North Sea Transition Authority

Overview 2025

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Introduction from the Chief Executive

The UK's North Sea energy industry is an amazing success story. Following the award of the first oil and gas licence 60 years ago, the sector has been integral to keeping the lights on and homes heated nationwide. It has employed hundreds of thousands of skilled men and women and contributed billions of pounds to the economy.

Stuart Payne, NSTA Chief Executive

Now we are at the start of an exciting new chapter devoted to the vital energy transition, which integrates the North Sea's carbon capture, hydrogen, wind and oil and gas resources. The climate crisis demands that the transition happens at pace and, if we get it right, this chapter can truly be the best and cleanest yet.

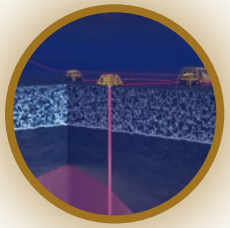
The NSTA will be at the forefront. We recently awarded the UK's first ever permit for carbon storage to the Northern Endurance project, kickstarting a multibillion pound-industry which is poised to create tens of thousands of jobs and drive the UK to net zero. For many years reaching this milestone was an ambition. Collaborating with industry, government and other regulators, the NSTA has helped turn this into a reality. We are determined to propel many more CCS projects forward in the coming years.

In this new chapter, the sector will play a pivotal role. Oil and gas will continue to be part of the energy mix for decades as we transition, and domestic production can and must keep getting cleaner. The world-class supply chain, with its track record of tackling some of the most complex engineering challenges on earth, will be crucial in delivering decarbonised production and the CCS, hydrogen and floating wind projects the country needs.

The North Sea has played a major role in the world's energy mix for decades. Its global leadership of the energy transition has only just begun.

Our role

The NSTA regulates and influences the oil, gas, offshore hydrogen and carbon storage industries. We work with government, industry and other regulators to achieve our three main objectives.



Capital, skills
Infrastructure reuse

Integration, floating wind
Skills, supply chain

Energy production and security

Economic recovery of oil and gas

Storage: Natural gas and H_2

Accelerating the energy transition

Integration

Carbon storage and hydrogen

Co-location and spatial

Digital and data

Cost-effective decommissioning

Emissions reduction

Clean power generation

Flaring and venting

Efficiencies

Technology

Capital

Licence to operate

North Sea transition – UK's growth opportunity

The North Sea has the resources, infrastructure and industrial capability to deliver an orderly energy transition. By harnessing these assets, the UK can benefit from a new economic success story.

Industrial potential

£170bn expenditure to 2030

- **£85bn** Oil and gas[1]
- **£7bn** CCS[2]
- **£76bn** Offshore wind[2]
- **£4bn** Hydrogen[2]

200,000+ Good, skilled jobs[2]

Existing **world class energy supply chain** from oil and gas sector

Infrastructure

100+ pipelines with repurposing potential

250+ subsea installations

Integration of multiple energy systems

Natural resources

up to **78GT** of CO_2 storage potential[4]

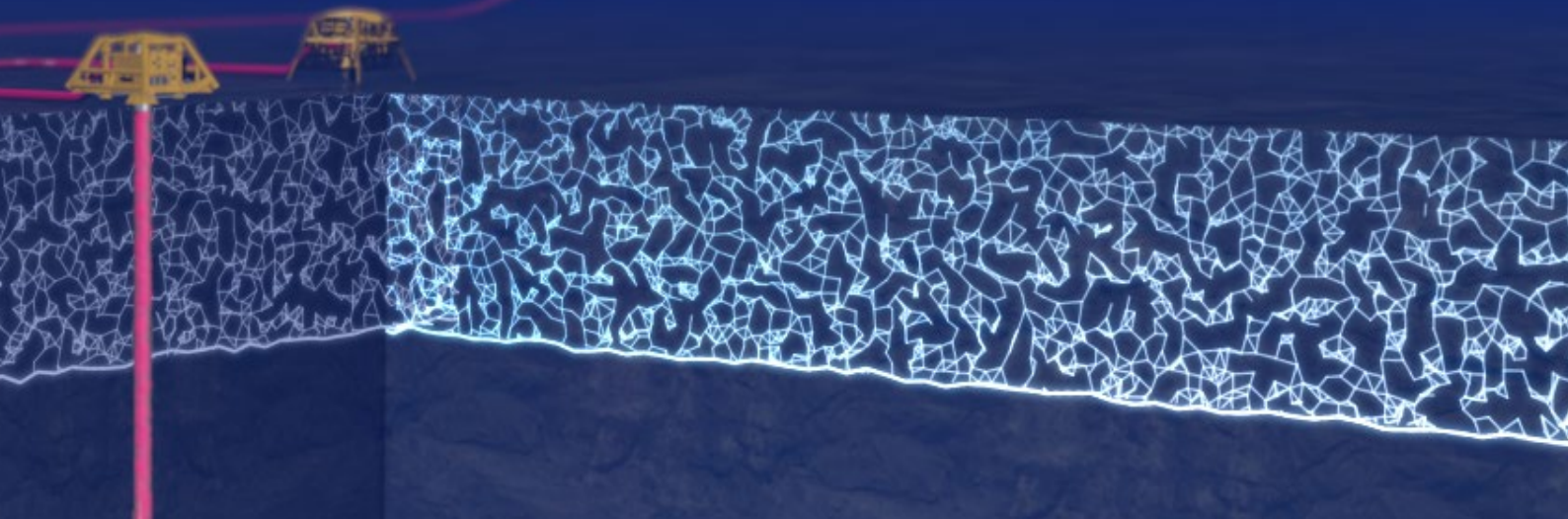
3.75bn barrels of oil and gas remain to be produced [1]

50GW fixed and floating offshore wind[3]

Sources: [1] – NSTA [2] – OEUK [3] – UK Government target [4] – ETI, BGS, et al. UK Storage Appraisal Project (2011)

Accelerating the energy transition

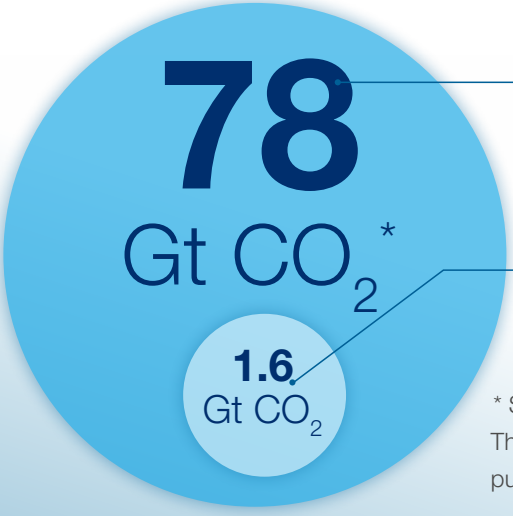
NSTA analysis shows the UK Continental Shelf can make a major contribution to net zero. Oil and gas infrastructure and capabilities can also be leveraged for CCS, offshore wind deployment, and hydrogen transport and storage.



