



Philippe Geiger

French ministry for ecology, energy, sustainable development, town
and country planning

CCS Safety and Liability



Focus on ...

- EU CO₂ storage Directive
- Main debates last year inside Europe
- Questions to be answered before transposition in national laws



EU CO₂ storage Directive

- part of the climate and energy package including also measures to meet the 20% GHG and 20% renewable target in 2020
- European Commission proposal January 2008
- political agreement between European Parliament and Council December 2008, under French Presidency



Scope of EU Directive

- territory of Member states, their exclusive economic zones and continental shelves
- storage in water column prohibited
- doesn't apply to research projects (<100 kt)
- covers EHR combined with CO₂ storage

Member States determine whether and where CCS will happen on their territory



Risks

- CO₂ leakage
- impacts on biosphere
- impacts on health
- impacts on other activities
- ground water contamination
- ...



Safety in EU Directive

Comprehensive provisions:

- site selection
- operation of storage sites
- monitoring and reporting
- closure and post closure



Safety in EU Directive

- *Article 7 : applications for storage permits*
- *Article 9 : contents of storage permits*
- *Article 12 : CO₂ stream acceptance criteria*
- *Article 13 and 14 : monitoring and reporting*
- *Article 15 : inspections*
- *Article 16 : measures in case of significant irregularities and leakages*



Safety in EU Directive

- *Article 17 : closure and post closure obligations*
- ...
- *Annex I : steps and criteria for site characterisation and risk assessment*
- *Annex II : steps and criteria for establishing and updating the monitoring plan*



The same rules everywhere?

- Different storage sites : depleted oil fields, deep saline aquifers, onshore-offshore, ...
 - Geology will be different from one place to another
- > *almost no figure in the EU directive*
- how do we avoid competitive distortion?



The same rules everywhere?

Answers in EU directive:

- purpose is “permanent containment of CO₂”
- comprehensive risk assessment
- geological formation shall be selected only if there is no “significant” risk of leakage (risk : combination of probability and magnitude of damage)



The same rules everywhere?

Answers in EU directive:

- Exchange of information between Member States and guidelines from the European Commission
- Commission review of draft storage permits prepared by national competent authorities
- Review of directive implementation



Liability

Two periods :

- operation (CO₂ injection)
- post injection



Liability

Types of liabilities

- Bodily injury and property damage
- Local environmental damage
- Global environmental damage



Long term liability

- Most novel feature
- Long lifecycle of CO₂ storage vs Limited longevity of commercial organisations
- Defining long term liabilities and post closures responsibilities is a priority for CO₂ storage regulators



Long term liability

- Should we transfer responsibilities and liabilities to public authorities? When? How?
- Conflicting interests:
 - authorities vs companies
 - fight against climate change vs polluter pays principle?



Long term liability

Answers in EU CO₂ storage directive

- Transfer of legal obligations to competent authority when all available evidence indicates that stored CO₂ will be completely and permanently contained
- Post transfer monitoring, reduced to a level which allows identification of leakages or significant irregularities



Long term liability

Answers in EU CO₂ storage directive

- Minimum period before transfer to be determined by competent authority, no shorter than 20 years, unless the authority is convinced that criterion is met before



Long term liability

Answers in EU CO₂ storage directive

- No cost recovery from former operator after transfer except in case of fault, negligence, concealment, ...
- financial contribution from operator to competent authority before transfer; shall cover at least anticipated cost of monitoring for 30 years



Long term liability

A few questions are left to Member States at this stage :

- Minimum period : at least 20 years? More than 20 years?
- Financial contribution : surrender fee or liability fund or ... ?
- Liability for bodily injury and property damage?



Conclusion

- EU CO₂ storage directive is an important step forward
- Member states still have to answer a few questions before transposition in national laws
- Demonstration projects will guide future legal developments.