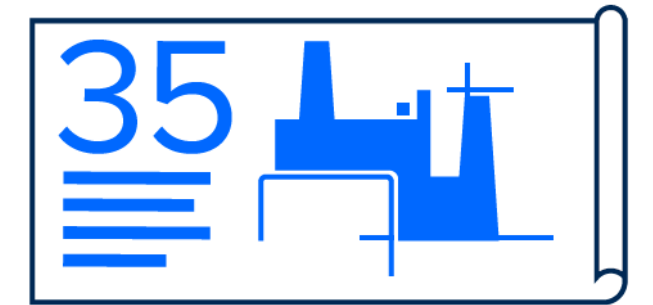


# Status of CCUS in Europe

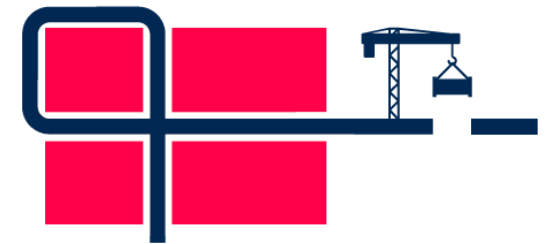
Guloren Turan— General Manager, Advocacy

# CCUS IN EUROPE

- More than 30 commercial facilities under development in Europe, with construction having started in Norway's Langskip CCS network.
- First commercial CCUS facilities in development in Bulgaria, Belgium, Denmark, Finland, Italy, Poland, and Sweden.
- The UK aims to establish 4 CCS networks by 2030 capturing 20-30 mtpa, with £1 billion allocated to support CCS development.
- The Dutch Government allocated 2 billion SDE++ subsidy to capture facilities in the Port of Rotterdam network.
- In December 2021, the Danish government announced it will invest €2.4 billion in support of CCS projects.



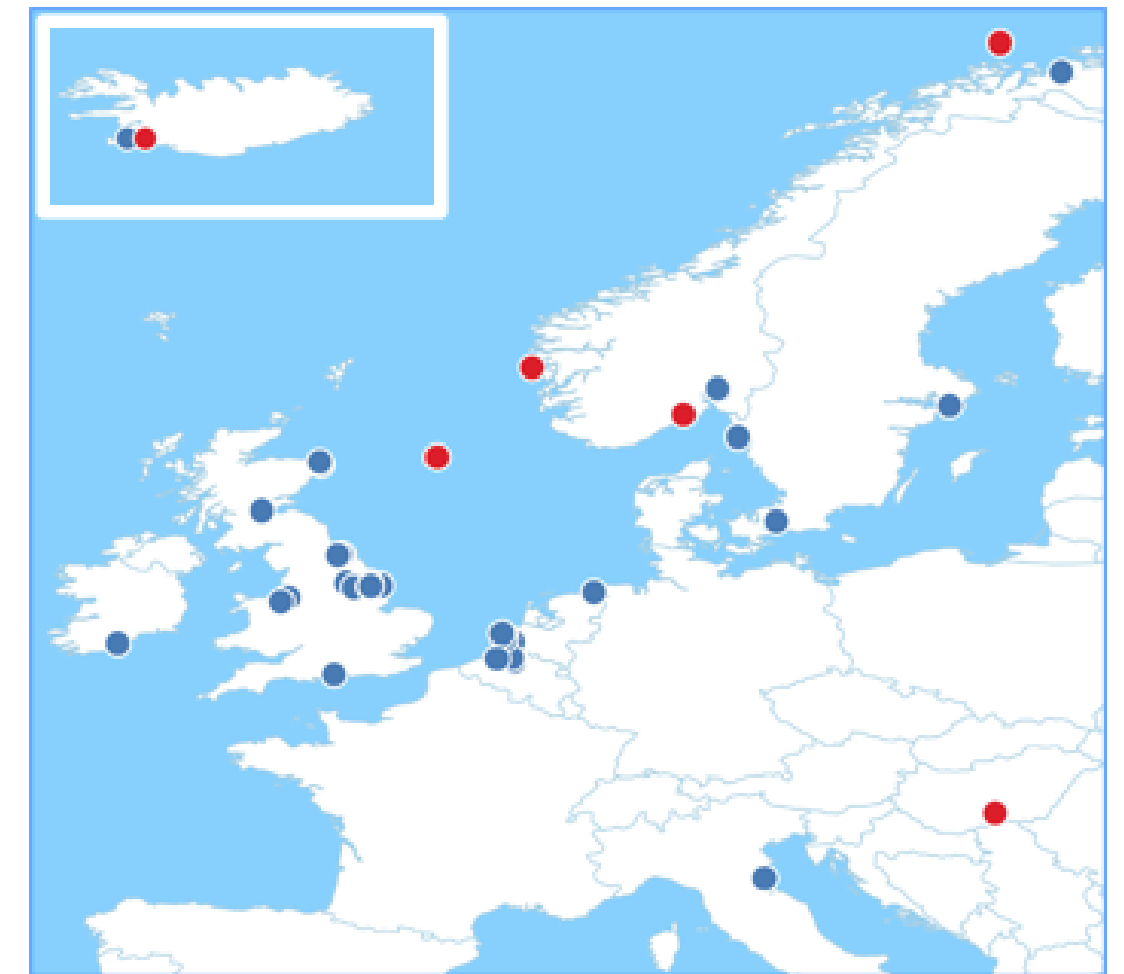
Construction is underway on the Norwegian project, Langskip.



