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Authority

# Energy Transition : A new chapter for the UKCS

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DEVEX 2021

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**Director of Operations**

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# UKCS current context



**44bn**

Barrels of oil and gas produced to date



**320+**  
installations

**7,800+**

Wells drilled



**20,000+**

kilometres of pipelines

**78 GtCO<sub>2</sub>**  
potential storage capacity



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**~75%**

UK energy consumption from oil and gas

**£360bn**

Total upstream tax paid



**269,000**

UK jobs supported

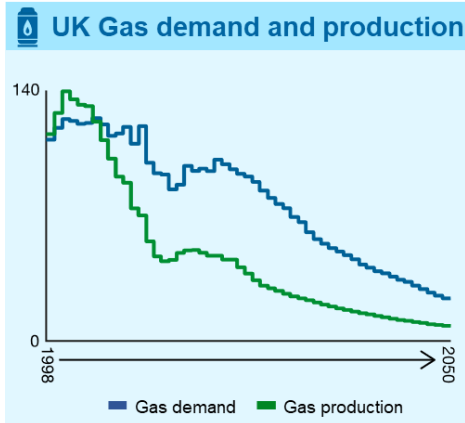
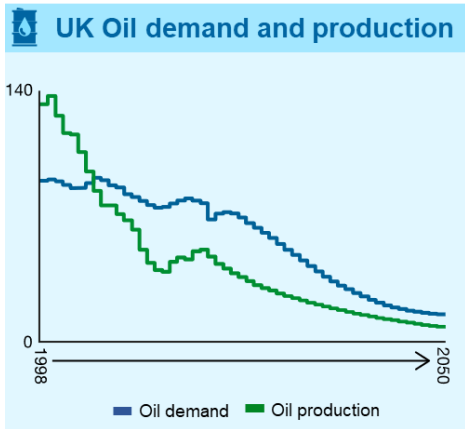
Decommissioning cost estimate

2017:  
**£60bn**

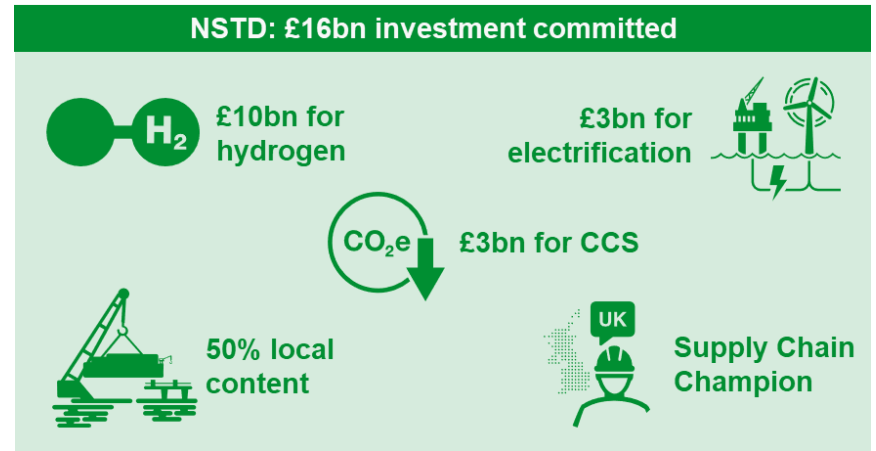
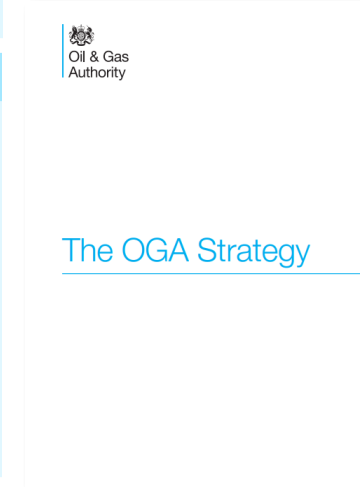
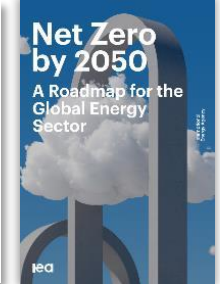
2020:  
**£48bn**



