



North Sea
Transition
Authority

Overview 2024







Contents

Introduction from the Chief Executive	5
Our role	6
UKCS – Energy Transition opportunity	7
Helping meet demand	10
Net zero lifecycle	11
Energy – focus on North Sea projects	12
North Sea Transition Deal	14
Delivering the deal: NSTA action	15
UK upstream oil and gas GHG emissions	18
Emissions reduction – NSTA action	20
Electrification	21
CCS – UK opportunity	24
CCS – projects moving forward	25
Hydrogen	26

Focus on technology deployment	27
Bacton Energy Hub	28
Decommissioning	32
Asset stewardship – driving improvement	34
Exercising our powers	35
Significance of the supply chain	36
Energy Pathfinder	37
Digital and data	38
Digital, data and technology for everyone	39
Measuring success	40
Experienced leadership	41
Who does what in Government?	42
North Sea Transition Forum, Steering Group and Task Forces	43
Interactive energy map for the UKCS	44

Introduction from the Chief Executive

The North Sea is changing. What was an oil and gas province is becoming an integrated energy basin.

Oil and gas will still play a significant role, but offshore wind, carbon storage and hydrogen will all become more prominent as the UK aims to reach net zero by 2050.

The NSTA is at the heart of this transition, putting in place the building blocks of the North Sea super-basin.

Oil and gas still meets around three quarters of UK energy demands and will remain a part of the energy mix for decades as we transition. The NSTA will continue to steward the UK's hydrocarbon assets for domestic and cleaner energy production.

We have approved eight new developments since the start of 2023. Even with these projects, domestic production will continue to decline, they bring much-needed investment into the basin and anchor the skills required for the transition on UK shores.

Reducing the emissions from this production is essential to maintaining a social licence to operate, and unlocking the remaining value in the basin.

There has been good progress in some areas, notably a near halving of flaring since 2018, but the NSTA wants the industry to go further, including on the electrification of platforms. Our ambitious new 'emissions reduction plan' clarifies decarbonisation requirements on industry to get on long term emission reductions pathways.

We expect to see real industry action in response to the Plan immediately.

2024 is set to be a milestone year for the UK carbon storage industry. We look forward to granting the UK's first two storage permits, which could lead to first injection of CO₂ offshore by 2028. The UK's potential for carbon storage has been clear for some time, but we are now on the cusp of turning that potential into reality.

The NSTA has also become the regulator for offshore hydrogen transport and storage and we look forward to stewarding this nascent industry.

The opportunity to accelerate the energy transition in the North Sea is underpinned by the UK's world-class offshore supply chain, technological capability, and decades of offshore data. The NSTA is providing visibility on upcoming projects across all offshore energy types, helping to connect operator and supply chain.

The North Sea is a resource which can drive a sustainable and successful energy transition. But only by integrating the planning, technological and regulatory landscapes across different energy sectors we can fully exploit that resource and unlock the new North Sea.



Our role

We regulate and influence the oil, gas, offshore hydrogen and carbon storage industries. We help **drive North Sea energy transition**, realising the significant potential of the UK Continental Shelf as a critical energy and carbon abatement resource. We hold industry to account on **halving upstream emissions by 2030**.

ENERGY SECURITY



Helping meet UK energy demand

Oil and gas production, stewardship and storage

EMISSIONS REDUCTION



Regulating for emissions reduction

Driving electrification and zero routine flaring and venting

ACCELERATING THE TRANSITION



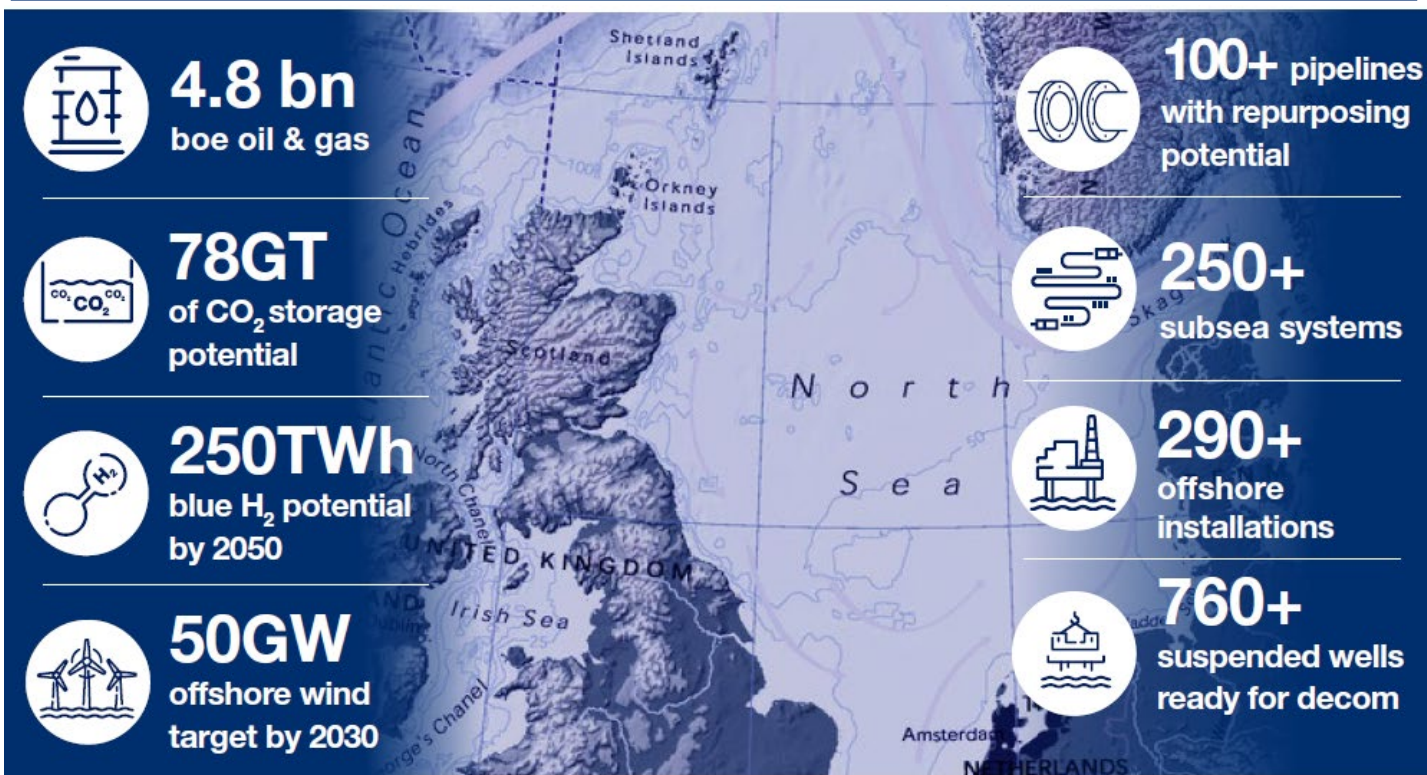
Carbon storage and offshore hydrogen licensing

Providing open access data
Decommissioning and repurposing

We aim to be an **integrating force in the UKCS**, helping realise its **full economic potential**.
We champion **the supply chain** and **job creation** across the UK.

UKCS – Energy Transition opportunity

The seas around the UK contain an abundance of opportunity. The real prize is in harnessing these rich resources and infrastructure to deliver an integrated energy basin and a new economic success story.



