

North Sea Transition Deal

What does this mean for CCUS and Geoscience?

Kareem Shafi
Business Advisor

kshafi@oeuk.org.uk

Agenda

1) OEUK North Sea Transition Deal

2) What does the NSTD mean for CCUS?



Government Commitments

Industry Commitments

3) Why are subsurface skills vital for CCUS?

Who is OEUK? (Offshore Energies UK)

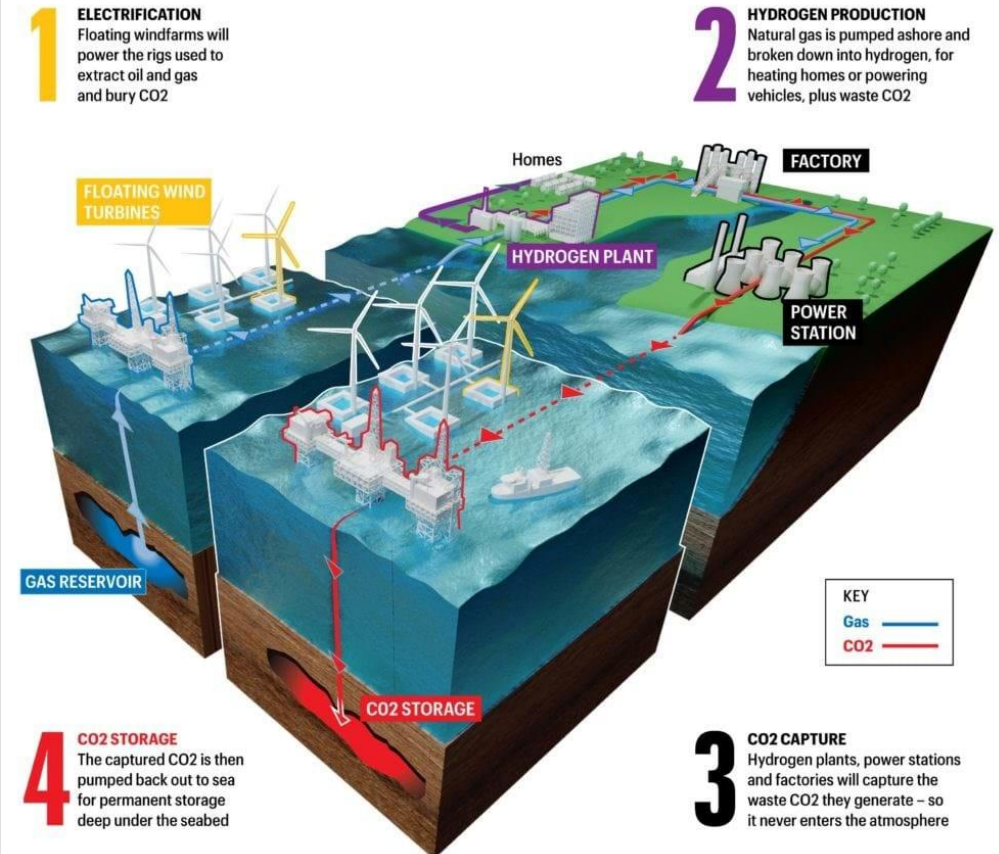
The linked image cannot be displayed. The file may have been moved, renamed, or deleted. Verify that the link points to the correct file and location.

(OEUK) Offshore Energies UK is the leading trade body for the UK's integrating offshore energies industry.

Our membership includes over 400 organisations with an interest in offshore oil, gas, carbon capture and storage, hydrogen and wind.

OFFSHORE ENERGIES

The UK's offshore operators are developing four key new technologies to help the UK achieve carbon neutrality



(NSTD) North Sea Transition Deal

The UK North Sea Transition Deal

The UK North Sea Transition Deal, the first by a G7 country, will accelerate the energy transition, reduce UK emissions, and create new jobs across the UK



What are the key commitments captured within the NSTD?

