



**The  
Oil & Gas  
Technology  
Centre**

Your Innovation Partner

# Your Innovation Partner

## Jan 2019

# Industry context



1999 peak production  
5 million barrels per day

2017 production  
c.1.5 million barrels per day



44 billion barrels since 1964  
£330 billion in corporation tax

10-20 billion barrels  
potential remaining



300,000 jobs in UK  
from oil and gas

Supply chain revenue of  
£30 billion per year

Grow supply chain; double exports



**£500bn**  
revenue

Maximise Economic Recovery



**£420bn**  
revenue

Overall prize



**£920bn**  
revenue

Every 1bn barrels produced generates £50bn of value for the economy



# Creating value

Unlock the potential of the  
UK Continental Shelf



Anchor the supply chain in  
North East Scotland



Create a culture of innovation  
that attracts industry  
and academia



£180 million City Region Deal funding



# Technology vision

## Fix today



Drones



Thermite  
plug



Virtual  
reality



Additive  
manufacturing



Subsea  
snake



Advanced  
inspection

## Maximise recovery



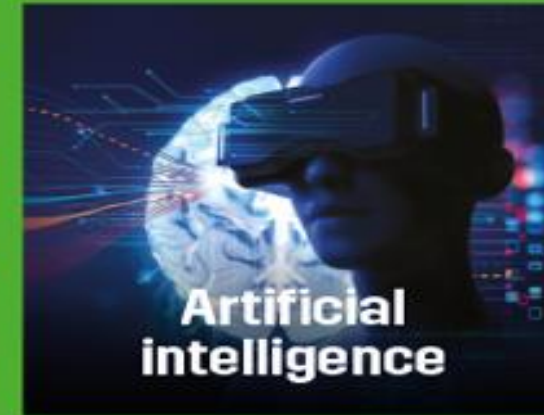
Small  
pools



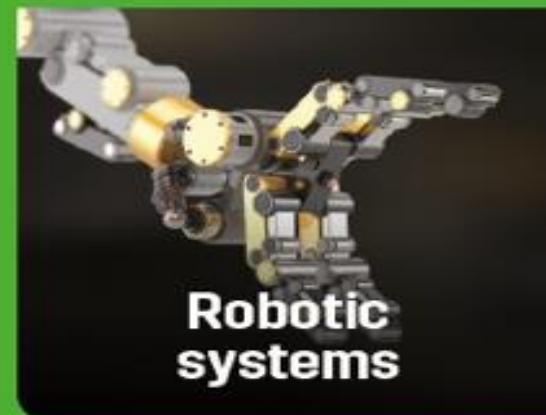
Remote  
operations



Big data



Artificial  
intelligence



Robotic  
systems



Composites

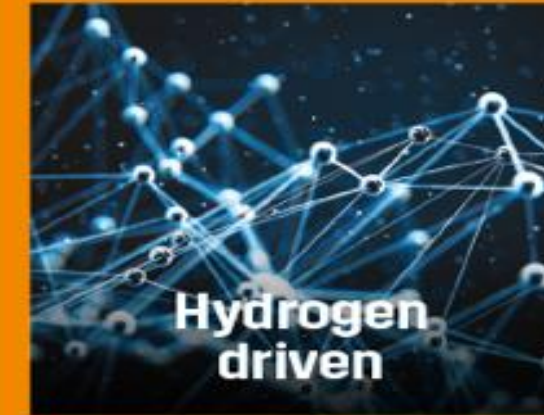
## Transform tomorrow



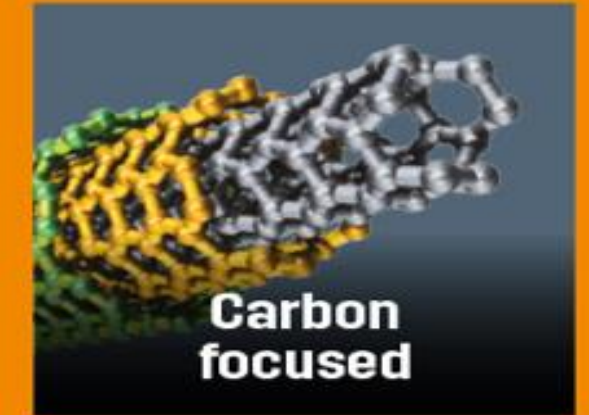
Product  
driven



Service  
oriented



Hydrogen  
driven



Carbon  
focused



Unmanned  
facilities







Reusable  
infrastructure

Technology can transform the oil and gas industry for the low carbon future



