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Regulation and Challenges for CCS

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The European CCS framework

- Carbon Capture and Storage Directive (CCS Directive, 2009/31/EC)
- Environmental Liability Directive (ELD, 2004/35/EC)
- European Emission Trading Scheme Directive (ETS Directive, 2003/87/EC)

- This framework is also applicable in Norway through the EEA Agreement.
- Several jurisdictions are adopting a framework similar to the CCS Directive, e.g. Western Australia.

The key features of the CCS Directive

- Storage sites must be assessed and the storage operator must have a permit.
- Only CO₂ can be stored.
- The storage site must be monitored.
- No leakage is allowed. If it occurs, corrective measures must be taken.
- Liability is transferred to the state if
 - a prescribed minimum time elapses and
 - “all available evidence indicates that the stored CO₂ will be completely and permanently contained”.
- The operator has to contribute financially to cover at least 30 years of monitoring after the transfer liability.

The main difficulties with the CCS Directive

- The default 20-year period is considered to be too long.
- The requirement of “completely and permanently contained” of CO₂ by “all available evidence” can be interpreted in various ways.
- The operator’s liability is not limited. This makes risk estimation and insurance difficult.
- It is particularly difficult to estimate the future price of emission trading allowances.

The Environmental Liability Directive

- Main purpose: to prevent or to remediate environmental damage.
- The arising liability is not limited but subject to proportionality of costs/effect.
- Applies onshore and offshore.

The Emission Trading Scheme

- Emission Trading Scheme Directive (ETS Directive, 2003/87/EC)
 - Sets up the emission trading market.
 - CO₂ stored as part of CCS need not be covered by allowances
- Regulation (EU) 601/2012 (Monitoring Regulation)
 - Complements the ETS Directive by providing specific rules on monitoring CO₂ emissions.
- ETS Directive + Monitoring Regulation + CCS Directive
 - These consider only pipeline networks.
 - Reading these instruments together is not prohibitive of carriage of CO₂ by ship but it is unsupportive to such extent that it is not compatible with it.

The carriage of CO₂ by ships

- It is a safe industry but CO₂ is an asphyxiant and it is carried as a pressurized gas.
- The common provisions of Norwegian maritime law apply.
- The shipowner bears liability in the first place.
- Insurance is compulsory.
- Liability is limited through the implementation of the Convention on Limitation of Liability for Maritime Claims (LLMC 1976/1996).
- If the Hazardous and Noxious Substances Convention 2010 (HNS) comes into force, it will provide its own limits and a fund for claims going beyond the limits.
- Two particular issues:
 - Article 6 of the London Protocol
 - The application of the European Emission Trading Scheme to carriage by ships.

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Industry-driven innovation for fast-track CCS deployment



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