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PLATFORM

The role of policy in scaling CCUS in the EU and the Baltic Sea Region

9 October 2025 | Baltic Carbon Forum

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Zero Emissions Platform (ZEP)

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

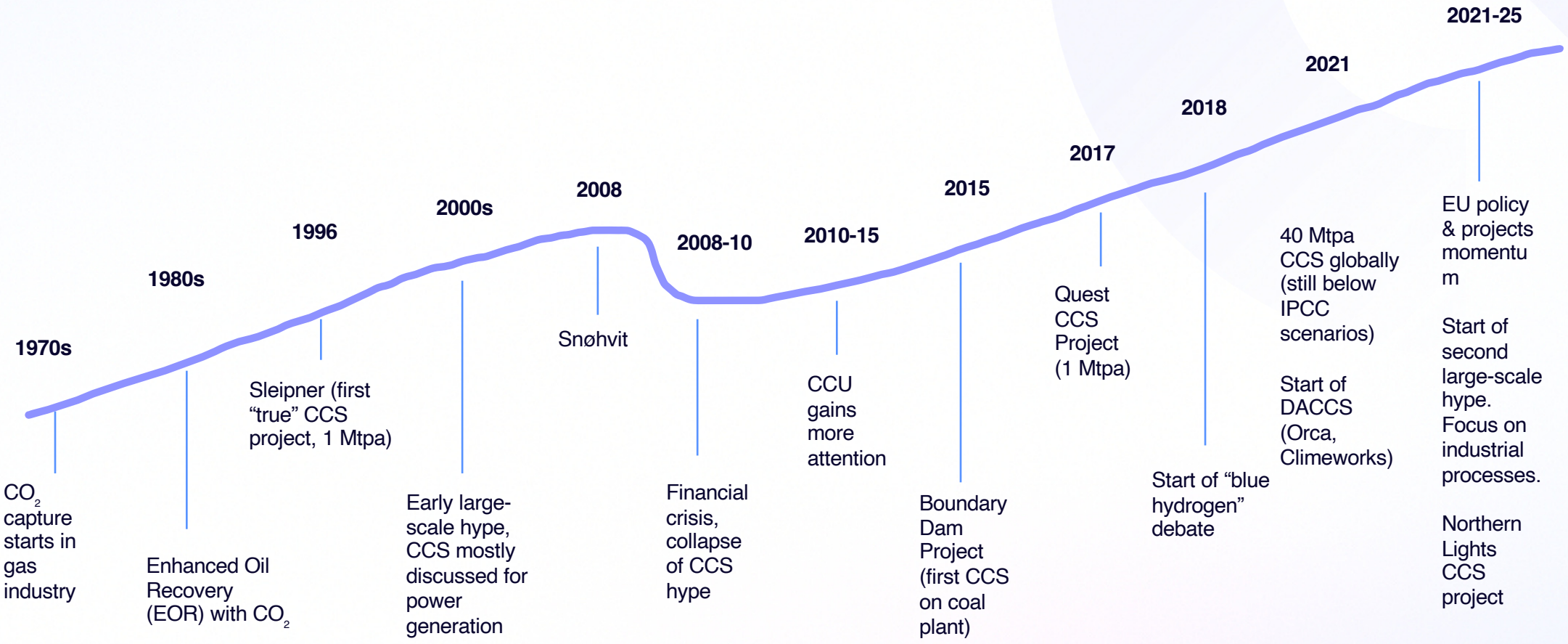
Research

Policy

Advocacy

Knowledge sharing

Retracing the history of (and momentum for) CCS/U



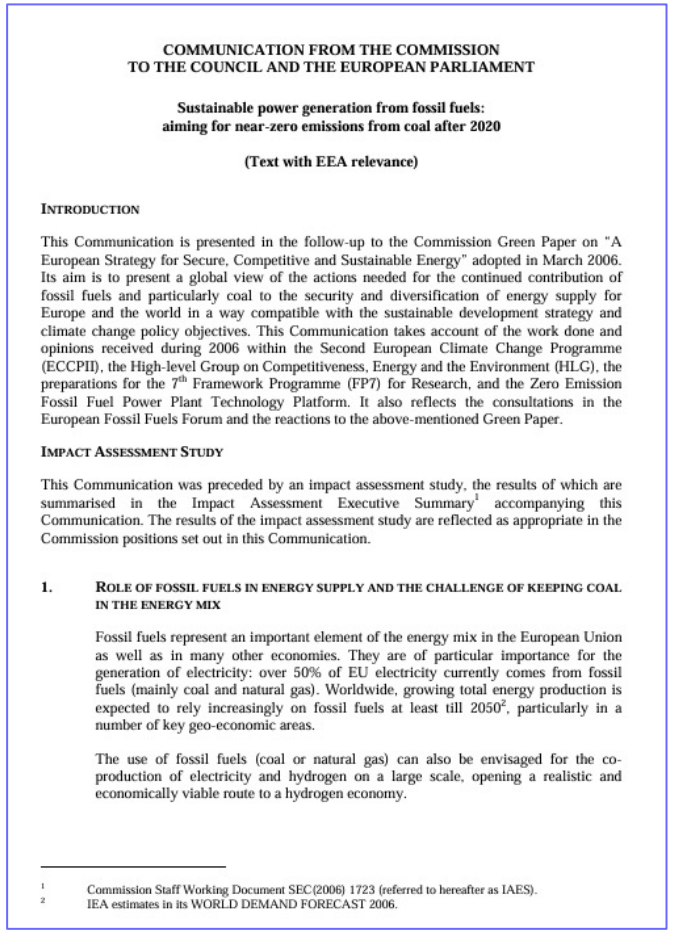
EU CCS Strategy - A feeling of déjà vu?

"Processes for CO_2 capture and CO_2 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_2 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_2 storage sites (onshore, offshore) and pipelines for multi-user access or projects for CO_2 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 7th 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[1] 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[2], 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.

