



# **POSITION PAPER**

**EU CO<sub>2</sub> MARKETS AND INFRASTRUCTURE  
LEGISLATION: POLICY RECOMMENDATIONS FOR  
ENABLING INDUSTRIAL DECARBONISATION**



Carbon Capture and Storage (CCS) plays an **essential role in virtually all modelled pathways limiting warming to 1.5°C or 2°C**, particularly for heavy industries like cement and steel, in addition to waste incineration. Transporting and storing CO<sub>2</sub> in the volumes necessary to contribute to the decarbonisation of EU industry will require an **extensive network of cross-border pipelines, shipping terminals, non-pipeline transport and geological storage sites**.

However, while CCS projects globally have doubled from 30 to 70 installations between 2020 and 2025, **Europe's CO<sub>2</sub> transport and storage market remains nascent**. The absence of a harmonised EU regulatory framework governing ownership, third-party access, and tariff structures creates fragmentation, delays investment, and risks Europe falling behind on CCS deployment.

The forthcoming **EU legislative initiative on CO<sub>2</sub> markets and transport infrastructure** offers a timely opportunity to address these challenges. This position paper outlines the key areas where EU regulation must deliver impact to unlock a well-functioning, competitive CO<sub>2</sub> market that accelerates industrial decarbonisation while ensuring **fair access, cost efficiency, and investment certainty** across Member States. These recommendations are based on Bellona Europa's two publications: [Building blocks for a well-functioning market for CO<sub>2</sub>](#) and [A well-functioning competitive and fair European CO<sub>2</sub> market for Climate](#).

## 1. Third-Party Access and Unbundling Requirements

**Recommendation:** Establish comprehensive **third-party access (TPA)** rules in EU legislation, expanding Article 21 of the CO<sub>2</sub> Storage Directive, implementing differentiated, **practical unbundling requirements** for multi-user CO<sub>2</sub> transport and storage infrastructure to prevent market concentration and ensure fair competition.

**Why:** Currently, no dedicated EU framework governs third-party access to CO<sub>2</sub> transport and storage infrastructure beyond the basic provisions of the CO<sub>2</sub> Storage Directive (2009/31/EC). This has resulted in a patchwork of Member State approaches—with only the UK (pre-Brexit), Belgium (Flanders), and Denmark having developed detailed TPA rules. Without harmonised access rules, vertically integrated ownership models and market power concentration create structural conflicts of interest and increase the risk of monopolistic control over transport and storage services.

To ensure a well-functioning market for CO<sub>2</sub> in Europe, the upcoming Market and Infrastructure Regulation must strike a balance that optimises the public good characteristics of a CO<sub>2</sub> market.

### How:



Adopt **clear legal definitions for operators, users, capacity rights, connection requests, and bundled services** within a dedicated EU legislative act on CO<sub>2</sub> infrastructure.



Mandate Member States to **appoint competent authorities with explicit enforcement powers** over third-party access, including dispute resolution mechanisms and third-party technical verification of connection refusals.



Require network operators and storage operators to publish access conditions, response timeframes for connection requests, pricing and tariff methodologies – with regulatory authorities empowered to intervene to ensure objectivity, transparency, and cost reflectiveness of tariffs.



Implement **differentiated unbundling based on infrastructure characteristics**: require ownership unbundling for pipelines serving industrial clusters or designed with surplus capacity to prevent vertical integration, while permitting point-to-point projects serving single emitter-storage pairs to remain integrated where no other prospective users exist along the corridor.



Unbundling rules, oversight and transparent connection procedures should also apply to the storage market to ensure a **level-playing field for all prospective storage providers**.

## 2. EU-Level Coordination and Network Planning

**Recommendation:** Establish an **independent EU-level planning organisation** with a clear mandate to develop an EU-wide network development plan for cross-border CO<sub>2</sub> transport corridors, ensuring coordination with hydrogen, gas, and electricity infrastructure planning.

**Why:** Despite the European Commission supporting 14 CO<sub>2</sub> transport Projects of Common Interest (PCIs), no EU-level coordination or planning body exists for CO<sub>2</sub> infrastructure—unlike gas (ENTSO<sup>1</sup>), electricity (ENTSO-E<sup>2</sup>) or hydrogen (ENNOC<sup>3</sup>). This absence creates **risks of inefficiently dimensioned pipelines, duplicative infrastructure, delayed investments and misalignment** between capture projects and transport availability. Uncoordinated national approaches also undermine investor confidence and spatial planning coherence.

### How:



**Create a new, independent planning entity** (for example the ENTSO-C or ENNOC) institutionally separate from other European networks to avoid conflicting strategic priorities and ensure alignment with climate neutrality rather than fossil gas interests.