Energy



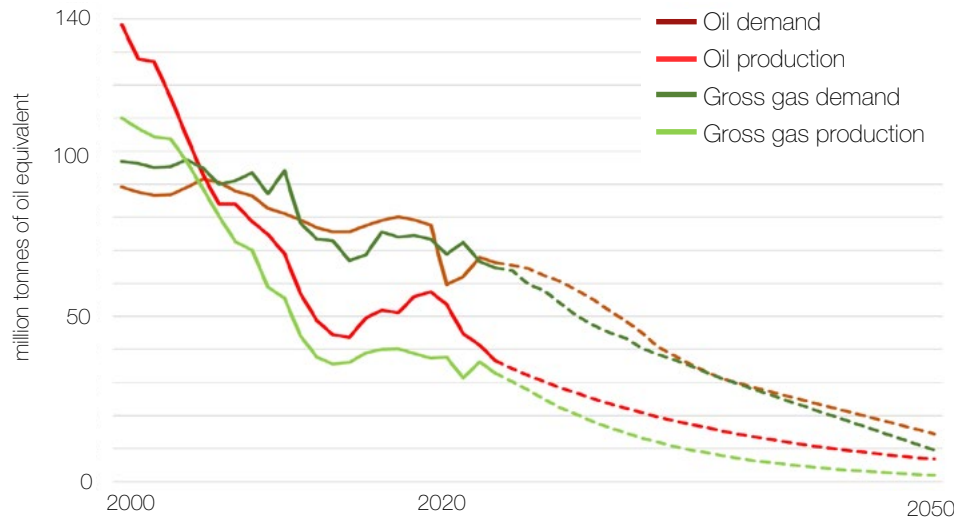
The North Sea has been helping to provide light and warmth for UK homes and industry for more than 50 years and can continue to be an essential resource for supporting UK energy security for many years to come as we transition.



Helping meet demand

Oil and gas currently meet around three quarters of UK energy demand, and will play a role out to 2050. Declining production from the UKCS will continue to contribute to the UK's energy security.

DESNZ Net Zero Strategy demand and production projections



UK demand for oil and gas exceeds production from the UK Continental Shelf. NSTA analysis shows this will still be the case in 2050.

This means the UK will continue to be a net importer of both oil and gas, even when factoring in new field developments.

40%

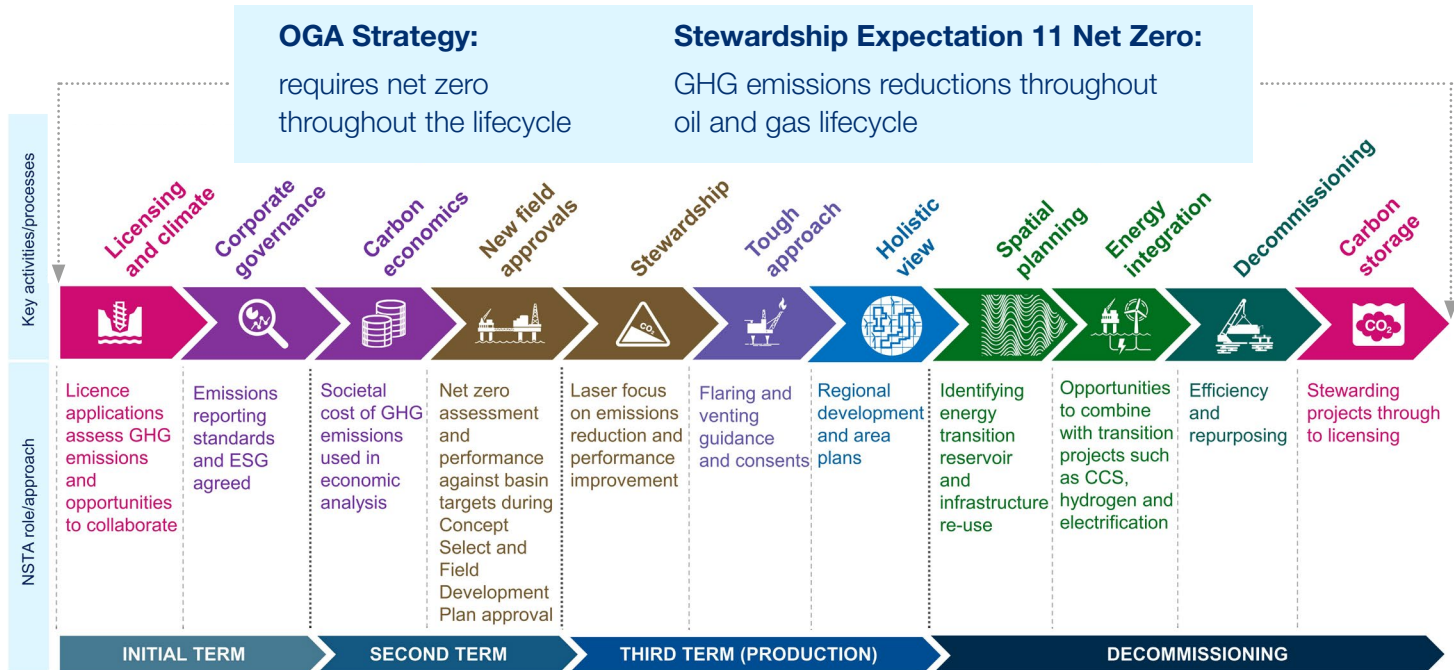
share of UK gas demand met by domestic production

~1/4

Carbon footprint of producing gas domestically against importing LNG

Net zero lifecycle

The NSTA takes a lifecycle approach to net zero regulation, including through our strategy and a range of regulatory levers. This ensures net zero is considered at every stage of the development of a field.



Energy – focus on North Sea projects

The NSTA has approved eight oil and gas projects since the start of 2023. These projects contribute to the UK's domestic energy production, maintain economic activity in the UKCS and help retain the skills needed for the energy transition.



£4bn

estimated capital investment
into the UK economy
generated by new projects

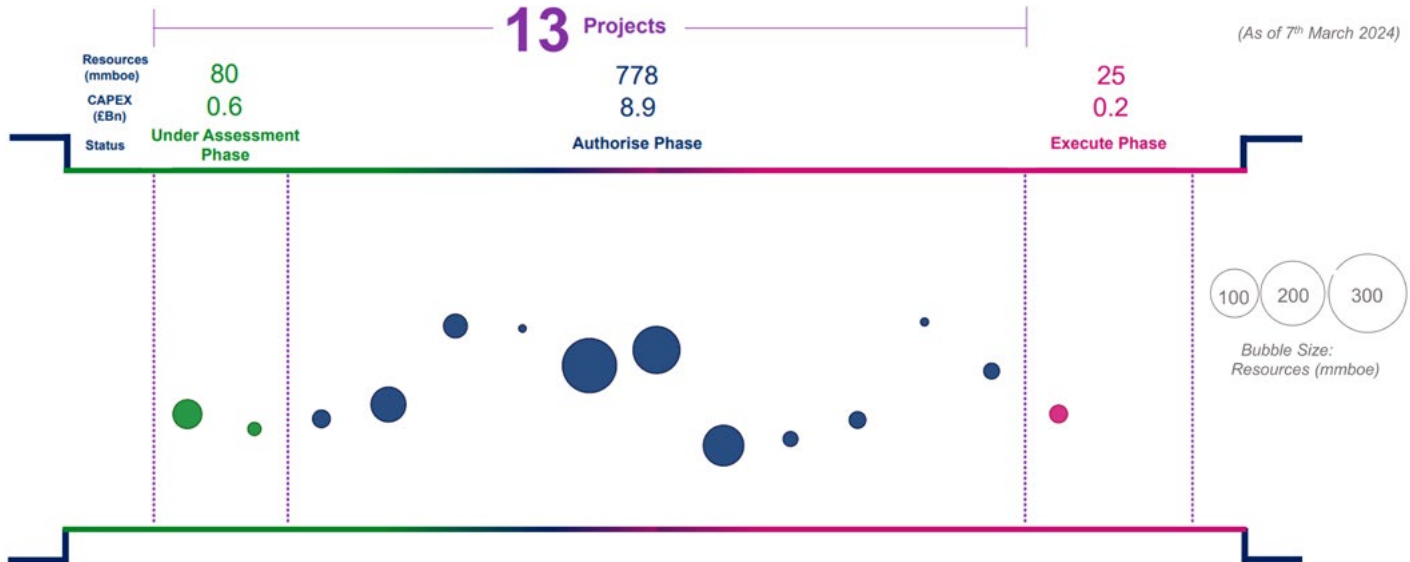
398mm BOE

of new production to support
UK energy supplies

New assets on average have
a **lower carbon
intensity** than older
assets

Energy – focus on North Sea projects

There is a healthy pipeline of upcoming projects, which will continue to help meet UK energy demand even as production declines.

