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Legal Framework for CO₂ Capture and Storage

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Proposal for Directive on geological storage of CO₂



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Draft Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

On geological storage of Carbon dioxide

(presented by the Commission)

Directive objectives

Why do we need a Directive on CO₂ storage?

- Ensure that CCS is an available option for mitigating global warming
- Ensure that CCS is performed safely
- Action by Member States alone is not sufficient to ensure environmental integrity for CO₂ storage
- Ensure public confidence in CCS
- Manage risk
- Remove barriers
- Address liabilities



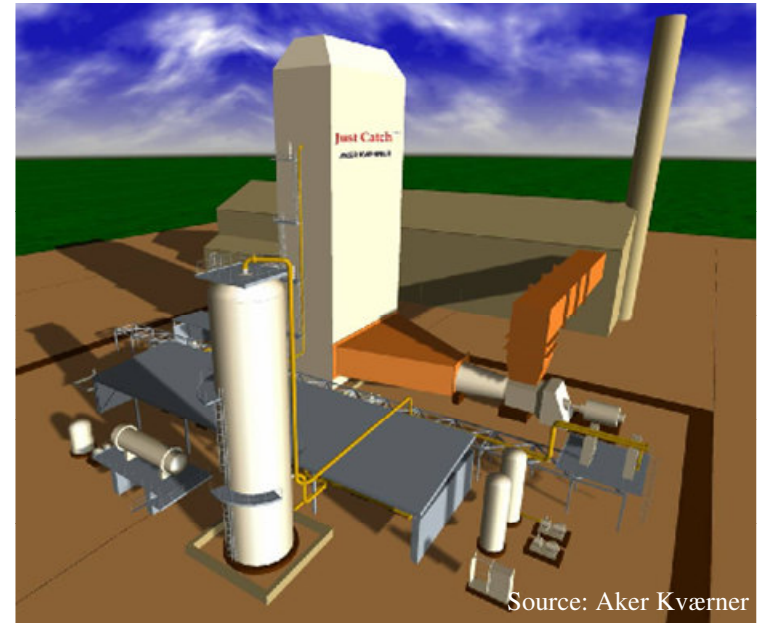
Regulations for capture and transport

■ CO₂ Capture

- Regulation under Integrated Pollution Prevention and Control Directive (**IPPC**)
- **BAT** Reference Document for capture technologies