[1] Commission Staff Working Document SEC(2006) 1723 (referred to hereafter as IAES).
[2] IEA estimates in its WORLD DEMAND FORECAST 2006.

European Commission, *(2007)*

What changed? Why now?

Technological developments?

Some, but not a key factor – technologies already well assessed & operational in other parts of the world.

Push factors

- **Political/regulatory barriers unlocked**

➢ Carbon price (EUA) in the EU ETS increased

➢ Emitters who have not yet decarbonised their production now face the end of free allocation and the CBAM phase-in

- **Supportive EU policy framework**

Think of policy instruments affecting CCS/U in terms of:

"Sticks"
(pressure levers)

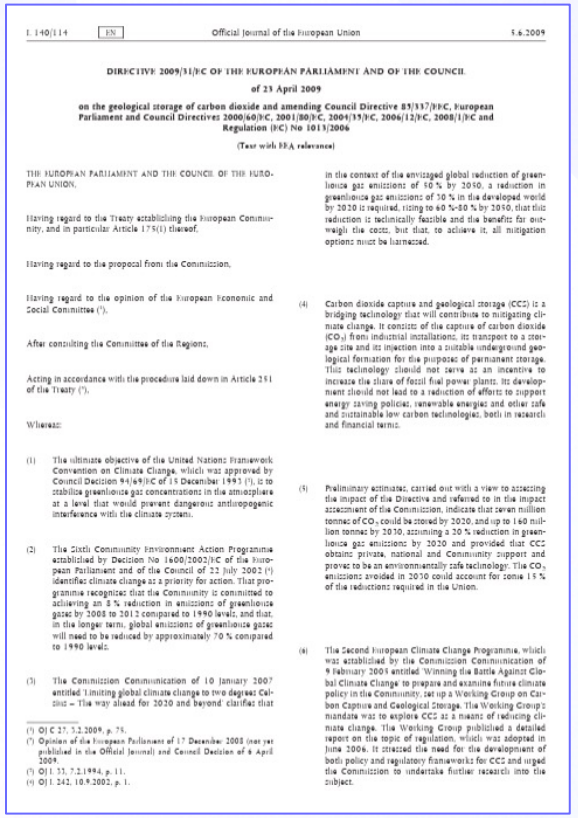
"Carrots"
(incentives)