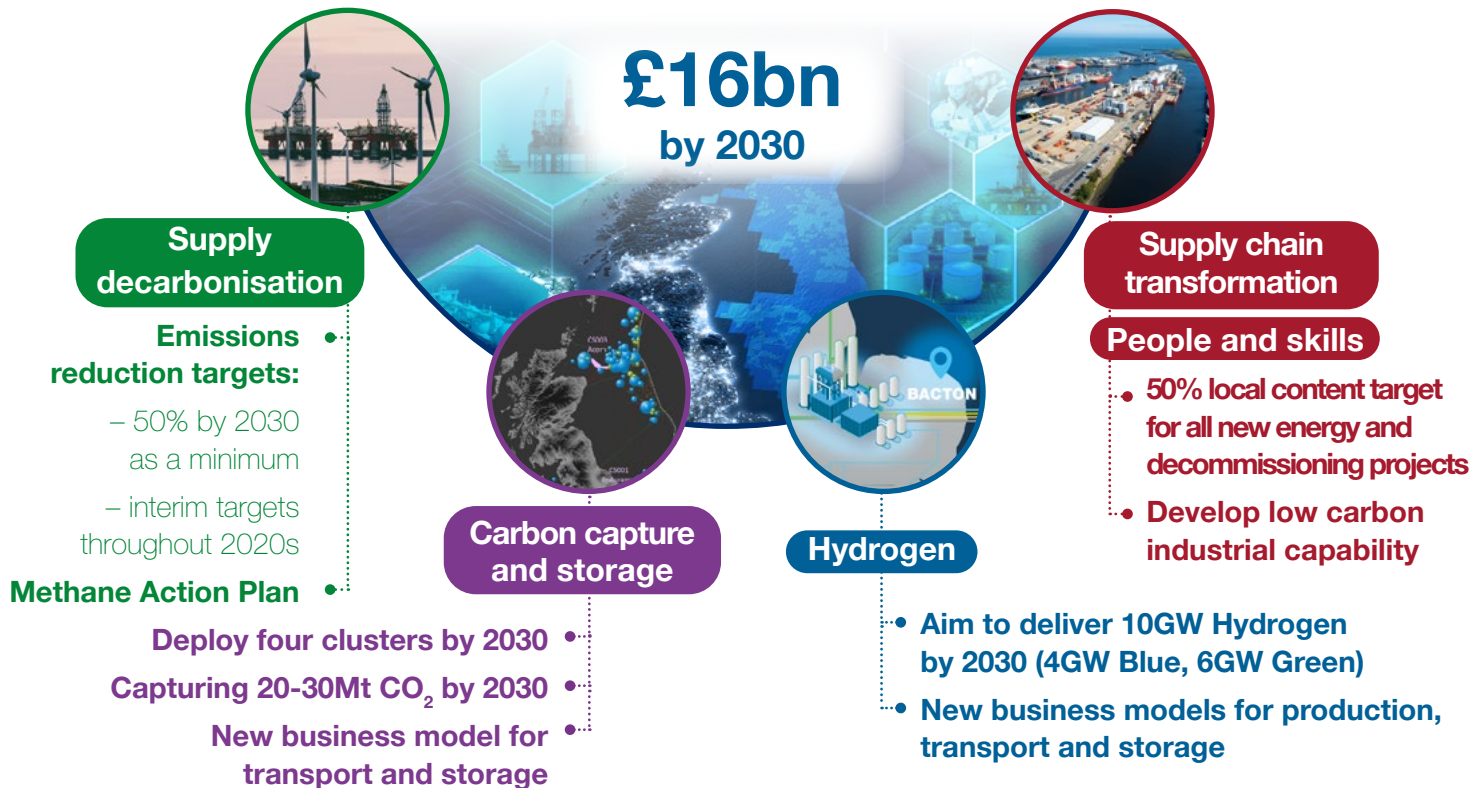


Tom Wheeler
Director of Operations

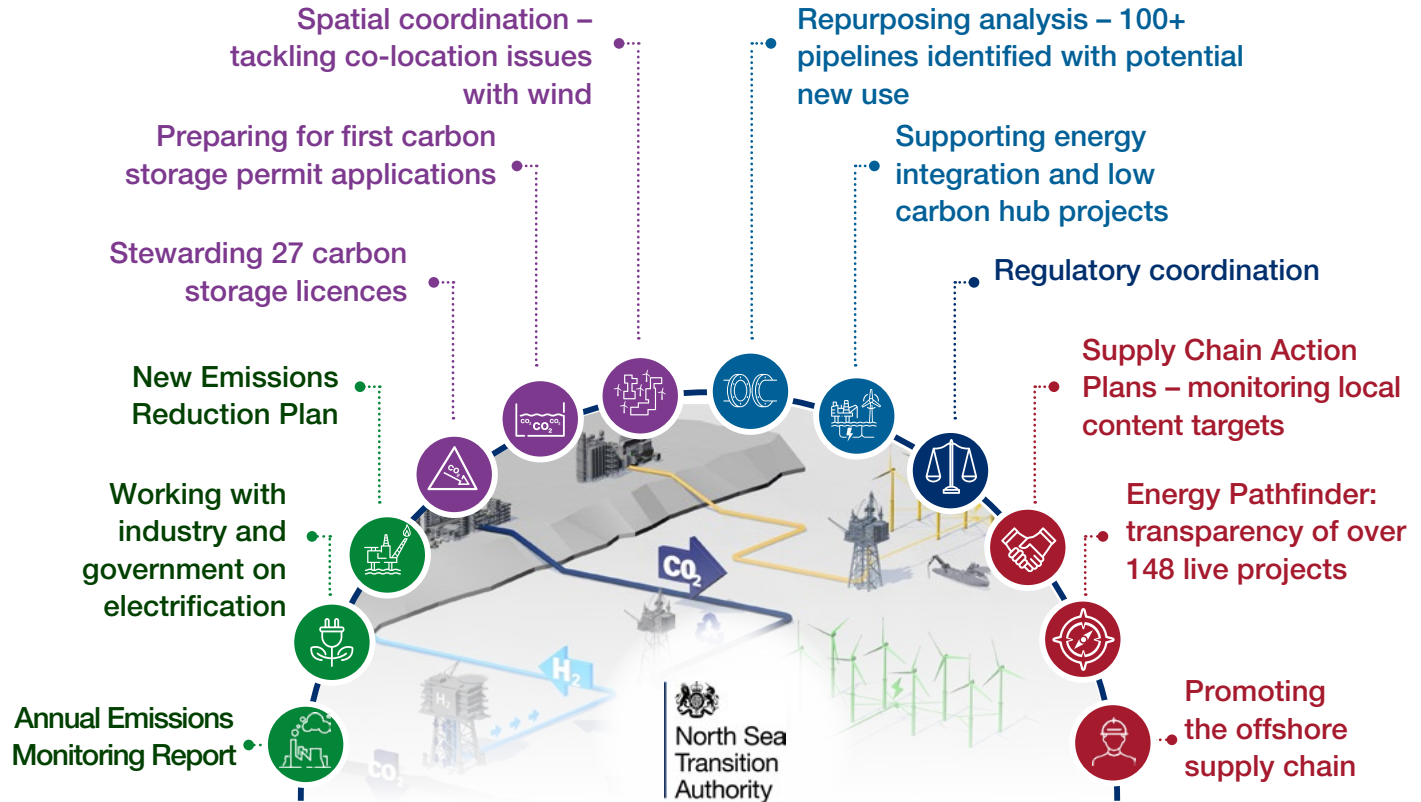
"There are still opportunities for hydrocarbon production on the UKCS and new projects tend to have a lower carbon intensity than older assets. We assess all new projects with our net zero lifecycle approach and work with operators to ensure their emissions are as low as possible."

North Sea Transition Deal

The landmark North Sea Transition Deal is an agreement between industry and government to deliver an orderly energy transition. The NSTA is helping deliver on many of the aims of the deal.



