

# CCS in Europe – **where** are we headed?

16 September 2025 | IEAGHG



# Zero Emissions Platform (ZEP)

Established in 2005 by the European Commission as the official advisor on industrial carbon management

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## The United States Risks Losing Its Carbon Capture Advantage

Hence, to establish a globally competitive carbon capture industry that supports domestic growth while enabling exports of technologies,...

1 month ago

News

Policy

## EPA plans to torpedo US carbon capture industry

Rule 'has no material impact on improving human health and the environment,' agency says, despite scientific consensus on the dangers of climate change

by [Leigh Krietsch Boerner](#)

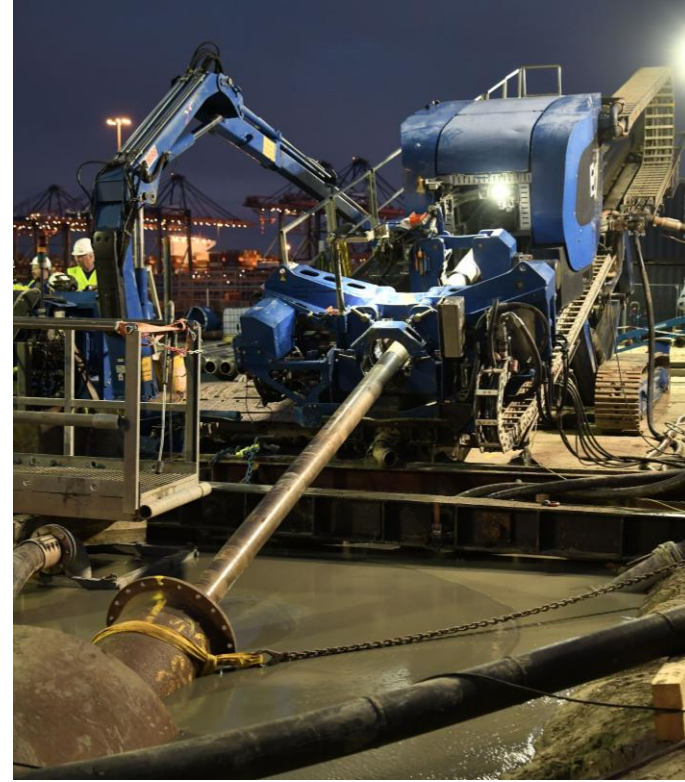
September 13, 2025 • 3 min read

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**Where does this  
leave CCS in  
Europe?**



# EU CCS Strategy - A feeling of déjà vu?

*“Processes for CO<sub>2</sub> capture and CO<sub>2</sub> storage already exist as established industrial practices in some sectors; the technology is well developed and tested”*

*“Major technology improvements are anticipated for the coming years. Gains in the efficiency of future plants and reductions in CO<sub>2</sub> capture costs are expected in the near future”*

*“Incentives could be provided through various mechanisms, for example:*

- Establishing a more favourable context for long-term investment decisions by ensuring the relative perpetuity of the emissions trading scheme and by facilitating commercial financing and risk-sharing instruments (e.g. through the EIB)*
- Developing EU CO<sub>2</sub> storage sites (onshore, offshore) and pipelines for multi-user access or projects for CO<sub>2</sub> infrastructure development at Member State level”*

## COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT

**Sustainable power generation from fossil fuels:  
aiming for near-zero emissions from coal after 2020**

(Text with EEA relevance)

### INTRODUCTION

This Communication is presented in the follow-up to the Commission Green Paper on “A European Strategy for Secure, Competitive and Sustainable Energy” adopted in March 2006. Its aim is to present a global view of the actions needed for the continued contribution of fossil fuels and particularly coal to the security and diversification of energy supply for Europe and the world in a way compatible with the sustainable development strategy and climate change policy objectives. This Communication takes account of the work done and opinions received during 2006 within the Second European Climate Change Programme (ECCPII), the High-level Group on Competitiveness, Energy and the Environment (HLG), the preparations for the 7<sup>th</sup> Framework Programme (FP7) for Research, and the Zero Emission Fossil Fuel Power Plant Technology Platform. It also reflects the consultations in the European Fossil Fuels Forum and the reactions to the above-mentioned Green Paper.

### IMPACT ASSESSMENT STUDY

This Communication was preceded by an impact assessment study, the results of which are summarised in the Impact Assessment Executive Summary<sup>1</sup> accompanying this Communication. The results of the impact assessment study are reflected as appropriate in the Commission positions set out in this Communication.

