



**THE SCOT₂TISH
CLUSTER**

The Scottish Cluster

All Energy

10 May 2023

Charlie Youngs, Head of Acorn

The Scottish Cluster

THE SCOTTISH
CLUSTER

A “CCUS Cluster”: T&S network and first phase of at least two CO₂ capture projects.

- Track 1: Mid-2020s deployment. HyNet and East Coast Cluster selected Track 1 (Scottish Cluster Reserve) in Oct-21.
- Track 2 (TBC): Targeting deployment in 2028

The Scottish Cluster aims to be one of four UK low-carbon clusters collectively capturing 20-30 MtCO₂ per year across the economy by 2030 to help meet the UK’s 2050 net zero target.

A successful Scottish Cluster is critical to decarbonising Scottish industry and provides a path to net zero for Scotland and the UK.

The Scottish Cluster could capture ~5-10 million tonnes of CO₂ annually by 2030.

The Cluster helps enable a just transition, delivering a sustainable future for hard-to-abate sectors, protecting jobs, supporting communities, creating new value adding activity for Scotland and the UK.

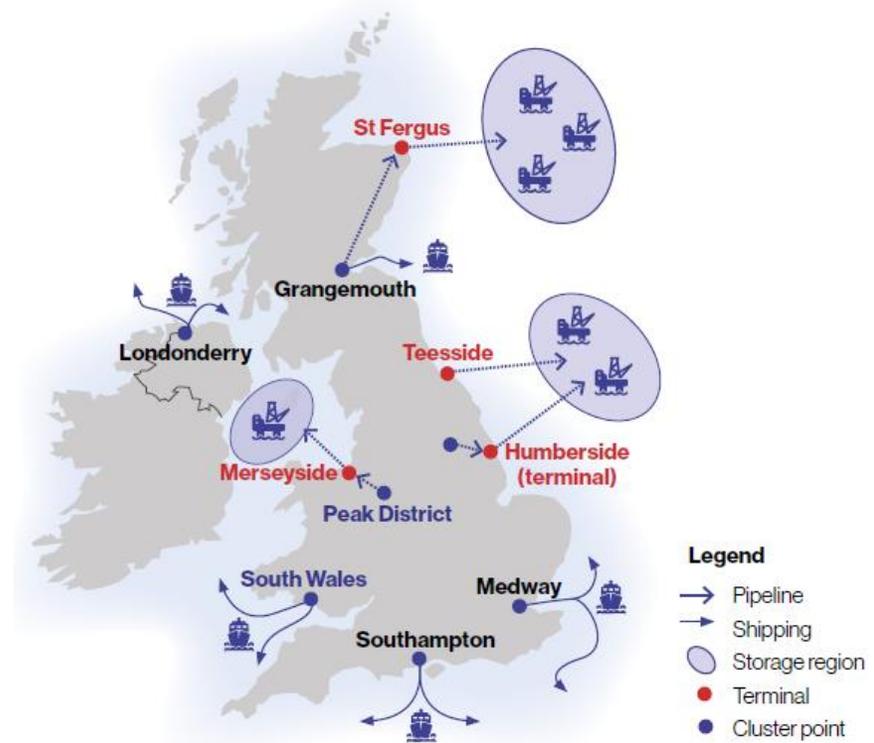


Image from www.gov.uk
Policy paper, “Industrial decarbonisation strategy”
Updated 7 April 2021

