

Your Innovation Partner



The
Oil & Gas
Technology
Centre

Your Innovation Partner

Chris Pearson
Supergen ORE Hub

June 2019

Our Goals



Unlock

Unlock the full potential of
the UK Continental Shelf

Anchor

Anchor the supply chain
in North East Scotland

Inspire

Inspire a culture of
innovation
and transformation



£180 million funding from the Aberdeen City Region Deal

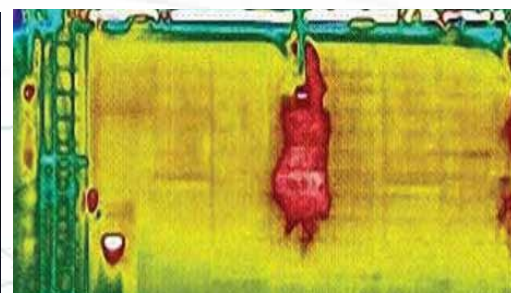
Technology Vision



Fix today



Data access



Asset inspection



Production optimisation



Revitalise exploration

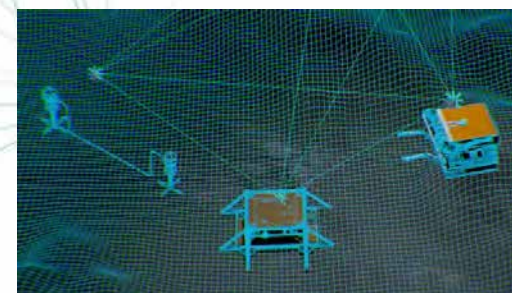


Efficient decommissioning



Alternative well barriers

Maximise recovery



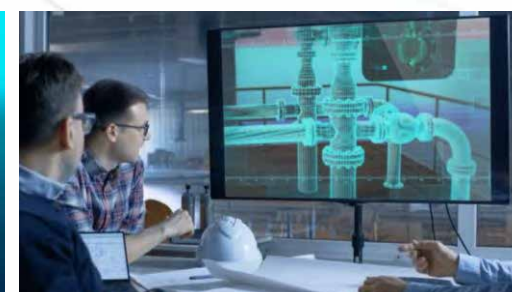
Tieback of the Future



Integrated energy



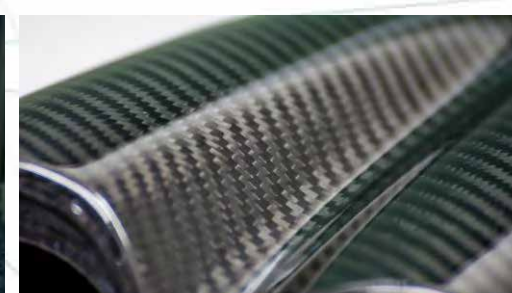
Automation



Remote operations



Artificial intelligence



New materials

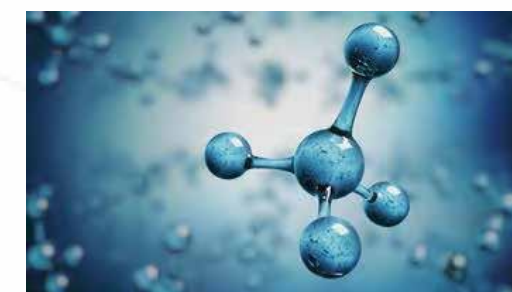
Transform tomorrow



Low carbon operations



Reusable infrastructure



Hydrogen delivery



Data driven



Unmanned facilities



Zero carbon developments

Transforming the industry for the low carbon future

How We Work



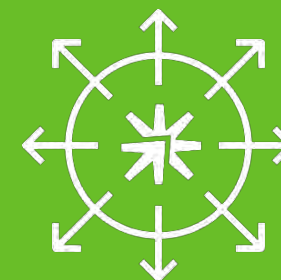
Driving

Action through technology roadmaps to achieve MER UK and grow the supply chain



Delivering

Projects that move the dial on key challenges and opportunities across the UKCS and beyond