#### 1. ROLE OF FOSSIL FUELS IN ENERGY SUPPLY AND THE CHALLENGE OF KEEPING COAL IN THE ENERGY MIX

Fossil fuels represent an important element of the energy mix in the European Union as well as in many other economies. They are of particular importance for the generation of electricity: over 50% of EU electricity currently comes from fossil fuels (mainly coal and natural gas). Worldwide, growing total energy production is expected to rely increasingly on fossil fuels at least till 2050<sup>2</sup>, particularly in a number of key geo-economic areas.

The use of fossil fuels (coal or natural gas) can also be envisaged for the co-production of electricity and hydrogen on a large scale, opening a realistic and economically viable route to a hydrogen economy.

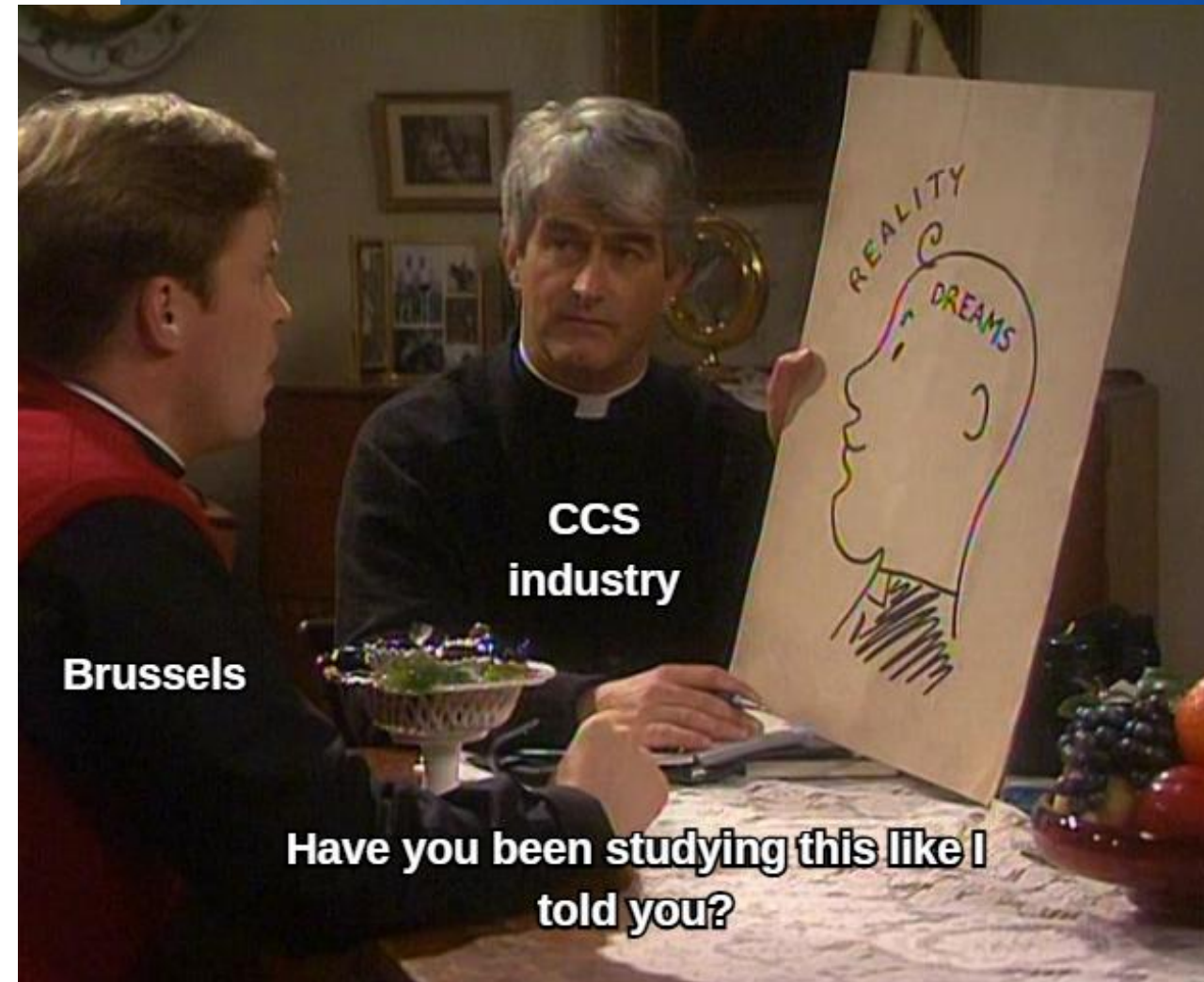
<sup>1</sup> Commission Staff Working Document SEC(2006) 1723 (referred to hereafter as IAES).

