Norway: Legal and regulatory CCS framework

Mette Karine Gravdahl Agerup
Assistant Director General
Ministry of Petroleum and Energy
CCS directive – draft regulations submitted for public consultation

• Directive entered into force for Norway on 1 June 2013

• Discussion with ESA regarding application of directive (financial security) to existing gas fields (Sleipner and Snøhvit)

• Two Ministries responsible for implementation of directive in Norway:
  – Petroleum and Energy (resource management)
  – Climate and Environment (environmental issues)

• Two draft regulations submitted for public consultation on 28 March 2014 – time limit for comments: 28 May
Transportation and storage of CO$_2$

- In Norway, transportation by pipeline for permanent storage in a subsea geological formation on the continental shelf is currently the only feasible solution for storage of CO$_2$ from industrial plants onshore.

- Storage of CO$_2$ is only feasible on the continental shelf – for geological reasons.
CCS directive – draft regulations

- **Resource management:** Based on existing Petroleum Act
- **Licensing system:**
  - Prospecting license (non-exclusive)
  - Exploration license (exclusive)
  - Exploitation license (exclusive) (subject to impact assessment)
  - Post-closure: Transfer of responsibility to State c/o Ministry of Petroleum and Energy (MPE)
  - Financial mechanism

- **Environmental issues:**
  - Storage license (to be submitted to ESA for review)
  - Financial security (MPE to be consulted)
Norway: National regulation of CCS as part of petroleum activities: Applicable legislation exists

- CCS as part of petroleum activities (whether for the purpose of EOR or permanent storage on the continental shelf): Regulated under the existing petroleum regime:
  - The Petroleum Act and Regulations (production licence required, conditions for transportation, storage and monitoring as part of approved Plan for development and operation)
  - The Pollution Control Act and Regulations (permit to inject CO$_2$, requirements for the composition of the CO$_2$-stream, monitoring)
  - The CO$_2$-levies Act
EU-ETS

- Norway part of the EU emissions trading system
- Applies to emissions of CO$_2$ – also from petroleum activities
- Stored CO$_2$ is “not emitted” – no obligation to pay quotas for CCS
- If leakage: Obligations to pay quotas for all CO$_2$ emitted
National regulation of CCS which is not part of petroleum activities

• Onshore capture plant:
  – Energy Act/Land Planning Act (Ministry of Transport)

• Building and operation of CO₂ pipeline:
  – New legislation (Ministry of Petroleum & Energy/Labour & Social Affairs)

• Exploration for, development and use of offshore reservoir for permanent storage of CO₂ (exclusive licences):
  – New legislation (Ministry of Petroleum & Energy/Labour & Social Affairs)

• Permit to inject CO₂ on the continental shelf:
  – Pollution Control Act/Regulations (to be amended) (Ministry of Environment and Climate)
  – New legislation (Ministry of Petroleum & Energy/Labour & Social Affairs)
Norway: National regulation of CO₂ for permanent storage on the continental shelf

- Issues to be regulated by the Ministry of Petroleum and Energy/Labour and Social Affairs (based on existing petroleum legislation and the EU CCS Directive):
  - Licence to:
    - Explore for subsea geological structures for permanent storage of CO₂
    - Develop and use subsea geological structures for permanent storage of CO₂
    - Construct and operate pipeline for transportation of CO₂ from capture plant to offshore storage site
  - Plan for development and operation of an offshore geological formation for permanent storage of CO₂ – subject to Ministry approval
  - Impact assessment – part of the development plan
  - Safety issues – risk analyses
  - Third party access to CO₂ pipelines and storage reservoirs – responsibility for injected CO₂
  - Responsibility for long term monitoring of storage reservoir
  - Transfer of responsibility to the State
  - Dispute resolution
Long-term liability

- Draft regulations imply transfer of responsibility for the storage site to State twenty years after closure of the storage location.
  - ..if the operator can demonstrate that the stored CO₂ is stable and that no leakage occurs from the storage location

- Operator responsible for the cost of monitoring the storage location for the first thirty years following such transfer

- The issue of financial liability is difficult
Financial assurance for long-term stewardship

Draft regulations:

• Security: Parent company guarantee/other security – to be adapted to phases of activities at any time
• The operator to insure his CCS activities at all times – at least:
  - a) damage to facilities;
  - b) pollution damage and other liability towards third parties;
  - c) wreck removal and cleanup as a result of accidents;
  - d) insurance of the licensee’s own employees who are engaged in the activities.

• Contractors and subcontractors
• Insurance coverage: reasonable in light of risk exposure and premium costs
• Insurance report to the Ministry by the end of each calendar year
• The Ministry may require further insurance to be taken out
Public engagement

Draft regulations:

• Operator to carry out impact assessment (IA) before:
  – Development of CO₂ storage site
  – Construction of pipelines for transportation of CO₂
  – Closure of storage site

• IA process:
  – Draft IA program – public consultation – all interested parties – at least 6 weeks
  – Adopted IA program adapted to comments – to all parties who commented
  – IA – public consultation – all interested parties – at least 3 months
  – IA adapted to comments – new studies may be required, as appropriate
Norway: Environmental regulation of CO$_2$ for permanent storage on the continental shelf

- A storage license according to the CCS Directive is to be given by the Environment Directorate

- The draft license to be submitted to the EFTA Surveillance Authority (ESA) for review

- ESA may submit comments to the draft license within a 4 month time limit

- Financial security to be decided in consultation with the Ministry of Petroleum and Energy
Norway: Environmental regulation of CO₂ for permanent storage on the continental shelf

Acceptance criteria based on Directive 2009/31/EC and London Protocol:

– CO₂ stream shall consist overwhelmingly of carbon dioxide
– No wastes or other matter to be added for the purpose of disposal
– CO₂ streams may contain incidental associated substances from the source or capture process, but concentrations of all incidental and added substances shall be below levels that would:
  • Adversely affect the integrity of the storage site or the relevant transport infrastructure
  • Pose a significant risk to the environment or human health, or
  • Otherwise breach the requirements of applicable EC legislation
– Injection of CO₂ streams will be accepted subject to an analysis of the streams, including corrosive substances, and a risk assessment having been carried out, showing that the contamination levels are in line with accepted criteria
Thank you for your attention