The Deal will require an internationally competitive and level playing field as part of a broader energy framework

Supply Decarbonisation

cutting upstream Oil and Gas industry emissions through an ambitious production emissions reduction programme



Carbon Capture & Storage

enabling large parts of UK industry and society to eliminate emissions



Hydrogen

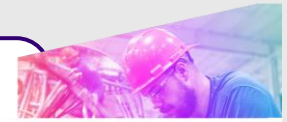
providing a realistic alternative for heating, heavy industry, and transport



The above activities will be made reality by focussing on capabilities that underpin the growth of the UK economy

Supply Chain Transformation

Developing engineering, manufacturing, services and technology expertise to support the energy transition and create a globally competitive energy supply chain of international repute



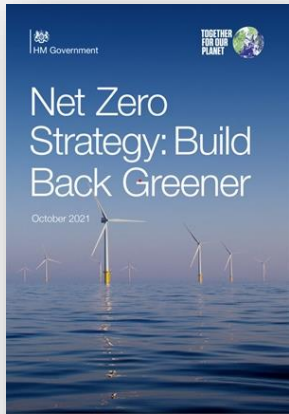
People & Skills

securing, stimulating, and creating tens of thousands of high quality jobs in industrial heartlands



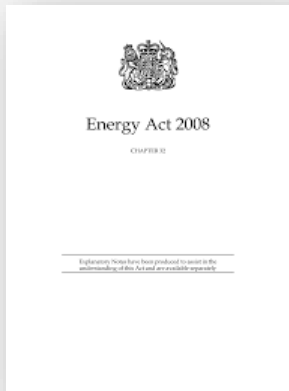
What does the NSTD mean for CCUS?

Government Commitment – Successful Deployment of CCUS Networks



UK CCUS Target(s):