Delivering the deal: NSTA action



Emissions reduction



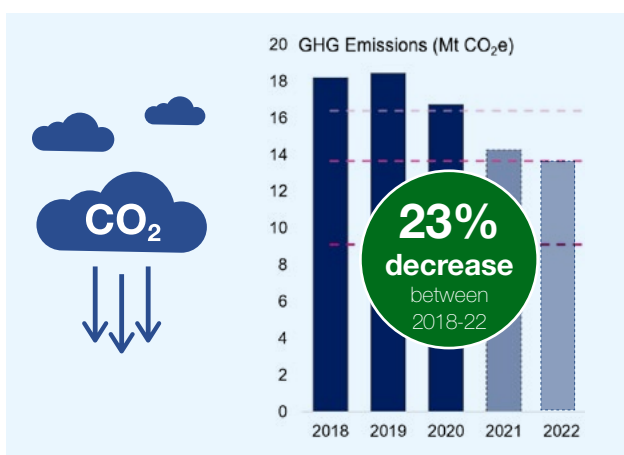
The NSTA is fully committed to enabling the achievement of the UK government's commitment to reach net zero emissions by 2050.



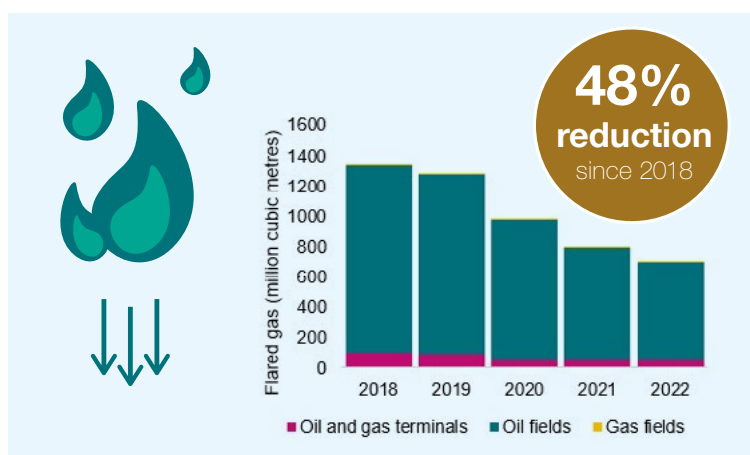
UK upstream oil and gas GHG emissions

The North Sea Transition Deal commits industry to reduce emissions 50% by 2030 and to be net zero by 2050. Early progress has been made but bold measures are needed to surpass the 2030 target.

GHG emissions reduction



Declining gas flaring



Upstream GHG footprint

Emissions from upstream oil and gas operations equate to **3% of UK total**

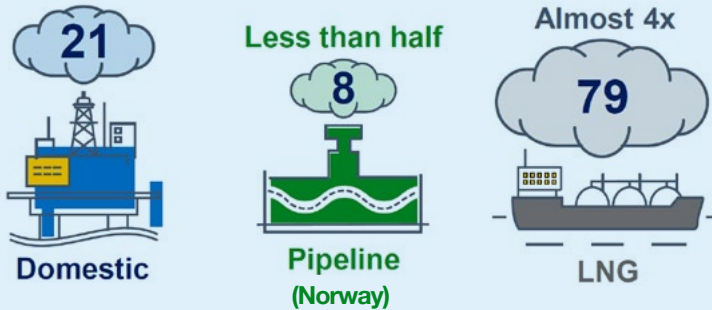


Power generation accounts for over 79% of upstream emissions. Platform electrification is crucial.

UK upstream oil and gas GHG emissions

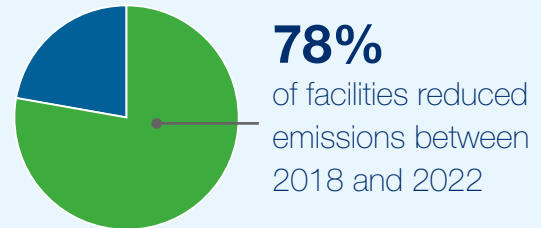
UK international comparison – 2022 average carbon intensity*

Offshore facilities emissions change

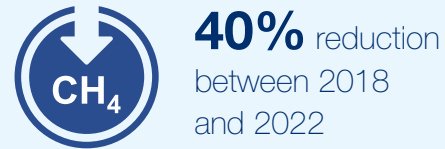


Producing gas domestically has a quarter of the carbon footprint of imported LNG.

*All units are kg CO₂/boe



Methane



Niki Obiwulu
Analysis & Insights Manager

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

Emissions reduction – NSTA action

Since updating our strategy in 2021 the NSTA has had a strong focus on driving down production emissions from the upstream sector. Our guidance and stewardship has resulted in significant progress, but without further initiatives industry would lose support for ongoing domestic production.

3.7Mt of lifetime CO₂e
emissions avoided due to
NSTA interventions. Equivalent of
2M cars for a year.

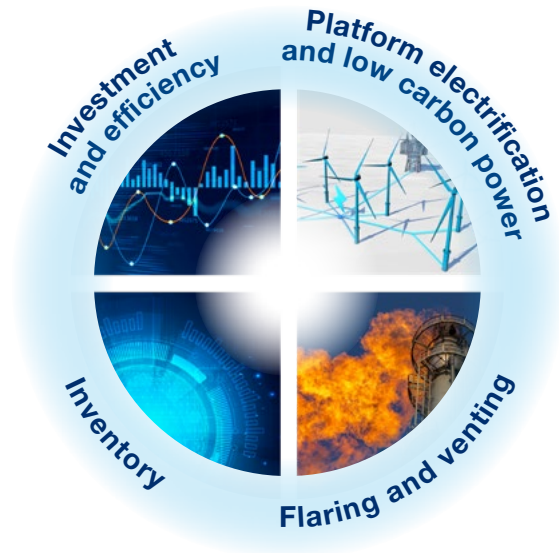
Flaring and venting

NSTA guidance to industry states:

- flaring and venting and associated emissions should be at the **lowest possible levels**
- zero routine flaring and venting for all **by 2030**
- all new developments should be planned and developed on the basis of **zero routine flaring and venting**

OGA Plan

Our proposed emissions reduction plan encourages operators to take action in **4 key areas**.



Electrification

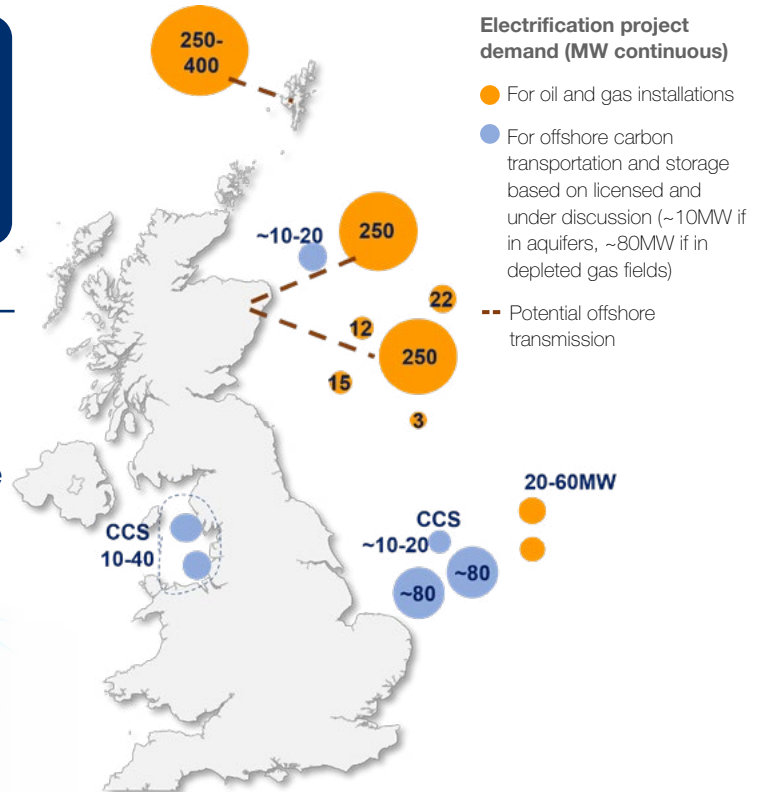
Power generation is the single largest contributor of GHG emissions from the upstream sector. The NSTA works closely with government, other regulators and the industry to support electrification efforts.