"Control"
(legal & regulatory)

EU policy milestones

2009 – EU Directive 2009/31/EC ("CCS Directive")

- **What is it**: a legal framework for the **environmentally safe geological storage of CO2**
- **Who it applies to**: Member States
- **What is does**: adopted as part of the EU climate-energy package, it removed barriers in existing legislation to enable safe and permanent CCS (amending 6 Directives and 1 Regulation)
  - **Highest standard** in the world, minimum standard for all MS
  - 4 non-binding Guidance Documents updated in July 2024 to reflect latest advancements in CCS technology and address ambiguities identified during initial CCS deployments
- **How does it work**: it has been transposed in most EEA countries between 2010-2014 (but still prohibited in other EU countries)



L 140/114 EN Official Journal of the European Union 5.6.2009

DIRECTIVE 2009/31/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 23 April 2009

on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee (1),

After consulting the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty (2),

Whereas:

(1) The ultimate objective of the United Nations Framework Convention on Climate Change, which was approved by Council Decision 94/69/EC of 15 December 1993 (3), is to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

(2) The Sixth Community Environment Action Programme established by Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 (4) identifies climate change as a priority for action. That programme recognises that the Community is committed to achieving an 8 % reduction in emissions of greenhouse gases by 2008 to 2012 compared to 1990 levels, and that, in the longer term, global emissions of greenhouse gases will need to be reduced by approximately 70 % compared to 1990 levels.

(3) The Commission Communication of 10 January 2007 entitled 'Limiting global climate change to two degrees Celsius – The way ahead for 2020 and beyond' clarified that in the context of the envisaged global reduction of greenhouse gas emissions of 50 % by 2050, a reduction in greenhouse gas emissions of 30 % in the developed world by 2020 is required, rising to 60 %-80 % by 2050, that this reduction is technically feasible and the benefits far outweigh the costs, but that, to achieve it, all mitigation options must be harnessed.

(4) Carbon dioxide capture and geological storage (CCS) is a bridging technology that will contribute to mitigating climate change. It consists of the capture of carbon dioxide (CO_2) from industrial installations, its transport to a storage site and its injection into a suitable underground geological formation for the purpose of permanent storage. This technology should not serve as an incentive to increase the share of fossil fuel power plants. Its development should not lead to a reduction of efforts to support energy saving policies, renewable energies and other safe and sustainable low carbon technologies, both in research and financial terms.

(5) Preliminary estimates, carried out with a view to assessing the impact of the Directive and referred to in the impact assessment of the Commission, indicate that seven million tonnes of CO_2 could be stored by 2020, and up to 160 million tonnes by 2030, assuming a 20 % reduction in greenhouse gas emissions by 2020 and provided that CCS obtains private, national and Community support and proves to be an environmentally safe technology. The CO_2 emissions avoided in 2030 could account for some 15 % of the reductions required in the Union.

(6) The Second European Climate Change Programme, which was established by the Commission Communication of 9 February 2001 entitled 'Winning the Battle Against Global Climate Change' to prepare and examine future climate policy in the Community, set up a Working Group on Carbon Capture and Geological Storage. The Working Group's mandate was to explore CCS as a means of reducing climate change. The Working Group published a detailed report on the topic of regulation, which was adopted in June 2006. It stressed the need for the development of both policy and regulatory frameworks for CCS and urged the Commission to undertake further research into the subject.

