



Oil & Gas
Authority

Decommissioning & Energy Transition

Decom North Sea Webinar

Bill Cattanach
28th May 2020

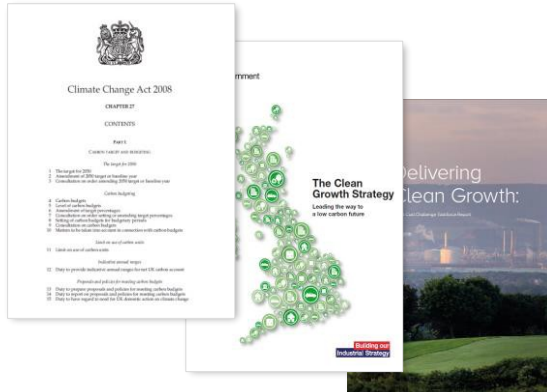
Change in the energy sector

Societal expectations



Government response

Net Zero by 2050 target



Carbon capture and storage

Offshore windpower

Hydrogen economy



'30 GW by 2030'

Hydrogen supply competition

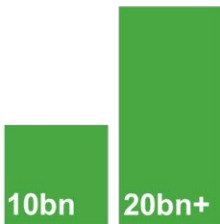
Industrial fuel switching

UKCS opportunity

UKCS oil and gas activity

Resources (boe)

