

Resources and Responsibilities for Frameworks



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Carbon Capture, Utilization, and Storage: Handbook for Policymakers

About the Handbook

A ‘how-to’ action guide to empower legislators, ministries, regulators, and NOC officials for understanding the policies, rules, and best practices that countries can adopt and implement for CCUS.

Available here:

cldp.doc.gov/carbon-capture-utilization-and-storage-ccus-resources

**Carbon Capture,
Utilization, and Storage**
Handbook for Policymakers



Carbon Capture, Utilization, and Storage: Handbook for Policymakers

About the Handbook (Cont.)

- Sponsored by **U.S. Department of State, Bureau of Energy Resources.**
- Drafted over one week in an intense session with eight expert co-authors.
- Co-written by authors representing:
 - Government
 - NGOs
 - Multilaterals
 - Industry
 - Academia



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Key Takeaways

- When creating a framework for CCUS, policymakers can draw upon a number of resources including international standards such as those developed by the International Organization for Standardization (ISO), as well as existing CCUS legislation from the US, EU, and others.
- In addition, when creating a framework, policymakers should look to existing international conventions. These conventions may not only obligate the country to regulate CCUS projects in a certain way, but they may also be a source of guidance.
- Project Greensand is an example of how two countries are using international standards and international conventions in a CCUS project.



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International Standards

- International standards can help develop country-specific CCUS frameworks
- Standards are developed through member consensus under the ***International Organization for Standardization (ISO)***
 - ISO membership is comprised of countries and liaisons represented by international subject-matter experts who convene under technical committees to formulate a specification/ guideline/definition based on leading practices
 - Members then vote on standards through ballots
 - If approved, a standard is typically reviewed and updated every five years
 - Standards are voluntary and cannot be used in place of existing regulations or laws
 - However, standards may be referenced, incorporated, or adopted into a regulation
 - When jurisdictions adopt a standard, it can help harmonize regulations and laws across jurisdictions



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International Standards: Case Studies

Case Study: ISO 27914

Developed in 2017, ISO 27914 covers CO₂ geological storage.

This standard is currently being revised under ISO/TC 265 to add a quantification and verification portion for storage without hydrocarbon production and incorporate experiences made since publication.

The revision process is expected to be completed in 2025.

ISO 27914 has been adopted by Japan and Canada and referenced by Norway's regulators in its guidelines for CO₂ safety regulations.



Indonesia Carbon Capture and Storage Center Leadership
(Courtesy of the Center)

Case Study: Indonesia Carbon Capture and Storage Center leverages international resources to advance CCUS

In 2023, the Indonesia CCS Center (the Center) was inaugurated, led by a team of experts encompassing engineering, science, policy, and business.

The Center's establishment was driven by the imperative to serve as a dedicated resources to accelerate CCUS technology development in Indonesia through research, innovation, and advocacy.

The Center has facilitated several discussions, engagements, forums, and is actively engaged in developing a CCUS regulatory framework and supporting domestic and regional initiatives.



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Early Mover Frameworks

Frameworks developed by those overseeing legacy CCUS projects (early movers) may guide the construction of emerging laws and regulations

Case Study: U.S. UIC Class VI 'Primacy'

The primary regulator instrument for underground CO₂ storage in the US is the Underground Injection Control (UIC) Class VI program.

The goal of the UIC program is to protect underground sources of drinking water from injection activities.

Class VI program provides requirements for CO₂ injection for permanent geological sequestration.

This regulation is currently managed at a federal level by the EPA who has a number of guidance documents related to UIC Class VI that may be helpful for CCUS framework development in other jurisdictions.

Case Study: IEA Model Framework: Long-Term Liability and Stewardship

The IEA Model Framework is an example of an early mover framework. It observed that the issue of long-term liability is generally addressed in one of three ways:

1. Provision made for transfer of responsibility to the relevant authority
2. Long-term liability explicitly rests with the operator
3. Long-term liability is not explicitly addressed; assumed that the operator retains liability for a storage site in perpetuity



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International Conventions

International Convention	Mechanism for CCUS Framework Implementation
UN Convention on the Law of the Sea (1982) (UNCLOS)	No express CCUS activity regulation, but its provisions may have an impact if CCUS activities are deemed to constitute “pollution”
1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (The London Protocol)	Comprehensive international legal instrument for protection of marine environment and often used in context of cross-border CO ₂ transport. Several countries with no pre-existing frameworks for CO ₂ storage are considering acceding to the London Protocol and using provisions of the protocol as building blocks for national frameworks.
Basel Convention (1989)	Provides that international trade in hazardous waste is subject to the prior consent, or refusal, of the receiving country; unclear if CO ₂ constitutes hazardous waste in the scope of the Basel Convention
Convention on Environmental Impact Assessment in a Transboundary Context (“Espoo Convention”)	Requires parties to assess the environmental impacts of their transboundary activities during early stages of project planning and take all appropriate measures to mitigate significant adverse transboundary impacts. Though CCUS and CO ₂ -related activities are not expressly listed, a CCUS project may be subject to the convention’s requirements if it is conducted within the territory of, or by, convention parties
Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters (Aarhus Convention)	Imposes public participation requirements on member parties within the territorial scope of the convention for activities that may have a significant effect on the environment Currently has 48 Contracting Parties, but none in the Asia-Pacific Region



International Conventions: Case Studies

Case Study: Transportation of CO₂ between Two Contracting Parties to the London Protocol

Project Greensand started CO₂ injection in March 2023, marking the world's first offshore cross-border CCS project – CO₂ captured in Antwerp, Belgium was shipped to the Nini West depleted oil field on the Danish continental shelf for injection.

Both Denmark and Belgium are Contracting Parties to the London Protocol. The two countries arranged a non-legally binding MoU identifying permitting agencies, confirming the purpose/scope/intention of activities.

This complies with Article 6.2 requirements.

Case Study: Transportation between Contracting and Non-Contracting Parties to the London Protocol

An Australian, Contracting Party, company, signed an MoU with the Bayu-Undan joint venture, an offshore, Non-Contracting Party.

Article 6.2 is more prescriptive for cases between a Contracting and Non-Contracting Party than for arrangements between two Contracting Parties.

As a Contracting Party, Australia has to ensure its agreement contains provisions equivalent to those contained in the Protocol.

Currently, the Non-Contracting Party is still developing a regulatory framework, making this due diligence process challenging.





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