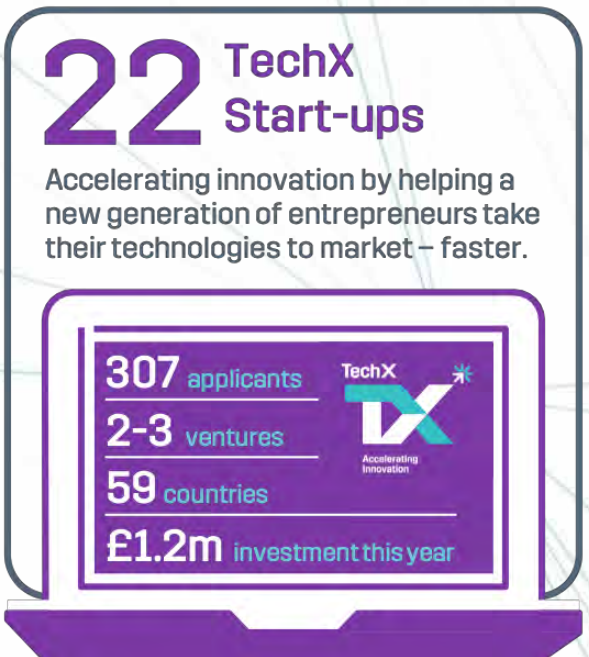
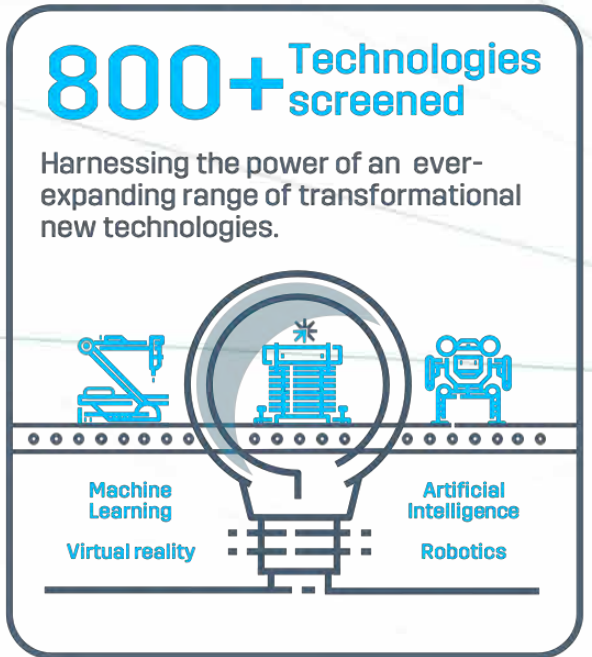