Remaining potential
10bn - 20bn+



Infrastructure



7800+
wells drilled



250+
subsea systems

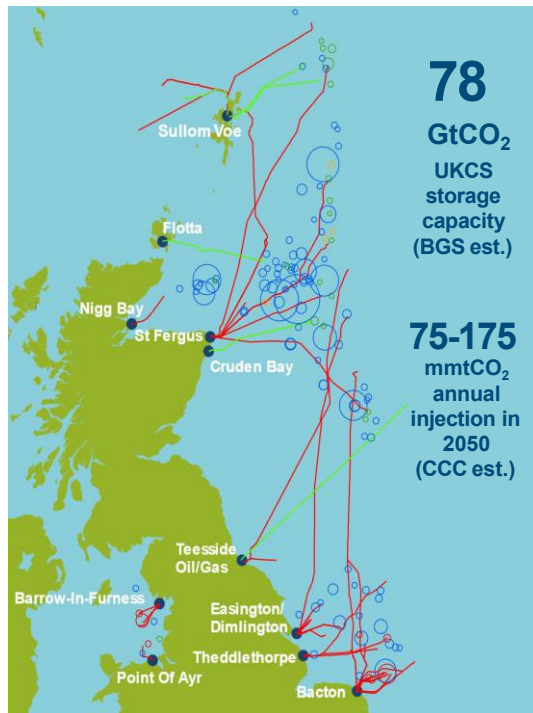


20,000
kms+
pipelines

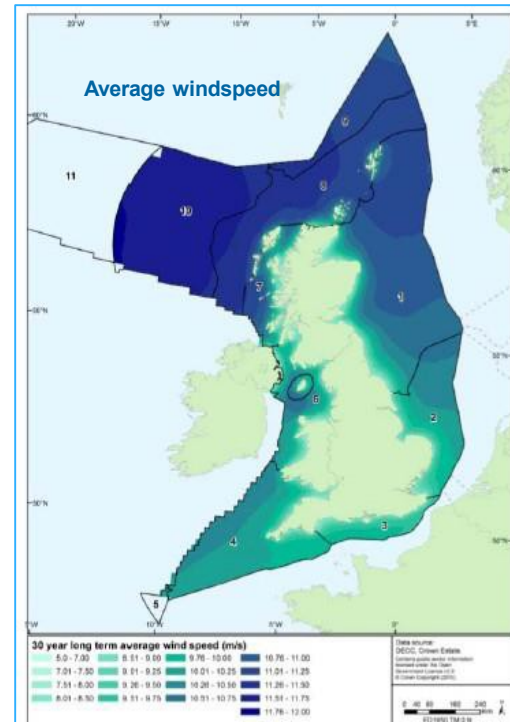


320+
installations

CO₂ storage potential

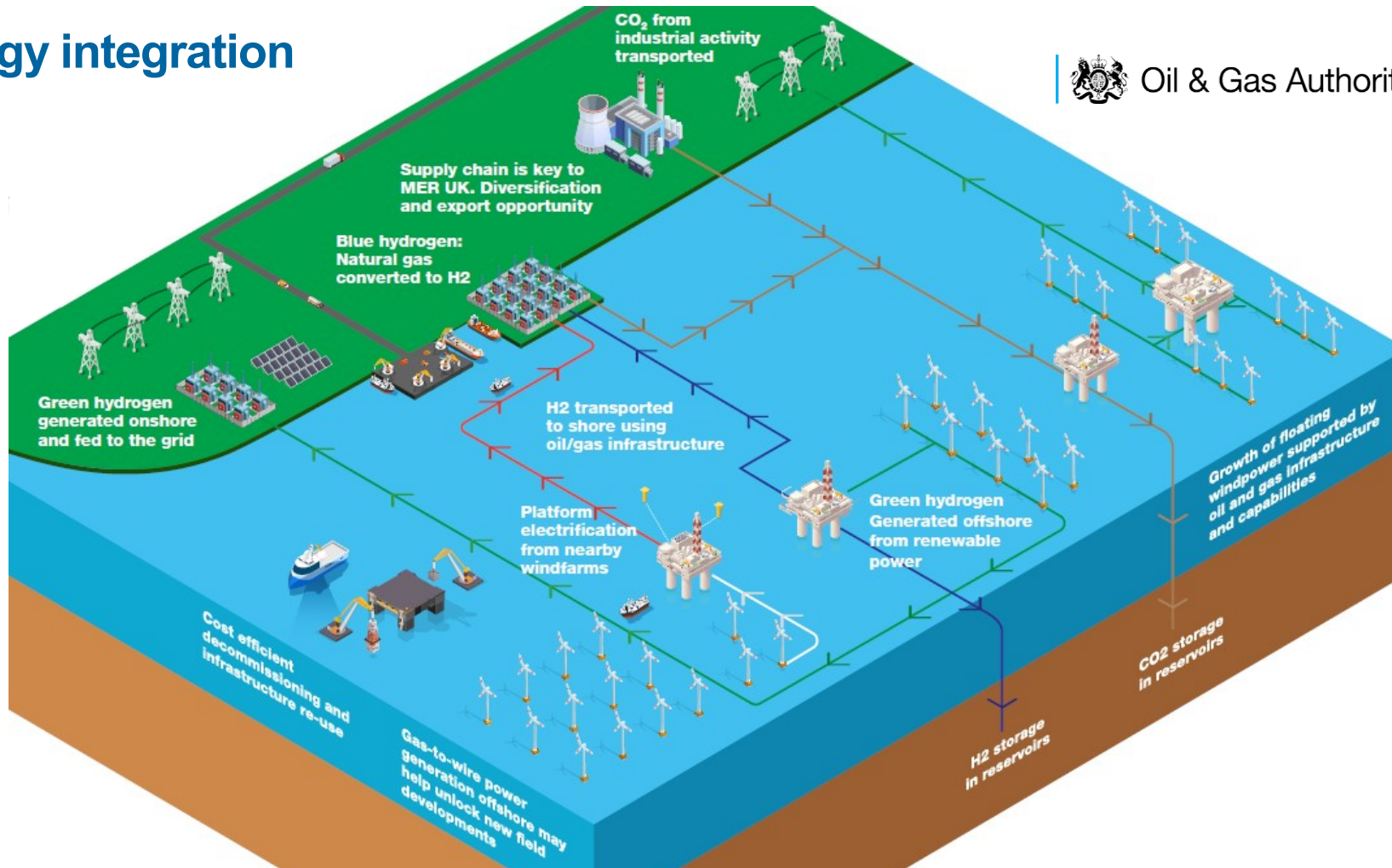


UKCS wind power potential



The UKCS presents a huge opportunity

Energy integration



Pioneer Fund – Energy Integration Project

Led by the OGA, in collaboration with:



The project aims to:

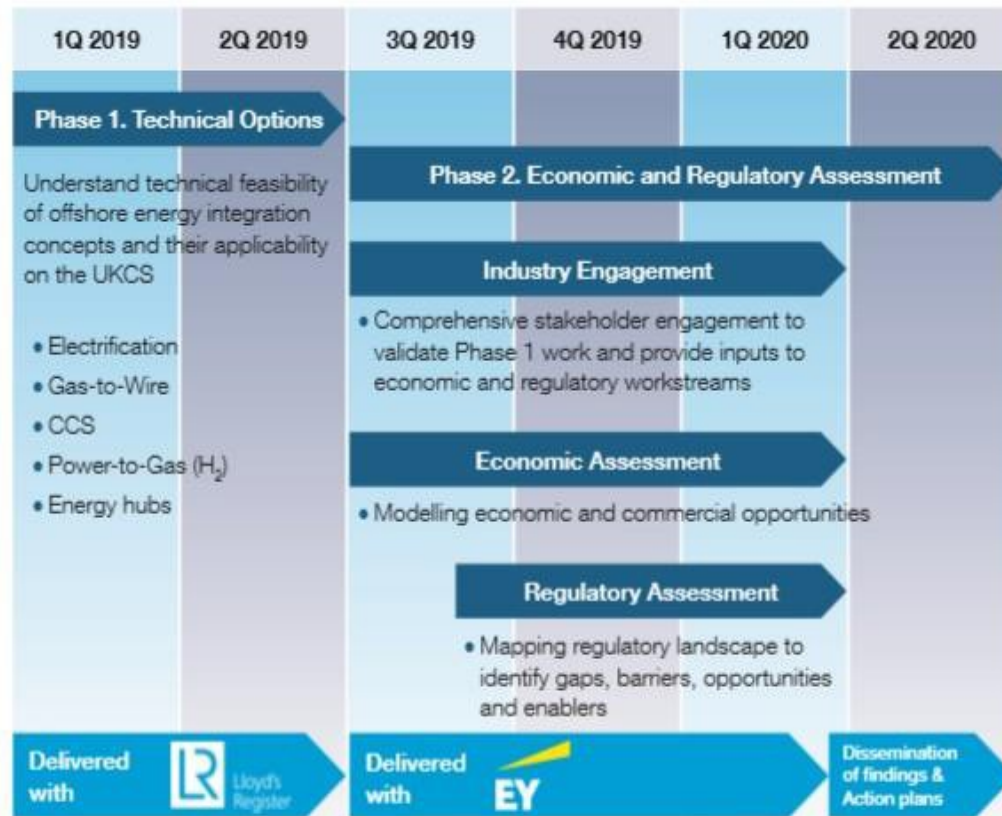
- Unlock UKCS energy integration opportunities
- Leverage oil and gas infrastructure for CCS, wind and hydrogen
- Enable partnering of oil and gas operators and supply chain with renewables

The project comprises two phases:

1. Technical options (completed)
2. Economic and regulatory assessment (ongoing)

This report describes the findings from Phase 1

Funded by £1m grant from the Better Regulation Executive's Regulators' Pioneer Fund