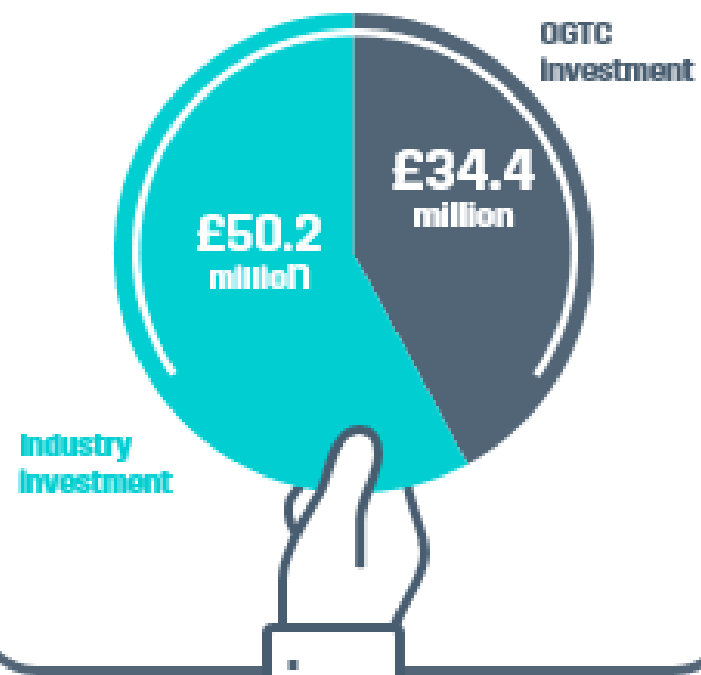
# Roadmaps – aligning to deliver V2035

Vision					
	<div><div><div>Grow supply chain; double exports</div><div></div><div>£500bn revenue</div></div><div><div>Maximise Economic Recovery</div><div></div><div>£420bn revenue</div></div><div><div>Overall prize</div><div></div><div>£920bn revenue</div></div></div>				
V2035 Targets	<div><div>Deliver additional barrels</div><div>Double service sector share</div></div>				
	<div><div>Reduce operating costs</div><div>Add recoverable reserves</div></div>				
TLB Challenges	<div><div>Increase production efficiency</div><div>Reduce well costs</div></div>				
	<div><div>Increase recovery factor</div><div>Reduce decom costs</div></div>				
OGTC Targets	<div><div>Revitalise exploration</div><div>Clean offshore energy</div></div>				
	<div><div>See clearly under the seabed</div><div>Efficient offshore operations</div></div>				
	<div><div>Unlock new developments</div><div>Productive onshore operations</div></div>				
	<div><div>Maximise subsurface recovery</div><div>Slash decom costs</div></div>				
	<div><div>Asset integrity &amp; inspection risk</div><div>Deployment at scale</div></div>				
	<div><div>Digital transformation</div><div>Improve production efficiency by 10%</div></div>				
	<div><div>Wells</div><div>Reduce well costs by 50%</div></div>				
	<div><div>Asset integrity</div><div>Reduce asset integrity costs by 50%</div></div>				
	<div><div>Small pools</div><div>Reduce lifecycle costs by 50%</div></div>				
	<div><div>Decommissioning</div><div>Reduce decom costs by 35%</div></div>				