(1) OJ C 27, 3.2.2009, p. 75.
(2) Opinion of the European Parliament of 17 December 2008 (not yet published in the Official Journal) and Council Decision of 6 April 2009.
(3) OJ L 33, 7.2.1994, p. 11.
(4) OJ L 242, 10.9.2002, p. 1.

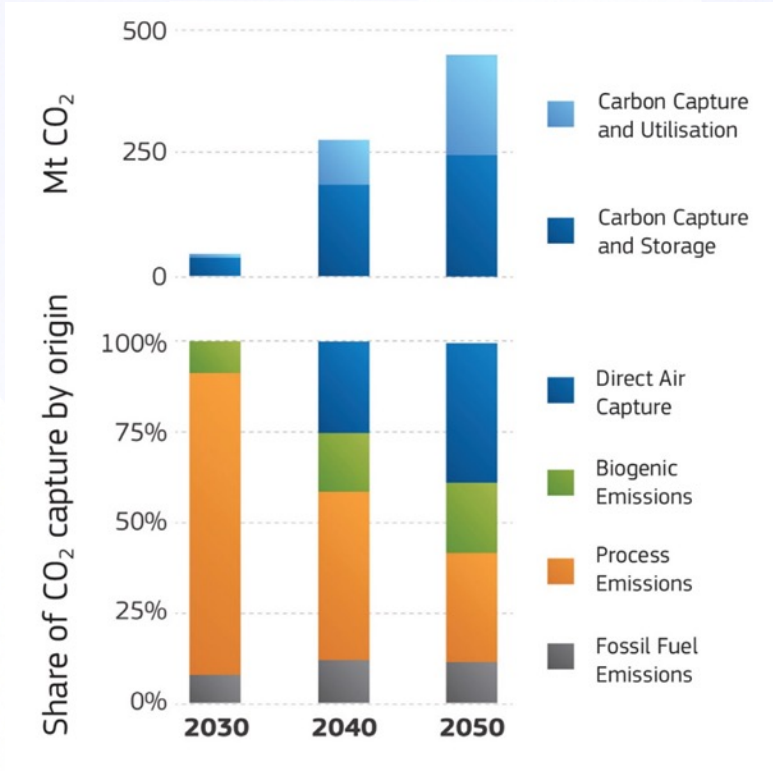
"CCS Directive" (2009)

European Commission, 2024

EU policy milestones

2024 – Industrial Carbon Management Strategy

- **What is it**: 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**: it focuses on three main ICM technological pathways:
  - CCS, CCU, and BioCCS + DACCS
  - CO2 transport infrastructure described as key enabler to establish a single market for CO2 in Europe
- **How does it work:** as a policy framework, it is not legally binding, but outlines clear policy priorities for the EU

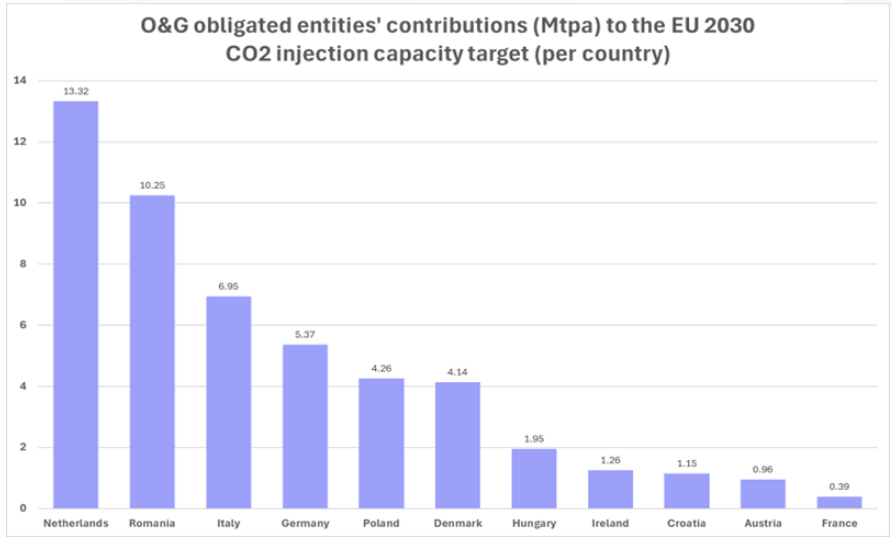


European Commission, 2024

EU policy milestones

2024 – Net-Zero Industry Act Regulation ("NZIA")