THE SCOTTISH CLUSTER

Acorn
project partners

STOREGDA
Lead Developer

Shell
Technical Developer

Harbour Energy

NSMP

Acorn CO₂ Storage Site

Acorn delivers decarbonisation and CO₂ storage for Scotland and the UK

Acorn Hydrogen

SAGE terminal

SEGAL gas terminal

Acorn Capture

FUKA gas terminal

ST FERGUS

ANCALA Sage terminal

SEGAL gas terminal

FUKA gas terminal

NSMP

Power generation and decarbonisation technology in Peterhead

Peterhead port, future CO₂ import terminal

Peterhead Carbon Capture Power station

Direct Air Capture

Domestic and International Shipping Routes

PETERHEAD PORT AUTHORITY

SSE Thermal

Peterhead Carbon Capture Power station

STOREGDA

Direct Air Capture

Decarbonising Grangemouth and Mossmorran

Shell FNGL

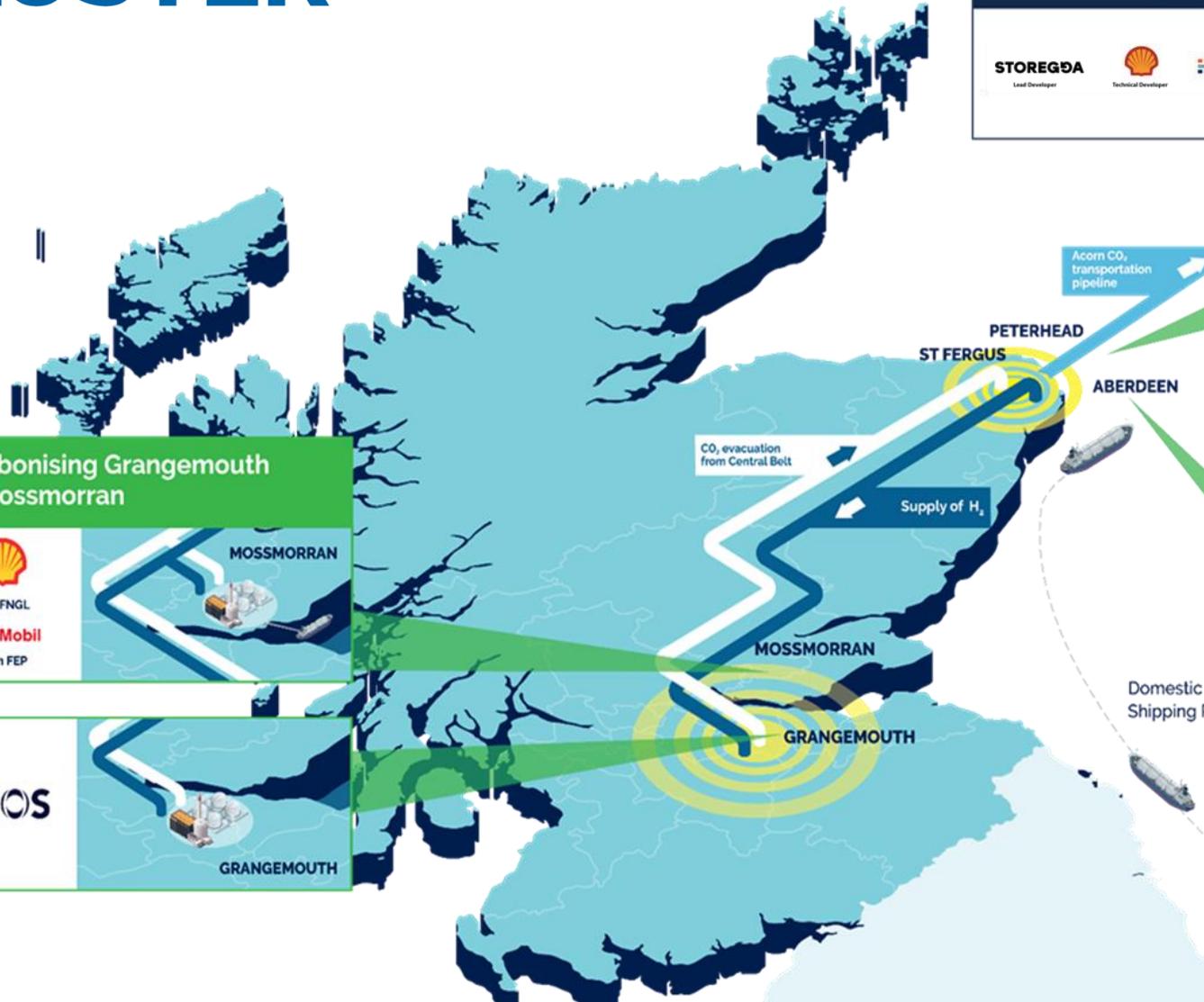
ExxonMobil

Exxon FEP

MOSSMORRAN

INEOS

GRANGEMOUTH



The Acorn partners have world-leading expertise & experience



Lead Developer



Technical Developer



Government support has been received from



Department for Energy Security & Net Zero



Co-funded by the Connecting Europe Facility of the European Union



Scottish Government
Riaghaltas na h-Alba
gov.scot

Primary CO₂ Source



Acorn at St Fergus



Image courtesy of Google Maps

Re-use of Infrastructure

- Goldeneye Pipeline (20in, 102km)
- Miller Offshore Gas Pipeline (30in, 240km)
- Miller Landline (26in, 18km)
- Feeder 10 pipeline (36in, 280km)

Sources of CO₂ into the Acorn T&S System

- Central Belt emissions via Feeder
- Post combustion capture of emissions from SEGAL and FUKA terminals
- Pre-combustion capture of CO₂ from SAGE terminal
- New Blue Hydrogen plant – Acorn H₂
- Peterhead Power Station – new dispatchable power station with capture plant
- Port import facility at Peterhead



Achieving the full potential of the Cluster



We continue to support academic research (IDRIC) and industry collaboration to accelerate the regulatory framework which will advance a commercial CCUS sector in the UK.

Dialogue and agreement between the Scottish and UK Parliaments, to progress the Cluster projects, is crucial.