# Strong performance

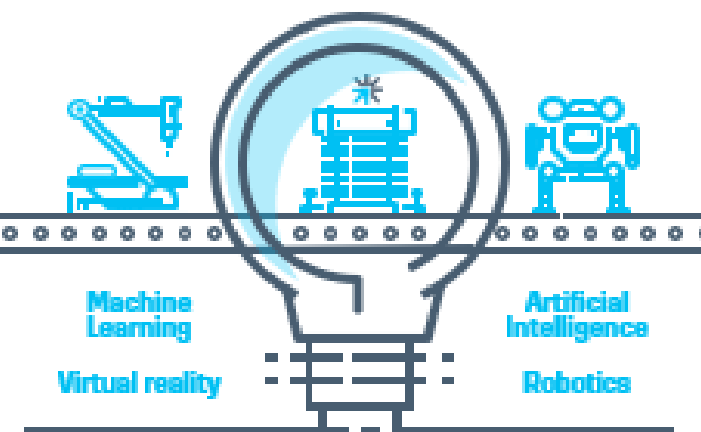
## £85m invested

Co-investing in industry-led projects to develop and deploy new technologies.



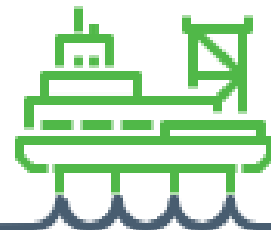
## 730+ Technologies screened

Harnessing the power of an ever-expanding range of transformational new technologies.



## 50+ In 2018

Working with industry partners to test and trial new technologies in an operational environment.



Planned		Completed
24	Asset integrity	9
2	Marginal Developments	1
4	Wells	6
13	Digital	3
2	Decommissioning	0
0	Subsurface	0

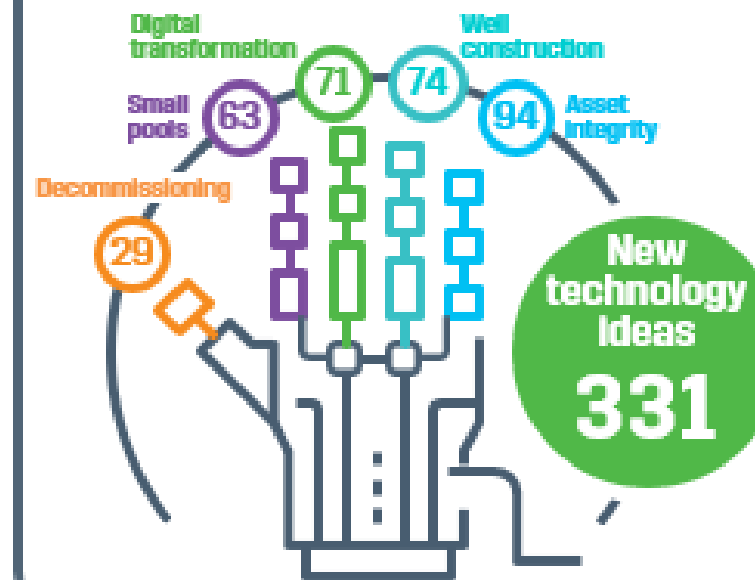
## 156 Approved Projects

Delivering technology project to fix today, maximise recovery and transform tomorrow



## Calls for Ideas

Generating new technology ideas from inside and outside the industry to tackle key challenges.



## 215 TechX applications

Accelerating innovation by helping a new generation of entrepreneurs take their technologies to market – faster.