CCS – UK opportunity

Carbon capture and storage (CCS) will play a crucial role in the transition to net zero, preventing hundreds of millions of tonnes of CO_2 from entering the atmosphere.

UKCS potential



potential storage capacity on the UKCS

cumulative total storage needed for UK to reach net zero by 2050

* Source: BGS CO_2Stored database
The graph shown is for indicative purposes only

75-175Mt CO_2 stored per year by 2050 to achieve UK's net zero target

Up to **100** carbon stores may need to be appraised to reach net zero by 2050

£21.7bn of funding available over 25 years for Track 1 clusters

£5bn per year to UK economy by 2050**

50,000 good, skilled jobs supported as industry matures**

** Source: UK government

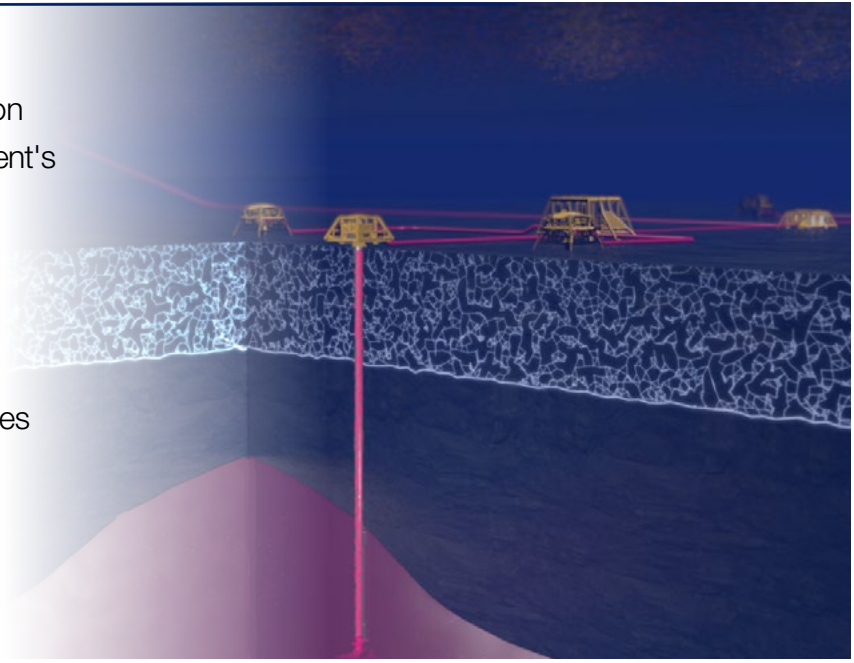
CCS – UK opportunity

The NSTA is playing a significant role in ensuring the UK's carbon capture and storage sector reaches its full potential.

Progress

As of April 2025, the NSTA:

- has awarded the UK's first four carbon storage permits as part of the government's Track 1 cluster programme
- has issued the UK’s first extended well consent for a carbon dioxide injection test
- is stewarding 27 carbon storage licences
- has run the world's first ever large-scale carbon storage licensing round, awarding 21 licences



Carbon storage projects

In late 2024, the NSTA awarded the permit for the UK's first ever carbon storage project to the Northern Endurance Partnership, a hugely significant step on the journey to net zero.

NEP project: key information

- Permit paves way to first injection from as early as 2027
- Store to take in CO_2 from industries in Teesside and Humberside
- Up to 100M tonnes of CO_2 to be stored over 25 years – equivalent to taking 58.8m cars off the road for a year
- Unlocks £4bn worth of contracts
- Will be first of many UK CCS schemes

The Endurance store located off north-east coast of England

Carbon storage projects

In April 2025, the NSTA awarded three permits to Eni for Liverpool Bay CCS, the CO_2 transportation and storage system which will serve the HyNet industrial cluster in north-west England and Wales.

NEP project: key information

- 109M tonnes of CO_2 to be stored over 25 years, starting as soon as mid-2028
- CO_2 transported from industrial emitters to Point of Ayr Gas Terminal and onward to three depleted oil and gas reservoirs in Liverpool Bay
- £3bn worth of investment unlocked and 2,000 construction jobs created
- Repurposed and new-build sections of pipeline to be used

The Endurance store located off north-east coast of England

There are two further CCS projects – Acorn and Viking – included in the government's Track 2 cluster programme.

Hydrogen

Hydrogen can be a key enabler to the energy transition, complementing offshore wind scale up and electrification and providing flexible back-up to intermittent power sources.

Our role

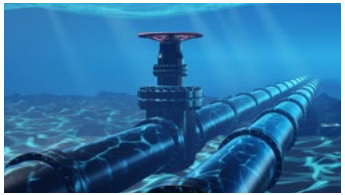
The NSTA is responsible for the **licensing and consenting** of **offshore hydrogen pipelines** and **offshore hydrogen storage**.

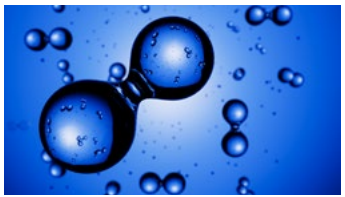
Government production ambitions

10GW hydrogen by 2030:

- **4GW Low carbon**
- **6GW Electrolytic**

UKCS potential





Production

Low carbon – hydrogen hubs, offshore carbon storage and natural gas feedstock.

Electrolytic – coastal location, offshore wind capacity.

