



Building a cross-border CO2 Infrastructure beyond the EU

Risks and opportunities

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Agenda

1. Legislation on CO2 cross-border infrastructure
2. Possible developments
3. Pros and cons
4. Challenges

EU legislation on CO2 cross-border infrastructure

TEN-E Regulation (Regulation (EU) No 347/2013)

- Establishes CO2 transport networks as a priority corridor for trans-European energy infrastructure
- Defines criteria for Projects of Common Interest (PCIs) in CO2 transport
- Provides framework for permitting and regulatory treatment of PCIs

Revised TEN-E Regulation (Regulation (EU) 2022/869)

- Expands scope for CO2 transport:
 - Includes various modes: pipelines, ships, barges, trucks, and trains
 - Covers transport to storage sites and permanent carbon removal installations
- Enhances support for cross-border CO2 networks:
 - Explicit inclusion of 'CO2 networks' as eligible for Project of Common Interest (PCI) status
 - Promotes integrated planning for CO2 capture, transport, and storage/utilization
- Updates PCI selection criteria:
 - Greater emphasis on cross-border benefits and EU-wide impact
- Revises regulatory framework:
 - Clarifies cost allocation principles for cross-border projects
 - Provides for coordinated permitting across member states

EU legislation on CO2 cross-border infrastructure

EU funding mechanisms

- Connecting Europe Facility (CEF):
 - Grants for studies and works related to PCIs in CO2 transport
- Innovation Fund:
 - Support for innovative CO2 capture and transport technologies
 - Focus on first-of-a-kind commercial demonstration projects

International legislation on CO2 cross-border infrastructure

London Protocol amendment (IMO Resolution LP.3(4) (2009))

- Allows for the export of CO2 for offshore storage purposes:
 - Removes previous prohibition on transboundary movement of CO2 for disposal
 - Enables international cooperation on offshore CCS projects
- Specifies conditions for CO2 export:
 - CO2 streams must be destined for disposal in accordance with Annex 1
 - A specific agreement or arrangement must exist between countries involved
- Requires assessment of potential adverse effects before permitting export
- Current status: Amendment adopted but not yet in force due to insufficient ratifications
 - Provisional application possible through resolution LP.5(14) of 2019

Possible developments

Proposed measures in Industrial Carbon Management Strategy (European Commission COM/2024/62)

- Emphasis on cross-border CO2 transport infrastructure:
 - Identification of strategic corridors for CO2 transport
 - Support for multi-country infrastructure projects
- CO2 transport infrastructure planning framework
- Business models for cross-border projects
- Exploration of public-private partnerships
- Introduction of Carbon Management Networks concept:
 - Regional coordination bodies for CCUS development
 - Facilitation of stakeholder engagement and project alignment

Development of implementing and delegated acts as outlined in Regulation (EU) 2022/869:

- Detailed criteria for PCI selection in CO2 transport
- Guidelines for cost-benefit analysis of CO2 transport projects
- Specifications for interoperability of CO2 transport networks

Pros and Cons

• Pros

- Economies of scale in transport and storage infrastructure
- Optimized utilization of storage sites across borders
- Potential for reduced overall costs through shared infrastructure
- Encouragement of innovation in CO2 capture, transport, and storage technologies
- Potential for technology transfer and knowledge sharing across borders
- Potential for repurposing existing fossil fuel infrastructure for CO2 transport

• Cons

- Potential for over-reliance on government support, hindering true market efficiency
- Challenges in harmonizing regulations across different jurisdictions
- Potential for regulatory arbitrage or uneven implementation of standards
- High upfront costs for infrastructure development

Challenges

Technical Considerations

- How can we ensure interoperability of CO2 transport systems between different countries?
- What strategies should be employed for capacity planning and network optimization of international CO2 pipelines?
- How can we effectively manage CO2 quality variations in streams from multiple countries?

Regulatory Framework

- What steps are needed to harmonize national regulations on cross-border CO2 transport?
- How should liability and risk be allocated in multi-country CO2 transport projects?

Technology Neutrality and Innovation

- How can we ensure that policies and regulations for cross-border CO2 infrastructure remain technology-neutral?
- What approaches can be taken to encourage innovation in CO2 transport technologies while maintaining a level playing field?
- How should the regulatory framework adapt to potential future technologies in CO2 capture, transport, and storage?