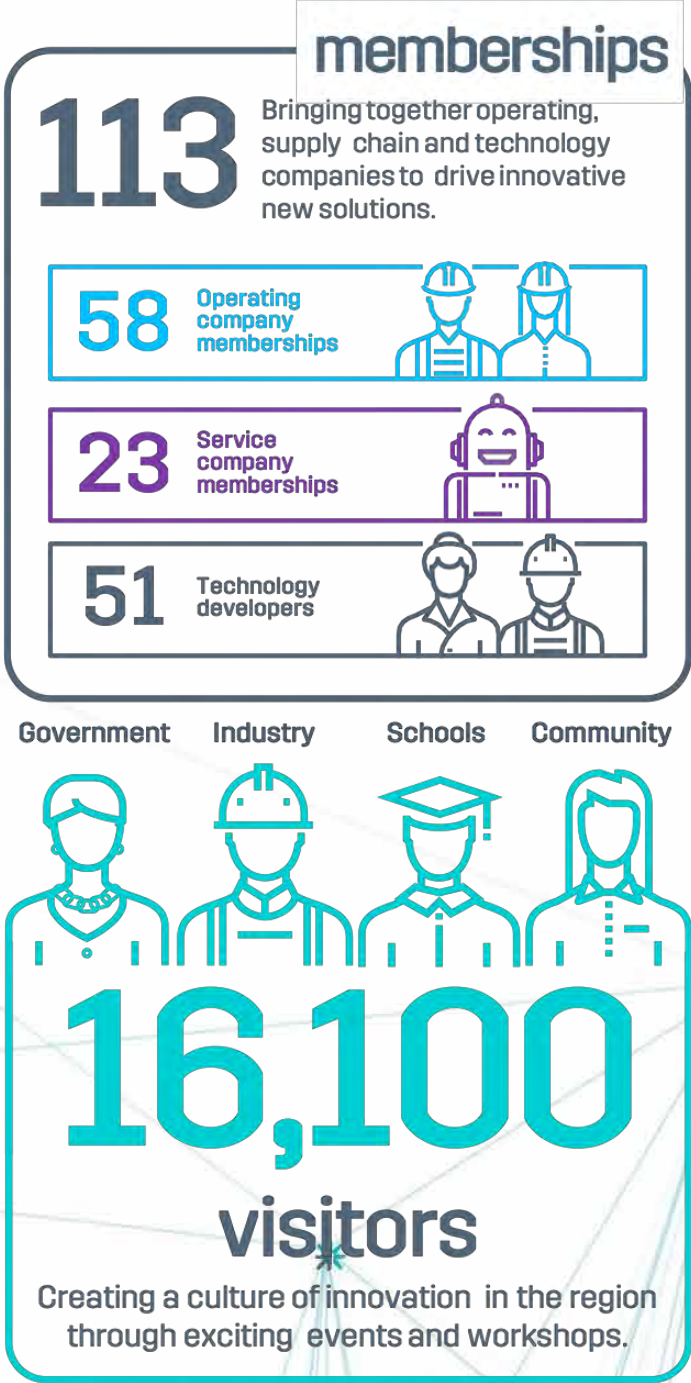
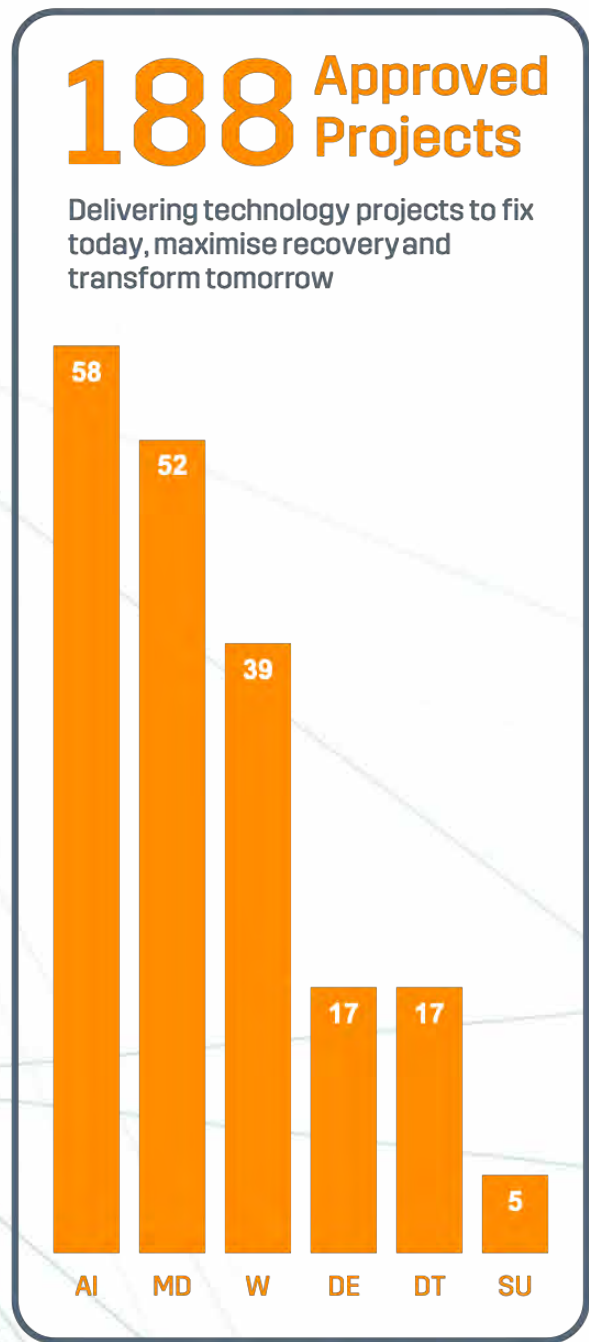