- 4 T&S Networks by 2030
- 20-30 MtCO₂/yr by 2030
- Pathway to 50Mt/yr by 2035

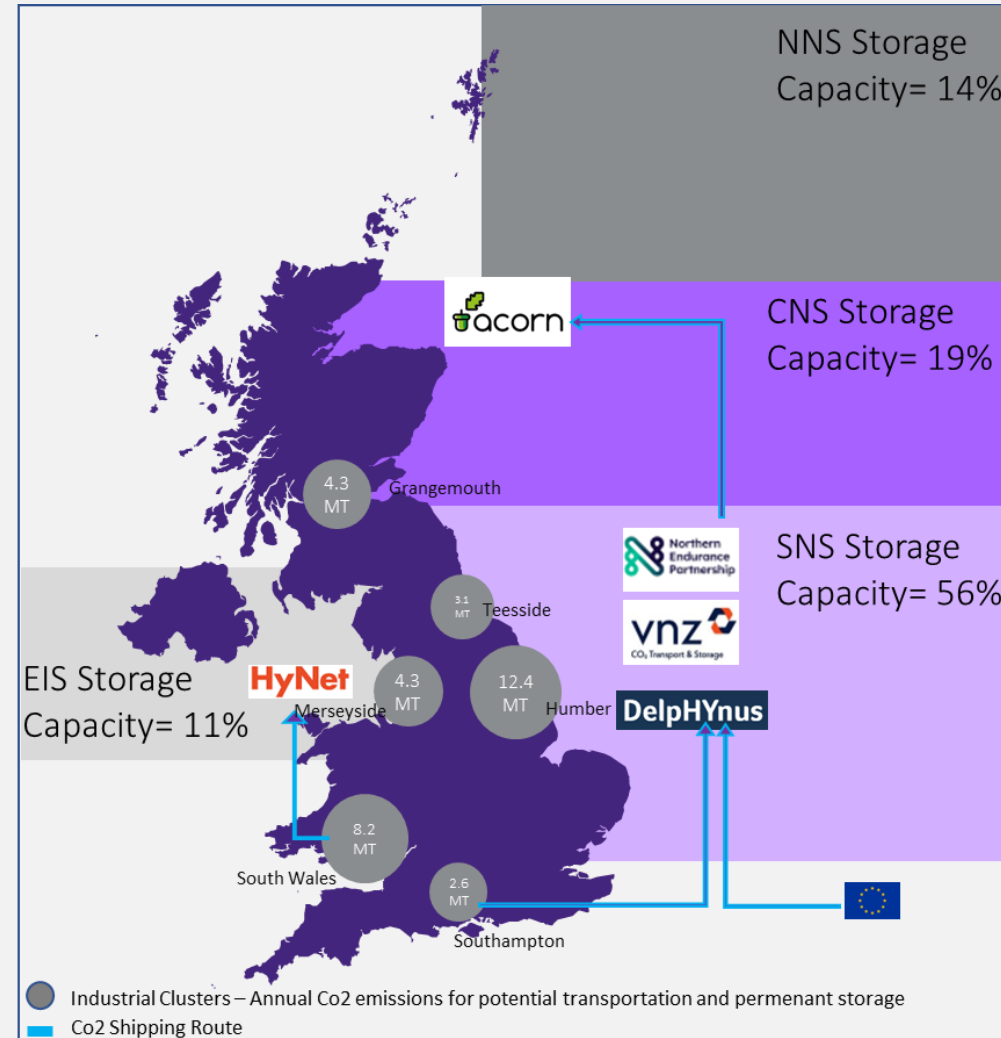


Development of CCUS Business models, policy & regulations

CCUS Sequencing - Phase 1

Track 1 = Deployment of two T&S Networks by mid 2020's

Track 2 = Deployment of two T&S Networks by end of 2020's



Industry Commitment – Decarbonise UK Scope 3 Emissions

CCUS is the only emissions reduction technology available for heavy emitting industries



Petro Chemical &
Refineries



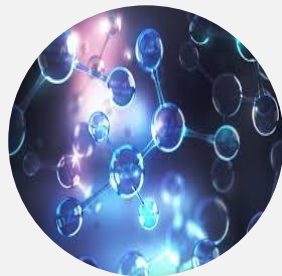
Cement
Manufacturing



Steel
Manufacturing



Power Generation



Blue
Hydrogen



Industry Commitment – Repurposing of Oil and Gas Infrastructure for CCUS

NSTA Strategy Obligation 15 & 16:

*Before commencing the planning of decommissioning of any infrastructure in a region, **relevant persons including the owners of such infrastructure, must ensure**, and be able to demonstrate, that all viable options for that infrastructure's continued use including for **reuse or re-purposing for carbon capture and storage projects have been suitably explored**.*



