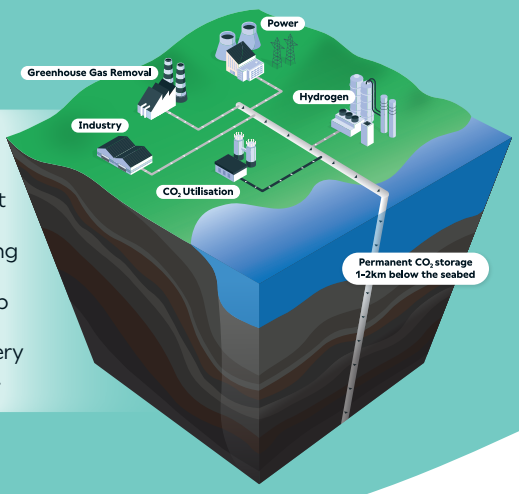
Carbon Capture, Utilisation and Storage in the South East

BACTON CCS



A CCUS Cluster

Multiple industries sharing CO_2 transport and storage infrastructure, enabling industrial and power decarbonisation, deep emissions reductions and supporting delivery of net zero pathways.

What is CCUS?

Carbon Capture, Utilisation and Storage (CCUS) captures carbon dioxide (CO_2) from industry, power plants or even directly from the air. The process involves three key steps:

1. **Capture:** CO_2 capture technology captures CO_2 from industrial or energy-related emissions or directly from the air.
2. **Transport:** The captured CO_2 is compressed and transported by ship, road, rail or pipeline to storage sites.
3. **Storage or utilisation:** CO_2 is injected into geological formations offshore 1-2km below the seabed (e.g., depleted oil and gas fields or saline aquifers) or used in products like concrete or fuels.

CCUS industry is delivering in the UK:

CCUS is being developed in **regional industrial clusters**. The first projects are under construction in **Merseyside, North Wales and Teesside**, where industries share transport and storage infrastructure. Further projects are in development in the **Humber, Scotland, Derbyshire & Staffordshire, East Anglia, South Wales, the South Coast and Avonmouth**.

The UK Climate Change Committee highlights that CCS is essential to meeting the UK's climate commitments.[1]

CCUS is a vital tool for:

Cutting emissions from foundational industries: CCUS is the only realistic way to decarbonise industries like cement, chemicals and refining by capturing emissions created as a by-product of the production process.

Delivering deep emissions reductions: CCUS can capture 50–60 million tonnes (Mt) of CO_2 annually by 2035 – a level the Climate Change Committee says is essential for meeting the UK's climate targets, equivalent to offsetting the carbon footprint of Greater London twice over.

Retaining UK industries: CCUS enables industry to cut emissions, remain competitive the global low-carbon products market and supports up to 50,000 jobs by 2050.

Producing low-carbon hydrogen: CCUS enables low-carbon hydrogen for industry by capturing CO_2 during production.

Removing CO_2 from the air: Greenhouse Gas Removal (GGR) technologies actively remove CO_2 from the atmosphere, complementing decarbonisation efforts by helping address emissions from hard-to-abate sectors, such as agriculture and aviation.

Powering millions of homes: Gas-fired power stations with CCUS will produce 2-7 Gigawatts (GW) of low carbon, flexible power by 2030, enough for up to 5.25 million homes and balancing the grid when renewables are not available.

Boosting the UK economy: Building out CCUS will help unlock £26 billion in private investment by 2030, supporting a growing UK CCUS supply chain worth up to £2.6 billion by 2040, generating up to £30 billion in taxable revenue annually by 2050 and adding £94 billion Gross Value Added (GVA). With around a third of Europe's CO_2 storage potential, the UK is well positioned to lead in carbon storage and exports.

[1] Climate Change Committee (2025) The Seventh Carbon Budget (pg.14). Available here.

CCSA

What comes next?

The UK now has a credible pipeline of CCUS projects, but the next projects and clusters must move forward without delay. To secure a self-sustaining CCUS industry and realise its industrial, economic and climate benefits, the CCSA urges Government to:

1. **Deliver the actions required** to progress the build-out of the East Coast Cluster and HyNet as well as confirming the allocation of the development funding committed to Viking CCS and The Acorn Project.
2. **Provide an allocation framework** for government support contracts in the 2027 Spending Review and a clear nationwide route to market for CCUS deployment. This should include enabling Viking CCS, The Acorn Project, East Coast Cluster Humber Expansion and MNZ | Peak Cluster to reach financial close within this Parliament, and supporting other projects and clusters to deploy, including those using CO_2 transport by ship, road and rail.
3. **Implement policies and regulations** to stimulate low carbon products, carbon removal and European-wide CO_2 storage markets to enable the transition to a self-sustaining market.

Bacton CCS

CCUS in the South East: Bacton CCS

Bacton CCS, a project led by Eni CCUS Holding, aims to substantially decarbonise power and industrial processes in East Anglia, the Thames Estuary and London regions through CCUS deployment.

It will decarbonise key industrial sectors and unlock greener growth opportunities for the **automotive, ceramics, food, materials, energy and waste disposal sectors**, as well as accelerate local ports development.

CO_2 emissions can be transported to be **permanently stored within Eni's offshore Hewett depleted gas field** - an empty natural gas field deep under the North Sea, now being turned into a secure CO_2 store - by a mix of pipeline and non-pipeline (e.g. shipping) solutions.

Thanks to its strategic position, the cluster could serve both the Bacton Energy Hub, Thames Estuary cluster and broader East Anglia region. Additionally, by the Government enabling a cross-border CO_2 market, **the cluster could benefit from exporting the storage potential to EU emitters**, reducing reliance on Government support and creating taxable returns.

Key benefits include:

Decarbonisation potential: At full capacity, could capture up to 10 million tonnes of CO_2 per year and store it in the Hewett depleted gas field - a site with capacity for 300 million tonnes, equivalent to the UK's total annual CO_2 emissions.

Hydrogen potential: Positioned to produce hydrogen at scale, supplying clean energy to London and the surrounding region, boosting energy security and cutting reliance on fossil fuels.

Economic benefit: Will attract inward investment by enabling industries to decarbonise, securing their future in the region and protecting local jobs.

Cross-border opportunity: Can receive CO_2 from North West Europe, turning UK storage into an exportable service that generates revenue and strengthens Britain's position in the global low-carbon economy.

Project overview: Bacton CCS

Leading industry partners

Bacton CCS, Enfinium, MVV, VPI Power, Progressive Energy, Summit Energy Evolution, RWE, North London Waste Authority, SSE Thermal, Medway One Energy Hub, Cadent, Interconnector and Fluxys.

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