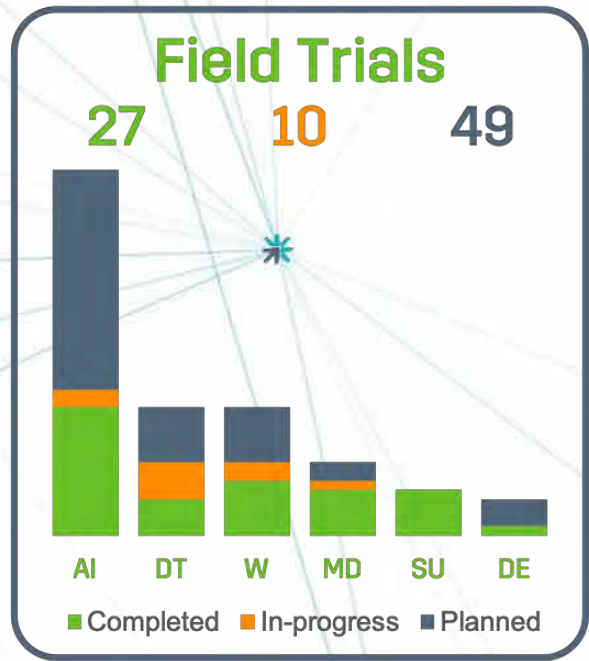
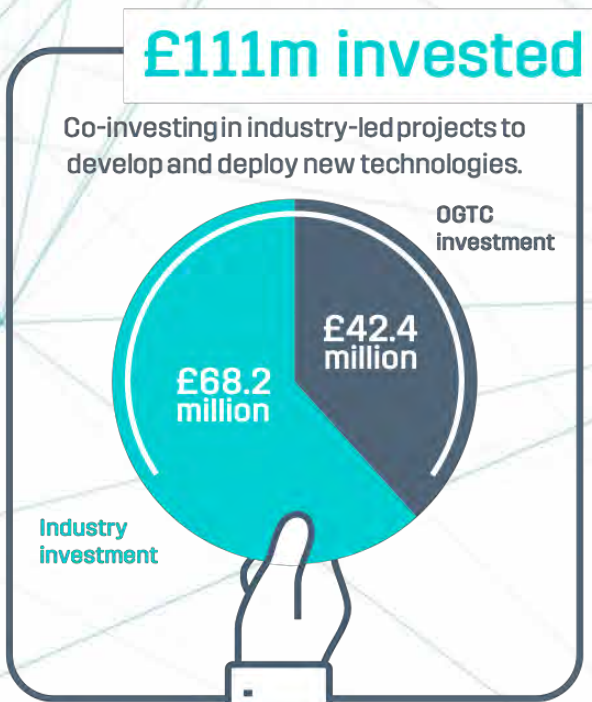
Connecting