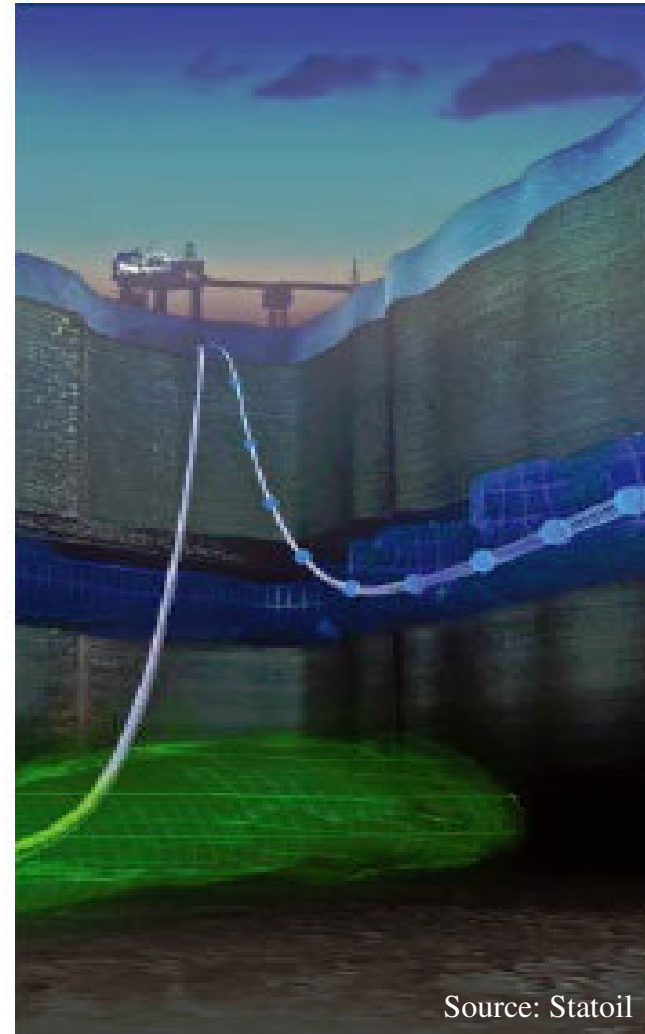
■ CO₂ Transport

- Transport by pipeline: Regulation at Member State level **as for natural gas transport**
- Transport by ship: similar approach



Proposal for CO₂ storage directive

- **Scope:**
Geological storage of CO₂ including enhanced hydrocarbon recovery using CO₂
- *Reacting to stakeholder comments DG ENV is now considering to delete the reference to hydrocarbon recovery*



National Competent Authorities

- Member States shall establish ***competent authority(s) (CA)*** responsible for fulfilling duties under the Directive
- CA will issue ***exploration permits and storage permits***
- Application for storage permit shall include:
 - Site characterization
 - CO₂ source and quality
 - Monitoring plan and closure plan
 - Proof of financial security
 - Proof of technical competence
- The CA must consider the Commission opinion before permits can be issued
- Who will become the Norwegian CA?
Gassnova? SFT? DNV?

Site characterisation

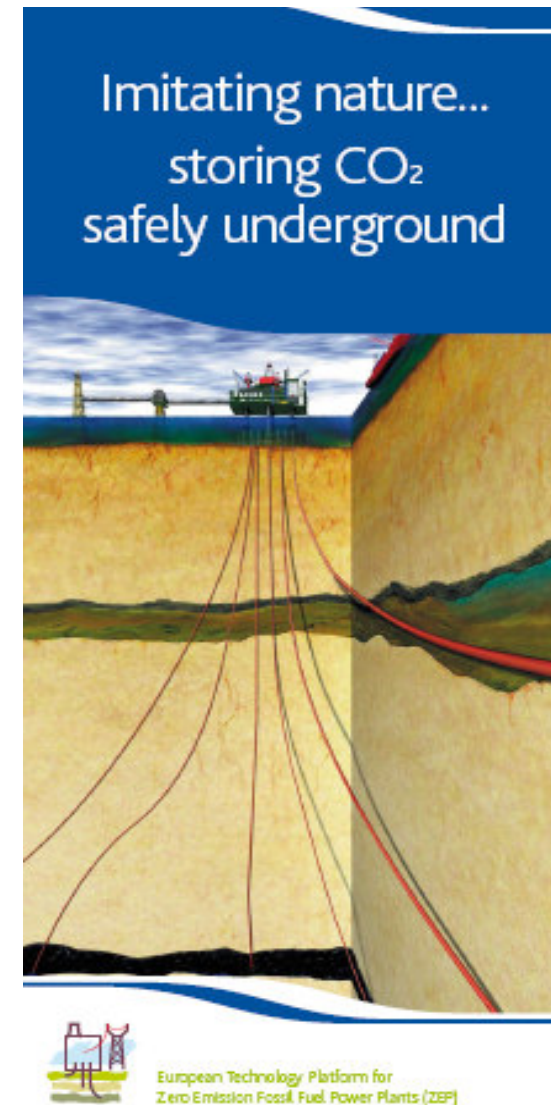
■ Exploration of storage sites:

Exploration permit to be granted for max. 2 years (after that to be converted into storage permit or relinquished)

*Reacting to stakeholder comments
DG ENV is now considering to change
the time limit of 2 years*

