



Supporting  
success

# CCS: Risk and Liability Issues: Directive on the geological storage of carbon dioxide

Valerie Fogleman  
Consultant, Stevens & Bolton LLP  
Professor of Law, University of Cardiff

Service  
Quality  
Relationships  
Results

 Stevens & Bolton LLP



# Storage Site Risks

Supporting  
success

- Leakage (“any release of CO<sub>2</sub> from the storage complex”)
- Significant irregularity (“any irregularity in the injection or storage operations or in the condition of the storage complex itself, which implies the risk of a leakage or risk to the environment or human health”)

Service  
Quality  
Relationships  
Results



# Liability for Storage Site Risks

Supporting  
success

- Operator
  - one operator for each storage site
  - remains liable until sealed storage site transferred to competent authority following compliance with specified conditions

Service  
Quality  
Relationships  
Results



# Types of Liabilities

- Bodily injury and property damage
- Global environmental damage (climate damage)
- Local environmental damage (harm to local environment and human health)

Supporting  
success

Service  
Quality  
Relationships  
Results



# Types of Liabilities

Supporting  
success

Bodily injury and property damage

- national law applies

Service  
Quality  
Relationships  
Results



# Types of Liabilities

Supporting  
success

## Global environmental damage

- European Union emissions trading scheme applies
  - requisite number of allowances for any leaked emissions of CO<sub>2</sub> must be surrendered

Service  
Quality  
Relationships  
Results



# Types of Liabilities

Supporting  
success

## Local environmental damage

- Environmental Liability Directive (ELD) amended to add CO<sub>2</sub> storage sites to Annex III
- Corrective measures
  - “any measures taken to correct significant irregularities or to close leakages in order to prevent or stop the release of CO<sub>2</sub> from the storage complex”
  - required regardless of whether ELD threshold of environmental damage is exceeded

Service  
Quality  
Relationships  
Results



# Corrective Measures

Supporting  
success

- Proposed corrective measures plan (CM Plan) must be included in application for storage site
- CM Plan must be approved by competent authority
- Permit terms include obligation to implement CM Plan if significant irregularity or leakage occurs

Service  
Quality  
Relationships  
Results



## Corrective Measures

- Competent authority may require operator “to take the necessary corrective measures, as well as measures related to the protection of human health” including measures additional to those in CM Plan

Supporting  
success

Service  
Quality  
Relationships  
Results



# Corrective Measures

Supporting  
success

- Competent authority may take corrective measures itself and, if operator fails to take necessary corrective measures, must take such measures itself
- Competent authority shall recover costs of corrective measures carried out by it from operator including by drawing on financial security

Service  
Quality  
Relationships  
Results



# Environmental Liability Directive

Supporting  
success

- Operator of storage site is strictly liable for preventive or remedial measures due to imminent threat of, or actual, environmental damage to natural resources, that is:
  - land
  - water
  - protected species and natural habitats

Service  
Quality  
Relationships  
Results



# Environmental Liability Directive

Supporting  
success

## Thresholds

- Land: significant risk of adverse effect on human health
- Water: significant effect on ecological, chemical or quantitative status and ecological potential of waters
- Protected species and natural habitats: significant adverse effect on attainment or maintenance of favourable conservation status

Service  
Quality  
Relationships  
Results



# Environmental Liability Directive

Supporting  
success

## Preventive measures:

“any measures taken in response to an event, act or omission that has created an imminent threat of environmental damage, with a view to preventing or minimising that damage”

Service  
Quality  
Relationships  
Results



# Environmental Liability Directive

Supporting  
success

## Emergency remedial actions

“all practicable steps to *immediately* control, contain, remove or otherwise manage the relevant contaminants and/or any other damage factors in order to limit or to prevent further environmental damage and adverse effects on human health or impairment of services [from damaged natural resources]”

Service  
Quality  
Relationships  
Results



# Environmental Liability Directive

Supporting  
success

## Remedial measures

“any action, or combination of actions, including mitigating or interim measures to restore, rehabilitate or replace damaged natural resources and/or impaired services, or to provide an equivalent alternative to those resources or services [set out in Annex II to ELD]”

Service  
Quality  
Relationships  
Results



# Environmental Liability Directive

Supporting  
success

- Remedial measures for land: remove, control, contain or diminish contaminants so that land no longer poses any significant risk of adversely affecting human health
- Remediation standard: current or approved future use of land at time of damage

Service  
Quality  
Relationships  
Results



# Environmental Liability Directive

Supporting  
success

- Remedial measures for water and/or protected species and natural habitats
  - primary remediation (baseline condition)
  - complementary remediation (alternative sites)
  - compensatory remediation (interim losses)

Service  
Quality  
Relationships  
Results



# Environmental Liability Directive

Supporting  
success

## Exceptions include

- Act of war (including terrorism)
- Act of God

Service  
Quality  
Relationships  
Results



# Environmental Liability Directive

Supporting  
success

- Mandatory “defences” – imminent threat of, or actual, environmental damage caused by
  - third party despite appropriate safety measures
  - compliance with governmental authority’s order
- Optional “defences” – operator not at fault or negligent and environmental damage caused by
  - compliance with permit
  - state-of-the-art activities
- Member State may adopt optional defences but disapply to emergency remedial actions

Service  
Quality  
Relationships  
Results



# Conclusions

Supporting  
success

- Liabilities
  - bodily injury and property damage
  - surrender of CO2 allowances
  - corrective measures
  - ELD liabilities
- Overlap between corrective measures and ELD liabilities intentional to ensure corrective measures required if ELD threshold not exceeded for local environmental damage

Service  
Quality  
Relationships  
Results



# Conclusions

- Corrective measures
  - lower threshold than ELD for risk to human health
  - apply to risk to “environment”; ELD is more limited

Supporting  
success

Service  
Quality  
Relationships  
Results



# Conclusions

Supporting  
success

- Member States need to reconcile Directive on geological storage of CO<sub>2</sub> with ELD, especially for
  - scope and nature of corrective measures versus remedial measures
  - optional defences
  - carrying out corrective / remedial measures if operator fails to do so (overlap)
  - pre-existing national legislation on local environmental damage

Service  
Quality  
Relationships  
Results