Industry, governments, regulators and academia to drive technology investment and deployment



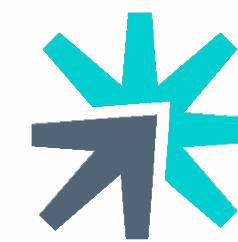
Partnering with industry, government and academia

Our Track Record



Delivering strong results

10-year Roadmap



Driving



Solution Centres

Unlock UKCS potential & anchor the supply chain

Add >£8bn value

Production efficiency up 10%

Up to 20 billion barrels

35% cost reduction

Well costs down 50%

50% fields under

Costs down 50%

TechX Accelerator

Accelerate 100 new start-ups

Add >£8bn value

15 new spin outs

50% commercialisation

£100m co-investment syndicate

National R&D Centres

Create at least two national R&D centres

Increase R&D capability

National Decommissioning Centre with the University of Aberdeen

National Subsea Centre with Robert Gordon University

Culture of innovation

Thought leadership for the industrial transition

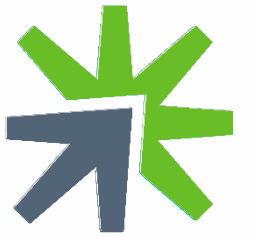
Ready for the future

Low carbon industrial transition

Inspiring the next generation

Industry and academic engagement

Solution Centres



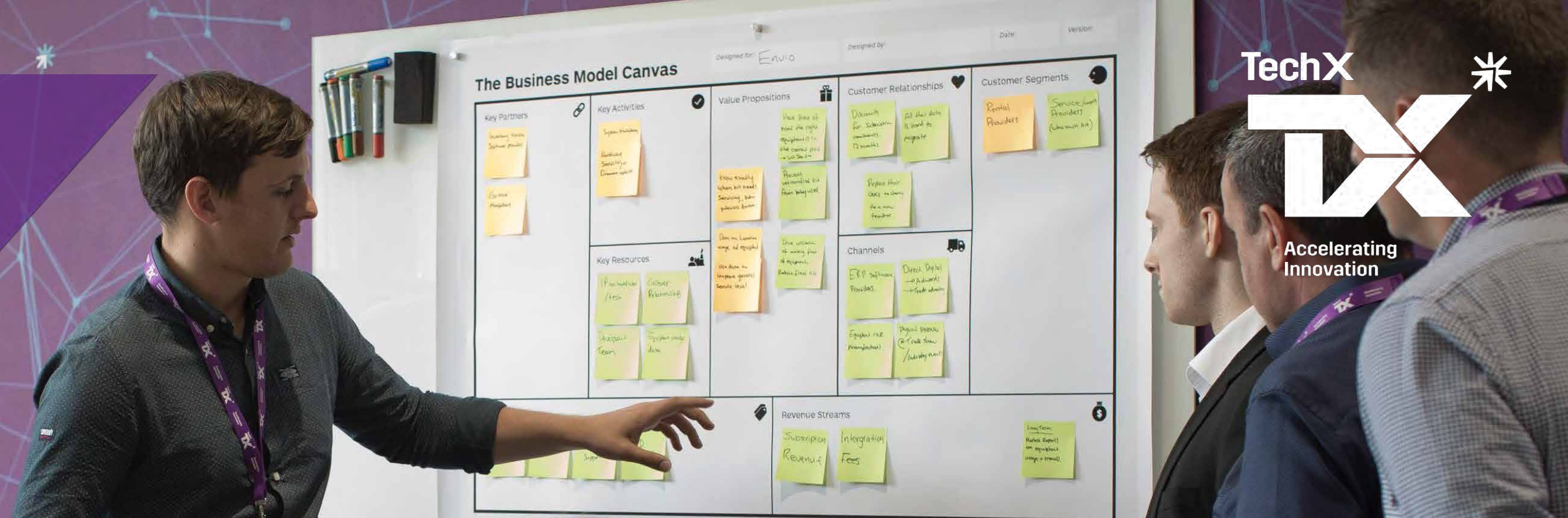
Driving



Digital	Subsurface	Decom	Wells	Marginal Developments	Asset Integrity
10% increase in production efficiency	MER UK up to 20bn barrels	35% cost reduction	50% lower well construction costs	50% under development	50% cost reduction
Digitally enabled supply chain	Discover more	Late life management	Optimise design	Tieback of the Future	Risk based inspection & data analytics
Digital & data architecture	Develop more	Post COP OPEX reduction	Flawless delivery	Facility of the Future	Detection & condition based monitoring
Smart facilities	Recover more	Innovative removal	Maximise production	Integrated energy	Enhanced inspection techniques
Digitally enabled worker		Optimise abandonment	Optimise abandonment		Repair & mitigation solutions
Production optimisation					

Delivering solutions to industry challenges

TechX Accelerator



Driving

15 new
spin outs

Ventures

Creating start-ups with technologies that for a low carbon economy

100 new
start-ups

Pioneers

Supporting start-ups validate and commercialise exciting new technology ideas

50%
commercialisation

Market Entry

Helping technology companies from other sectors enter oil and gas

£100 million
investment

Co-investment

Unique fund offering seed capital to companies exiting TechX



Accelerating game-changing companies

National R&D Centres



Driving

Partnering

With R&D institutions and innovation centres across the UK and internationally

Enhancing

The research R&D capability of universities and other organisations

Developing

New technologies that deliver for the UK and internationally



Industry-led R&D in partnership with academia

National Decom Centre



The
National
Decommissioning
Centre

Innovation through Partnership



UNIVERSITY OF
ABERDEEN



The
Oil & Gas
Technology
Centre

Your Innovation Partner



Mature basin management

- Business models
- Long-term liability management
- Comparative assessment
- Basin-wide simulation



Well Decommissioning

- Barrier verification
- Abandonment landscape
- Alternative barrier materials
- Designing for decommissioning



Late life and decommissioning

- Basin-wide decommissioning
- Alternative removal
- Decision making
- Dismantling and in situ decom
- Environmental science



