

SHOC Conference: Carbon Free Shipping and Shipping Carbon – Contracts in Context

Environmental Obligations to Regulate Oceanic Carbon Storage in International Law

10 November 2022

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Introduction

▶ Definition of Carbon Dioxide (CO₂) Capture and Storage (CCS):

‘a process consisting of the separation of CO₂ from industrial and energy-related sources, transport to a storage location and long-term isolation from the atmosphere’ (B. Metz et al (eds), *IPCC Special Report on Carbon Capture and Storage*, 2005, 3).

▶ Oceanic CCS

- Offshore geological storage
- Ocean storage

▶ CCS as ‘a bridging technology that will contribute to mitigating climate change’



Introduction

- ▶ Climate change as ‘a common concern of mankind’ (Preamble of the Paris Agreement)
- ▶ An obligation to protect and preserve the marine environment as *an obligation erga omnes*, that is, ‘an obligation under general international law that a State owes in any given case to the international community, in view of its *common values* and its concern for compliance, so that a breach of that obligation enables all States to take action’
 - Need for *the reconciliation of two community interests*



Introduction

- ▶ The long-term sustainability of CO₂ storage in the oceans
 - The IPCC Special Report
 - ‘CCS also poses issues relating to long-term liability for possible unintended releases or contamination which may have inter-generational and, in some cases, international consequences’ (B. Metz et al (eds), *IPCC Special Report on Carbon Capture and Storage* (2005) p. 70).
 - Oceanic CCS as a matter of inter-generational equity
 - Importance of temporal elements



Regulation of Oceanic CCS as Dumping

► Definition of dumping under the UN Convention on the Law of the Sea (LOSC): Article 1(1)-(5)

‘(5) (a) “dumping” means:

(i) any deliberate disposal of **wastes** or other matter from vessels, aircraft, platforms or other man-made structures at sea;

(ii) any deliberate disposal of vessels, aircraft, platforms or other man-made structures at sea’



Regulation of Oceanic CCS as Dumping

► Definition of dumping under the LOSC: Article 1(1)-(5)

‘(5) (b) "dumping" does not include

(i) the disposal of wastes or other matter incidental to, or derived from the normal operations of vessels, aircraft, platforms or other man-made structures at sea and their equipment, other than wastes or other matter transported by or to vessels, aircraft, platforms or other man-made structures at sea, operating for the purpose of disposal of such matter or derived from the treatment of such wastes or other matter on such vessels, aircraft, platforms or structures;

(ii) placement of matter for a purpose other than the mere disposal thereof, provided that such placement is not contrary to the aims of this Convention.’



Regulation of Oceanic CCS as Dumping

► Definition of marine pollution under the LOSC

Article 1(1)(4)

‘the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or **is likely to** result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities’.



Regulation of Oceanic CCS as Dumping

▶ The 1996 London Protocol as Amended in 2006

- **ANNEX 1 WASTES OR OTHER MATTER THAT MAY BE CONSIDERED FOR DUMPING**

‘1. The following wastes or other matter are those that may be considered for dumping being mindful of the Objectives and General Obligations of this Protocol set out in articles 2 and 3:

....

.8 Carbon dioxide streams from carbon dioxide capture processes for sequestration’.

***London Protocol:** Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter



Regulation of Oceanic CCS as Dumping

▶ The 1996 London Protocol as Amended in 2006

- **ANNEX 1 WASTES OR OTHER MATTER THAT MAY BE CONSIDERED FOR DUMPING**

‘4 Carbon dioxide streams referred to in paragraph 1.8 may only be considered for dumping, if:

- .1 disposal is into a **sub-seabed geological formation**; and
- .2 they consist overwhelmingly of carbon dioxide. They may contain incidental associated substances derived from the source material and the capture and sequestration processes used; and
- .3 no wastes or other matter are added for the purpose of disposing of those wastes or other matter’



Regulation of Oceanic CCS as Dumping

▶ The 1996 London Protocol as Amended in 2006

- Amendment of Article 6 of the London Protocol so as to allow the export of carbon dioxide streams for disposal in accordance with Annex 1.
- Provisional application of an amendment of Article 6 of the London Protocol.



Regulation of Oceanic CCS as Dumping

▶ The 1996 London Protocol as Amended in 2006

- Annex 2 Assessment of Wastes or Other Matter That May be Considered for Dumping
- The 2006 Risk Assessment and Management Framework for CO₂ Sequestration in Sub-seabed Geological Structure (CS-SSGS)
- The 2012 Specific Guidelines for the Assessment of Carbon Dioxide for Disposal into Sub-seabed Geological Formations



Regulation of Oceanic CCS as Dumping

► Temporal Element

- Annex 2 Assessment of Wastes or Other Matter That May be Considered for Dumping

The assessment for dumping 'should define the nature, **temporal and spatial scales** and **duration** of expected impacts based on reasonably conservative assumptions' (para. 13).