# The world is changing



...and the policy landscape is evolving rapidly



The OGA is also supporting the transition to net zero

# The Energy Transition

The role of oil and gas in the energy transition includes:



**Maintaining secure energy supply**



**Lowering production emissions**



**Diversification opportunities and anchoring skills in UK**



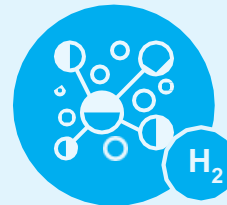
**Infrastructure reuse**



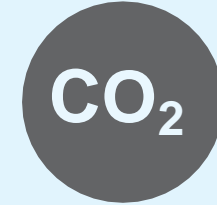
**Supporting windpower expansion**



**Strong supply chain, exporting globally**



**Unlocking hydrogen opportunities**



**Expertise, infrastructure and capital to progress CCS**

Forecasts show oil and gas will remain important part of the energy mix for foreseeable future

# UKCS CO<sub>2</sub> Emissions



## 2019 to 2020 CO<sub>2</sub> Emission % Change by Installation



Nearly **2/3** of all UK upstream O&G installations **reduced** their CO<sub>2</sub> emissions from 2019 to 2020, including terminals

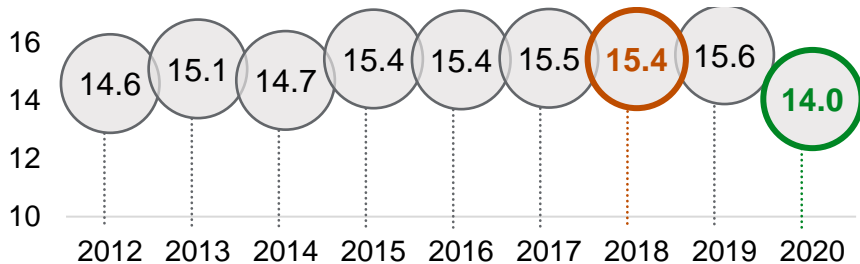
## OGA influence: 970k tonnes emissions avoided

- 1. Operator held to account**
  - Vapour recovery unit installed
  - Saving 22 tonnes flared gas per day

- 2. Compression Project**
  - OGA economic modelling
  - Electric drive recommendation agreed