Transform O&G Production

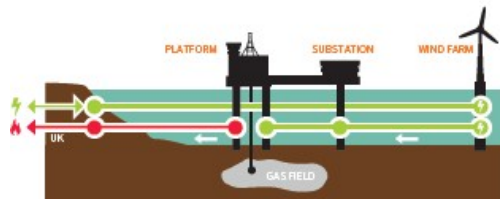
2020s

Ramp up energy transition

2030s

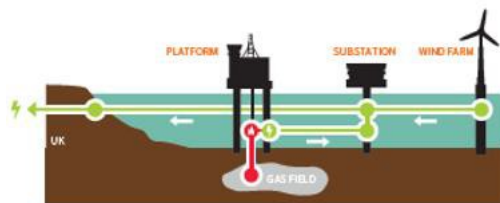
Delivery Net-Zero

2040s



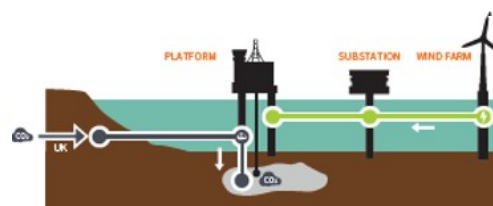
1. Electrification

- Power platforms from windfarms
- Reduce emissions and opex



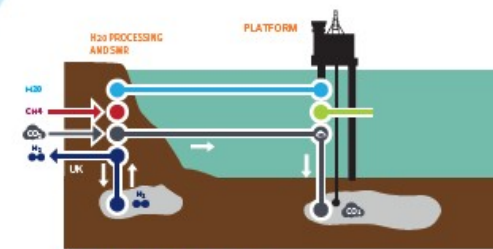
2. Gas-to-Wire

- Offshore power generation
- Reduce opex and balance grid
- Can be combined with CCS



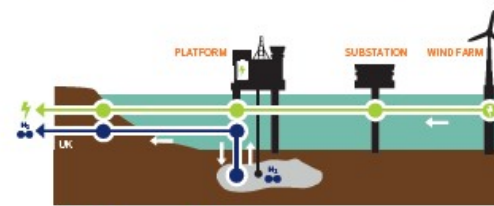
3. Carbon Capture & Storage

- Capture onshore emissions
- Transport and store offshore
- Repurpose O&G infrastructure



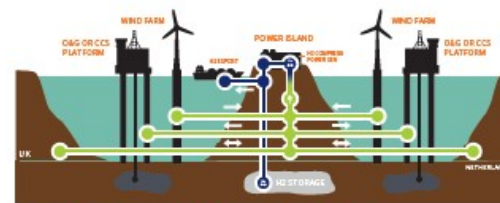
4.1 Blue Hydrogen

- Enables continuing use of natural gas and hydrogen economy
- Combined with CCS to support net-zero



4.2. Green Hydrogen

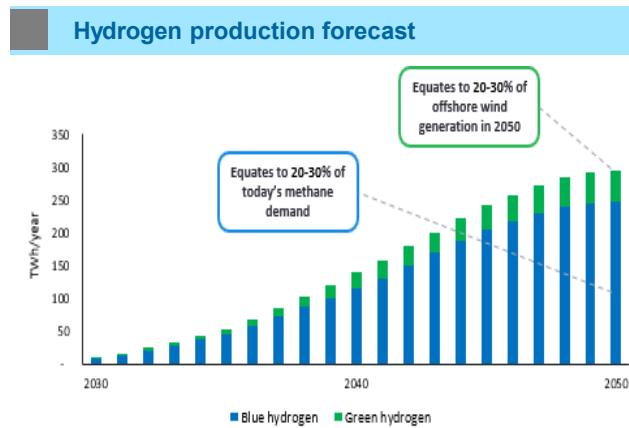
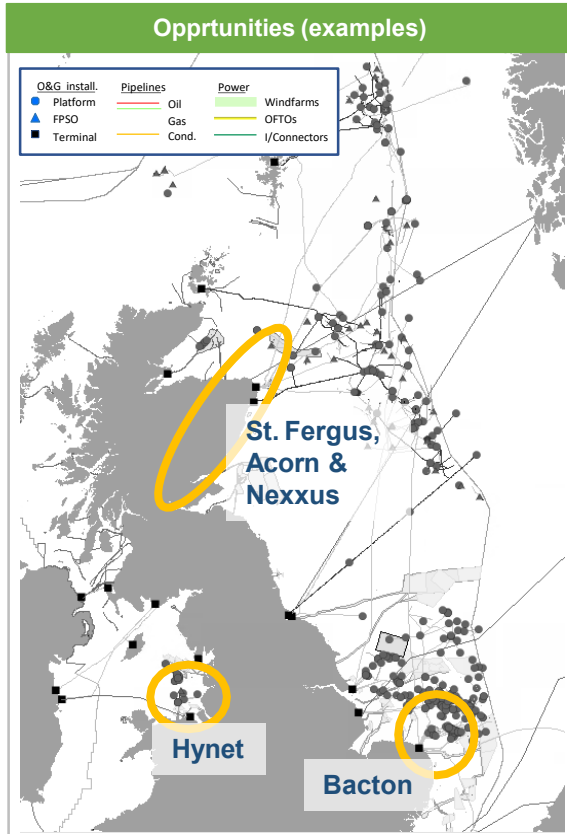
- Critical storage and transportation solution for renewable energy
- Enable hydrogen economy



