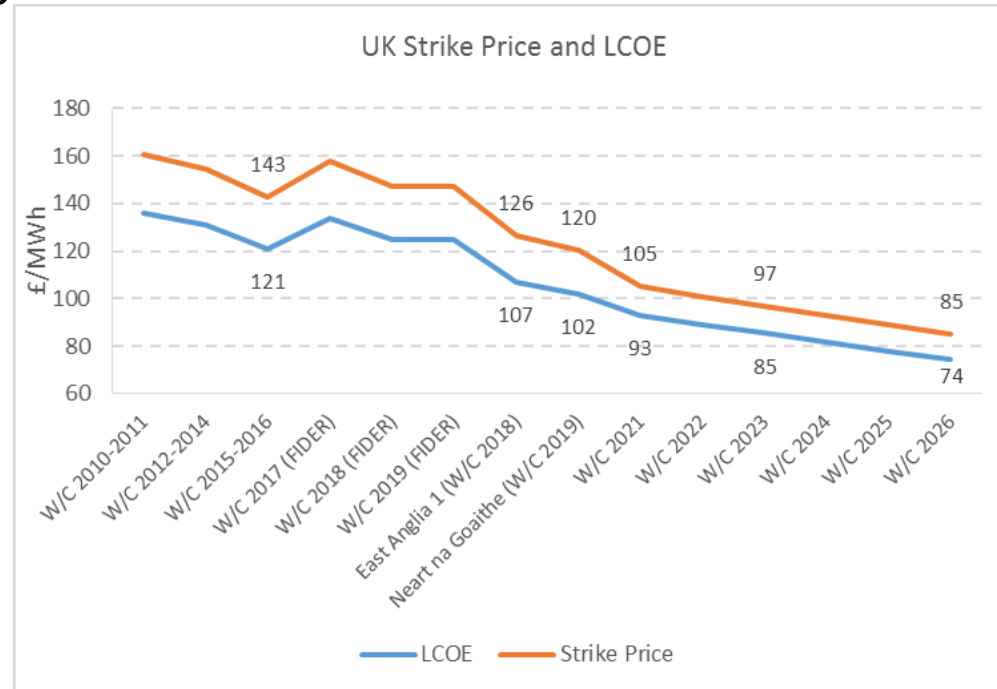
23
competitively

£6.2m
invested in building team of leading

£5.7m
invested in collaborative projects and

Offshore Renewables - an essential industry

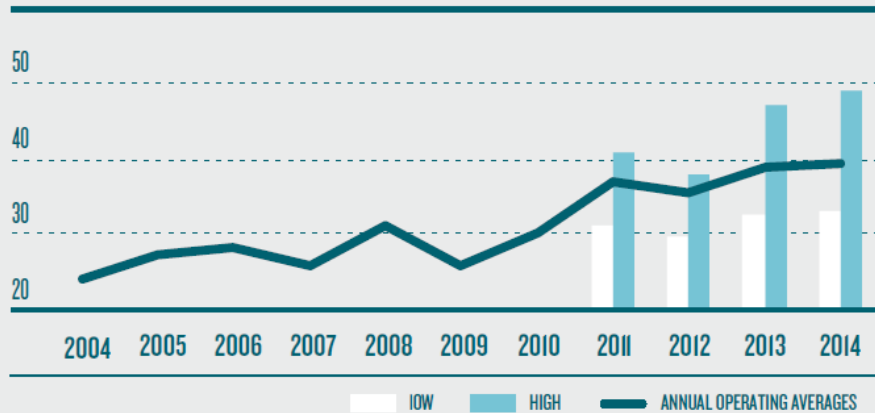
- Paris: net zero emissions by 2100
- 5th Carbon Budget to 2032*
 - 20GW offshore wind by 2030
 - No/slow nuclear 25GW offshore
 - No CCS: 25GW offshore wind
- By 2030
 - Wind 30-40% of UK power generation
 - Offshore wind up to 25%
- Denmark 42% electricity from wind in 2015



**Costs falling:
And more rapidly than expected**

A UK success story

UK Offshore Wind Load Factors (%)



- Aberdeen oil & gas has global expertise reputation
- UK can be same in offshore renewables