- 3. Excess flaring**
  - Stewardship identified issue
  - Operator rectifying

## UKCS Total CO<sub>2</sub> Emissions Trend (Mt)



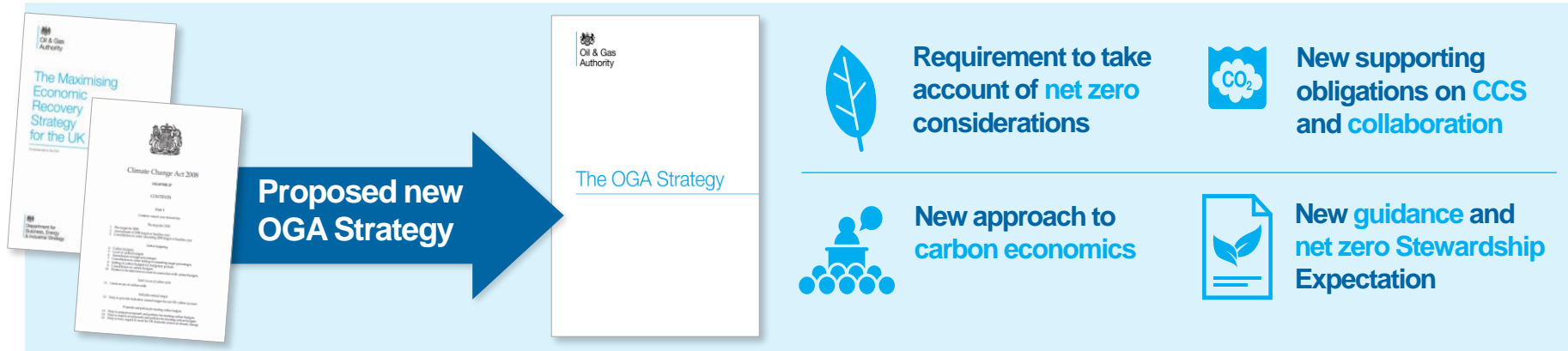
## Flaring volume reduction



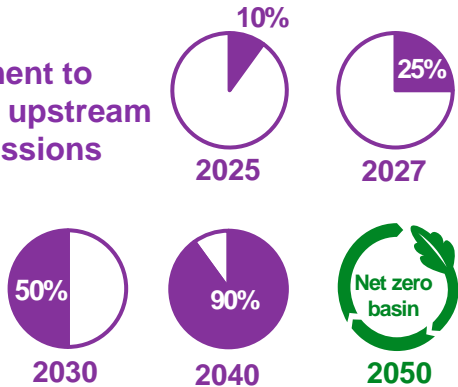
**22% decrease in 2020 from previous year**



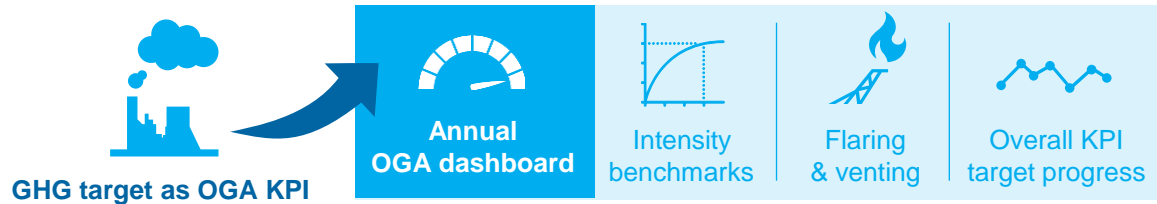
Source: EU ETS  
 \* In scope of the EU ETS  
 \*\* Carbon Intensity defined as offshore installation CO<sub>2</sub> emissions in scope of the ETS per unit of sales production.



Industry commitment to reducing upstream GHG emissions



## OGA tracking and monitoring progress



# Energy Integration – Vision and collaboration



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Led by



Oil & Gas Authority

In collaboration with



Department for Business, Energy & Industrial Strategy

THE CROWN ESTATE

ofgem



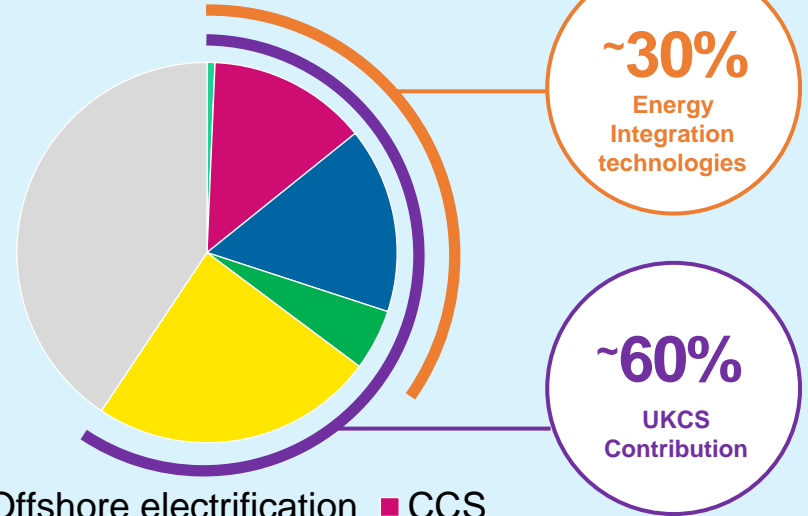
Crown Estate Scotland  
Oighreachd a' Chrùin Alba

Regulatory enhancements

Technical/economic feasibility

Continuing into Phase 3

2050 net zero emission abatement from 2018 baseline  
(Total = 450MtCO<sub>2</sub>e pa.)