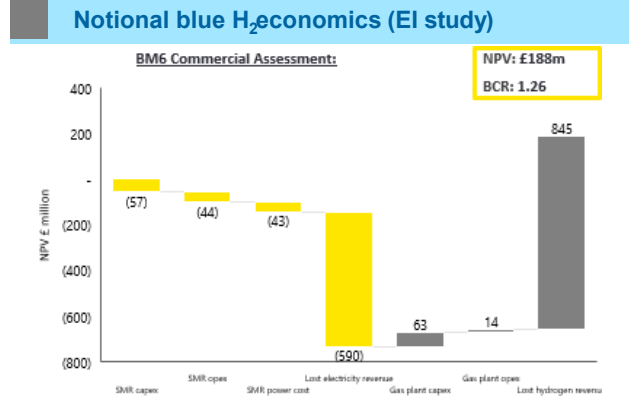
5. Large-scale Energy Hubs

- Co-locate renewable generation, energy storage and transportation
- Build economies through scale
- Enable low-carbon industrial clusters

Blue hydrogen



Source: EY analysis; National Grid FES data



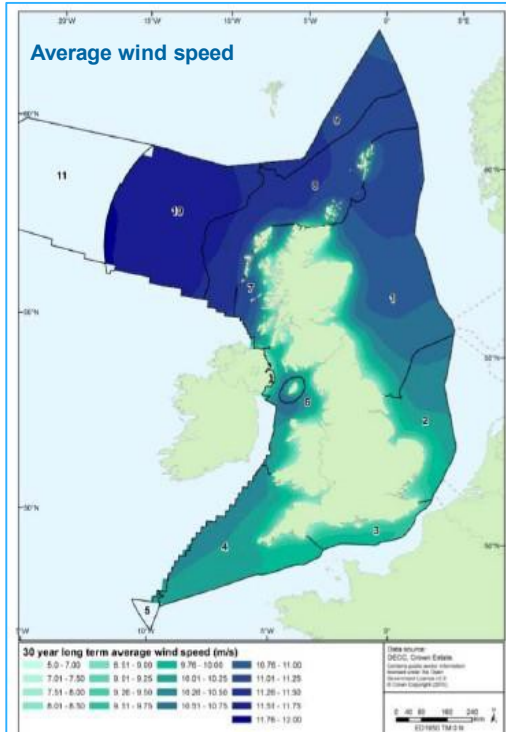
Decarbonises UK natural gas (imports) at source

Can be scaled up (to ~30% of current natural gas demand)