# EUROPEAN UNION

- The EU made climate neutrality by 2050 a binding target, along with reducing emissions by 55% by 2030.
- EU CCS activity increased by near four-fold rise since 2019
- CCS Networks are fundamental to EU ambitions
- Norway and the Netherlands lead on CCS:
  - Langskip – offshore reservoir, CO<sub>2</sub> shipped from Norway
  - Porthos – offshore reservoir, CO<sub>2</sub> collected around Port of Rotterdam
- EU Innovation Fund for CCS project deployment, supplemented by individual Member State policies
- “Communication ‘on Sustainable carbon cycles’” released in December 2021 to support carbon dioxide removals (CDR)

Modified from [Global Status of CCS 2021 Report](#), GCCSI



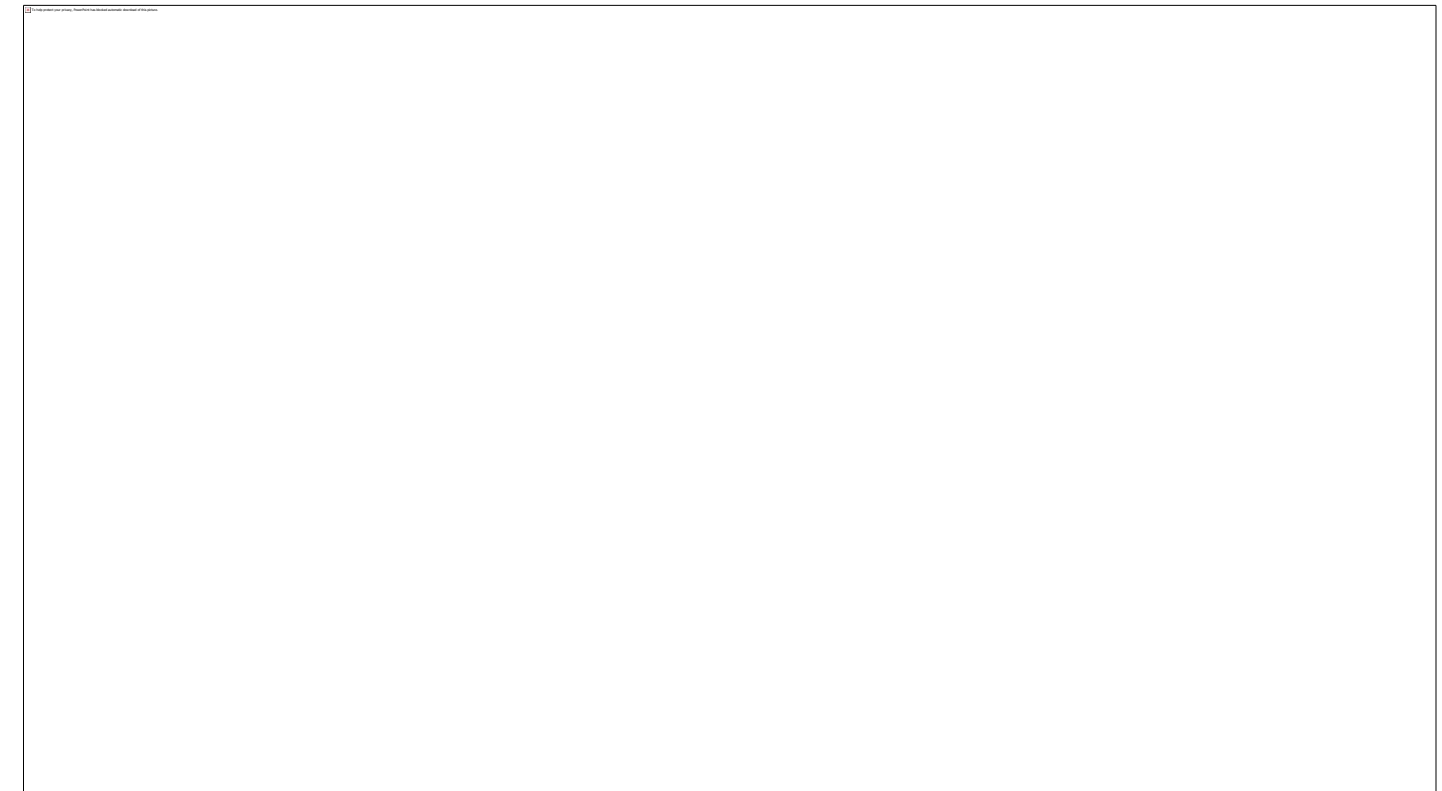
Commercial CCS Facilities

● Operation and Construction ● Development ● Suspended

**6 commercial projects operating or in construction**

**32+ commercial projects in development**  
(not including announced projects)

# EU INNOVATION FUND



- **First call** awarded €1.1 billion funding announcement by the European Union to develop 7 large-scale innovation projects, 4 of which are CCUS projects. Finland, Belgium, Sweden and France will all be beneficiaries of funding to support their CCS projects in hydrogen, chemical, bio-energy and cement production, respectively.

- **Second call** awarded €1.8 billion to 17 projects of which, 7 employ Carbon Capture and Storage (CCS) and/or Carbon Capture and Utilisation (CCU) elements. These are located in Bulgaria, France, Germany, Iceland, Poland, and Sweden (2 projects), and involve the sectors of cement (3 projects), lime, chemicals, and synthetic fuels. One project specifically covers CO<sub>2</sub> storage infrastructure.

# UNITED KINGDOM

- The Climate Change Act commits the UK government by law to reducing greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050.
- Climate Change Committee (CCC) has described Carbon Capture, Usage and Storage (CCUS) as a 'necessity, not an option'
- PM's Ten Point Plan (November 2020)
  - Two CO<sub>2</sub> storage hubs by end 2020s, four by end 2030s
  - At least one Power CCUS project for delivery by mid 2020s
  - Capture 20-30 Mtpa by 2030
  - Complementary business models for T&S, power, industry, blue hydrogen, BECCS