- Offshore electrification
- Blue H2
- Offshore windpower
- CCS
- Green H2
- Onshore measures

# Energy Integration - Illustrating the vision



## Northern Scotland and Islands

- Electrification of new O&G developments
- Blue H<sub>2</sub> and CCS
- Windpower expansion and Green H<sub>2</sub>
- Leveraging O&G terminals and other infrastructure

## Central Belt of Scotland

- Carbon capture from industrial cluster and transport to storage facilities
- Blue H<sub>2</sub> production from natural gas

## East Irish Sea

- Carbon capture from industrial cluster and transport to storage facilities
- Blue H<sub>2</sub> production from natural gas
- O&G and windpower synergies, including Green H<sub>2</sub>

## Moray Firth & North East Scotland:

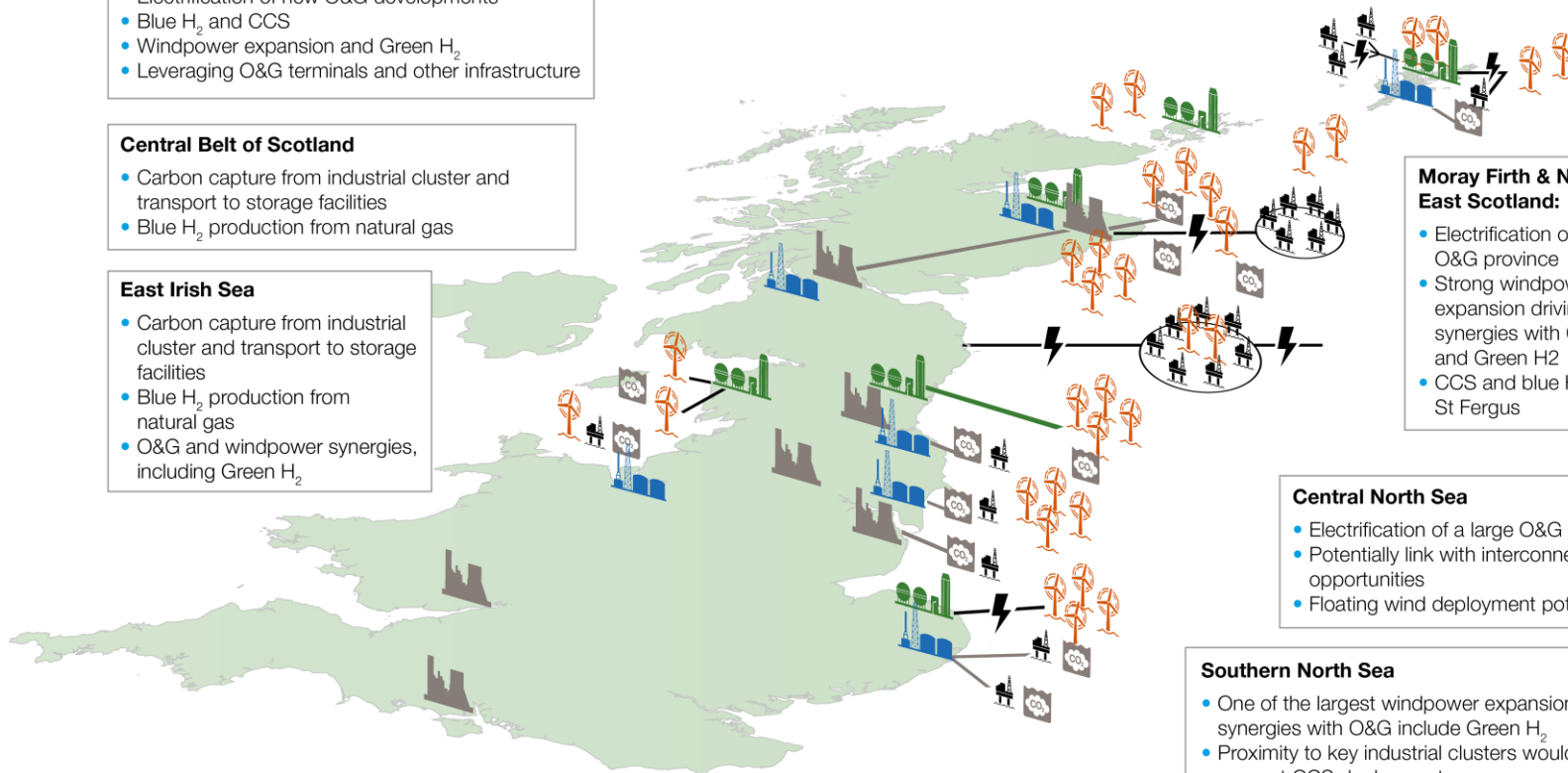
- Electrification of a large O&G province
- Strong windpower expansion driving synergies with O&G and Green H<sub>2</sub>
- CCS and blue H<sub>2</sub> at St Fergus