1-2 Mt CO₂e per year

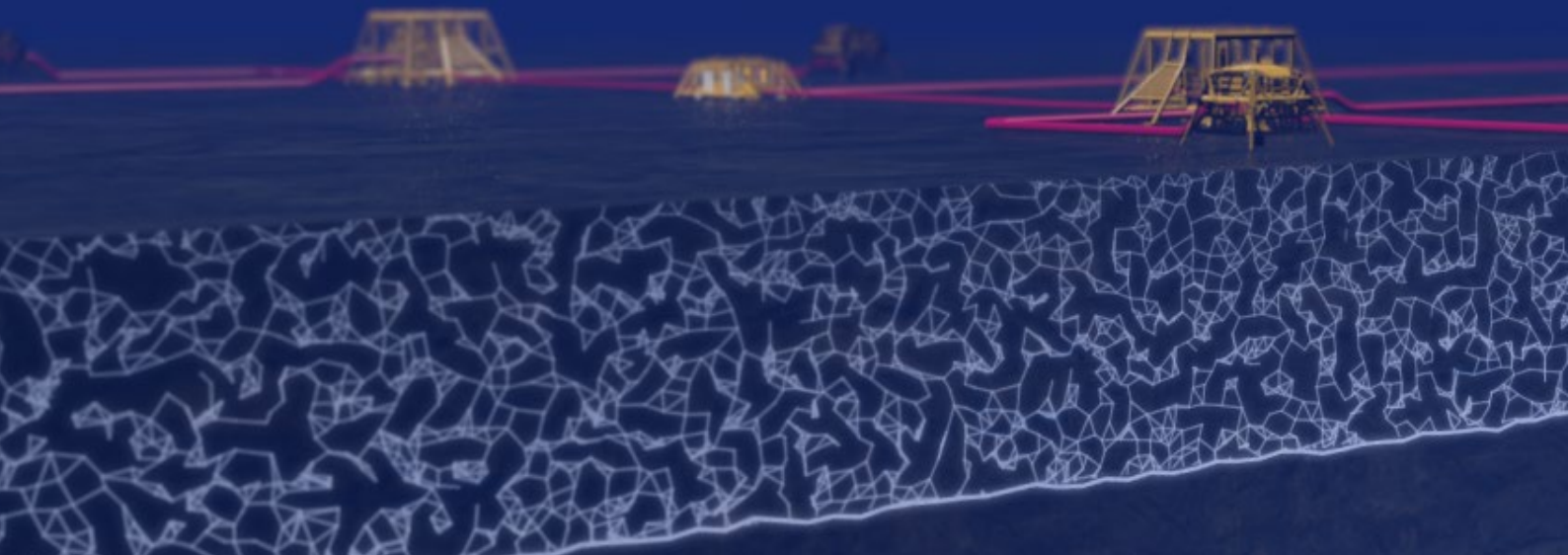
Potential emissions reduction from powering offshore installations with electricity

Cross-cutting benefits

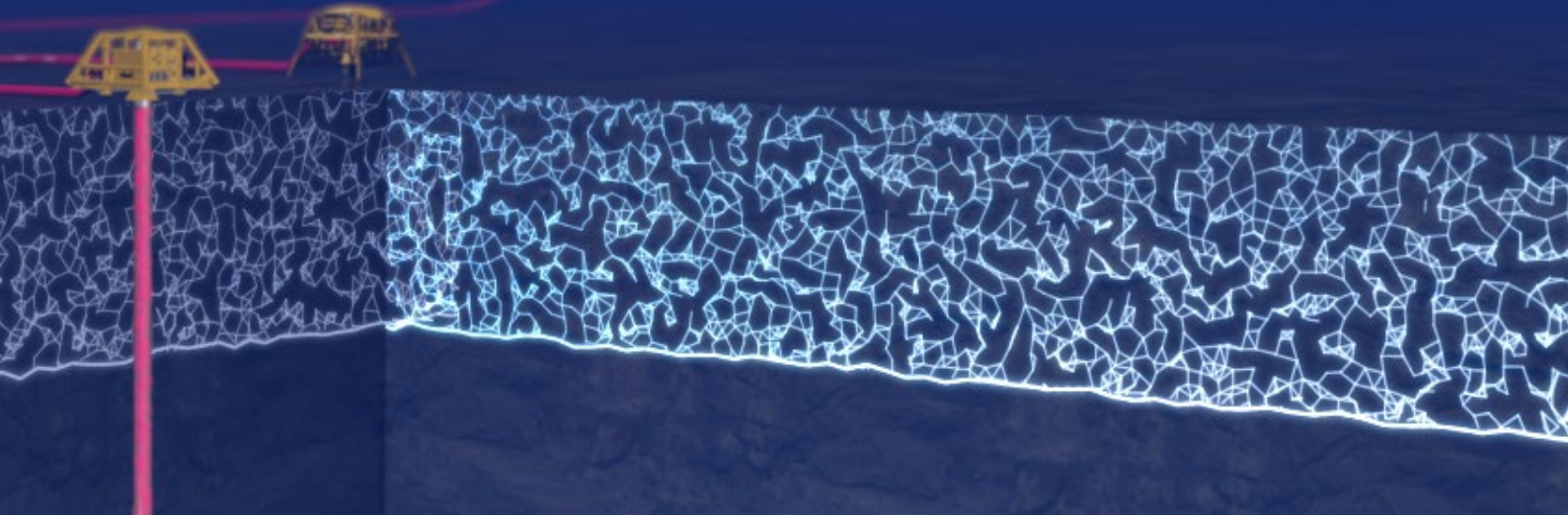
- Potentially accelerating floating offshore wind deployment
- Unlocking UK supply chain benefits
- Seeding infrastructure for future carbon storage and hydrogen developments



Accelerating the 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.



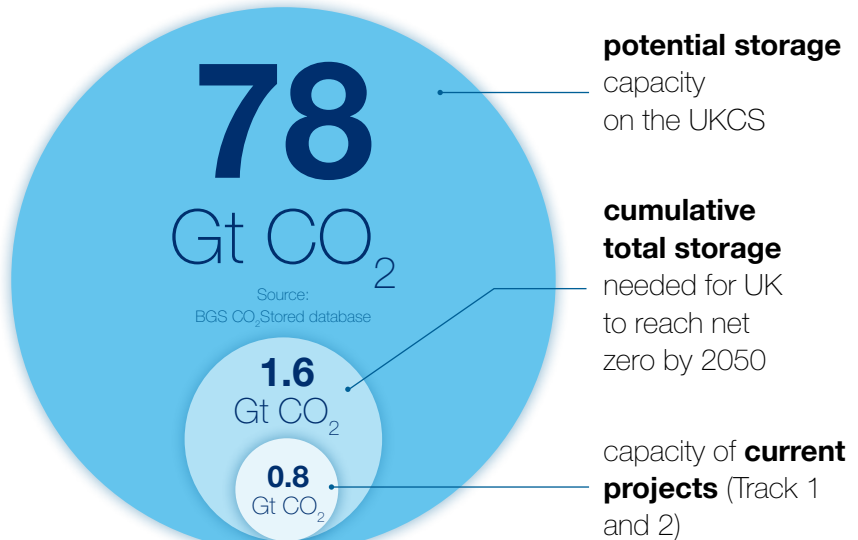
CCS – UK opportunity

Carbon capture and storage (CCS) is vital to the UK reaching net zero by 2050. The NSTA plays a significant role in realising the UK's CCS potential. There is enough capacity in the UKCS to store centuries worth of UK emissions.