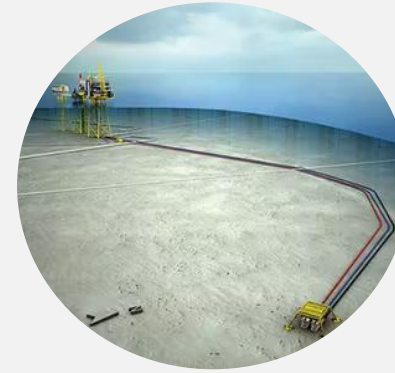
Terminals



Platform



Pipelines

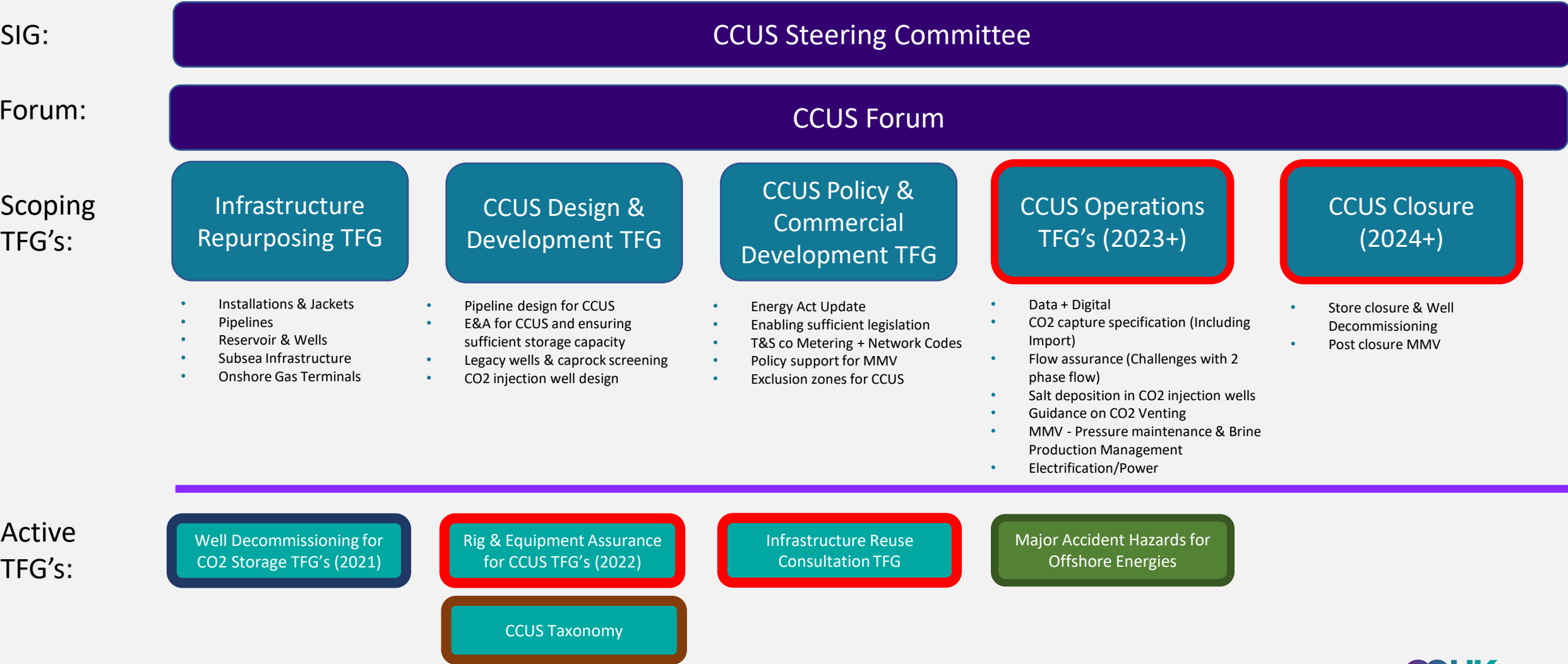


**Subsea
Equipment**

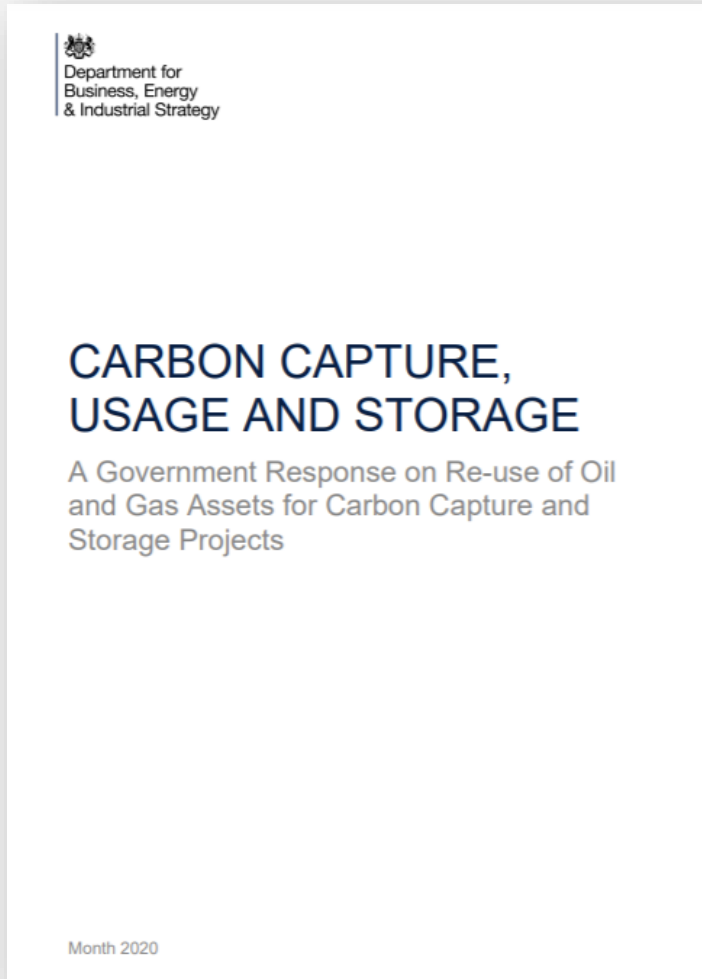


**Wells &
Reservoir**

Industry Support – Establish Industry Groups to Identify Challenges & Share Good Industry Practice



Industry Support – Develop guidelines to share good industry practice for CCUS



CCUS Expert Group
(May 2020)



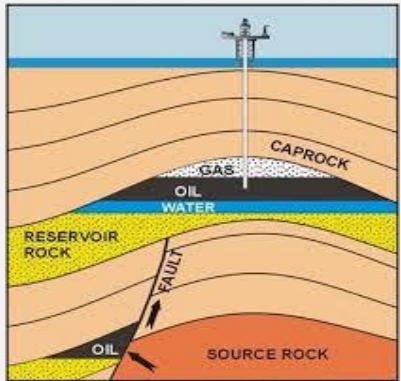
Action 11: We have commissioned Oil and Gas UK to coordinate the development of **appropriate guidance on plugging and abandoning wells to