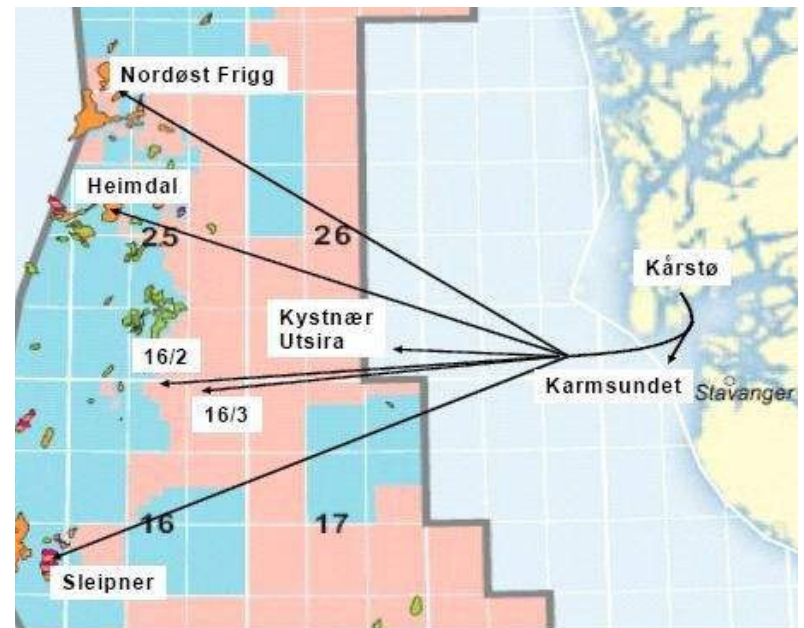
■ Characterisation and verification of storage sites:

The site should only be selected if assessment shows that there is no significant risk of leakage



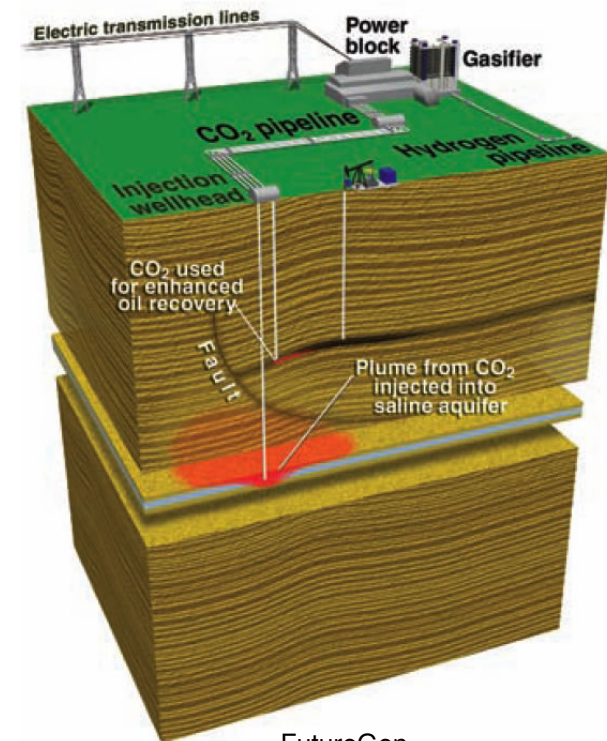
Operation

- **Criteria for CO₂ stream:**
Consist "overwhelmingly" of CO₂
- **Access to transport and storage network:** should be non-discriminatory, access may be refused under certain conditions



Monitoring and reporting

- **Monitoring and reporting obligations:**
Comparison between actual and modelled behaviour and detection of any leakage/migration/adverse effects for surrounding environment
- **Inspections:**
Routine (every 12 months) and non-routine environmental inspections to check compliance with requirements of the Directive
- **Measures in case of leakage:**
Corrective measures to be taken by the operator (or by the government if operator fails or is unable)