Now



13,000

2030



50,000

ORE Catapult

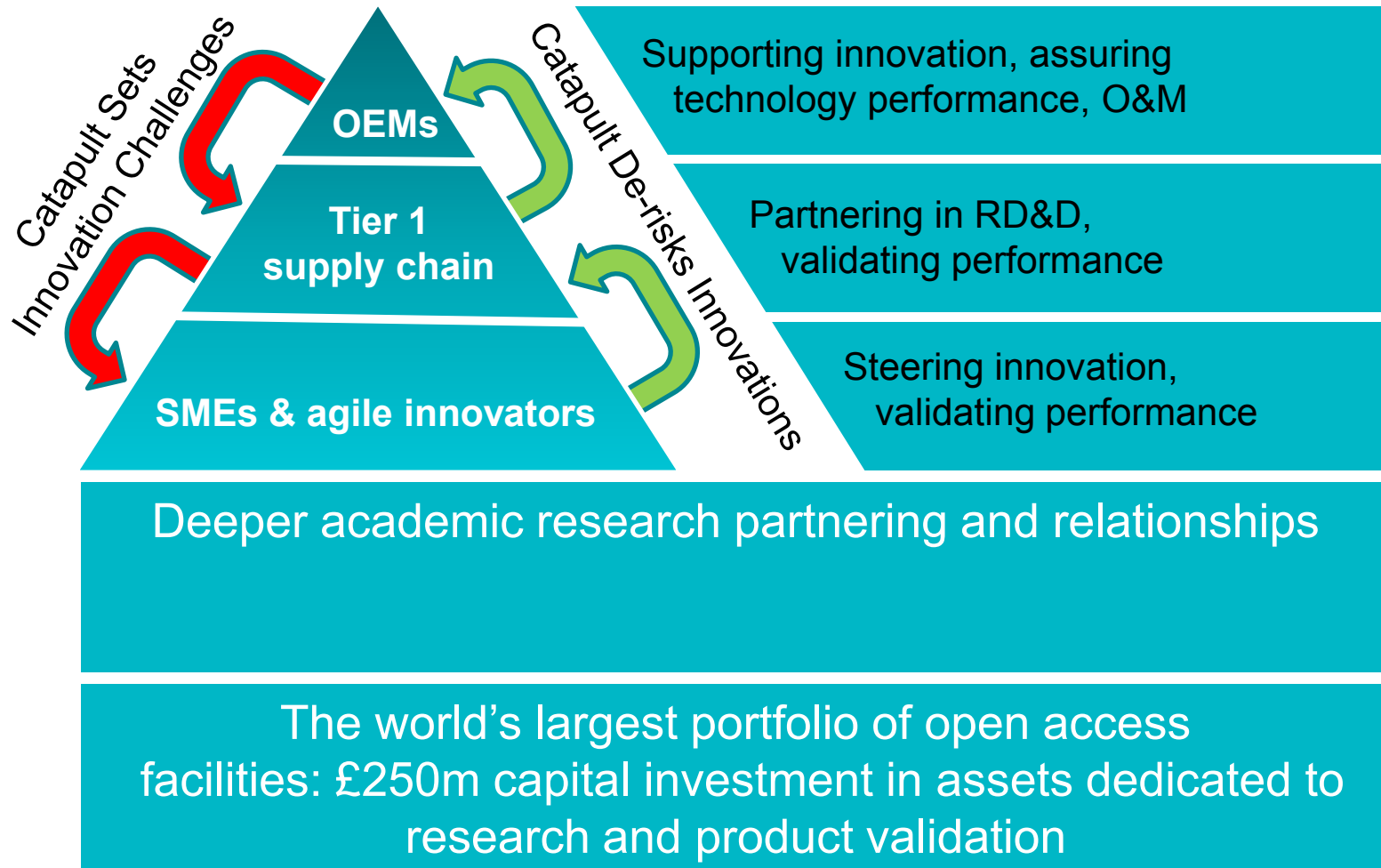
Build UK Supply chain by closing technical gaps

CATAPULT
Offshore Renewable Energy



Dual axis blade testing, Bearing testing, Novel cables, Real data for simulations.....