## Central North Sea

- Electrification of a large O&G province
- Potentially link with interconnector opportunities
- Floating wind deployment potential

## Southern North Sea

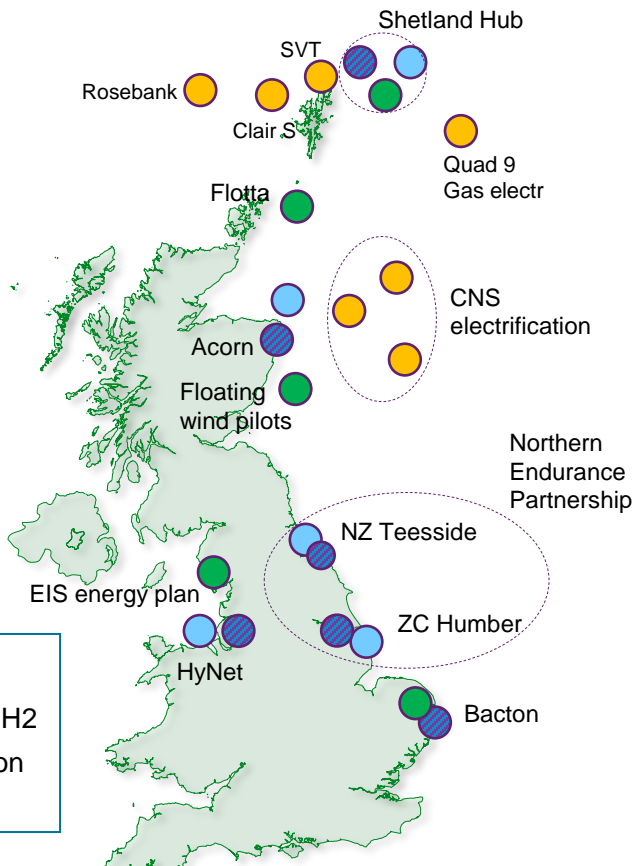
- One of the largest windpower expansion areas, synergies with O&G include Green H<sub>2</sub>
- Proximity to key industrial clusters would support CCS deployment
- UK natural gas production and imports would support Blue H<sub>2</sub>