FutureGen.
Source: www.aapg.org

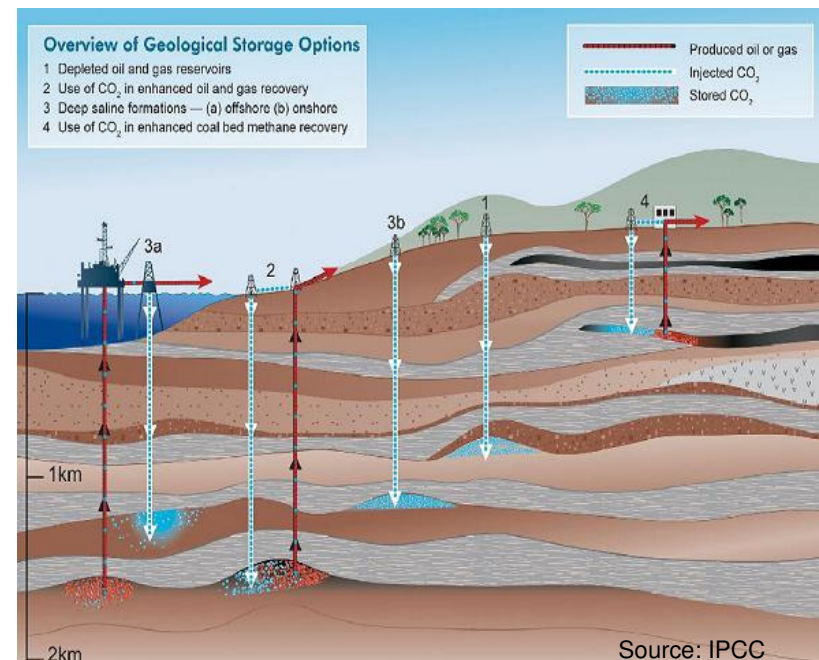
Closure

■ Transfer of responsibility to the state:

CA takes over responsibility including all legal obligations in post-closure phase *if all available evidence suggests long-term security of the storage*

■ Financial security:

Operators should upfront make financial securities regarding closure procedures



Change of water and waste legislation

- **Water Framework Directive:**

Allow for "injection of CO₂ streams for storage purposes into geological formations which for natural reasons are **permanently unsuitable for other purposes...**"

- **Waste Framework Directive:**

To be excluded from the scope of the Directive is "CO₂ captured and transported for the purposes of geological storage..."

The way forward

- **There will be debate** on the proposed directive for CO₂ storage in the **EU Parliament** and the **EU Council**
- **Entry into force:** Implementation at national level should be done 1 year after the publication of the Directive