- **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**:
  - CO2 storage Target: 50 million tons of injection capacity by 2030 (EU only)
  - Transparency on CO2 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 it applies directly and is currently being implemented



EU upcoming policy milestones

Proposed by Commission - EU Climate Law amendment

- **What is it:** the amendments set a binding Union target for 2040
- **Who it applies to:** directly to EU Member States
- **What it does** the EC proposing amendments to set:
  - A 2040 climate target of 90% net greenhouse gas emissions reduction to reach climate neutrality by 2050
  - Three flexibilities to achieve the target, namely:
    - the possible contribution of international credits from 2036 onwards towards the EU NDC
    - the possible inclusion of domestic permanent carbon removals within the EU ETS
    - flexibility across sectors
- **How does it work**: proposed in July, it is currently being discussed by co-legislators. As an EU Regulation it will apply directly

EU upcoming policy milestones

Upcoming - Industrial (Decarbonisation) Accelerator Act

- **What is it**: the act aims at increasing sustainable and resilient industrial production in energy-intensive industrial sectors in the EU
- **What it aims at:**
  - speeding up permitting procedures
  - identifying priority projects and clusters
  - creating and protecting European lead markets for low carbon products (cement, steel, chemicals)
- **How does it work**: A lot of the “how” remains yet undefined. EC should publish proposal 25 November (TBC)

EU upcoming policy milestones

Upcoming: CO2 transport infrastructure and market legislative proposal

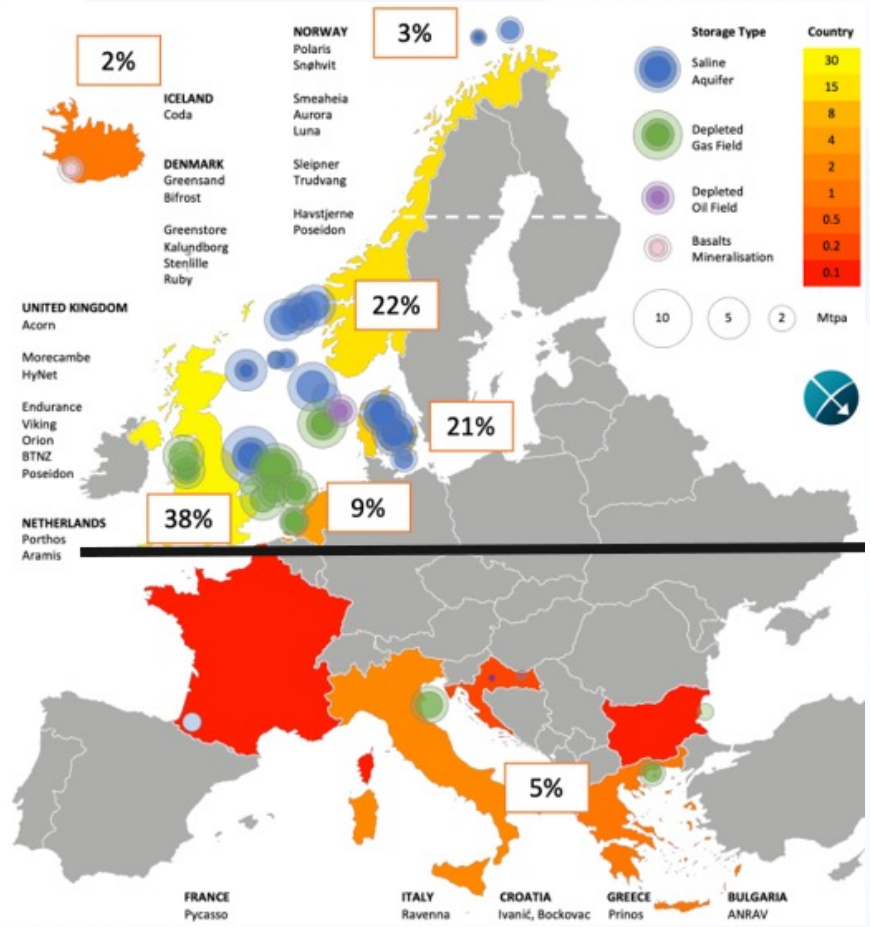
- **What is it** : upcoming legislation which aims at defining the CO_2 market and regulating transport infrastructure
- **Who it applies to:** depends on whether it will be a Regulation or Directive
- **What it does:** it aims at outlining a framework for ownership, access and tariff rules and network plan and remove legal barriers
- **Timeline**: proposal by EC and impact assessment to be published in Q3 2026 (by July)

