



Regulatory and legal issues: development of an enabling legal framework for carbon capture & storage in the EU

ACCSEPT stakeholder meeting

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Risk management framework

Capture

- Regulated and permitted under IPPC – no legal change required
- Update of BAT Reference Documents (BREFs) to specify requirements
 - Large Combustion Plant
 - Cement and Lime Manufacturing
 - Mineral Oil and Gas Refineries
 - Possible horizontal BREF on CO₂ capture technologies?

Transport

- Currently regulated at MS level (for natural gas); relevant European and international standards apply (for instance for transporting gas under pressure)
- Large pipelines require automatic Environmental Impact Assessment, small ones on case-by-case basis
- TREN Working Group on safety of oil and gas pipelines
- Conservative approach: no risk differences CO₂/NG justifying a different approach.



Impacts and risks to be managed

Storage

- Adopt framework approach similar to IPCC guidelines
 - Model expected behaviour of CO₂, and use site only if have demonstrated expected permanence of storage
 - Monitor site after use to confirm that CO₂ behaving as expected
 - Decommission and close, with monitoring period after closure

- Centralised verification of safety in the initial phase

- Other provisions:
 - Transfer of responsibility to state on condition that risk of future leakage is demonstrated to be insignificant
 - Provisions on composition of the CO₂ stream
 - Financial provisions for insolvency of operators before site is safely closed



Purity of CO₂ stream

- Concern of stakeholders that CCS may be used as alternative disposal technique for conventional air pollutants
- Debated in London Convention (percentage limitations)
- Alternative approach in OSPAR: effectively to apply the same de-NO_x and de-SO_x as required under current air quality legislation
 - ‘However, CO₂ streams may contain incidental associated substances derived from the source material and the capture, transport and storage processes used. **Maximum acceptable concentrations of these substances shall be related to the Best Available Techniques (BAT), to European standards for atmospheric emissions and/or for discharges to the marine environment (subject to concentration differences due to the specific CO₂ capture process), and to their possible impact on the integrity of the relevant transport infrastructure and storage site.’**



Management options for storage

Regulate under Integrated Pollution Prevention and Control Directive

- Include under Annex I
- Detailed guidance on site characterisation, selection, operation, closure and post-closure in BREF on CO₂ storage sites
- Other amendments:
 - Comitology for verification of safety of storage
 - Requirements on financial provisions for insolvency
 - Requirements on transfer of installation to state
 - Requirements on composition of CO₂ stream
- BREF has less central role under Directive than requirements specified in Annexes
- Particularly sensitive for closure and aftercare, which would naturally be addressed in the BREF here, but are specified in the legislative text for (e.g.) landfill sites.

Free-standing legal instrument?

In any case, confer Environmental Impact Assessment/Strategic Impact Assessment, mainly to ensure public consultation.



Rights for prospection and exploration

Hydrocarbons Licensing Directive 94/22/EC

- Lays down rules that Member States have to follow when issuing authorisations granting exclusive right to prospect or explore for or produce hydrocarbons in a geographical area
- Member States have right to determine what areas in their territory to be made available
- Must ensure no discrimination as regards access to and exercise of activities
- Authorisations granted only after procedure in which all interested entities may submit applications (publication in Official Journal)

CCS

- Confer 94/22 onto prospection and exploration for CO₂ storage sites



Removal of barriers

Water

- In Article 11.3.j of Directive 2000/60/EC, the following text is inserted after the third text:
 - “- injection of CO₂ streams for storage purposes into geological formations which for natural reasons are permanently unsuitable for other purposes, provided that such injection is authorised under Directive XX/XX/EC”

Waste

- Examination in Impact Assessment
- Propose to remove CCS (as regulated elsewhere) from waste legislation
- In Article 1 of Directive 2006/12/EC, the following new paragraph is inserted:
 - “3. CO₂ streams that are transported for the purpose of storage, injected or stored in accordance with the provisions of Directive XX/XX/EC are not considered to be waste as defined in paragraph (a).”



Liability for leakage from storage site

Local damage to health and property: leave to MS level

Local damage to the environment

- Confer Environmental Liability Directive (automatic under IPPC route)
- On analogy with landfill, applies to incidents during:
 - Full operational phase
 - Post-closure phase where monitoring is required
 - The phase where monitoring has ceased and site has been abandoned.
- The basic requirement will be strict liability.

Non-local damage (i.e. climate implications) covered by inclusion in ETS (see below)

Financial provision for future liability

- Environmental Liability Directive Article 14
- For non-local damage, see options under ETS Directive



Treatment under ETS

Basic framework:

- Phase II (2008-12): CCS can be included without legislative modification, but capture, transport and storage must be opted in together ('bubble' approach)
- Phase III (2013 onwards): looking at amendment to make it possible to opt in also separate installations, and to opt-in a class of installations for all Member States
- Conditions:
 - rules on risk management followed
 - Monitoring and reporting guidelines proposed by opting-in state and adopted by comitology

Surrender of credits for leakage from storage: two options

- Simple: allowances surrendered for any monitored emissions
- Precautionary:
 - Provisional allowances surrendered for percentage of emissions stored. Would be cancelled to cover any monitored leakage.
 - Any monitored leakage above 1% covered by additional surrender of allowances.
 - Non cancelled allowances may revert to operator under specified conditions (e.g. after fixed period).



Making CCS mandatory post-2020

- **Target in Communication on Sustainable Power Generation from fossil fuels communication**
 - All new post-2020 must use CCS
 - All new prior to 2020 must be capture-ready and retrofit rapidly after 2020

- **Impact assessment**
 - What would we regulate: coal, gas, all fossil fuels, only large installations?
 - Cost of regulating?
 - Practicality of regulating?
 - Optimal retrofitting schedule for capture-ready plant
 - Effect on structure of energy market

- **Advantages**
 - Clear long-term signal which would stimulate deployment
 - Capture-ready at risk of operator: what investment to make now to make retrofit in 2020 easier



Timing

- **Draft impact assessment and legislative proposal end July 2007**
- **Internal procedures July-November 2007**
- **Adoption by Commission November 2007**