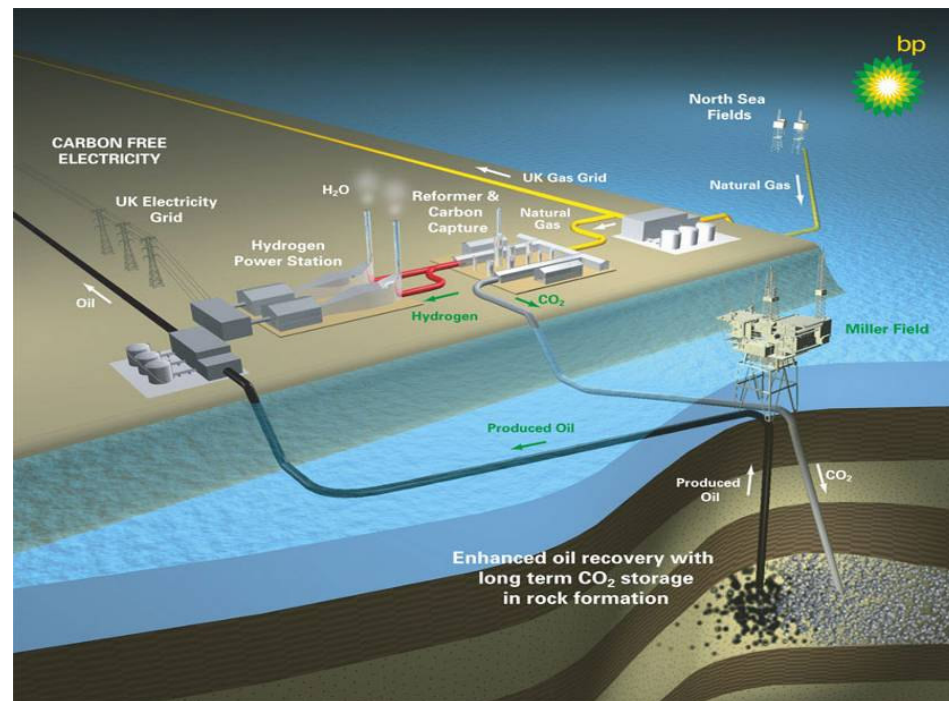
The way forward



Operators

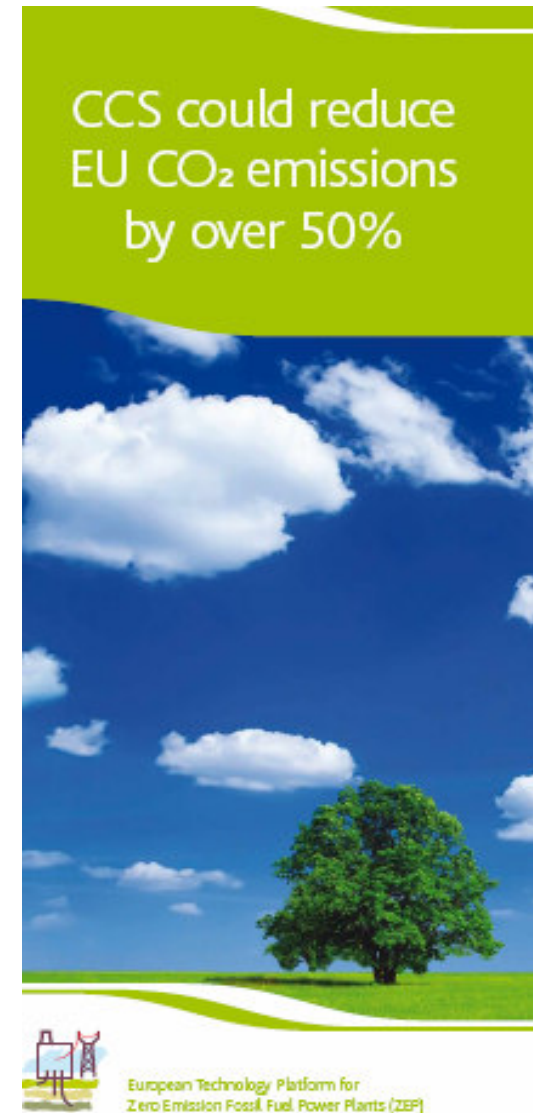
How will the Directive influence operators?

- MS determine when and where CCS will happen
- Companies will decide whether to go for CCS based on conditions in the market (i.e. Carbon price)



Can CCS become mandatory?

- Impact Assessment Study:
Not mandatory CCS in 2020
- **Capture-ready** requirement:
”...all combustion plants must have suitable space on the installation site for the equipment necessary to capture and compress CO₂ and that the availability of suitable storage sites and the technical feasibility of CCS retrofit have been assessed”
- Amendment of Large Combustion Plants (LCP) Directive
- ***Further legislative proposals possible by end 2015 (revision of the Directive)***



Summary

- Regulatory framework for CO₂ storage will be in place when the directive enters into force
- Member States must establish ***competent authorities (CA)*** responsible for fulfilling duties under the Directive
- Negative attitude in the EU parliament and EU Council is expected
- “Capture-ready” requirement is introduced to avoid lock-in of high emission technologies
- Big discussions on “Capture-ready”
- CCS could become mandatory