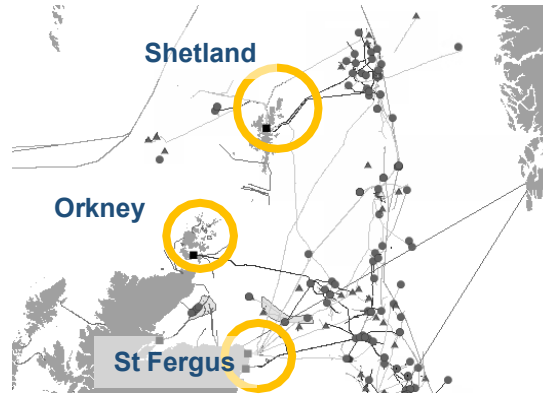
Extensive re-use of infrastructure (terminals, onshore/offshore pipelines)

Attractive economics when combined with CCS

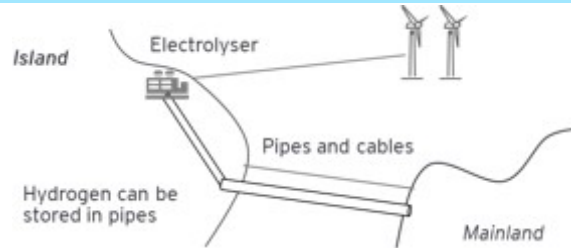
UKCS wind power potential



Green hydrogen opportunity (examples)



Green hydrogen concept



Can provide storage for intermittent renewable power

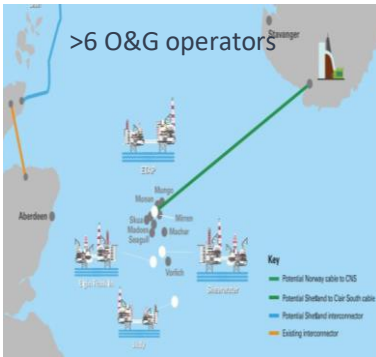
Efficient energy transport over long distance

Leverage midstream infrastructure (terminals, onshore / offshore pipelines)

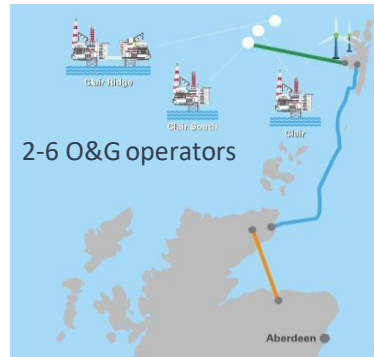
Challenged by high capital costs (electrolysers)

Pilots and early projects

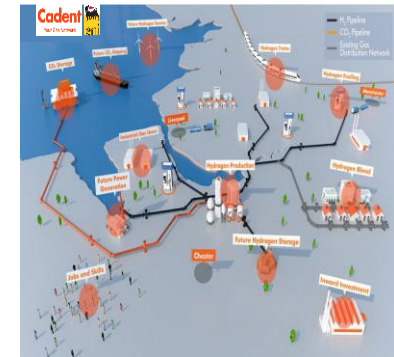
CNS Platform Electrification



WOS Electrification



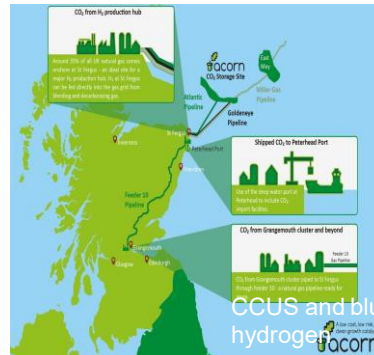
Hynet (Blue Hydrogen)



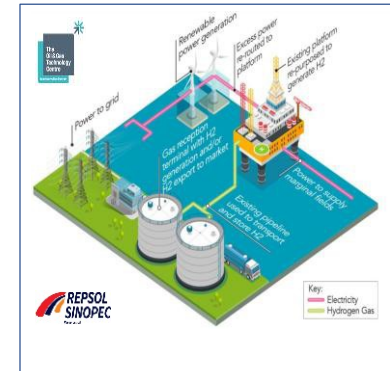
Hywind Scotland (Equinor)



Acorn CCS & Blue Hydrogen



Hydrogen Flotta (RSRUK, OGTC)



UKCS decommissioning



Oil & Gas Authority



UKCS annual decommissioning spend £1.5 – 2.5bn p.a.