Infrastructure

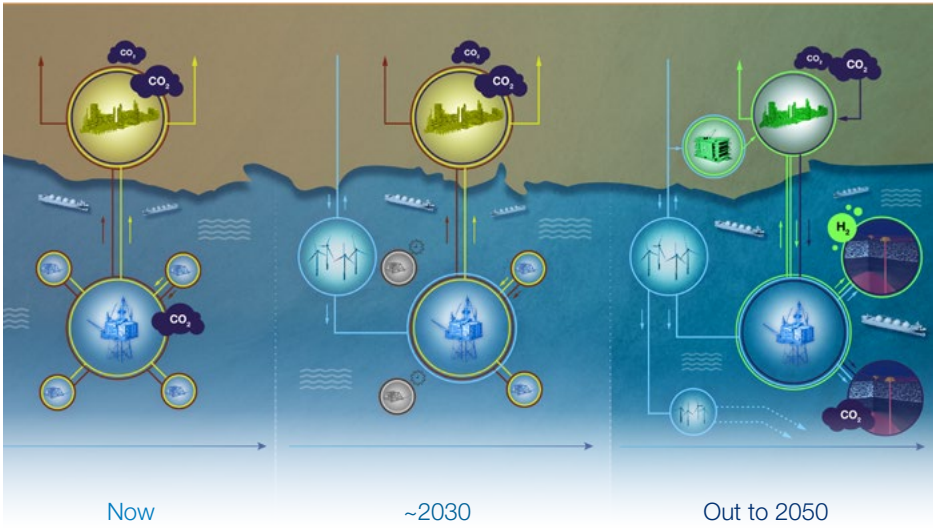
Existing pipelines, terminals and skills base can be repurposed, saving capital costs and time on permitting.

Storage

Short, medium and long duration will be required, including in offshore reservoirs.

Integrated energy hubs

The North Sea has abundant wind, carbon storage and hydrogen resources. Integrating these assets, including with repurposed oil and gas infrastructure, will help them reach their full potential.



Now – Oil and gas hub

Producing oil and gas with offshore emissions from gas/diesel-powered equipment.

~2030 – Decarbonised hub

Tied into grid and offshore wind, minimising offshore emissions and enable floating wind.

Out to 2050 – Integrated energy hub

Repurposing and linking oil and gas, carbon storage, hydrogen and wind operations to maximise their potential.

Decommissioning

Decommissioning is an obligation to licensees and a big opportunity for the UK supply chain. Minimising costs will save money for taxpayers. The NSTA provides tools, data and guidance to support industry.

Context

NSTA role

- **Deliver cost-effective decommissioning** – saving money for taxpayers and industry
- **Stewardship** and **guidance** to operators
- **Consultee** for OPRED on Decommissioning Programmes
- **Regulator** for **well decommissioning**

Decommissioning

"We're constantly looking at how we can make best use of the data we collect, and our regulatory powers, to provide transparency and unlock opportunities to make decommissioning cost-effective as a key enabler to the energy transition."

Alastair Bisset, Head of Decommissioning

Visibility of decom portfolios

Our new data visibility dashboard showcases upcoming decom work-schedules, giving confidence to the supply chain.

Decommissioning data visibility dashboard

A new TWIST

The Tree and Wellhead Information for Subsea Tooling database gives vital insights to make decommissioning more cost-efficient.

The Tree and Wellhead Information for Subsea Tooling

Effective planning for P&A

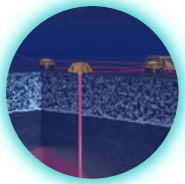
The NSTA aims to identify campaign opportunities and scheduling efficiencies to help drive down costs.

Data and digital capabilities…

The NSTA is making more data available to more people than ever before through our Digital Energy Platform, which boasts an impressive and growing array of award-winning tools.

Data powered transition

1 petabyte of free geoscience and engineering data

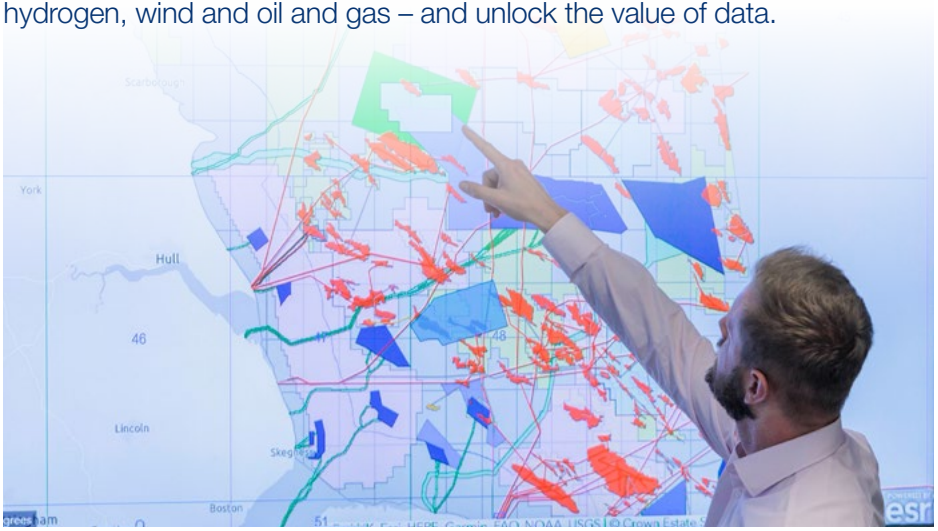


Carbon storage exploration

Offshore wind project siting

Spatial mapping tools

Our spatial and subsurface mapping tools are being used to accommodate and integrate a range of technologies offshore – such as carbon storage, hydrogen, wind and oil and gas – and unlock the value of data.



… a catalyst for the transition

Innovative use of data is playing a vital role in accelerating the North Sea's energy transition to net zero. We continuously explore new ways to share valuable data which facilitates better decision-making and supports the delivery of a holistic, interconnected energy system.

Nic Granger, Chief Information and Financial Officer

Interactive dashboards

Emissions performance, production efficiency, pipeline consents – just three examples of a suite of 30+ online tools provided by the NSTA. The NSTA is making it easier to benchmark performance, identify opportunities and get business done.

Digital leadership

The NSTA chairs the Offshore Energy Digital Strategy Group, convening government and industry to deliver data solutions for the sector.