125 Start-ups

90 SMEs

24 from 24 countries

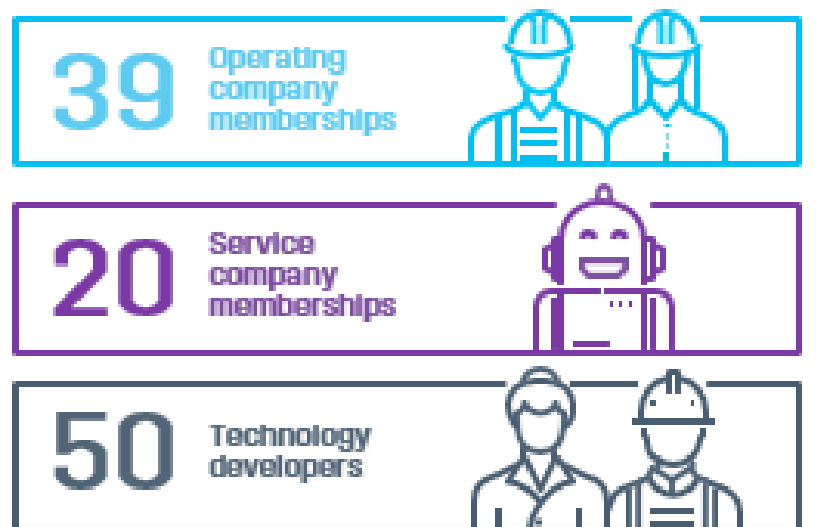
£3m investment this year

TechX

Accelerating innovation

## memberships

113 Bringing together operating, supply chain and technology companies to drive innovative new solutions.



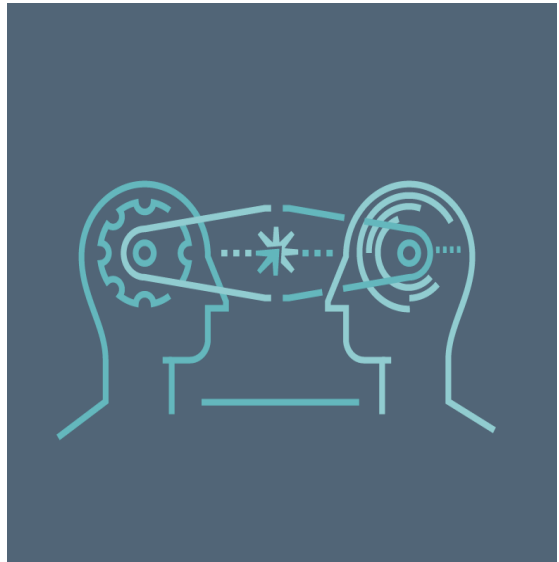
...a positive start, still lots to do



Industry  
Decision Tool

Influence Policy  
& Strategy

UK R&D  
Focal Point



50% Reduction  
P&A Cost

Real  
Solutions

Resolve  
Liability

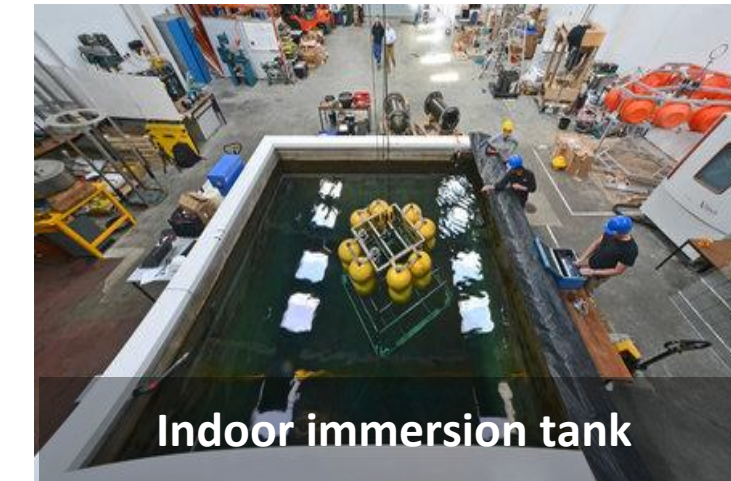


The  
National  
Decommissioning  
Centre

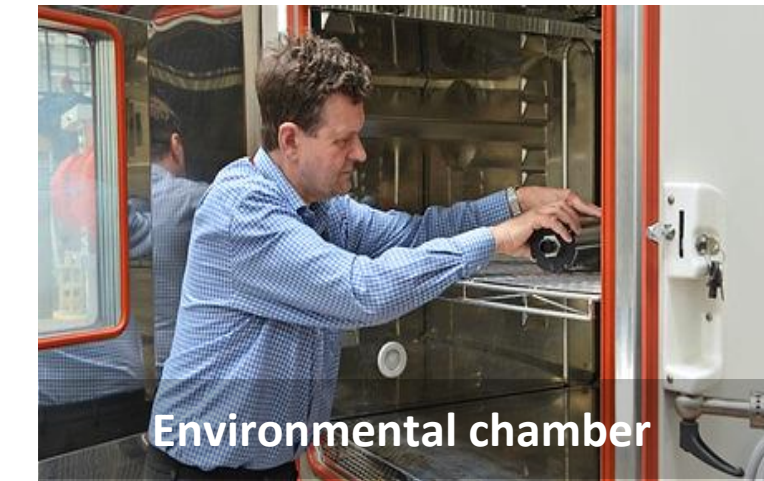
Innovation through Partnership



Hyperbaric testing



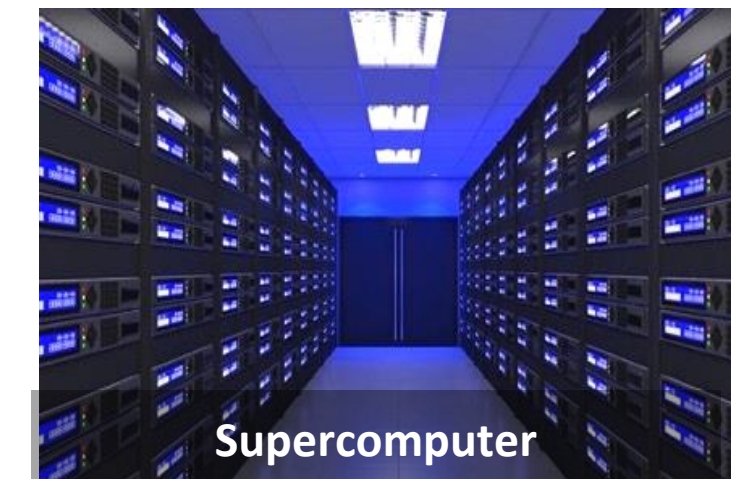
Indoor immersion tank



Environmental chamber



Industrial laser



Supercomputer



Advanced workshop

ukndc.com  
#decomcentre

Enabling technology collaboration across the industry

# National Subsea Centre

**Diverse  
industry  
participation**

Attract a diverse range of UK and international partner companies with the skills, expertise, projects and commitment to invest and participate

**Strong R&D  
partnerships**

Develop strong partnerships with institutions, innovation centres and companies in the UK and internationally

**High-quality  
projects**

Work in partnership with industry to create a balanced portfolio of demand-led projects across the technology readiness spectrum

**Collaborative  
hub**