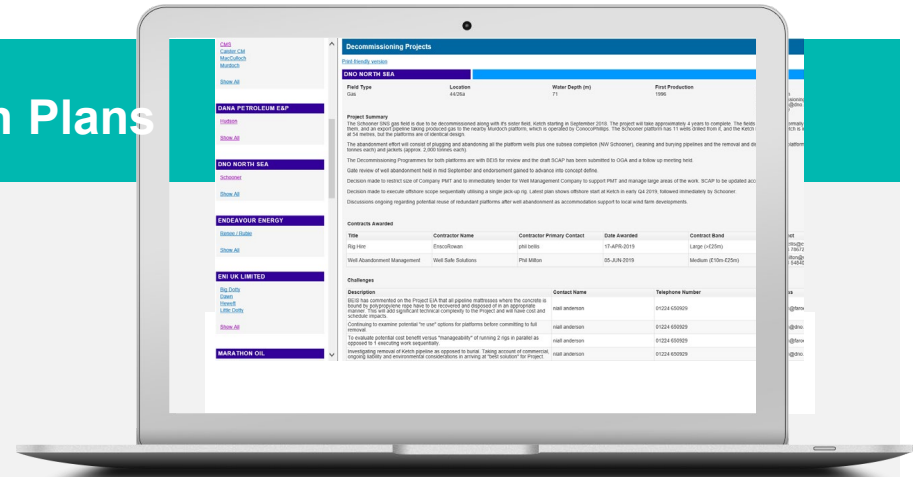
A requirement of Supply Chain Action Plans

Project and contract information including
Challenge/opportunity areas

Available to all industry – subscribe process

Provide visibility of up coming activity giving confidence to the service sector to invest in
innovation, solutions and skills

Comprehensive One stop shop for operators and the supply chain



Supply Chain Recovery Projects – UKCS: Potential options

Project	Description	Potential Support
P&A Wells Project	<p>Consider options to stimulate activity in well plug & abandonment</p> <ol style="list-style-type: none"> 1. Engineering & Preparation 2. Offshore Execution 	Funding support
Small-scale decom work	Identify range of work including survey and preparation activity that could be undertaken before the commencement of formal decom, but would generate activity for the supply chain.	Encouragement of operators
Development Projects	Identify potential stimulus opportunities to drive forward deferred/stranded upstream projects which would support MER-UK and generate activity for the supply chain.	Funding support
Net Zero	<p>Consider how to accelerate existing proposed decarbonisation projects. Understand if there is a funding gap that could specifically help unlock activity. This could include electrification of offshore oil & gas producing assets, either from shore or renewable sources.</p> <p>This work would fall into two discrete types:</p> <ol style="list-style-type: none"> 1. Incubator projects: Pilot proof of production concept projects, small scale, not intended to be profitable at stage one, focussed on next step development that will allow supply chain to prove capabilities and cost models. 2. Full scale projects: Following detailed testing/incubation, initiatives delivered at scale 	Funding support Potentially policy/regulatory support
Maintenance campaign	<p>Understand the scale of maintenance work – including safety critical – that is built up across the basin, and consider how best to support safe delivery of this work whilst also generating work for the supply chain.</p> <p>This could potentially be delivered early if safe environment can be maintained including in light of the COVID challenge – which would be addressed through large-scale testing</p>	Covid-19 test and trace should help stimulate offshore activity
Safeguarding jobs	The energy transition projects have the potential to generate and protect up to 100k jobs	