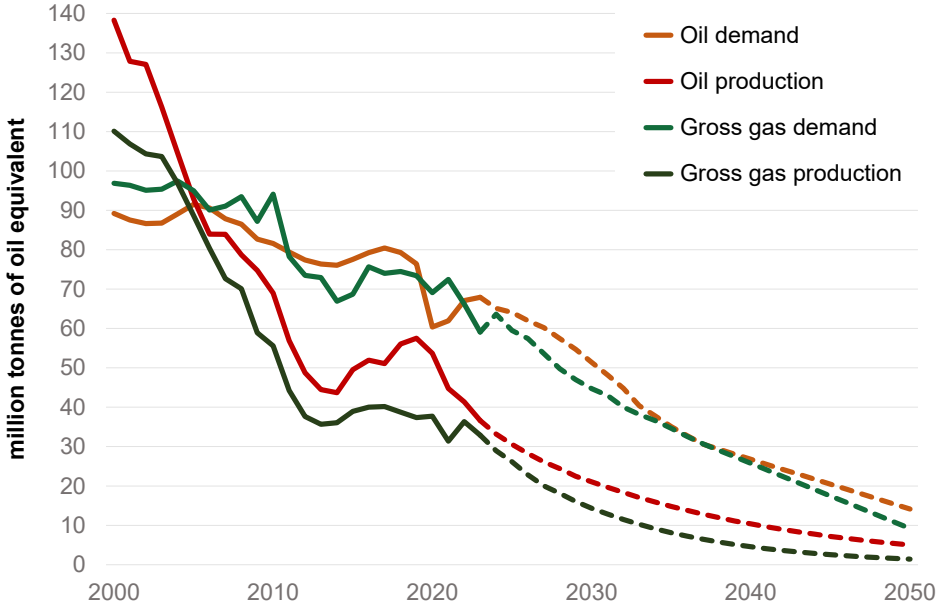
Energy production and security

The North Sea has been helping to provide light and warmth for UK homes and industry for more than 50 years and will continue to be an essential resource for supporting UK energy security for many years to come.

Helping meet demand

Oil and gas currently meet three quarters of UK energy demand and will play an important role in the energy mix for years to come. Though it is declining, domestic production reduces our reliance on imports.

DESNZ Net Zero Strategy demand and production projections



Domestic gas production equated to **around half** of UK demand in 2024.

UK to be a **net importer** of oil and gas out to 2050.

Carbon intensity of producing gas domestically is **on average almost four times lower** compared with importing LNG.

Domestic production must become cleaner

Operators must stay focused on cutting production emissions to safeguard public confidence in the industry. Domestic production can only be justified if it continues to get cleaner.

Net zero regulation and influencing

Annual Consents Exercise:

- Strict **limits** for **flaring** and **venting** – new digital system
- Breaches of limits can result in sanctions, including **fines**
- **Production limits** agreed

OGA Plan:

- Sets out **requirements** for industry to meet the net zero obligation in our strategy
- **Builds on** and **consolidates guidance** on flaring and venting and Stewardship Expectation 11: Net Zero

ESG:

- Robust and transparent ESG reporting key to **continued investment**
- The NSTA highlights **good practice** in licensees' ESG disclosures

Optimising existing assets

NSTA analysis shows there is an opportunity to secure cheaper, easier and cleaner production by restarting production from existing wells which have been shut-in or are underperforming.

Focus on well intervention

Well intervention accounts for **7% of total UKCS production**. There is a big opportunity to maximise existing assets with an increase in intervention activity.

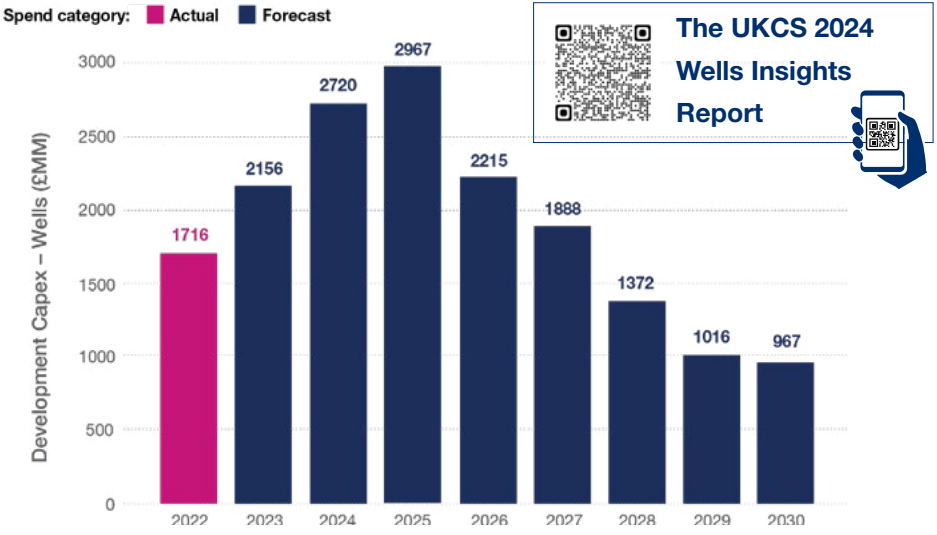
30% of the UKCS's active well stock is shut in

20mmboe of production potential from restoring approx. **200** shut-in wells

£12 – estimated cost per barrel of intervention work

Development drilling in decline

Infill drilling on existing licences can yield additional production, but NSTA forecasts show a decrease in spend out to 2030.



The UKCS 2024 Wells Insights Report

Optimising existing assets

The UKCS is home to more than 280 fields producing around 1 million barrels of oil and gas equivalent per day – a significant contribution to the nation's energy position. Operators must continue to manage these assets efficiently, ensuring economic recovery.

Tom Wheeler, Director of Operations

Asset Stewardship

- NSTA **Stewardship Expectations** promote best practice and set high operational standards, optimising efficiency
- **Annual survey** data used to **benchmark** operators' performance across key metrics, e.g. production efficiency
- Operators' performance is reviewed and improvements discussed

Technology

Operators safeguard existing production using innovative tools which simplify and lower the costs of inspecting, monitoring and maintaining their infrastructure – NSTA raises awareness of these offerings through its reports.