Deployment challenges in Europe development of European CO_2 storage sites

- 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_2 storage development in Europe presents a significant risk to European industries, particularly to those in Central, Eastern and Southern Europe

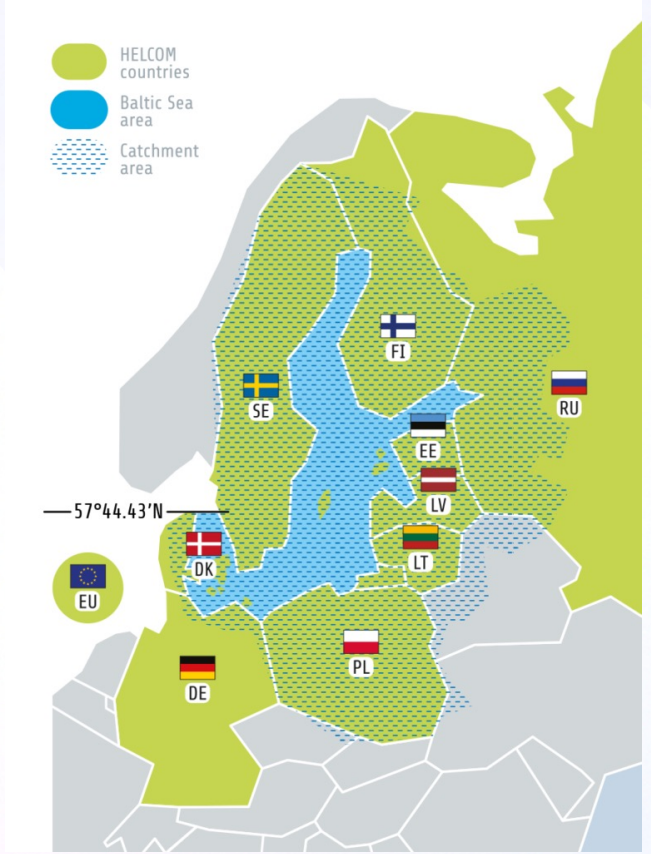


Expected forecast (P50) of CO2 storage capacity in Europe in 2030 (Cavanagh & Lockwood, 2024)

Deployment challenges in the Baltic Sea Region

Helsinki Convention

- **What is it**: an international agreement prohibition the deliberate disposal at sea or **into the seabed** of waste
- **Who it applies to**: Denmark, Estonia, EU, Finland, Germany, Latvia, Lituania, Poland, Russia, Sweden
- **How it does i**t: It prohibits of waste dumping in the Baltic Sea Area. CO2 is not listed as an exception, which means that its storage is prohibited
- **Upcoming developments**: the Baltic Marine Environment Protection Commission (HELCOM), an IGO overseeing the governance of the Helsinki Convention, is currently reviewing the implications of offshore CO2 storage with regard to the text of the Convention



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Thank you

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