Our role

- Licensing and permitting authority for offshore carbon storage
- Stewardship of 27 carbon storage licences
- Collaboration with other key external bodies, including on spatial coordination
- Using our technical expertise to build a portfolio of carbon storage opportunities
- Consultee to OPRED on operators' decommissioning plans
- Maintain carbon storage public register

UKCS potential



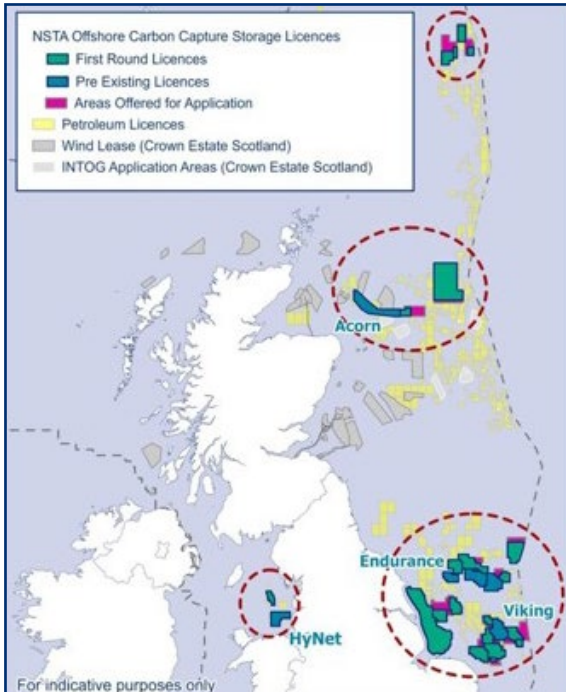
The graphic shown is for indicative purposes only.

100 – estimated number of **appraised carbon stores** needed to reach net zero.

CCS – projects moving forward

The NSTA has now awarded 27 licences for carbon storage on the UKCS. We are preparing to take a decision on the UK's first two storage permits for projects in the government's Track 1 cluster programme.

Current projects



East Coast Cluster

- Endurance storage site
- Aquifer
- Planned injection: 2027

HyNet North West

- Hamilton/Lennox storage site
- Depleted gas field
- Planned injection: 2027

Scottish Cluster

- Acorn storage site
- Depleted field
- Planned injection: 2028

Viking CCS

- Viking storage site
- Depleted field
- Planned injection: 2030



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 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.

Focus on technology deployment

The UK has been a leader in offshore technology for 50 years. Continuous innovation and deployment of new technologies underpins delivery on energy security of supply, emissions reduction and accelerating the transition to net zero.

Our role

Raising awareness of new technologies through our work with the Technology Leadership Board and UK Energy Technology Platform.



Well intervention

Wireless, retrofittable intelligent safety valves to restore production or injection in wells with failed valves. Deployed by **BP** and **Harbour Energy**.



Subsea operation

Splash zone cleaning and inspection tools for conductors and caissons. Hydraulically actuated extension arm provides dexterity and reach to position tools and sensors. Deployed by **Ithaca**.



Asset inspection

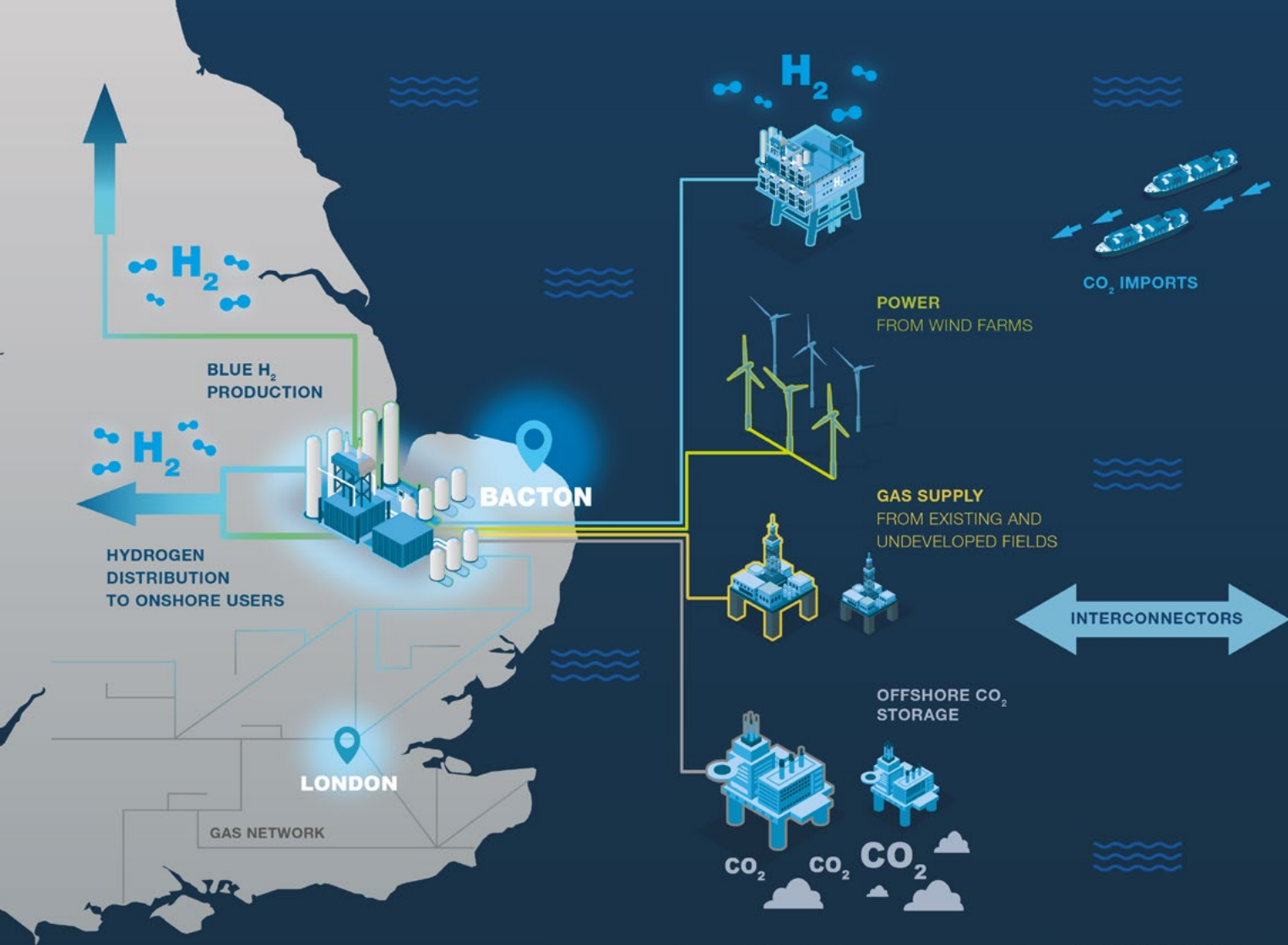
Caged drones for inspections inside storage tanks allow for greater safety, time- and cost-efficiencies. Deployed by **EnQuest**.



Bacton Energy Hub

The Bacton Catchment Area can play a significant role in the UK's energy future through a combination of blue and green hydrogen, offshore wind power, nuclear and carbon storage.

- 
- Strategic gas processing hub in East of England, **up to 2 trillion cubic feet** incremental gas production
 - Potential for **18Mt CO₂** carbon abatement by 2050, enabling low-carbon hydrogen
 - **Offshore wind integration** – green hydrogen potential, power for CCS
 - Potential **hydrogen demand** from **7TWh (2030)** to **90TWh (2050)**
 - **Repurposing existing onshore gas pipelines** providing access to London
 - **Attracting private capital** – Sumitomo Corporation backed development agreement for low carbon hydrogen production







FALNES TIDE

RESCUE ZONE

LF

Decommissioning

We work with industry to minimise the cost and greenhouse gas impact of decommissioning; and support the repurposing of infrastructure particularly in advancement of energy transition opportunities.

