Towards an ambitious Industrial Carbon Management (ICM) for the EU

Workshop: CO2-capture, storage and utilisation to achieve future climate targets

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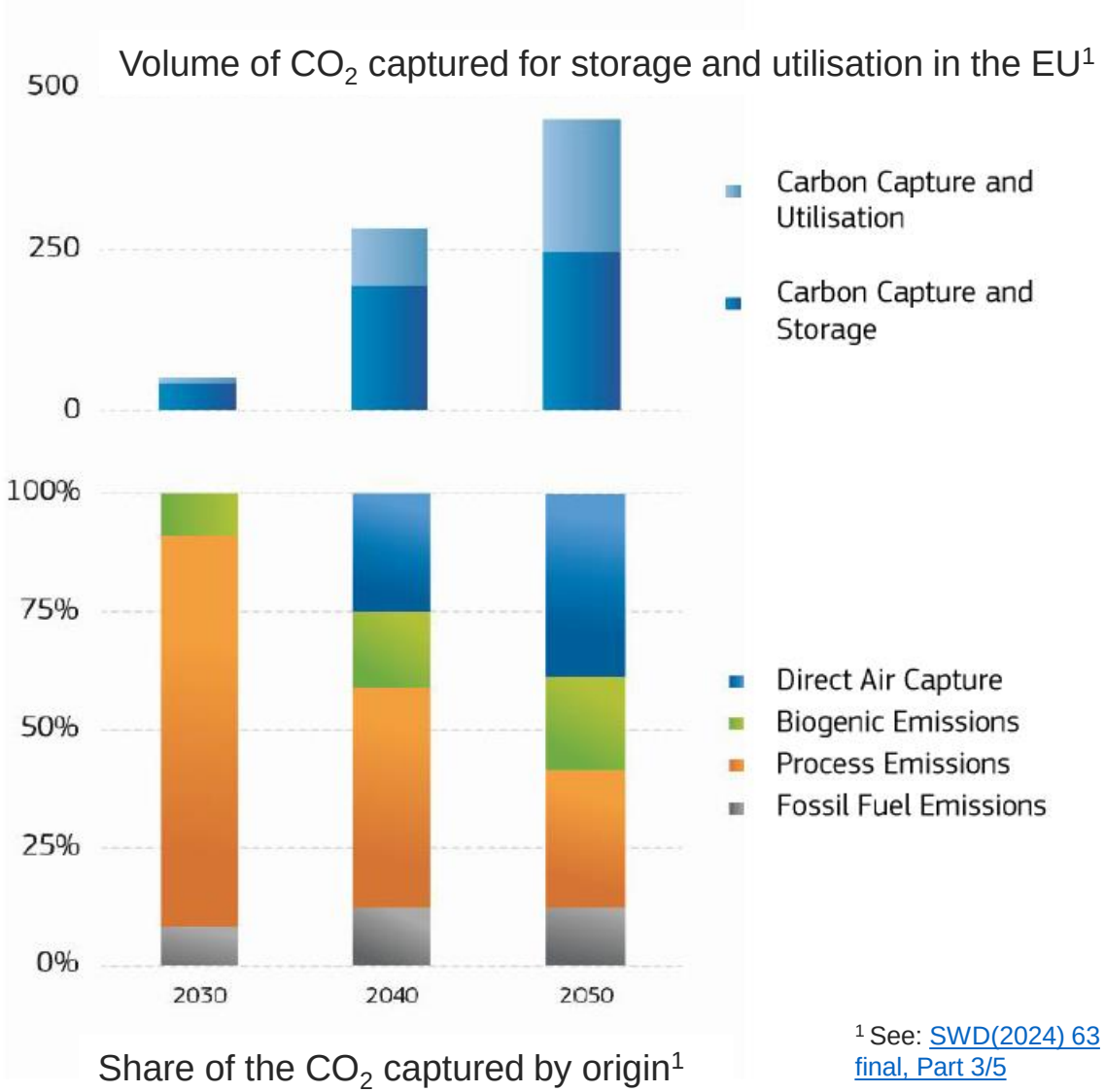
The 2040 Climate Target Communication*

