

EnTEC – EU regulation for the development of the market for CO₂ transport and storage

Presentation: Second Energy Transition Expertise Centre (ENTEC) Conference

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Study conducted by:



Agenda

Proposed agenda:

- 1) Introduction to project (objectives, time, methods)
- 2) Why is it needed? Overview of current status
- 3) Scope
- 4) Key findings on regulation and market
- 5) Preliminary recommendations
- 6) Next Steps
- 7) Q&A



Introduction to project

This **project objectives** are:

1. Analyse **regulatory options** (and their limits) for CO₂ transport & storage
2. Analyse **potential business models** for the construction and operation of the CO₂ transport networks & storage sites

Time horizon: 2030. Also keep in mind 2050 as horizon for full development of CO₂ market

Value Chain: CO₂ transport (all modes incl. pipes, ships, railways) and storage (use is out of scope). Market analysis part will also consider upstream part (capture).

Project timeline: September 2022 – February 2023

Methods: Desk research + stakeholder interviews



Why is it needed? Overview of current status: CCS regulation and markets in Europe

- **CCS is needed** to arrive at climate neutrality by 2050. In particular for:
 - Deep decarbonization of industry
 - Low-carbon dispatchable power
 - Low-carbon (blue) hydrogen production
 - Carbon Dioxide Removals
- Need to accelerate CCS deployment in Europe for it to contribute to 2030 targets / make the most out of early investments → **regulatory guidance providing market/commercial certainty**/direction is needed
- **CCS Directive a very good basis but not enough**, focus on storage and misses important aspects of transport regulation



Scope – key Network and Market Regulation topics

Network Regulation	Market Regulation
Role of network operator	Market access
Network planning	Cross-border trade development
Third party access	Trade platforms and exchanges
Tariffs and revenue regulation	Definition of market product types
Value chain organization and unbundling	Licensing for market participants
Cross-border infrastructure development	Certification of CO2
Permitting issues	Incentives for Storage operators (non-financial)
CO2 standards	



Task 1 – Regulatory Analysis

Key Findings

■ Key feedback

- Guidance at EU-level beyond the CCS Directive, especially on CO2 transport, would be helpful
- More political backing/clear signals for CCS at EU level needed to provide certainty for governments and investors
- Different views on the extent of regulation that is desirable but consensus that in addition to national regulation more steer at EU level is desirable
- General consensus to be careful with just transposing regulation from other sectors (gas, hydrogen, elec.). CO2 has its own particularities
- Legal basis for the export of CO2 for offshore storage must be further clarified (London protocol)
- Need for ensuring level-playing field for countries with no storage capacity
- Need to de-risk new storage exploration. Consider government-led initial exploration program
- Need for standards of CO2 quality to ensure compatibility, possibility of a pan-European network. Guidance should come from EU level



Task 1 – Regulatory Analysis

Key Findings

- Network Planning
 - Planning taking inspiration from the TYDP/including CO2 in the plans generally welcomed
 - Uncertainty over network development makes it difficult to predict the extent of regulation needed
 - Importance of ensuring support for multi-mode transport. Extent to which other transport modes will develop can affect network planning
 - Views on role of network operator differ
- Full-chain organization
 - Different models (from Longship – full chain, to UK – T&S bundled, to complete unbundling) possible
 - Government could play a role as guarantor for the risks related to the interface between the full chain elements
 - Need to clarify allocation of liabilities across the full chain. Different stakeholder interests
- Tariffs / Cost recovery
 - No consensus on best approach
 - Idea of emitter cluster collective bargaining



Task 2 – Market Analysis

Key Findings

- Analysis of current situation
 - Regulator role and government involvement is developing slightly differently in every country
 - Overall consensus that government has to play some form of mediator role but not necessarily regulate whole chain
 - Current T&S based on O&G regulations – not completely suited for shipping & cross-border
- Technology Market Readiness
 - Key gap = increasing readiness of stores to increase availability of options for developing market
 - Increasing need for store certification/ guarantees for more commercial market
- Investment Costs for CO2 T&S
 - Investment costs not a barrier with CfDs in place – but insurance and financial liabilities still problematic
- Future CO2 T&S Development Scenarios
 - Varying visions from different countries on onshore vs offshore & cross-border potential



Preliminary Regulatory Considerations and Policy Recommendations

- **Open Access to T&S Infrastructure**

- Solving this is creating overcapacity and ensuring there are mechanisms or support in place for these early mover projects to oversize their T&S infrastructure.
- Forums/commercial setting to bring emitters together with potential T&S operators
- Avoid overregulation of e.g. tariff setting

- **Further regulatory guidance on CO2 transport at EU-level**

- Guidance beyond CCS Directive needed
- Importance of setting CO2 standards to harmonize/develop pan-European Networks

- **Decoupling T&S from emitters**

- Organization of the value chain differs per country/project → especially regarding unbundling/bundling of T&S? Regulation should allow flexibility

- **Support for early development of large-stores**

- Greater incentives are required for storage operators to appraise and characterize sites early
- EU level insurance scheme would be highly beneficial



Regulatory Considerations and Policy Recommendations

- **National Government role**

- Facilitate interface management across the whole chain and help mediate the cross-chain risks
- Establish long-term financial security through subsidy schemes and providing guidance on streamlining storage site permitting
- European agency, (linked to Entso-g ?) could be the most advantageous option to speed up T&S in Europe

- **Support for CEE region**

- Mechanisms in place to make sure countries can progress their CCS projects without being penalized for being far away from storage hubs
- Support for capacity building of staff

- **European Vision**

- More clarity on where incentives will be placed, especially related to innovations like DACC/BECCS technologies, and in stimulating the development of a merit order for various technologies
- Re-invest funds to provide more bankable storage potential and support emitters



Next Steps

Deliverable/ meeting	Contents	Date
	Stakeholder consultation activities	Ongoing
D	Draft report with revised version for all tasks	Early Feb
M	Final meeting	Early Feb
D	Final report	End Feb 2023



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Questions?

Thank you

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