Regulation of Oceanic CCS as Dumping

► Temporal Element

- The 2012 Specific Guidelines for the Assessment of Carbon Dioxide for Disposal into Sub-seabed Geological Formations

‘6.2 ... The following are important considerations in selecting a sub-seabed geological formation for the disposal of carbon dioxide streams:

.5 potential migration and leakage pathways **over time** (including transboundary movement) and potential effects to the marine environment of leakage of CO₂’



Regulation of Oceanic CCS as Dumping

► Amendments of the OSPAR Convention

‘In annex iii article 3 new paragraphs 3 and 4 are added as follows:

3. The prohibition referred to in paragraph 1 of this Article does not apply to carbon dioxide streams from carbon dioxide capture processes for storage, provided
 - a. disposal is into a sub-soil geological formation;’



Regulation of Oceanic CCS as Dumping

► Amendments of the OSPAR Convention

- The OSPAR Guidelines for Risk Assessment and Management of Storage of CO₂ Streams in Geological Formations

‘5.2 ... A thorough site characterisation is therefore critical for defining the nature and **temporal and spatial scales** of potential impacts’.

‘5.3 ... It is important to **update the risk characterisation periodically**, as part of the risk management process, based on new field data and/or performance assessment data and/or new/improved scientific knowledge’.



Regulation of Oceanic CCS as Dumping

▶ Amendments of the OSPAR Convention

- OSPAR Decision 2007/1

‘The placement of carbon dioxide streams in the water column or on the seabed is prohibited, unless it results from normal operations as described in Article 1(g)(i) of the Convention or is for a purpose other than the mere disposal thereof as described in Article 1(g)(ii) of the Convention and is in accordance with the relevant provisions of the Convention.’



Regulation of Oceanic CCS as Dumping

► The Helsinki Convention

- Article 11

- ‘1. The Contracting Parties shall, subject to exemptions set forth in paragraphs 2 and 4 of this Article, **prohibit dumping** in the Baltic Sea Area.
2. Dumping of dredged material shall be subject to a prior special permit issued by the appropriate national authority in accordance with the provisions of Annex V’.



Regulation of Oceanic CCS as Dumping

► The Helsinki Convention

How is it possible to harmonize the Helsinki Convention with the London Protocol?

- Article 29 : Relation to other Conventions

‘The provisions of this Convention shall be without prejudice to the rights and obligations of the Contracting Parties under existing and future treaties which further and develop the general principles of the Law of the Sea underlying this Convention and, in particular, provisions concerning the prevention of pollution of the marine environment’.

- Article 30 (4)(a) of the Vienna Convention on the Law of Treaties/A *lex posterior* or *lex specialis* principle



Obligations to Prevent Transboundary Marine Pollution from Offshore Geological Storage

► The No-Harm Principle (An Obligation of Due Diligence)

- LOSC, Article 194(2)

‘2. States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention.’



Obligations to Prevent Transboundary Marine Pollution from Offshore Geological Storage

► Temporal element of due diligence

- The view of ITLOS Seabed Disputes Chamber:
“due diligence” is a variable concept. **It may change over time** as measures considered sufficiently diligent at a certain moment may become not diligent enough in light, for instance, of new scientific or technological knowledge’ (ITLOS Reports 2011, 43, para 117).



Obligations to Prevent Transboundary Marine Pollution from Offshore Geological Storage

- ▶ Inter-link between a due diligence obligation and an EIA
 - An environmental impact assessment (EIA) as a procedure that seeks to detect **signs of future environmental risks** and impacts of a proposed project before authorising or funding the project
 - An EIA as a legal device to address **inter-temporality** in the protection of the environment
 - Inter-link between a due diligence obligation and an obligation to conduct an EIA



Obligations to Prevent Transboundary Marine Pollution from Offshore Geological Storage

► Need for Monitoring

The London Protocol Risk Assessment and Management Framework

‘7.5 **Long-term monitoring** and mitigation of any leakage of CO₂ will be important activities in the context of the London Convention and Protocol, due to the long time-scales of CS-SSGS, the potential for much larger sites than those used for conventional dumping operations and the nature of CO₂’.



Obligations to Prevent Transboundary Marine Pollution from Offshore Geological Storage

► The Precautionary Approach

- Article 3(1) of the London Protocol

‘1 In implementing this Protocol, Contracting Parties shall apply a **precautionary approach** to environmental protection from dumping of wastes or other matter ...’

- **Inter-temporal nature** of the precautionary approach

→ An inter-link between the precautionary approach and an EIA.



Concluding Remarks

1. Importance of the long-term sustainability of CO₂ storage in geological formations

2. Inter-link between environmental obligations:
 - 1) A due diligence obligation
 - 2) The obligation to perform an EIA
 - 3) The obligation of monitoring
 - 4) The precautionary approach