<sup>2</sup> IEA estimates in its WORLD DEMAND FORECAST 2006.



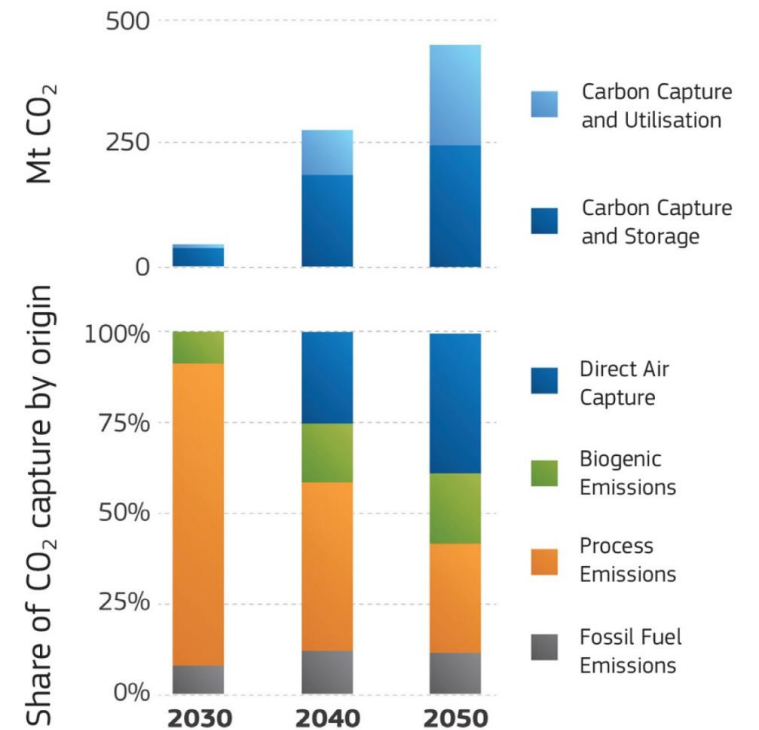
We need a good story...

...but not too good.



# EU Industrial Carbon Management Strategy

- **What it is:** A non-legally binding roadmap for scaling CCS & CCU in the EU by 2030, 2040 and 2050
- **Who it applies to:** Primarily the European Commission, also Member States
- **What it does:**
  - Sets big targets
- **How does it work:**
  - As a policy framework, it is not legally binding, but outlines clear policy priorities for the EU