NSTA Technology Survey & Insights Report 2024

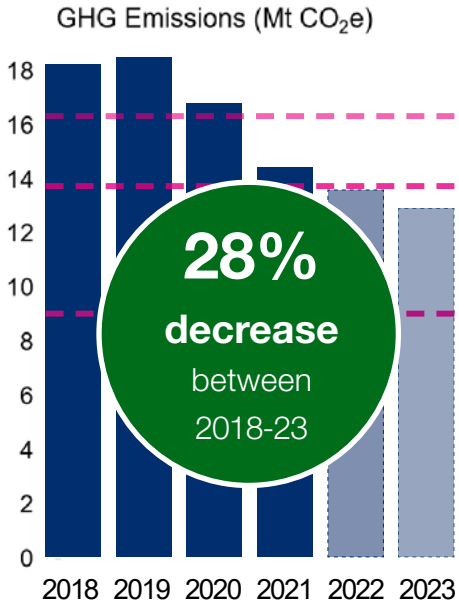
Emissions reduction


The NSTA is fully committed to enabling the achievement of the UK government's commitment to reach net zero emissions by 2050.

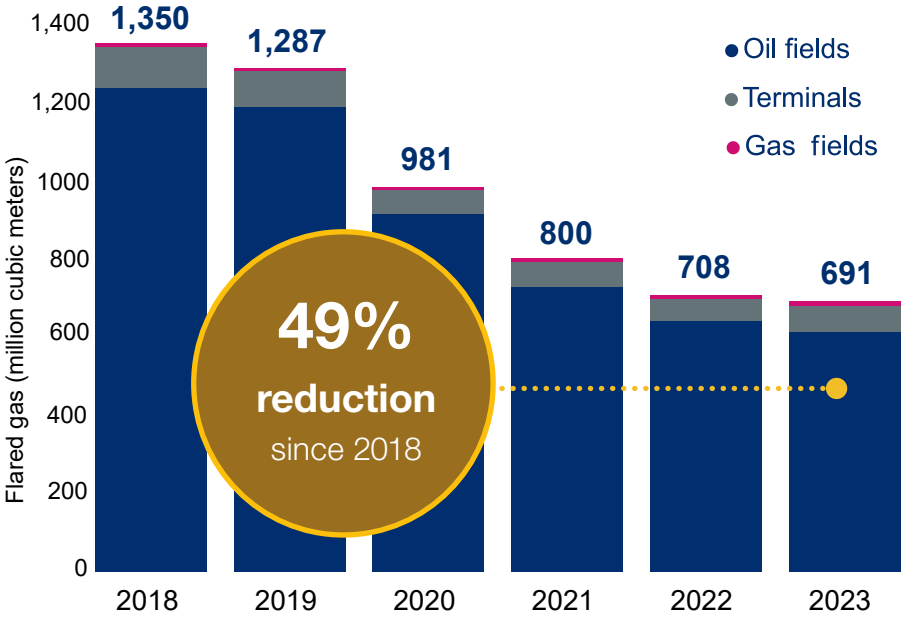
UK upstream oil and gas GHG emissions

North Sea industry has pledged to reduce its emissions 90% by 2040, on the way to net zero by 2050. While progress has been made, oil and gas production operations still make up 3% of UK emissions.

GHG emissions reduction



Declining gas flaring



UK upstream oil and gas GHG emissions

Our annual Emissions Monitoring Report shines a light on industry performance and keeps track of progress against emissions reduction targets. It's an important tool for focusing attention on the pace of progress.

Niki Obiwulu, Analysis and Insights Manager

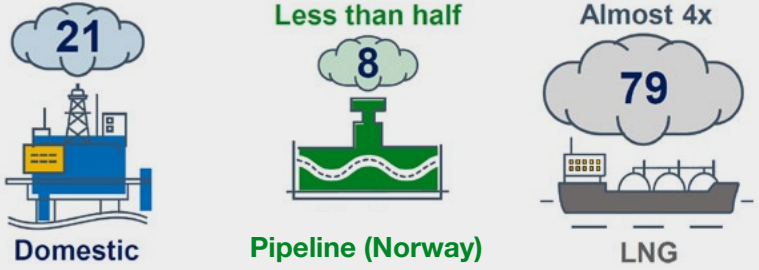
Emissions reductions

50% of reductions achieved from 2018-23 were due to active measures

Upstream GHG footprint

Average emissions intensity for offshore assets was **24 kgCO_2e/boe** in 2023.

UK-international gas comparison – average carbon intensity*



Carbon intensity of producing gas domestically is **on average almost four times** lower compared with importing LNG.

*All units, reported in 2022, are kg CO_2/boe

OGA Plan

The OGA Plan gives operators certainty on emissions reduction requirements and helps them make long-term plans for emissions reductions, putting them on the pathway to net zero.

The Plan calls for concerted action across four areas

Investment and efficiency

- Investment in **greenhouse gas emissions reduction** should be made by industry
- Includes **investment in specific technology** to improve efficiency and reduce emissions

Electrification and low carbon power

- Power generation is **largest contributor** to oil and gas production emissions
- **Electrification required for existing assets**, where it is reasonable to do so, with other low carbon power options also considered

Inventory

- More focus on **planned decommissioning**
- Scrutiny of **high emissions intensity assets**

Flaring and venting

- Flaring and venting account for **a fifth** of production emissions
- Operators must deliver **continuous improvements** in flaring and venting
- **Zero routine flaring** and venting for all by 2030

Electrification

As fuel combustion for power generation accounts for four-fifths of UKCS production emissions, electrification of offshore platforms can deliver the deepest cuts. Progress is being made.

Potential benefits

- 17 $MtCO_2e$ of emissions reductions from 2030 to 2050 in mid-case scenario
- Reduce volume of gas combusted in turbines used for offshore power generation, aiding energy security

Milestones reached in second half of 2024

Green Volt

- Floating wind farm to provide clean power to installations in the Outer Moray Firth
- Contract for Difference awarded in Sept 2024
- Phase 1 FEED contracts placed in Dec 2024

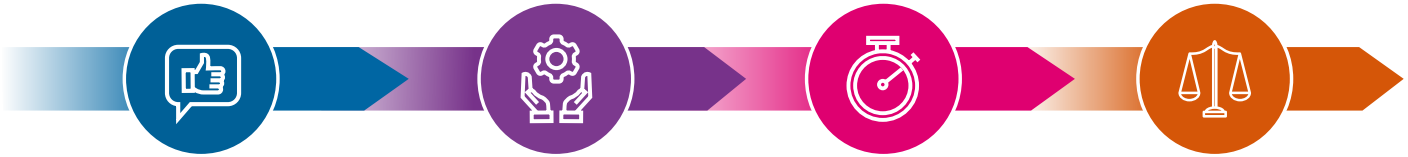
Culzean

- Single-floating wind turbine to cut Culzean platform emissions by 20%
- Pilot project sanctioned by TotalEnergies in Aug 2024

Exercising our powers

Regulatory compliance is essential for a level playing field and for industry to maintain its social licence to operate. The NSTA takes a tiered approach to ensure operators meet their obligations.

