

# **EU CO<sub>2</sub> Storage Directive and CO<sub>2</sub>-EOR**

**Creating the right conditions for CCS to grow -  
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**Chiara Armeni**

**Research Associate -UCL Laws**

**Deputy Director Carbon Capture Legal Programme**

## EOR – CCS Scenarios

- **Pure CO<sub>2</sub>-EOR activities:** Enhanced Oil Recovery with incidental CO<sub>2</sub> storage as normal part of the operations (incl. storage during buffering or balancing operations)
- **CCS-EOR:** EOR activities combined with incremental storage of CO<sub>2</sub> for emission reduction purposes
- **CCS activities:** CO<sub>2</sub> capture and permanent storage in geological formations for emission reduction purposes

## EOR under the CCS Directive: an orphan Preamble

- EOR not addressed by the CCS Directive
- Only reference 'EHR is not in itself included in the scope of this Directive. However, where EHR is **combined** with geological storage of CO<sub>2</sub>, the provisions of this directive should apply' (Preamble Recital 20)
- Legal status of the Preamble:
  - Does not have binding legal force;
  - Cannot serve as a ground for derogating from the main body of the relevant act;
  - Whilst may be used to 'cast light on the interpretation to be given to a legal rule, it cannot in itself constitute such a rule'

But no EOR provision to be interpreted in the Directive, so the Preamble has somewhat of an 'orphan status'. Why? Recital refers to a formal exception in the proposed directive art 2(1) subsequently dropped following strong opposition in 2008.

## EOR and the (undefined) definition of storage

- Geological storage of CO<sub>2</sub>: “*injection accompanied by **storage** of CO<sub>2</sub> streams in underground geological formations*”.
- Storage is not defined in the Directive

***How about EOR combined with CO<sub>2</sub> storage? Reasonable interpretation:***

**CCS-EOR** operations involving incremental storage (during or after the EOR operations) do qualify as storage under the directive, and its regime would apply.

**Pure CO<sub>2</sub>-EOR** operations involving incidental storage (including temporary storage connected with buffering operations) would not qualify as storage under the directive, but as an inevitable and ordinary result of EOR operations: the directive does not apply

- ***Clarification on this point is needed***

## EOR and acceptability criteria for CO<sub>2</sub> stream

- CO<sub>2</sub> stream shall consist overwhelmingly of carbon dioxide.
- no waste or other matter may be added for the purpose of disposing of that waste or other matter. (art 12 Directive)
- **How about substances mixed with CO<sub>2</sub> stream (eg. gas and brine) as a result of the CCS-EOR operations?**
  1. *'incidental associated substances from the source, capture or injection process'* - below levels that affect integrity of storage site; pose significant environmental and health risk; are in breach of the EU law - are allowed
  2. Substances from CCS-EOR activities will not be 'added' but 'returned'
  3. Ultimate objective is the environmental integrity of the site
  4. 'Overwhelmingly' is a flexible standard
- ***Clarification on this point is needed***

## EOR and ETS: a win-win solution?

### Link between ETS and CCS Directive:

- CCS**: installations carrying out CO<sub>2</sub> storage activities (incl. capture, transport by pipeline and permanent storage) must acquire an ETS permit and, therefore, monitor and report their emissions pursuant to the ETS directive. (Revised ETS directive (2009/29/EC) Annex I and Regulation 601/2012)
  
- No need to surrender allowance *‘in respect of emissions verified as captured and transported for permanent storage to a facility for which a permit is in force’* in accordance with the CCS Directive (art 10 a(3) ETS Directive + 2012 Regulation art 49(1) and Annex IV)
  
- CCS-EOR**: Same provisions as above apply
  
- Pure CO<sub>2</sub>-EOR**: Outside the scope of the CCS and ETS Directive

## Transport of CO<sub>2</sub> by Ship: an issue?

- If transport by ship is a realistic option for CCS and CCS-EOR activities

### ***THEN, SOME LEGAL GAPS:***

- To be considered as not emitted, CO<sub>2</sub> must be transferred to specific receiving installations: a capture installation for the purpose of transport or storage; a **transport network** or a storage site (2012 regulation, art 49 )
- Transport network under the CCS Directive: *‘the network of **pipelines**, including associated booster stations, for the transport of CO<sub>2</sub> to the storage site’*.
- Transfer to a ship is not covered to this purpose
- However:
  1. Regulation does not ‘exclude the possibility of future innovation’;
  2. MS can apply opt-in procedure for activities not covered by Annex I ETS Directive could be used to include ships transporting CO<sub>2</sub> within the list of ‘receiving installations’ – but issues remain.
- ***Clarification on this point is needed***

# Conclusions

- CCS-EOR has the potential to ‘create the right conditions for CCS to grow’
- CCS Directive not conceived with CCS-EOR in mind, but flexible enough to cover it
- Revision of the Directive could provide an opportunity for clarification
- In the meantime, European Commission could issue guidance regarding its approach to solve uncertainties





## SCCS CO<sub>2</sub>-EOR JIP

### Legal Status of CO<sub>2</sub> – Enhanced Oil Recovery

Professor Richard Macrory with Chiara Armeni, Chris Clarke, Sarah Docherty, Eva Van Der Marel, Ben Milligan, Ray Purdy - UCL Carbon Capture Legal Programme, 2013

**Thank you !**

**Chiara Armeni**

**c.armeni@ucl.ac.uk**