Thought leadership

- Inspire and implement
- Engineering and technology
- Culture and behaviour

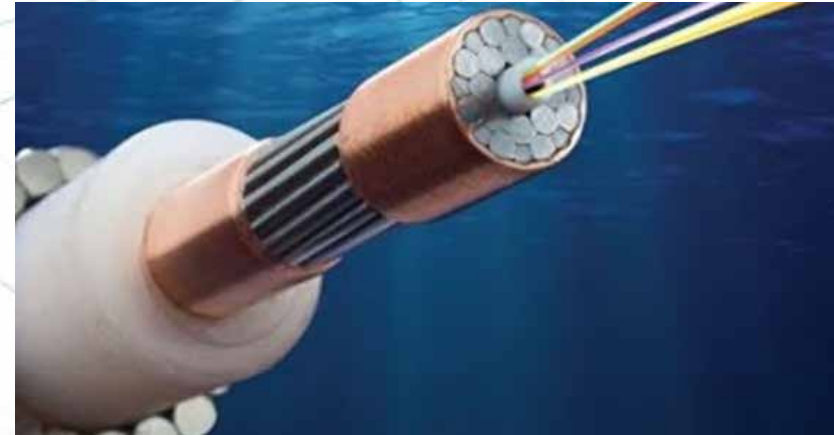
Industry-led R&D in partnership with academia

National Subsea Centre



Engineering

- Multi-discipline
- Teaching and research
- Industry and academia



Technology

- Subsea 4.0
- Cross industry alignment
- Faster/cheaper deployment



Integrated Energy

- Clean growth
- Integrated distribution
- Re-purposing assets



Thought Leadership

- Inspire and implement
- Engineering and technology
- Culture and behaviour

Industry-led R&D in partnership with academia

Culture of Innovation



Driving



Inspiring the next generation

- Primary Engineer
- Lego League
- Developing the Young Workforce

Engaging events and workshops

- Tech20
- Doors Open Days
- Innovation workshops

Increasing gender diversity

- Women in Engineering
- Fabulous Female Leaders
- Mentoring women in business

Creating a culture of innovation

Fix Today



Delivering



Failforce actuator safety gauntlet

Simple, low cost protector for actuator valves

Improves safety and lowers cost by 90% or £8,000 per actuator

Potential £300 million in savings to UKCS

Reduce cost



GDi digital twin & inspection

3D modelling and 360 imaging of offshore installations

Improves asset integrity efficiency, including maintenance and repair by ~£2 million per platform

Potential £500 million in savings to UKCS

Add barrels

Delivering projects that move the dial

Maximise Recovery



Delivering



Osokey seismic in the cloud

Collaborative database for seismic data and analytics

Provides rapid access for data interpretation, driving improved exploration performance

Potential 20% cost reduction for IT and storage

Increase reserves



Cavitas thermal heavy oil recovery

Subsea energy storage and power generation system to produce autonomous power for subsea wells

Integrated marine energy solution that lowers cost

Potential to unlock ~400 million barrels UKCS reserves

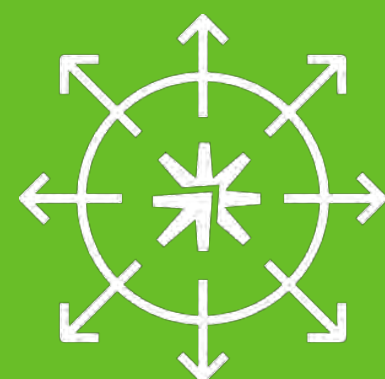
Add barrels

Delivering projects that move the dial

Transform Tomorrow



Delivering



Sealand platform power hub

Alternative power sources for existing facilities, working in partnership with offshore renewables