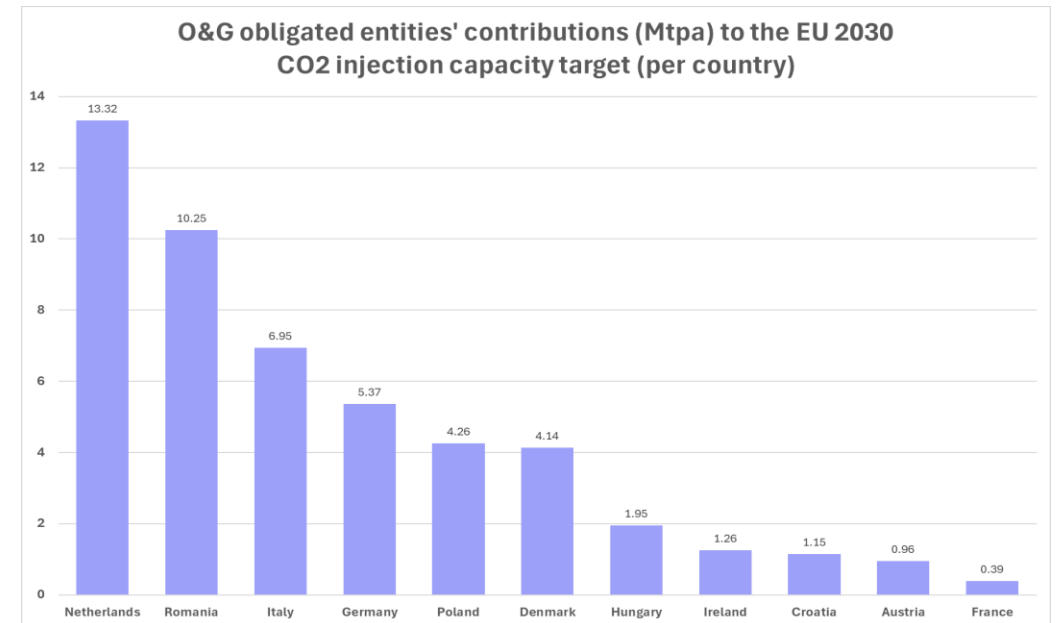


European Commission, 2024



# Net Zero Industry Act

- **What it is:** A Regulation aiming to accelerate the decarbonisation of the industrial sector in Europe
- **Who it applies to:** Directly to EU Member States and affected parties
- **What it does:**
  - **CO<sub>2</sub> storage Target:** 50 million tons of injection capacity by 2030 (EU only)
  - **Transparency on CO<sub>2</sub> storage data** – Member States and O&G licence holders
  - **Accelerated permitting** for projects
  - **Injection Capacity Obligation** – on licenced oil and gas producers
- **How does it work:**
  - As an EU Regulation applies directly and is currently being implemented

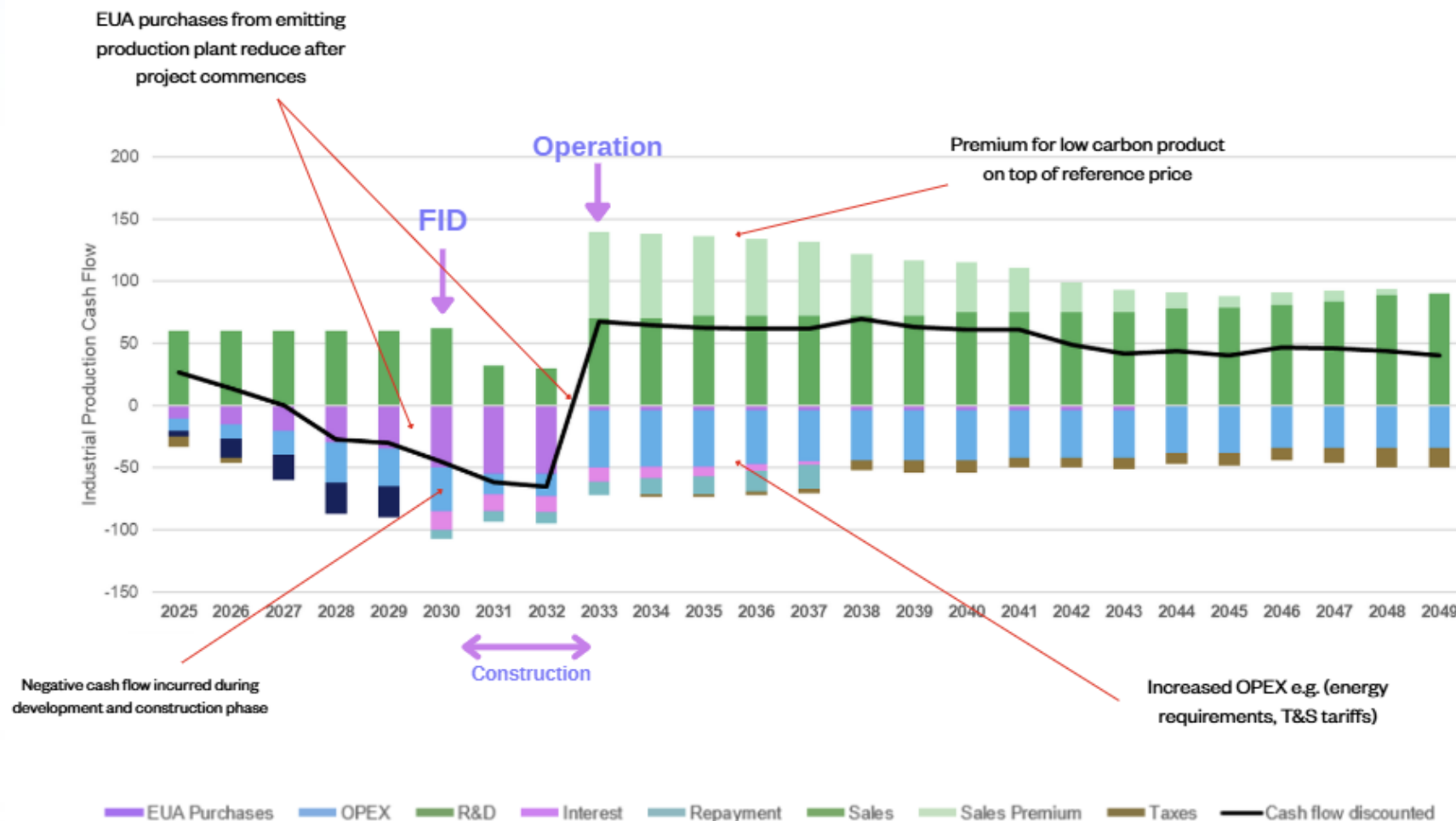


Zero Emissions Platform, 2025

**Emitters** are incentivized to develop capture projects (and pay transport & storage tariffs) with the 'stick' of the ETS price