1 European Network of Transmission System Operators for Gas

2 European Network of Transmission System Operators for Electricity

3 European Network of Network Operators for Hydrogen

-  Task the new planning body with **developing a Ten-Year Network Development Plan (TYNDP) for CO<sub>2</sub> transport**, assessing supply-demand scenarios, evaluating transport mode options (pipeline vs. shipping), and providing a blueprint for PCI/PMI selection.
-  **Align national CO<sub>2</sub> infrastructure roadmaps and Member State planning** (National Energy and Climate Plans, NECPs) with the EU-wide TYNDP through ACER supervision and European Commission approval.
-  Mandate **routine coordination** with ENTSOG, ENTSO-E, and ENNOH to address interdependencies (electricity needs for capture, hydrogen infrastructure overlaps, gas pipeline repurposing for CO<sub>2</sub>).
-  **Require conformity assessments for major CO<sub>2</sub> infrastructure expansions** against the TYNDP from a set date (i.e. 2028) to prevent fragmentation and ensure appropriate sizing for future demand.

### 3. De-risking Infrastructure Investment and Volume Risk Management

**Recommendation:** Develop EU guidance on state aid frameworks and risk-sharing mechanisms to **address volume risk in oversized CO<sub>2</sub> transport infrastructure**, enabling economies of scale while protecting operators and emitters from underutilisation risks during ramp-up phases.

**Why:** CO<sub>2</sub> pipelines exhibit significant economies of scale—larger diameters increase capacity with proportionally smaller cost increases, with engineering and installation costs (up to 50% of total CAPEX) remaining relatively constant regardless of size. Building anticipatory infrastructure is economically efficient but creates financing challenges: **private capital requires contracted volumes as revenue security, yet early-stage networks face prolonged underutilisation.** This drives excessive tariffs for first users, discouraging capture projects and creating a coordination failure.

#### How:

-  Provide European Commission guidance to Member States on designing **state aid-compatible policy interventions** that share volume risk, such as government-backed amortisation accounts or revenue support agreements (UK RAB model).
-  **Enable levelised tariff structures** that spread costs over infrastructure lifetimes, with interim public financing during underutilisation phases and repayment mechanisms as usage increases.
-  Explore **cross-chain risk mitigation mechanisms** that compensate operators for emitter commissioning delays and compensate emitters for transport/storage system outages—covering contingent liabilities beyond parties' control while maintaining accountability for own-performance. Public funds should only be considered in extension to or to facilitate commercial insurance products.

-  Encourage regulatory frameworks that **guarantee stable, regulated returns on invested capital** (e.g., RAB models) to de-risk private investment.
-  Coordinate with the **European Investment Bank and EU financing instruments** (Innovation Fund, Connecting Europe Facility) to leverage public funding for oversized infrastructure that serves strategic EU-wide CO<sub>2</sub> transport corridors.

## 4. Harmonisation of CO<sub>2</sub> Stream Standards and Cross-Border Protocols

**Recommendation:** Adopt EU-wide minimum specifications for CO<sub>2</sub> stream purity in pipeline and ship transport, based on CEN/ISO standards, and mandate transparent publication of specifications and measurement protocols.

**Why:** Different capture technologies produce CO<sub>2</sub> streams with varying impurity levels (nitrogen, hydrogen, SO<sub>x</sub>, NO<sub>x</sub>, H<sub>2</sub>S), which affect pipeline integrity (corrosion risks), transport efficiency (density changes), and storage capacity (non-condensable gases occupy pore space). **Without harmonised standards, each project negotiates specifications individually, creating redundant efforts, uncertainty over permissible levels.** Cross-border operability requires unified protocols for handling diverging stream specifications and off-spec deliveries.

### How:

-  The Commission to issue a standardisation request to the European Committee for Standardization's (CEN) Technical Committee 474 on CCUS to **develop European standards on CO<sub>2</sub> stream composition, metering and calibration.**
-  Allow **network operators apply for exemptions to define stricter specifications where justified**, while requiring publication of detailed specifications with scientific justifications to assist capture projects in design planning. The UK CCS Network Code's two-tier approach—minimum standard plus network-specific requirements—offers a proven model.
-  Establish **EU guidance on handling off-spec streams, including dispute resolution mechanisms** and reasonable limits on liquidated damages to prevent excessive liability exposure.
-  Facilitate **information exchange on impurity impacts** build sectoral knowledge and enable evidence-based standard refinement as deployment scales.



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Bellona Europa is an independent, non-profit organisation that meets environmental and climate challenges head-on. We are result-oriented and have a comprehensive and cross-sectoral approach to assess the economics, climate impacts and technical feasibility of necessary climate solutions. To do this, we work with civil society, academia, governments and polluting industries.