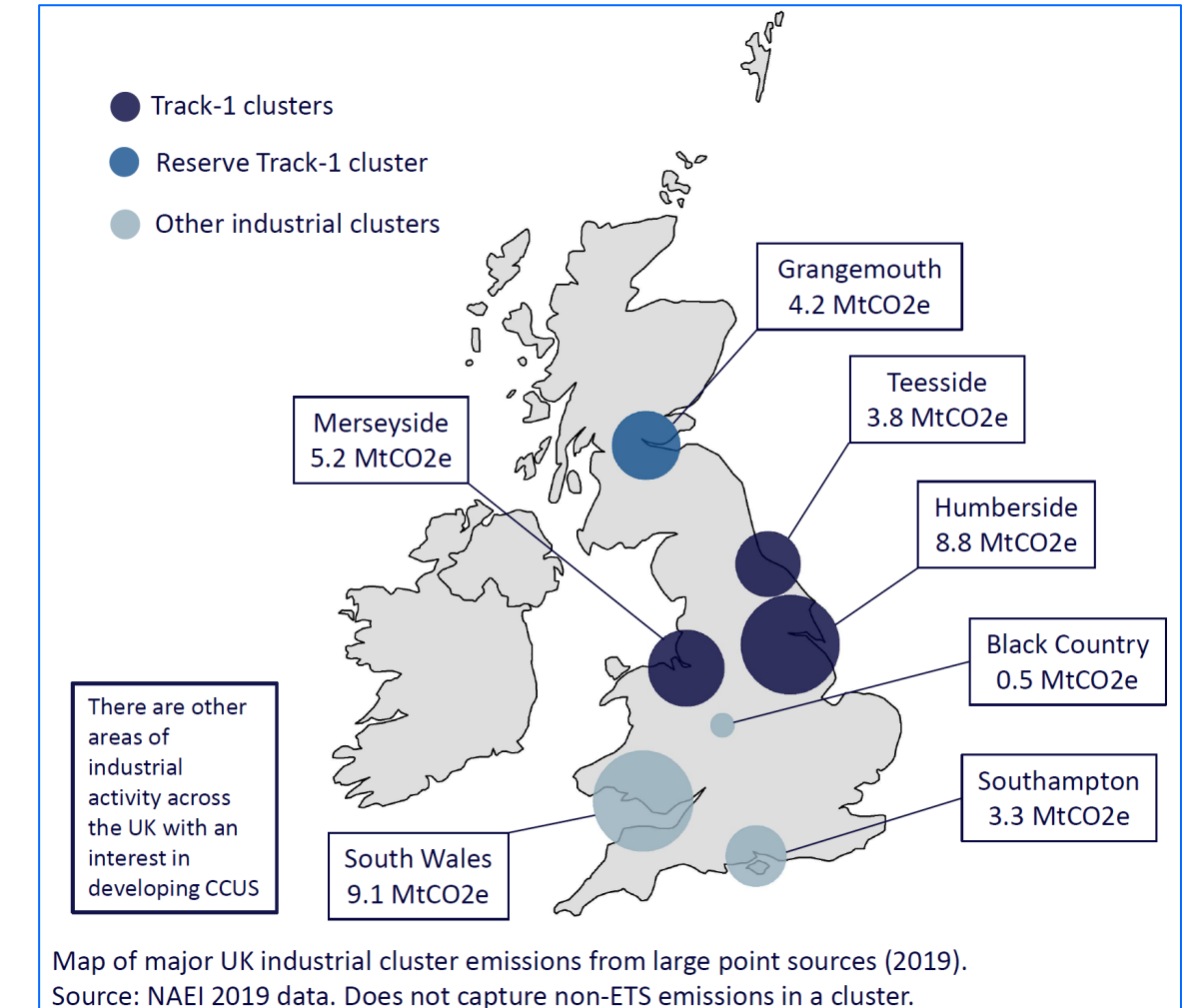