Our approach



Voluntary:
Licensees doing the right thing

Encourage **collaboration**.

Educate, **guide** and **inform**.

Promote **best practice**.

Assisted:
Licensee lacks knowledge
Unintentional non-compliance

Risk based stewardship and facilitation.

Encourage **corrective action**.

Directed:
Licensee requires NSTA intervention

NSTA will **detect non-compliance** then formally direct corrective action.

Compliance will be re-prioritised to be primary driver and outcome.

Enforced:
Formal sanction

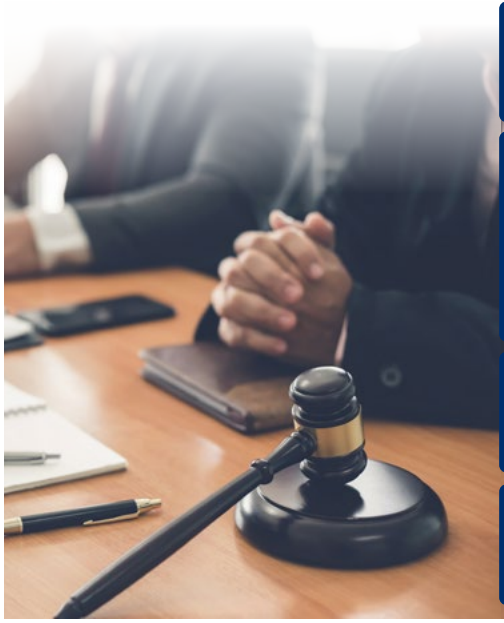
NSTA will **take enforcement action** to deter **poor behaviour** – especially if repeated non-compliance demonstrated.

Can include **financial penalties**, **removal of licence** and **enforcement** notices.

Exercising our powers

As the North Sea matures, the NSTA is increasing its focus on compliance with flaring and venting consents and well decommissioning obligations.

Enforcement Successes



In November 2024, the NSTA issued its **highest fine to date**, of **£350,000**, for unreasonable behaviour that led to a production shutdown.

In 2024, the NSTA imposed **four financial penalties**, received 10 referrals and opened **eight investigations**, including a first ever into missed well decommissioning deadlines. Six matters were closed with no further action.

Since the beginning of 2021, the NSTA has issued fines totalling **£1.4m**, including **£825,000** for flaring and venting breaches.

From 1 January 2025, **£500,000** is the new starting point for considering fines for flaring and venting breaches.

Significance of the supply chain

The NSTA is spearheading efforts to ensure the supply chain plays a full and leading role in the energy transition by highlighting contracting opportunities and promoting fairness and collaboration.

Local content
The NSTA promotes and monitor levels of local content in all decarbonisation projects including decommissioning.

200,000 estimated jobs
supported by the UK's offshore sector. Offshore supply chain to play instrumental role in energy transition. (source OEUK)

Supply Chain Action Plans
New digital tool provides insights into contracting strategies. 26 SCAPs received in 2024 for CCS, H_2, electrification and decom projects valued at £4.6bn.

Stewardship Expectation 12
The NSTA expects licensees to collaborate with the supply chain to provide early visibility of upcoming opportunities. Operators benchmarked on their treatment of suppliers.

Outreach and engagement
The NSTA creates opportunities for the supply chain at events year-round, bringing industry together to build a competitive service sector.

Energy Pathfinder

"Pathfinder made its name with the oil and gas industry but has been refocused and expanded to cover all emerging energy and decarbonisation sectors. It is fast becoming the premier energy transition tool for suppliers."

Bill Cattanach, Head of Supply Chain

Energy Pathfinder

Scan to see how it works

- **Free, one-stop-shop providing visibility** of **contracting opportunities** for the supply chain across the **energy production** and **decarbonisation sectors**
- Contains information on more than **160 projects**, including **oil** and **gas, emissions reduction, decommissioning**, **CCS**, **hydrogen** and **wind power**
- **1,700 subscribers** for monthly Pathfinder updates
- Allowing operators and developers to **highlight challenges** and **seek solutions** from the service sector
- Details of which Tier 1 supplier has won a contract **helps smaller suppliers bid** for **sub-contracts**
- **Forward work plans** provide details of upcoming tenders for operations and maintenance contracts

Measuring success

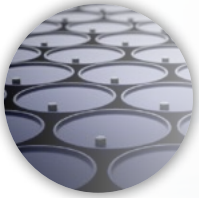
The NSTA has worked closely with industry to unlock 197 success stories between February 2021 and November 2024, and 637 since our inception*.