But emitters do not gain additional cash flow unless they:

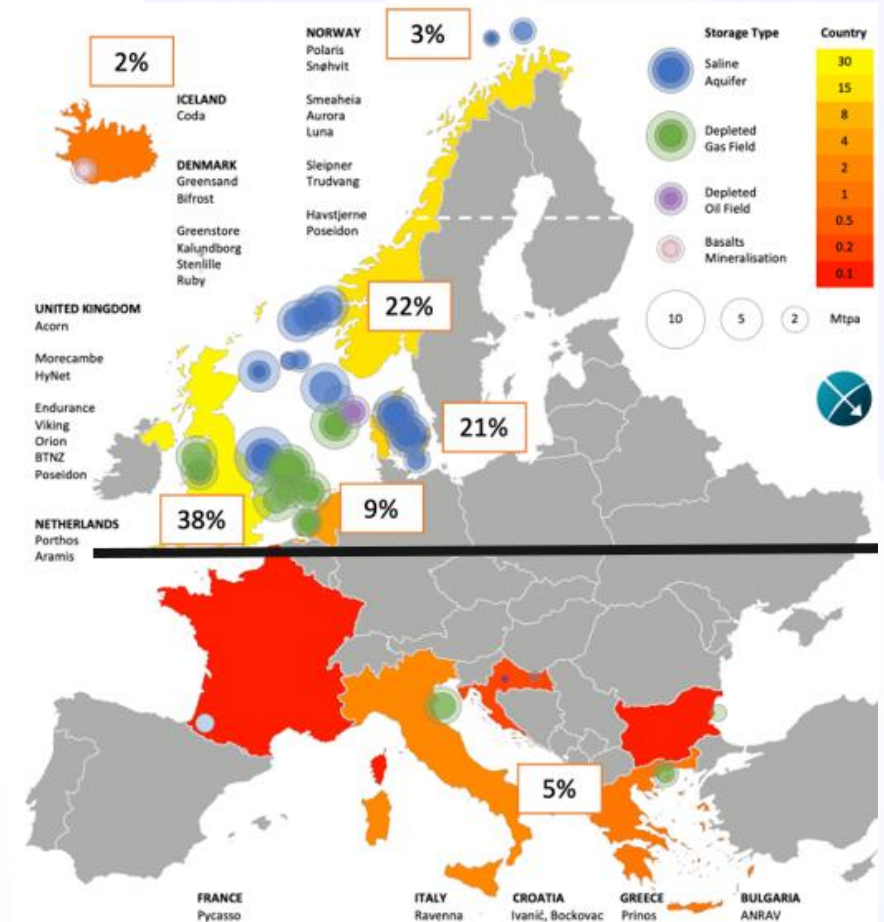
- (1) sell CDR certificates,
- (2) sell low carbon product premiums or
- (3) sell their CO<sub>2</sub> (and pay the ETS price)





# This is all proving quite expensive...

- Based on current developments and expected outcomes:  
over 90% of Europe's storage sites in 2030 will be located in the North Sea region, with just 5% in Southern Europe
- Even with an optimistic forecast (P10):
  - only 41 Mtpa of storage capacity available by 2030
  - i.e. high risk of missing the 50 Mtpa target set by the NZIA
- Growing imbalance in CO<sub>2</sub> storage development in Europe presents a significant risk to European industries, particularly to those in Central, Eastern and Southern Europe



Expected forecast (P50) of CO<sub>2</sub> storage capacity in Europe in 2030  
(Cavanagh & Lockwood, 2024)

# Industrial (Decarbonisation) Accelerator Act

- Major focus on creating lead markets for key industrial sectors – e.g. cement, steel, chemicals
- A lot of the “how” remains yet undefined





## CO<sub>2</sub> market and infrastructure regulatory package

- Defining the CO<sub>2</sub> market properly
- Outline a framework for ownership, access and tariff rules
- Establish some form of a network plan
- (Hopefully) remove some legal barriers





**So where is  
European CCS  
headed?**



# Thank you

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