retain integrity of an associated CO₂ store**, in consultation with industry, government, and the OGA.

Why are subsurface skills vital for CCUS?

CCUS Transport and Store Lifecycle

Stage 1

CO2 Storage Development



Which store are we going to use?

Stage 2

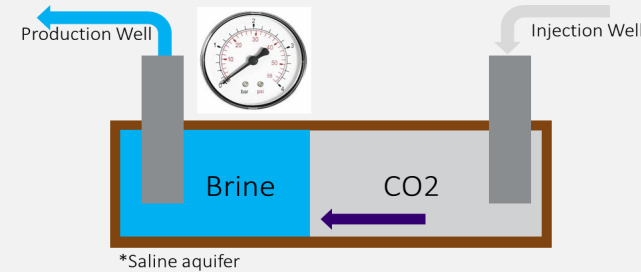
Offshore Infrastructure Development



Which infrastructure are we going to use or can we repurpose existing infrastructure ?

Stage 3

Operations & CO2 Injection



How can we maximise Co2 Injection?

Stage 4

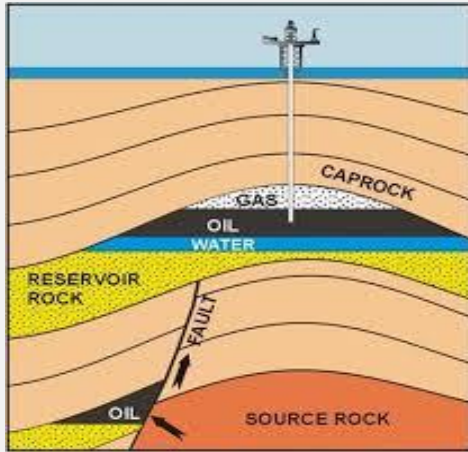
Sealing the Store & Decommissioning Infrastructure