3.7 $MtCO_2e$

lifetime emissions prevented

£531M

cost mitigated



552 mmboe

tripartite barrels

£356M

decom cost savings

£4.3 bn

value of investments

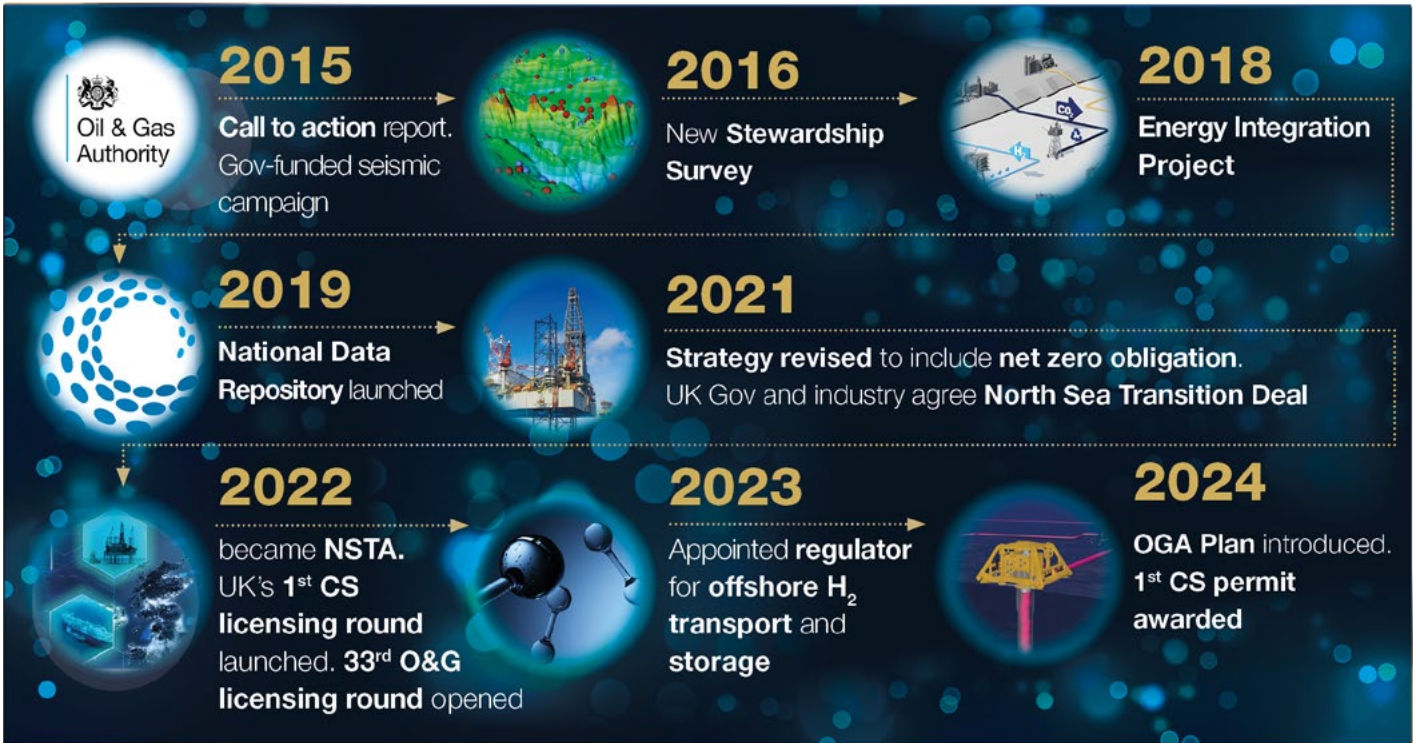
433 days

time saved to industry (fast tracked consents days)

* revised Strategy came into force Feb 2021

10 years of NSTA

The NSTA's purpose has continuously evolved and developed since our launch in 2015 following the Wood Review, which called for an independent regulator to maximise the North Sea's potential.



Experienced leadership

Board of Directors

Liz Ditchburn
Chair of the NSTA

Stuart Payne
Chief Executive

Dr Sarah Deasley
Non-Executive Director

Iain Lanaghan
Non-Executive Director

Dr Russell Richardson
General Counsel and Company Secretary

Nic Granger
Chief Information and Financial Officer

Sara Vaughan
Non-Executive Director

Fiona Mettam
Shareholder Director

Vicky Dawe
Shareholder Director

Malcolm Brown
Non-Executive Director

Experienced leadership

Leadership Team

Stuart Payne
Chief Executive

Hedvig Ljungerud
Director of Strategy

Andy Brooks
Director of New Ventures

Dr Russell Richardson
General Counsel and
Company Secretary

Nic Granger
Chief Information
and Financial Officer

Pauline Innes
Director of Supply Chain
and Decommissioning

Tom Wheeler
Director of Operations

Jane de Lozey
Director of Regulation

Suzanne Lilley
Head of Human
Resources

Who does what in government?

Energy transition including:	
Carbon storage and offshore hydrogen transportation and storage licensing and permitting authority	**NSTA**
UK energy policy, including CCS, hydrogen, renewable energy, legislation	**DESNZ**
Seabed leasing	**The Crown Estate** (England and Wales), **Crown Estate Scotland**
Marine leasing	**Marine Management Organisation (England), Scottish Government, Natural Resources Wales**
Offshore transmission, economic regulator for CCS	**OFGEM**

Oil and gas policy including:	
Overall oil and gas policy, legislation	**DESNZ**
Offshore decommissioning	**DESNZ – OPRED, NSTA, HMT**
Fiscal and taxation	**HMT** (NSTA providing expertise and evidence)
Supply chain and business impact	**DESNZ and NSTA**
Environment	**DESNZ – OPRED**
International relations and trade	**DESNZ, DBT, NSTA, FCDO**

Who does what in government?

Exploration and production including:	
Offshore, onshore, gas storage and gas unloading licensing Field development plan consents Offshore pipeline works authorisation Infrastructure Commercial matters and changes of control Flaring and venting consents Metering and allocation Production outages Offshore decom efficiency, costs, technology Supply chain action plans Effective net zero assessment Emissions benchmarking	**NSTA**
Offshore decom programme approval, execution and monitoring	**DESNZ – OPRED**
Offshore environmental management and inspection	**DESNZ – OPRED**
Health and safety management	**HSE**
Environmental aspects of onshore regulations	**Environment Agency (England)**

Key:

DESNZ: Department for Energy Security and Net Zero, **OFGEM:** The Office of Gas and Electricity Markets, **HMT:** His Majesty's Treasury, **DBT:** Department for Business and Trade, **FCDO:** Foreign, Commonwealth and Development Office **OPRED:** Offshore Petroleum Regulator for Environment and Decommissioning, **HSE:** Health and Safety Executive

North Sea Transition Forum and Steering Group

The North Sea Transition Forum

The North Sea Transition Forum is the **tripartite body (industry, government and regulators)** which provides government and industry leadership for the offshore oil and gas industry.
It is attended by **ministers and officials** from the UK and Scottish governments, trade unions, regulators and senior industry representatives.
It provides **strategic direction** to the offshore sector and sits at the top of a governance structure, including a steering group and seven industry task forces.

The North Sea Transition Steering Group

The North Sea Transition Steering Group is **co-chaired by the NSTA chief executive** and a senior industry representative. It has oversight of the task forces, ensuring there is no duplication or gaps in the work being undertaken by the task forces.