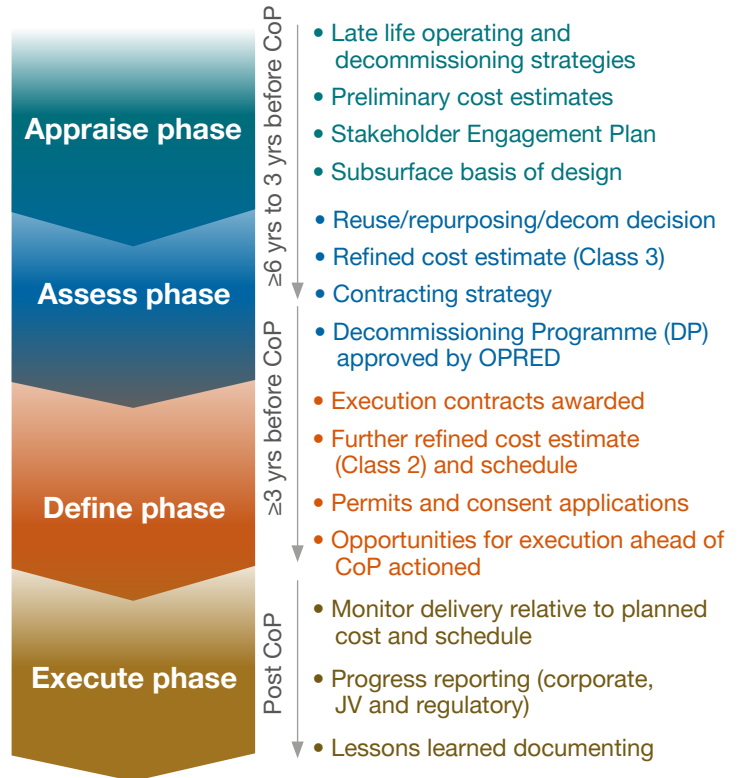
NSTA role

- Providing visibility of decom activities and plans, using our data and tools
- Stewarding licensees to minimise costs
- Leveraging and sharing learning to drive performance improvement

Decade of decommissioning

– projects spend of

over £20bn out to 2032





Decommissioning is making a contribution to the UK's net zero strategy

Opportunities for reuse and repurposing of existing infrastructure

Mapping of infrastructure relative to new developments (inc. CCS)

Developing framework and tools to support realising repurposing opportunities

Screening UKCS oil and gas infrastructure for repurposing viability

Integrating repurposing considerations into Stewardship Expectations

Industry is responding to the opportunity

Well P&A comprises ~48% of the forecasted spend on decommissioning. UK needs a competitive supply chain to deliver cost efficiently

Well decommissioning skills in high demand – industry needs to invest in skill development

NSTA engaging with industry to identify collaboration opportunities, and work to overcome legal and contractual challenges

Holding industry to account with continued focus on regulatory compliance and action to address non-compliance



Alastair Bisset
Head of Decommissioning

"Our Decommissioning Strategy emphasises the contribution the late life and decommissioning phase can make to the UK's transition to net zero, including through the reuse or repurposing of infrastructure and reservoirs. We are also developing and introducing key performance metrics to help industry improve decommissioning project performance and cost-competitiveness."

Asset stewardship – driving improvement

Through effective asset stewardship we aim to optimise efficiency, ensure economic recovery and support the drive to net zero carbon by 2050, while maintaining high standards of safety and environmental management.

Stewardship Expectations

12 separate **guidance documents** setting out our **expectations for industry behaviour** across the oil and gas lifecycle.



Stewardship Survey

Our comprehensive **annual data collection exercise**. It provides valuable data on **operator performance** and **trends** in the basin.



Stewardship Reviews

In-depth reviews with operators of high priority assets, enabling us to share **best practices**, identify **areas of performance** and assess whether licensees are **complying with their obligations**.



Stewardship Benchmarking

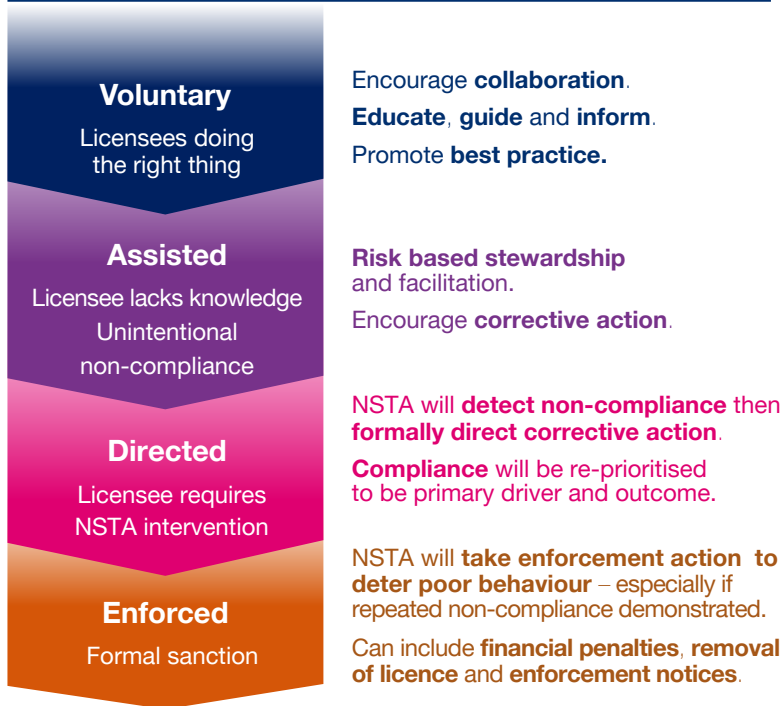
Benchmarking enables us to **compare performance** across the basin. Our publicly available dashboards provide insight into activity on the UKCS.



Exercising our powers

The NSTA expects regulatory compliance. Some licensees do this voluntarily, others require assistance, direction, or in more serious cases, enforcement action to achieve this.

Our approach



Enforcement Successes

In 2023, we issued our highest fine to date: **£160,000** for an operator flaring and venting without consent.

13 matters were referred to Disputes and Sanctions in 2023. We opened eight investigations; two of these were closed with no further action being taken.

Since the beginning of 2021, we have issued fines in excess of **£450,000**.

Significance of the supply chain

The NSTA aims to give the UK's world class supply chain visibility of upcoming work across oil and gas and energy transition projects. We hold industry to account on their treatment of customers and promote local content in new projects.



Local content

In accordance with NSTD, we will be seeking to promote and monitor levels of local content in all future decarbonisation projects including decommissioning.

200,000 estimated jobs

supported by the UK upstream sector. These skills are vital for the energy transition (source OEUK)



Supply Chain Action Plans

The new digitalised tool provides insight to the contracting strategies for all new projects including carbon storage and electrification of platforms.

Stewardship Expectation 12

The NSTA expects licensees to collaborate with supply chain to provide early visibility of upcoming opportunities and benchmark operators on their treatment of customers



Outreach and engagement

The NSTA supports the Supply Chain at events across the year. We bring industry together to build a competitive supply chain to help reach net zero.

Energy Pathfinder



Energy Pathfinder

Scan to see how it works:



- ◆ One stop shop providing visibility of supply chain opportunities across more than 148 developments
- ◆ Gives overall view to the industry of UKCS activity throughout the lifecycle of projects, including oil and gas and energy transition – CCS, hydrogen, low carbon power and offshore power generation
- ◆ 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

Our work with the Supply Chain and Exports Taskforce

Promoting and delivering the North Sea Transition Deal

The NSTA and industry agreed the metrics on how Local Content will be defined and applied to all energy transition and decommissioning projects.



Bill Cattnach OBE
Head of Supply Chain

"As we move to a more diverse portfolio of decarbonised energy projects, we need to promote opportunities for the established oil and gas supply chain to transfer skills and technologies to support this emerging activity. We will be seeking to identify high value gaps within the indigenous supply chain to encourage the establishment of new enterprise in this sector."

Digital and data

The NSTA's extensive data sets and digital tools are opening up the world offshore data to all.