Value Cascade



Oil and gas opportunities

- Design, Fabrication, Installation, O&M of offshore power plant
 - Scour protection of cables
 - Paints / coatings
 - Condition monitoring
 - Structural integrity, and NDT
 - ROVs and AUVs
 - Cable integrity
 - Spinning plant servicing
-

JDR PRODUCTS - UMBILICALS & POWER CABLES

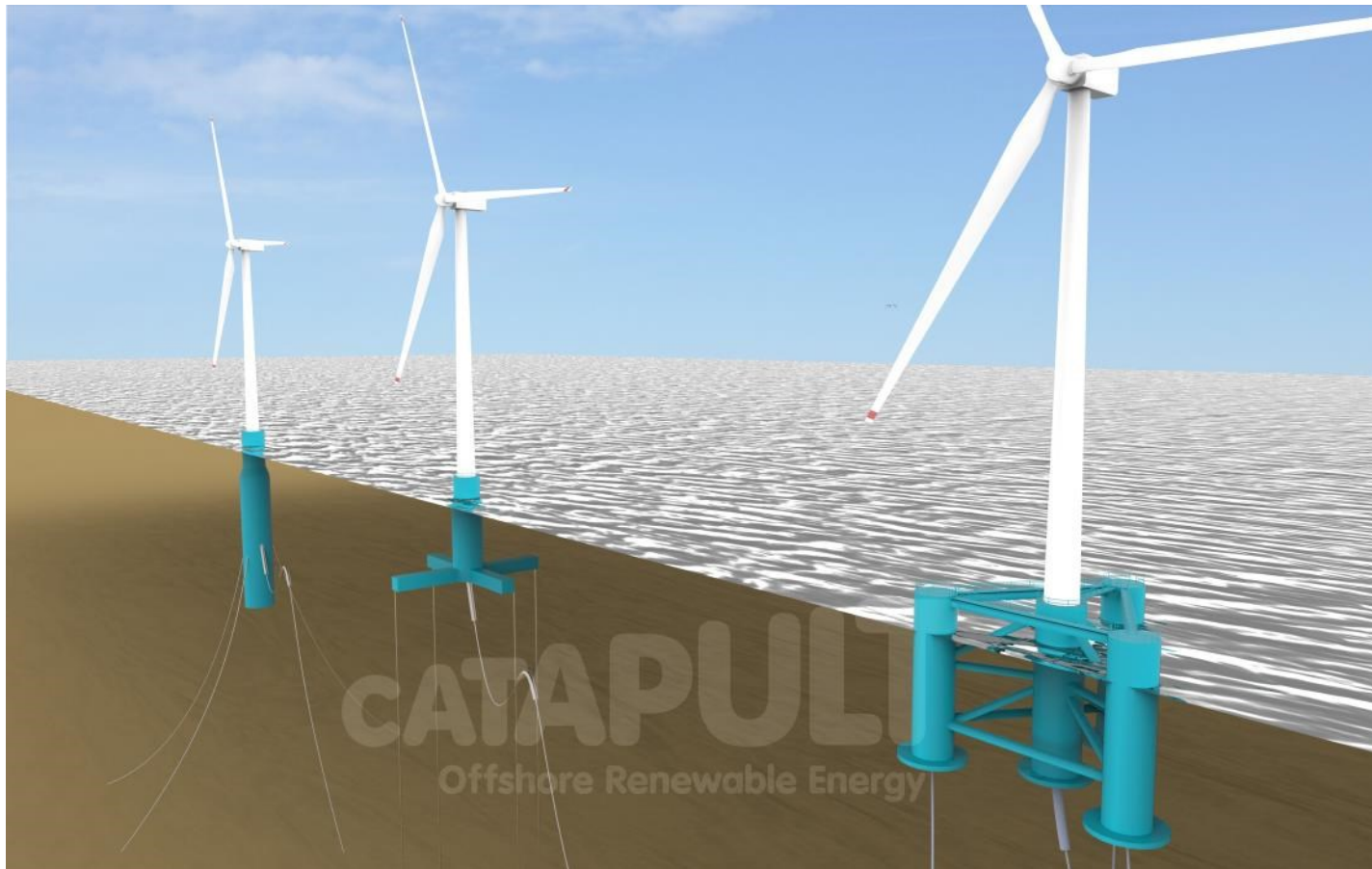
CATAPULT
Offshore Renewable Energy



Making the transfer not always easy

- Renewables still an evolving market
 - Different investment risk attitudes and return expectations
 - Planning moves often at slower pace
 - Technologies and contractual relationships are evolving (who does what, where does risk sit etc)
 - O&G standards not a straight read across
-

Disruptive innovation: Floating wind Oil & Gas manufacturing synergies





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