Reuse of infrastructure, reducing cost and CO₂ footprint

Potential £600 million annual saving to UKCS

Re-use and re-cycle



EC-OG subsea power hub

Downhole heating device for unlocking heaving oil reserves

Small footprint technology that maximises recovery

Potential £200 million saving to UKCS

Integrated energy

Delivering projects that move the dial

Our Innovation Network



Connecting



Horizon Scanning

Predicting emerging technologies and trends

University Network

Forging partnerships with industry and academia

Academic Panel

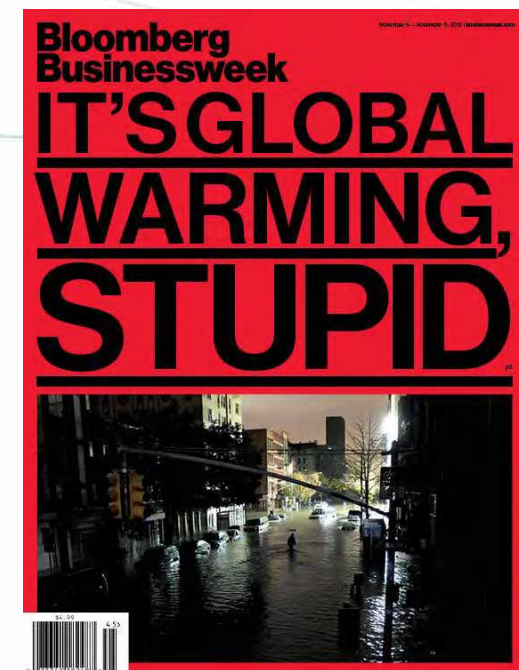
Harnessing expert advice and technical capability

Industrial Network

Leveraging the technology strengths of other sectors

Bringing the outside in

A Changing World



The Social Wave



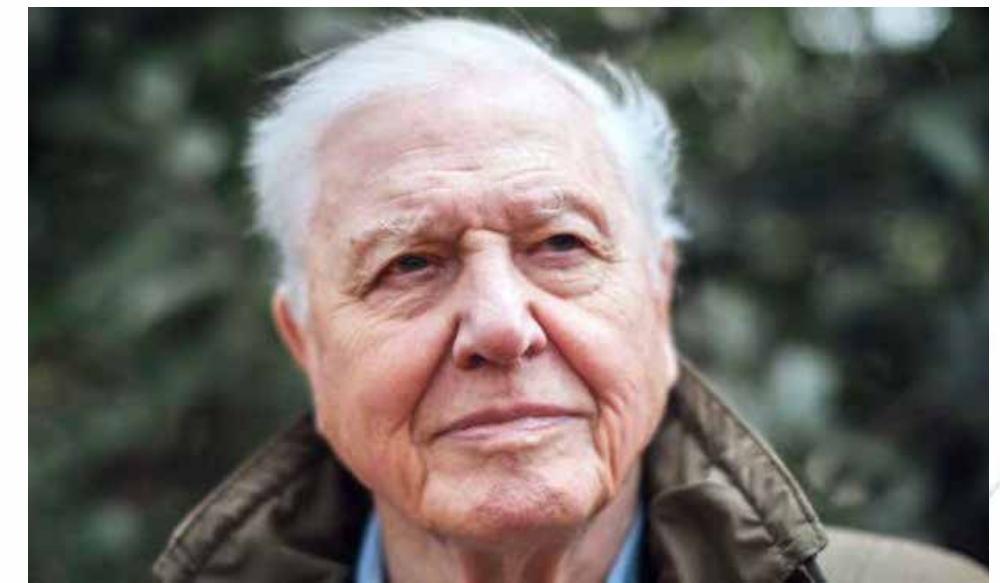
Greta Thunberg

“I don't want your hope. I don't want you to be hopeful. I want you to panic...and act as if the house was on fire. Because it is.”



Damon Gameau

“If we simply embraced the best solutions already available to us to improve our planet and shifted them rapidly into the mainstream.”



Sir David Attenborough

“If we have not taken dramatic action within the next decade, we could face irreversible damage to the natural world and the collapse of our societies.”

Driving demand for action

The Policy Landscape



Global



UNITED NATIONS

ipcc

INTERGOVERNMENTAL PANEL ON
climate change



UK



Net Zero
**The UK's contribution to
stopping global warming**

Committee on Climate Change
May 2019



TIME FOR ACTION

COP25
CHILE
2019
UN CLIMATE CHANGE
CONFERENCE



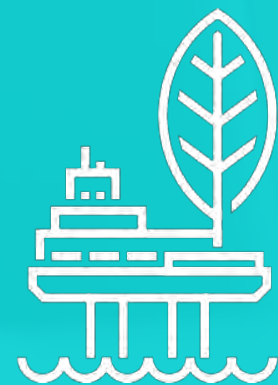
Advancing goals and targets

Industrial Transition



A cleaner industry

Decarbonise
operations



Net zero carbon basin

Integrated
energy



Global net zero

Our
contribution



Working across the energy sector to be part of the solution



Work
With us



The
Oil & Gas
Technology
Centre

Your Innovation Partner

Together we
can transform
the future