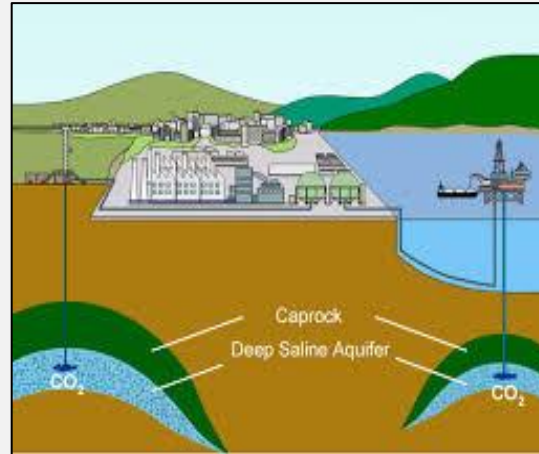
Now that we have safely stored our CO2, we must seal the store and remove our infrastructure

Stage 1 - CO2 Storage Development

Depleted Oil and Gas Field



Saline Aquifer



Why are subsurface skills vital for stage 1?

- CO2 Storage site selection and characterisation
- Cap rock integrity screening
- Well barrier designs for wells that are yet to be decommissioned
- Subsurface risk assessment (NSTA CCUS permit application)

Stage 2 - Offshore Infrastructure Development



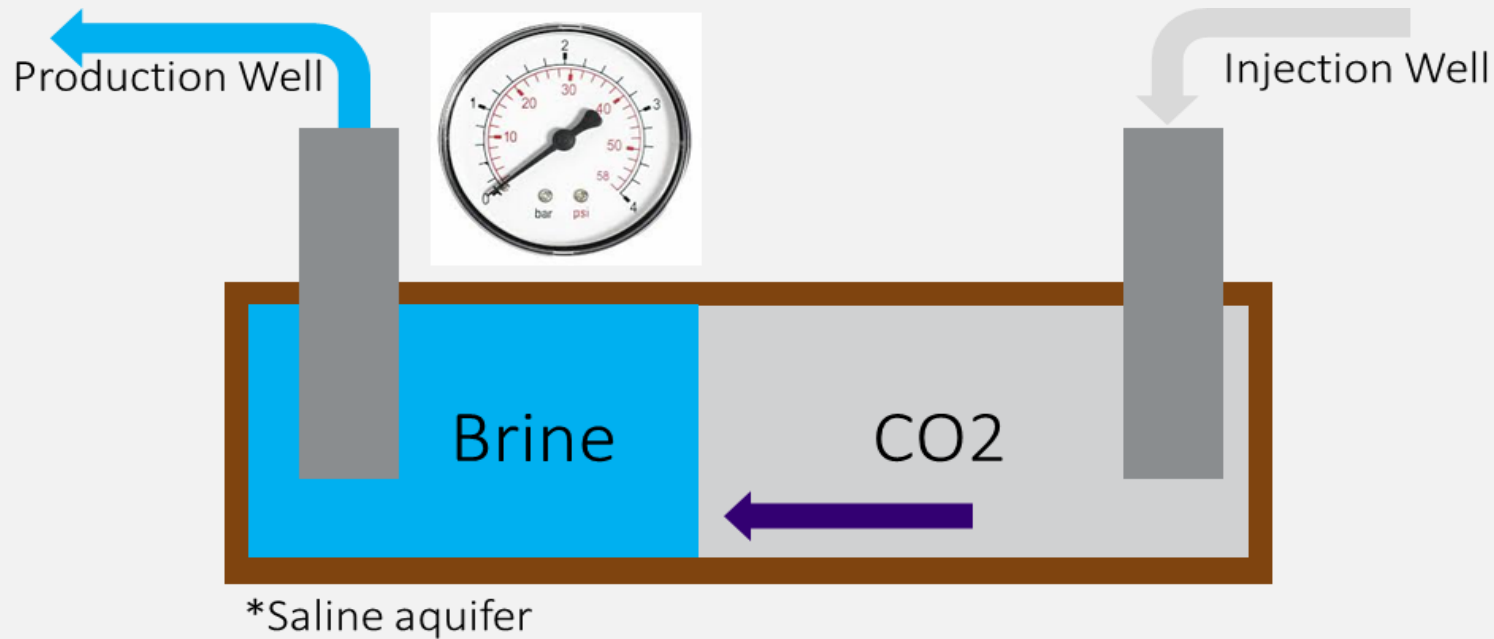
Why are subsurface skills vital for stage 2?