Task Forces

There are seven taskforces beneath the Forum and Steering Group. Each is co-chaired by a senior NSTA and industry representative and has members from across industry, trade associations and government. They play a key role in driving innovation and improvements across the offshore sector.

ASSET STEWARDSHIP TASK FORCE

CO_2 Transportation and Storage Taskforce

DaRT Decommissioning and Repurposing Taskforce

Subsurface Task Force

Supply Chain and Exports Taskforce

WELLS TASK FORCE

technology leadership board

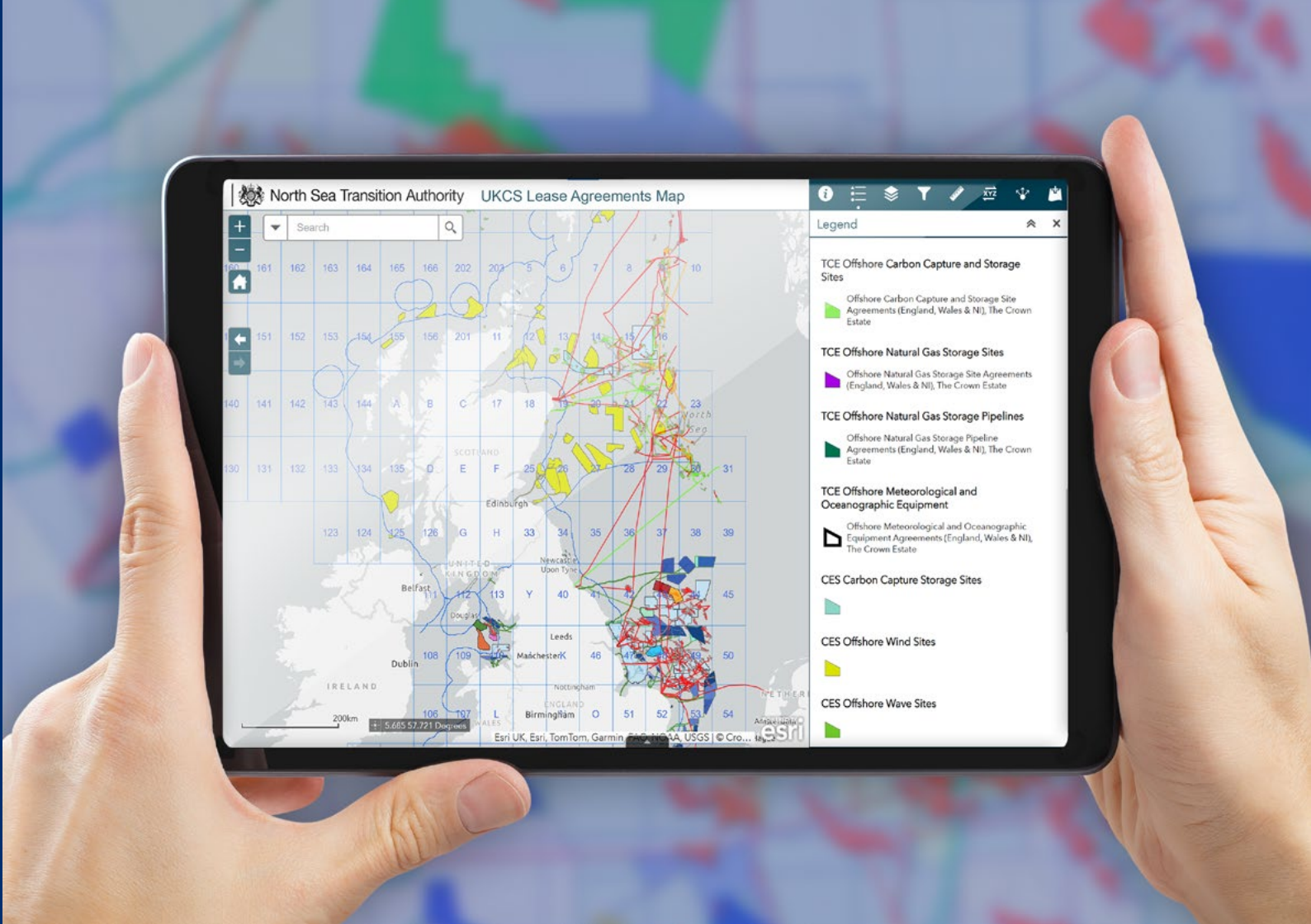
Interactive energy map for the UKCS

The NSTA has worked with The Crown Estate (TCE) and Crown Estate Scotland (CES) to create the app, which, at launch, listed more than 60 in-construction or active wind, wave and tidal sites on the UKCS as well as recently awarded CCS licences and 489 petroleum licences.

The application is automatically updated as each organisation logs new information and is the first time that the locations of all oil and gas and renewables sites have been presented together.

The application shows the proximity of existing oil and gas infrastructure to wind farms, electrical cables and CCS sites, which will assist in gauging the potential for reuse when decommissioning assessments are being made. It has also provided valuable information in prioritising areas for seismic shooting before a wind farm development is built.

Scan to see how it works:


North Sea Transition Authority
UKCS Lease Agreements Map
Search
Legend
TCE Offshore Carbon Capture and Storage Sites
Offshore Carbon Capture and Storage Site Agreements (England, Wales & NI), The Crown Estate
TCE Offshore Natural Gas Storage Sites
Offshore Natural Gas Storage Site Agreements (England, Wales & NI), The Crown Estate
TCE Offshore Natural Gas Storage Pipelines
Offshore Natural Gas Storage Pipeline Agreements (England, Wales & NI), The Crown Estate
TCE Offshore Meteorological and Oceanographic Equipment
Offshore Meteorological and Oceanographic Equipment Agreements (England, Wales & NI), The Crown Estate
CES Carbon Capture Storage Sites
CES Offshore Wind Sites
CES Offshore Wave Sites
Edinburgh
Belfast
Dublin
Leeds
Manchester
Birmingham
Nottingham
Newcastle Upon Tyne
IRELAND
200km
Esri UK, Esri, TomTom, Garmin

North Sea Transition Authority

The North Sea Transition Authority is the business name for the Oil and Gas Authority, a limited company registered in England and Wales with registered number 09666504 and VAT registered number 249433979.Our registered office is at Sanctuary Buildings, 20 Great Smith Street, London, SW1P 2BT.

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