- ICM essential complement to mitigation that is necessary in the first place
- ICM key to reduce and manage carbon emissions in industrial processes
- Then, need for a shift towards biobased and air-captured CO_2 streams
- CO_2 capture needs:
  - 2030: ~50 Mtpa
  - 2040: ~280 Mtpa (~250 Mtpa for storage)
  - 2050: up to 450 Mtpa
- **EU today: 10 Mtpa capture projects supported by the Innovation Fund – no CO2 storage site operational**



* COM/2024/63 final

[1] See: SWD(2024) 63 final, Part 3/5

Today: Industrial carbon management in Europe

EU Level

- CCS Directive
- EU ETS + EU Innovation Fund support
- RFNBOs and synthetic fuels
- Carbon Removal Certification Framework
- 14 CO2 projects in the 1st PCI/PMI list under TEN-E: 5 awarded CEF
- CCUS Forum: plenary + WGs, new ones to be established for 2024

MS Level

- 20 MS include ICM in NECPs
- 7 MS include ICM in Recovery and Resilience Plans
- DK, NL + NO w/ ICM subsidies and pioneering CO2 storage
- FR, DE & AT developing ICM strategies

Net Zero Industry Act (NZIA) Regulation *(from June 2024)*

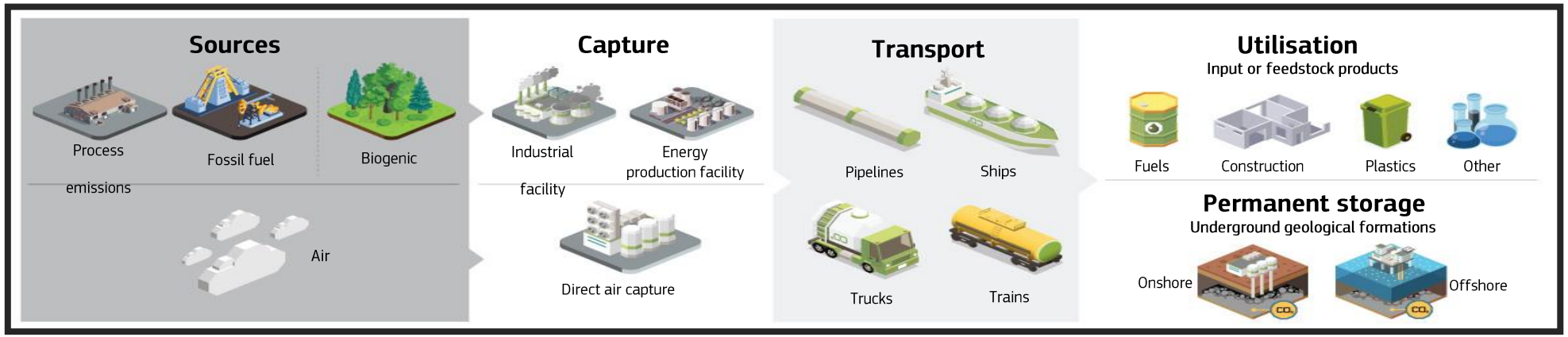
- ICM technologies = net-zero technology for EU
- CCS deployment = strategic net-zero projects
- **50 Mtpa storage target for 2030 with investment obligation**

European Commission

Industrial Carbon Management (ICM)

- **Commission Communication (6.2.2024)***, with actions for the Union and Member States to implement
- Focuses on three main “ICM” technological pathways:
  - **Capturing CO_2** emissions for **storage** (CCS)
  - **Removing CO_2** from the atmosphere (BioCCS and DACCS)
  - **Capturing CO_2** for **utilisation** (CCU)

CO_2 transport infrastructure = **key enabler** necessary to establish a CO_2 market in Europe.



* COM/2024/62 final

Capturing and storing CO_2

Aim(s): Decarbonisation option for industry (ETS = incentive).

Challenge(s): No operational storage sites (NZIA), no storage market, limited bargaining power, lack of geological data, insufficient investments.

Commission will develop:

- **CO2 demand aggregation platform** to match demand and supply for storage.
- **CO2 Storage Atlas for the EEA** to identify several gigatonnes of investable geological storage capacities for 2040 and beyond
- **Guidance:** CO_2-specific value chain "leakage" risks, transfer of storage responsibility, and financial security requirements under CCS Directive.