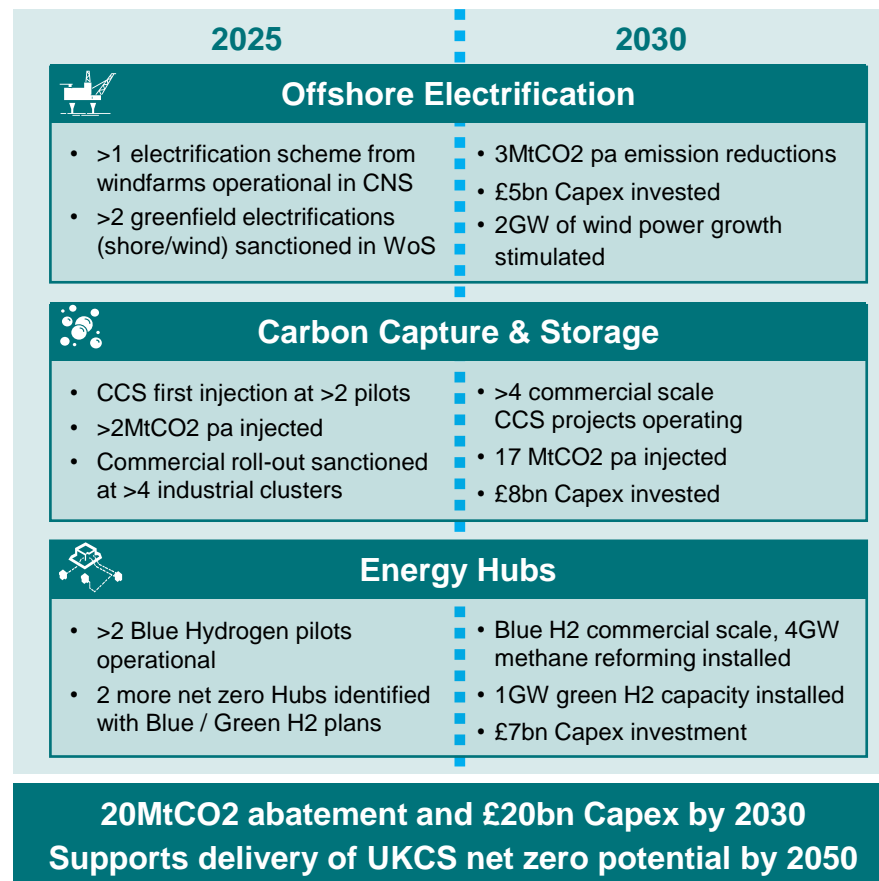


# Creating pathways from vision

## Net zero indicative projects



## Vision & potential pathways



# Offshore low-carbon power solutions



>4 large-scale electrification projects by 2030



Supporting growth of offshore windpower (+30GW by 2030, and 1GW floating wind)