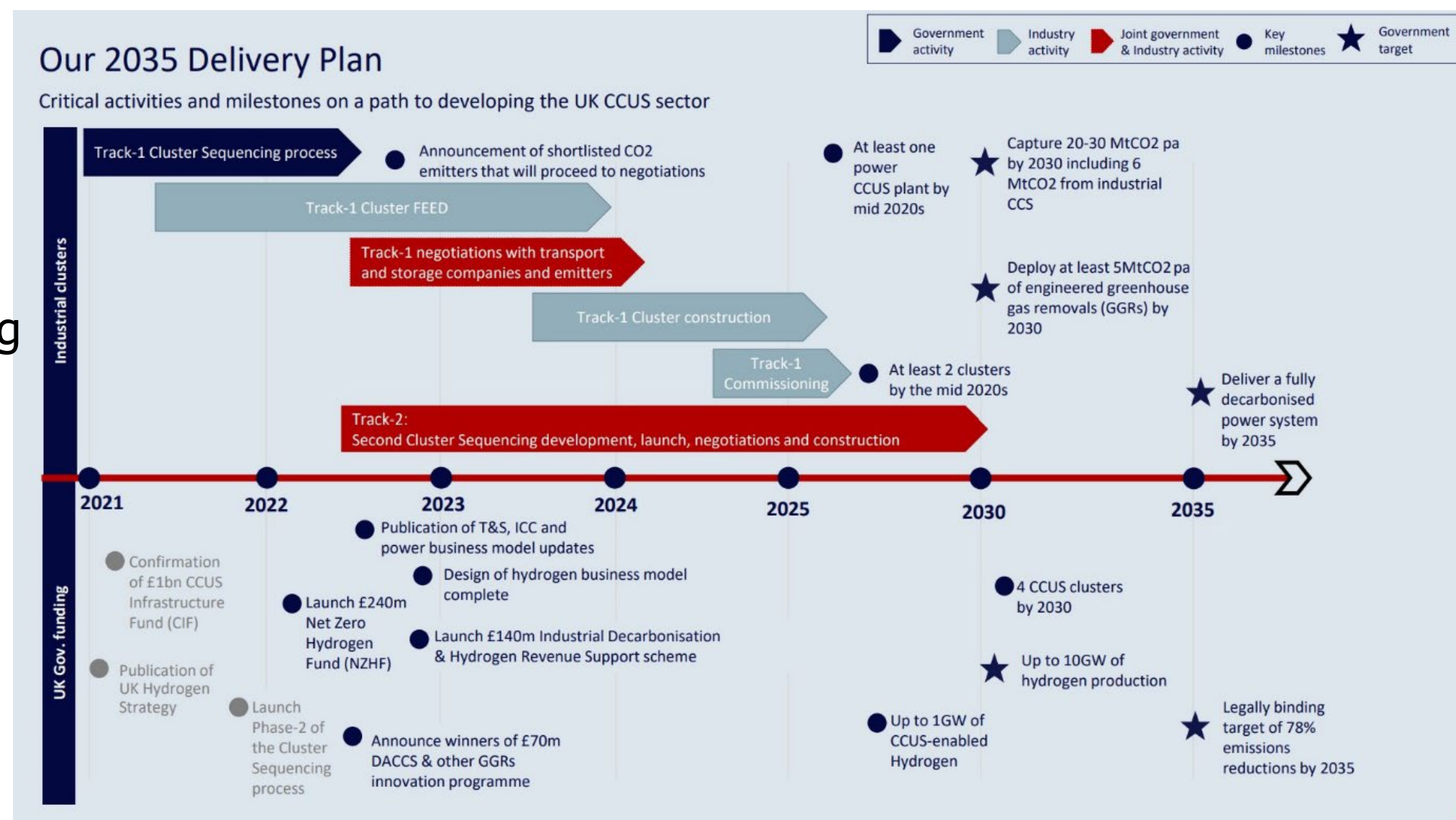