Progress of the Cluster projects has the potential to realise:

- Significant available storage to accommodate additional emitters' output across the UK through the Acorn project
- Reductions in the cost of storage to UK emitters
- The North Sea's value as a CO₂ export facility
- Continued learning, research and innovation benefitting all industries through academic programmes

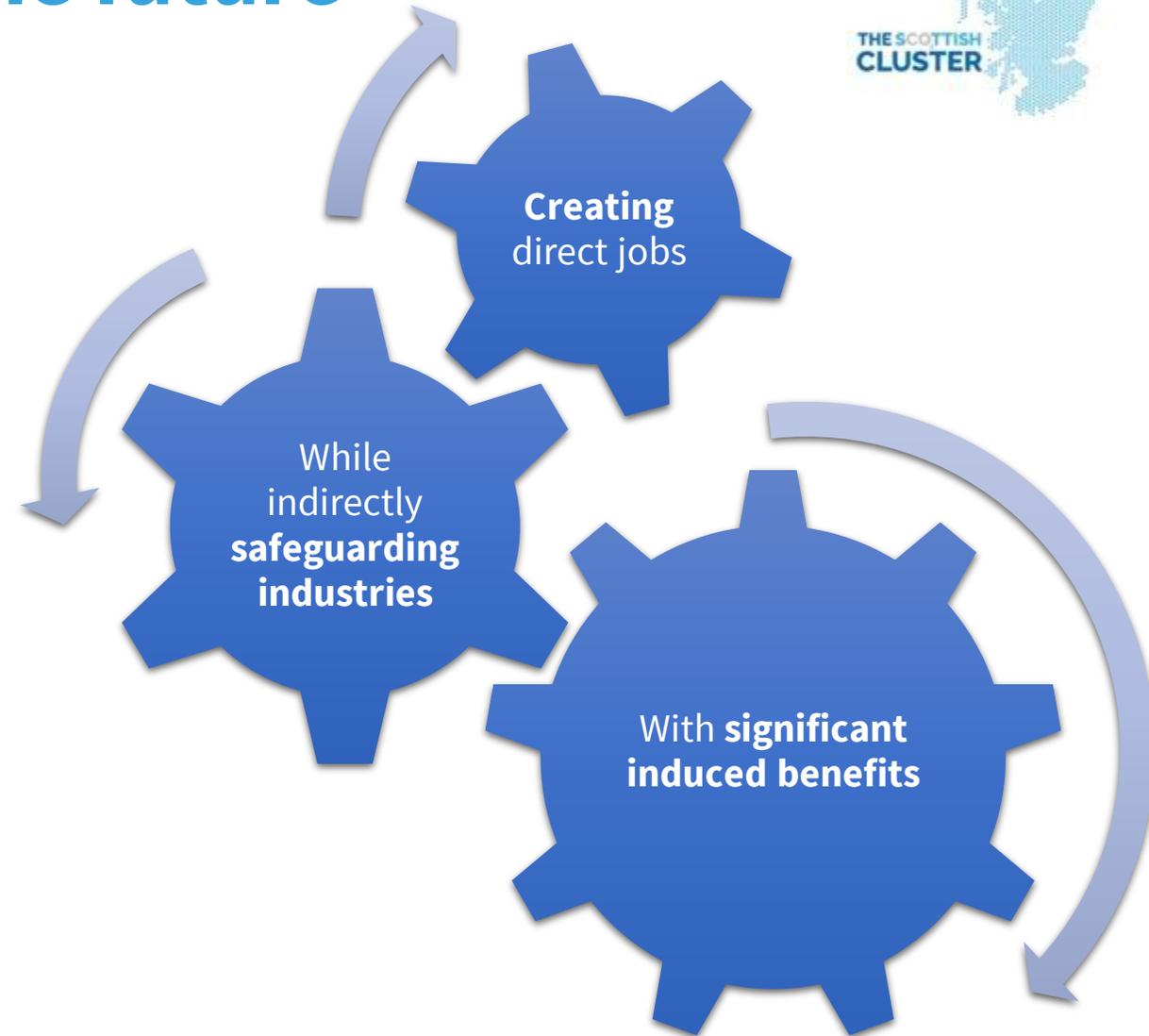


Supporting jobs now & for the future



The Cluster is **already supporting jobs** in project development and academic streams.

- Across the UK, total jobs expected to peak c.**20,600** in 2031
- National average c.**15,100** jobs from 2022 - 2050
- **High-skilled jobs and salaries** expected to achieve 50% above the national average
- **MOUs with local training organizations** NESAs and OPITOs to upskill 4,000 employees; 25% via apprenticeship schemes.



Scottish Cluster Supporters



Acorn and Scottish Cluster Update



- On March 30, the UK Government launched the next track of its Cluster sequencing competition, starting with a 4-week window for T&S projects to submit an expression of interest (EOI).
- Acorn was named as one of two T&S projects considered to be best able to meet the criteria and deliver the UK Government's objectives.
- If no other T&S projects come forward which credibly meet the criteria, Acorn T&S will formally move to due diligence and value for money discussions with Government as early as May 2023.
- The outcome of the recent CO₂ storage licensing round will also be announced in Q2.



thescottishcluster.co.uk

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