Investment in offshore transmission: grid capacity expansion



Regional schemes in CNS & WoS



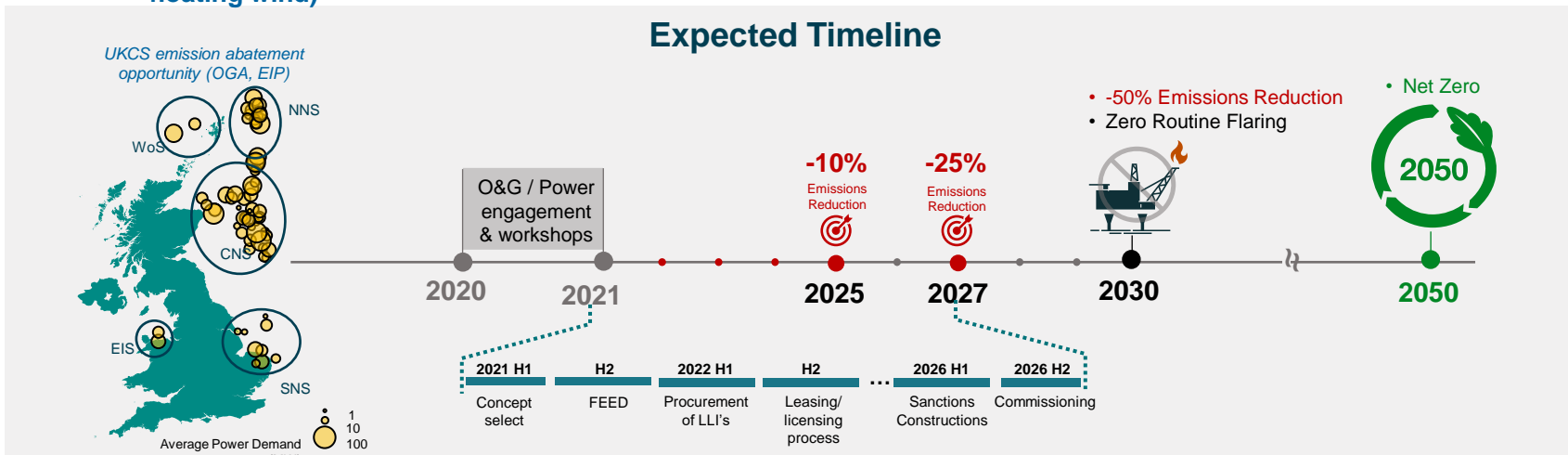
Supply chain

## Regulatory Alignment



*Proactive resolution of barriers*

## Expected Timeline



# CCS – the time is now

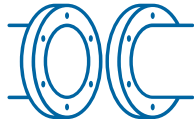


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Licensing and permitting authority for offshore carbon storage

Encouraging re-use as part of the OGA Cessation of Production process



Maintaining carbon storage licence public register



Acorn, St Fergus



Northern Endurance Partnership, Teeside



HyNet, North West England

78  
GtCO<sub>2</sub>

total UKCS CO<sub>2</sub> storage resource estimate

75-175  
MtCO<sub>2</sub>

CCC estimate of annual requirement in 2050

10  
MtCO<sub>2</sub>

UK govt 2030 annual target (Ten Point Plan)

3

carbon storage licences being stewarded towards storage permit application and first CO<sub>2</sub> injection

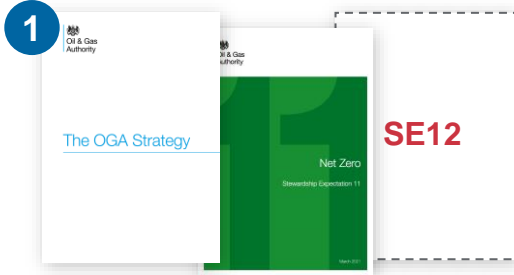
3

carbon storage licences applications being assessed

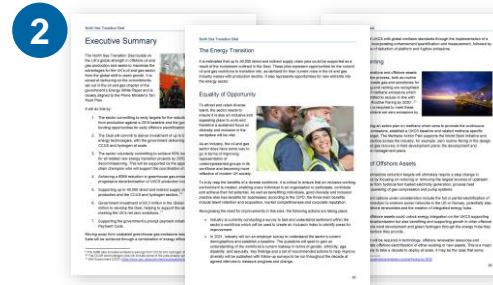
# What to expect from the OGA



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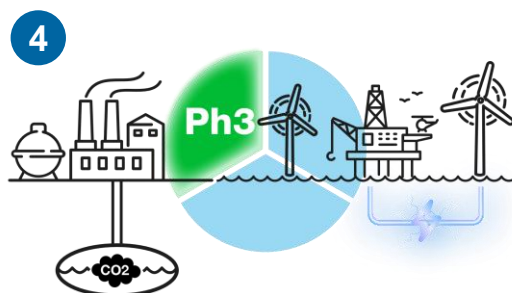
Complete Strategy roll out.



Implementing NSTD: governance



- Resource progression: no let up
- Checkpoint and future licensing



- Electrification & CCS progress
- Offshore implementation group & EIP Ph 3
- Scrutiny: emissions commitment, F&V



Digital Energy Platform



Supply Chain



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# Thank you

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