Figure source: [CCUS Investor Roadmap: Capturing Carbon and a Global Opportunity](#)



# UK GOVERNMENT CCUS DELIVERY PLAN

- UK CCUS Roadmap (April 2022) suggests progress on CCS is on schedule
- Track 1 hubs announced (Oct 2021) and clustering process underway.
- HyNet North West, East Coast Cluster (including Humber and Teesside) and Scottish Cluster in reserve.
- Of the 41 eligible projects, 20 projects shortlisted for possible support from Government, once it has established that the projects represent a 'value for money' investment for the taxpayer.
  - Power, blue hydrogen, waste, ammonia, refining, and cement
- Track 2 in development



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# NEXT MILESTONES

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## European Union

- European Commission established 3 Working Groups: 1) WG CO2 infrastructure (2) WG CCUS Vision, and (3) WG CCUS Industrial Partnerships.
  - CCUS Forum in October 2022
  - CCS and CCU vision paper, planned for 2023.
- In autumn third call of the Innovation Fund will be launched
- Legislative proposal for CDR certification is expected in Q4 2022.

## United Kingdom

- Track 2 for next track of clusters to be launched
- Finalisation of negotiations with shortlisted capture projects of Track 1
- Finalisation and publication of T&S, industrial carbon capture and power business model updates, development of BECCS business model