Create a multi-disciplinary hub using state-of-the-art technology to enable physical and virtual collaboration between organisations and sectors across the UK and internationally

**RGU research  
positioning**

Deliver a world-class research programme with sustainable funding and maximise the impact of R&D investment with spinouts, PhDs, first jobs and graduate apprenticeships

**Engage widely and inform policy**

**Build strong stakeholder relationships and inform UK and international subsea policy**

**Focused priorities and actions**



# TechX Overview



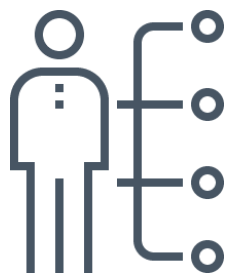
## Ventures

- Partnership with Deep Science Ventures
- Kicked off July 2018
- 3 challenge areas set by industry
- Recruiting 30 scientists
- 2-3 new tech companies March 2019
- Auto-enrolment in TechX Pioneers



## Pioneers

- Pioneer 1 - 4th June - 21st September
- Transition into TechX+ Incubator for 12 months
- Official T1 Visa status with DIT
- Pioneer 2 applications – 1st Oct – 31st Jan 2019
- Roadshows UK (Nov) & US (Dec)
- Pioneer 2 – 13th May 2019 – Aug 2019



## Market Entry

- Supporting successful Tech from other industries
- Signposting/ landscaping service
- No funding
- 2 projects in development



**215 applications**  
(125 Pioneer / 90 Market Entry)  
**24 different countries**

**Accelerating the future today**

# Our purpose

Making sure the North East of  
Scotland remains a great place  
to live, work and invest