Member States:

- Support ***Net Zero Strategic Projects*** under NZIA**.**
- Facilitate **storage permits**
- Empower geological services to create **CO_2 Storage Atlas for investors**.

European Commission

Removing CO_2 from the atmosphere

Aim(s): Support industrial carbon removals are key to EU climate neutrality.

Challenge(s): Not fully recognized by existing legislative framework, cost of carbon removals, different stages of maturity.

Commission will:

- **Assess overall objectives for carbon removals** in line with the 2040 climate ambition and the achievement of climate neutrality by 2050 and negative emissions thereafter.
- **Develop policy options and support mechanisms**, including if and how to account for them in the EU ETS.
- **Boost EU research, innovation and early-of-a-kind demonstration** for novel industrial technologies to remove CO2 with resources under Horizon Europe and the ETS Innovation Fund.

European Commission

CO_2 utilisation

Aim(s): Recognise CO2 as a valuable resource, to replace fossil carbon with real climate benefits.

Challenge(s): Heterogeneity of CCU pathways, accounting framework not fit for all CCU purposes, no price incentive for some types of CCU.

Commission will:

- **Consider options for higher uptake** of sustainable carbon as a resource in industrial sectors.
- **Establish a coherent framework** for **the accounting of all industrial carbon management activities** to accurately reflect the climate benefits along their value chains.

European Commission

CO_2 transport infrastructure

Aim(s): A single CO_2 market for Europe: non-discriminatory, open-access, transparent, multimodal, cross-border. Harmonisation and flexibility

Challenge(s): High upfront costs, complicated coordination accross value chains, lack of business case.

Commission will:

- *Initiate preparatory work for a possible **future CO2 transport regulatory package***
- *Work towards an **EU-wide CO2 transport infrastructure planning** mechanism*
- *Consider nominating **European coordinators** to support the early development of (cross-border) infrastructure projects.*
- *Develop **emissions accounting rules** in the context of the EU ETS.*
- *Work with the European standardisation bodies to establish **minimum standards for CO2 streams**. Standardisation mandate in award stage + finance for pre-normative research.*
- *Promote through the International Maritime Organization the development of guidelines on **safe transportation of CO2 by sea**.*

Investments and funding

Status quo:

- EU ETS Innovation Fund: 26 CCS/CCU projects > 3.3bn EUR (incl. 10 Mtpa CO2)
- TEN-E :
  - 680 m€ on CO2 projects so far
  - New list PCI/PMI under TEN-E and CEF: 14 CO2 projects (of which 5 already awarded CEF support)
  - New CEF call opened 30 April – 22 October - EUR 850 m€ (for ALL eligible PCI/PMIs, not just CO2)

Aim(s): Support and de-risk first-of-a-kind deployments in the EU.

Challenge(s): first-of-a-kind projects are costly but need to scale up the market.

Commission will:

- *Work with MS, to make use of **JEF-IPCEI**, in the context of ICM.*
- *Consider **market-based funding mechanisms** (such as competitive bidding auctions as a service under the Innovation Fund) for certain ICM technologies*
- *Engage with the **EIB** on financing of CCS and CCU projects.*
- ***Assessment of investment needs** for ICM up to 2040 and 2050.*

Enabling environments

The deployment of ICM solutions will also require:

- **Public awareness:** *public debate at MS level, reward for local communities where storage happens*
- **Research and innovation (R&I)**: *project knowledge-sharing & optimisation and pre-normative research*
- **Cross-border & international cooperation:** *UNFCCC harmonization of reporting and accounting, carbon pricing frameworks; focus on hard-to-abate emissions*

Conclusion:  & working together

Member States and the Commission need to **increase certainty for investors** and to **ensure real and quantifiable environmental benefits**

- ✓ To **reach climate neutrality by 2050** the EU needs a policy framework for industrial carbon management.
- ✓ The **technological solutions** to capture, transport, use and store CO_2 are available, but need to be **deployed at scale now**, both avoid emissions in industry / energy production and to start removing CO_2 from the atmosphere.
- ✓ Theoretical geological CO_2 storage possibilities and CO_2 transport infrastructure need to become **bankable climate solutions.**
- ✓ **Captured CO_2 is a valuable commodity** that should be used**.**

European Commission

Thank you for your attention

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