- Near surface seismic surveys prior to installing infrastructure

Stage 3 - Operations & CO2 Injection

Why are subsurface skills vital for stage 3?

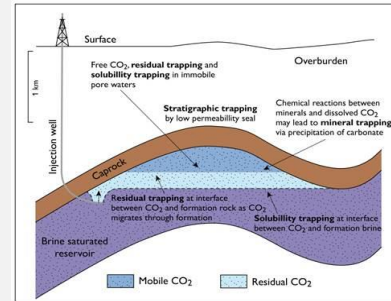
- Locate optimum CO2 injection well sites
- Locate optimum brine production well sites
- Monitor plume migration and reservoir pressures



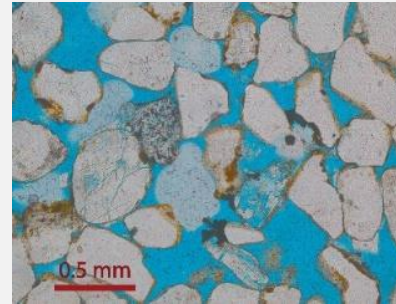
Stage 4 - Sealing the Store & Decommissioning Infrastructure



**Structural
Trapping**



**Residual
Trapping**



**Solubility
Trapping**



**Mineral
Trapping**



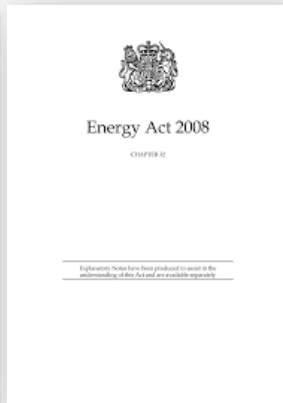
Why are subsurface skills vital for stage 4?

- Well barrier design (designed to reservoir recharge pressures & containment assessment)
- Obligation to measure, monitor and verify Co2

Summary – NSTD Commitments for CCUS

Government

CCUS deployment and regulation development



Industry

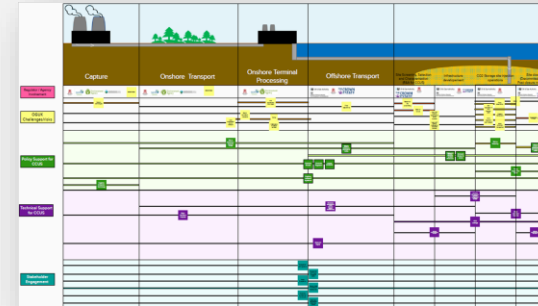
Reduction of scope 3 emissions



Infrastructure Repurposing for CCUS



Project “liaison” groups established with mapping of CCUS challenges



Development of technical standards for CCUS



Thank You

Kareem Shafi
Business Advisor

kshafi@oeuk.org.uk

The UK North Sea Transition Deal, the first by a G7 country, will accelerate the energy transition, reduce UK emissions, and create new jobs across the UK



**ROADMAP
2035**
A blueprint
for net-zero

Make net-zero happen

We will become a net-zero basin, we will help hit UK net-zero targets, we will be part of a fair and equitable energy transition

Grow the economy, jobs and places

We will sustain high skilled jobs, we will bring new energy businesses to develop local regions, we will attract investment and we will grow exports

Provide energy & industrial security

We will supply the UK's oil and gas demand to 2050 and beyond, while ensuring our operations are net-zero