+30 interactive maps and dashboards enabling operational awareness and benchmarking



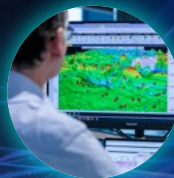
+1PB of industry geoscience and engineering data accessible as a national asset



+50 worldwide universities accessing data and developing the next generation of geoscientists



Leading **Offshore Energy Digital Strategy** (OEDS)



+60 years of industry data reported and disclosed using data powers



Enabling innovators to repurpose data for CCS, wind and hydrogen projects



New carbon storage data powers in place



+2M API requests per week delivering data directly into industry and government systems

Digital, data and technology for everyone

Innovative robust systems supporting a diverse energy sector.



National Data Repository

Innovative cloud based technology enabling more than 60 years' worth of crucial, free North Sea data to be used to help businesses make better informed decisions as part of the transition to net zero.

Data and insights

Free to use open data using geographic information systems and business intelligence platforms to encourage and enable an integrated offshore energy system.

Energy Portal

Government to business transaction apps enabling consenting, licensing and reporting, generating systems of record for the energy sector. These include WONS, PWA, field consents, Energy Pathfinder and SCAPs.



Nic Granger

Director of Corporate and Chief Financial Officer

"The NSTA is leading the way with our offshore digital and data capability. Our data and tools are being used every day by industry, government, academia and the supply chain to drive the energy transition."

Measuring success

154 success stories recorded between February 2021 and March 2024, **594** since inception*.

* revised Strategy came into force Feb 2021



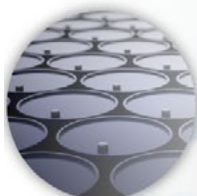
3.7 MtCO₂e

lifetime emissions
prevented



£271M

cost mitigated



547 mmboe

tripartite barrels



£353M

decom cost savings



£4.2 bn

value of investments













433 days

time saved to industry
(fast tracked consents days)

Experienced leadership

Board of Directors and Company Secretary

	Chairman				
Tim Eggar	Chief Executive	Non-Executive Director	Non-Executive Director	Non-Executive Director	Non-Executive Director
	Stuart Payne CBE	Sara Vaughan	Malcolm Brown	Dr Sarah Deasley	
					
Non-Executive Director	Shareholder Representative Director	Shareholder Representative Director	Director of Corporate and Chief Financial Officer	Company Secretary and General Counsel	
Iain Lanaghan	Fiona Mettam	Vicky Dawe	Nic Granger	Dr Russell Richardson	

Accountable to DESNZ Secretary of State

Executive Team

	Chief Executive								
	Stuart Payne CBE								
	Director of Operations								
	Tom Wheeler								
	Director of Regulation								
	Jane de Lozey								
	Director of Strategy								
	Hedvig Ljungerud								
	Director of Supply Chain and Decommissioning								
	Pauline Innes								
	Director of New Ventures								
	Andy Brooks								
	Director of Corporate and Chief Financial Officer								
	Nic Granger								
	Head of HR								
	Suzanne Lilley								
	Company Secretary and General Counsel								
	Dr Russell Richardson								

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, expected economic regulator for CCS	OFGEM

Oil and gas policy including:	
Overall oil and gas policy Legislation	DESNZ
Offshore decommissioning	DESNZ – OPRED, NSTA, His Majesty's Treasury (HMT)
Fiscal and taxation	HMT (NSTA providing expertise and evidence)
Supply chain and business impact	DESNZ & NSTA
Environment	DESNZ – OPRED
International relations and trade	DESNZ, Department for International Trade NSTA, Foreign and Commonwealth Office

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	North Sea Transition Authority (NSTA)
Offshore decom programme approval, execution and monitoring	
Offshore environmental management and inspection	
Health and safety management	
Environmental aspects of onshore regulations	
	DESNZ – OPRED
	DESNZ – OPRED
	HSE
	Environment Agency (England)

Key:

DESNZ: Department for Energy Security and Net Zero

OPRED: Offshore Petroleum Regulator for Environment and Decommissioning

North Sea Transition Forum, Steering Group and Task Forces

The North Sea Transition Forum

The North Sea Transition Forum brings our organisation together with government ministers and senior industry leaders to provide strategic direction and oversight on oil and gas industry issues. The group meets at least twice a year to drive key priorities, including the North Sea Transition Deal, the vital transition to a low carbon economy and the achievement of net zero.

The North Sea Transition Steering Group

The Steering Group oversees and co-ordinates the task forces, discusses and reviews strategic issues and ensures the task forces' priorities include the UK energy transition and the North Sea Transition Deal. Members include representatives from our organisation, Offshore Energies UK and senior representatives from industry including the task force leads.

Asset Stewardship Task Force

Decommissioning and Repurposing Task Force

CO₂ Transportation and Storage Taskforce

Subsurface Task Force

Supply Chain & Exports Task Force

Technology Leadership Board

Wells Task Force

Each task force is led by an industry representative with support from our organisation and other representatives from across industry, trade associations and government. The task forces are focused on core areas and are important vehicles for driving and delivering innovation and improvements. Following a review all task forces have extended their remits to build net zero, collaboration and cultural change into their work scopes as enablers of the North Sea Transition Deal.

Interactive energy map for the UKCS

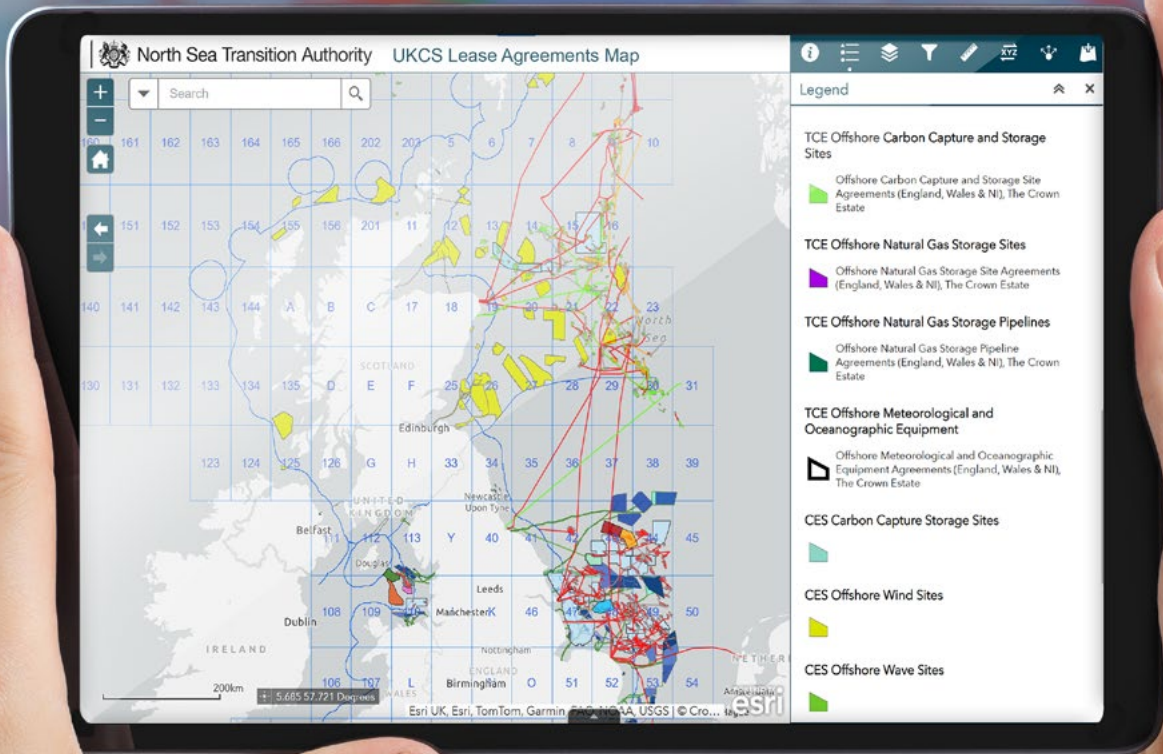
We have worked with The Crown Estate (TCE) and Crown Estate Scotland (CES) to create the app, which, at launch, listed more than 60 in-construction or active wind, wave and tidal sites on the UKCS as well as recently awarded CCS licences and 489 petroleum licences.

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:











Copyright © North Sea Transition Authority 2024

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.

www.nstauthority.co.uk