

CCS Technical Workshop 2022

Legal Challenges of CCS Implementation

Long term liability for geological storage of CO₂ after completion of injection

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Five Projects in which CO2 is Geologically Stored in Japan

Projects	Injection period	Purpose	Assessment of CO2 leakage from the geological storage in GHG inventories
Ku-Bi-Ki	1991.3 ~ 1993.6	EOR	CO2 leakage from subsurface storage is “considered insignificant”
Sa-Ru-Ka-Wa	1997.9 ~ 1999.9	EOR	
Na-Ga-O-Ka	2003.7 ~ 2005.1	Demonstration of geological storage of CO2	
Yu-U-Ba-Ri	2004.11 ~ 2007.10	Enhanced recovery of CBM	
To-Ma-Ko-Ma -I	2016.4 ~ 2019.11	Demonstration of geological storage of CO2	No leakage

Three Categories of Liability for Geological Storage of CO2

Categories	Explanation	Note about monitoring activities
Safety Liability	Liability for implementing the necessary measures to ensure the safety of and prevent pollution from geologically stored CO2.	“Safety Liability” is comprised of monitoring activities to clarify the implementation of measures to ensure the safety of and prevent pollution from geologically stored CO2.
Civil Liability	Liability for third party damages caused by unexpected accidents due to geologically stored CO2.	
Climate Change Liability	Liability for CO2 emissions caused by leakage from geological storage.	“Climate Change Liability” is comprised of monitoring activities to check CO2 leakage from geological storage.

Safety Liability Laws for Geological Storage of CO2 in Japan

Storage location	Purpose	Laws	Limitation of Liability Period	Existing Projects
Sub-seabed	EOR, EGR, ER-CBM	Mining Act, Mine Safety Act	5 years after the mining right has lapsed	-
	Pure CCS	APMPMD*	No limitation	To-Ma-Ko-Ma-I
Onshore Subsurface	EOR, EGR, ER-CBM	Mining Act, Mine Safety Act	5 years after the mining right has lapsed	Ku-Bi-Ki, Sa-Ru-Ka-Wa, Yu-U-Ba-Ri
	Pure CCS	-	-	Na-Ga-O-Ka

*Act on Prevention of Marine Pollution and Maritime Disasters

Major Civil Liability Provisions for Geological Storage of CO2 in Japan

Provisions	Responsible legal entity	Civil liability requirements	Applicable area(s)	Existing projects
Article 709 of Civil Act	Relevant operator of activities for the geological storage of CO2	<ol style="list-style-type: none"> 1. Willful misconduct or negligence in activities related to the geological storage of CO2; and 2. Reasonable causal relationship between such storage and third party damages 	Both sub-seabed and onshore subsurface	All five projects
Article 717 of Civil Act	Possessor or owner of the injection well or other facilities placed in the site	<ol style="list-style-type: none"> 1. Defect in the installation or maintenance of the injection well or other facilities placed in the site; and 2. Reasonable causal relationship between such defect and third party damages 	Only onshore subsurface	Ku-Bi-Ki Sa-Ru-Ka-Wa Na-Ga-O-Ka Yu-U-Ba-Ri
Article 109 of Mining Act	Current or last holder of the mining right	<ul style="list-style-type: none"> ● Reasonable causal relationship between mining activities specified in the Mining Act and third party damages ● Neither willful misconduct or negligence is required 	Both sub-seabed and onshore subsurface	Ku-Bi-Ki Sa-Ru-Ka-Wa Yu-U-Ba-Ri

Current Situation of Climate Change Liability for Geological Storage of CO2 in Japan

Type of Climate Change Liability	Current situations	Relationship with GHG inventories
Monitoring CO2 leakage from geological storage	<ul style="list-style-type: none"> ● There are no laws on monitoring CO2 leakage from the viewpoint of Climate Change Liability. ● However, monitoring is conducted pursuant to the Safety Liability in Mining Act, Mine Safety Act, and APMPMD* (if applicable). The results of such monitoring are assessed in accordance with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. 	<ul style="list-style-type: none"> ● To-Ma-Ko-Ma-I, in which monitoring is conducted based on the APMPMD, is acknowledged as a project which has “no leakage” of CO2. ● Each of Ku-Bi-Ki, Sa-Ru-Ka-Wa, and Yu-U-Ba-Ri, in which monitoring is conducted based on the Mining Act and Mine Safety Act, is acknowledged as a project whose CO2 leakage from subsurface storage is “considered insignificant”.
Imposition of Carbon Tax or loss of emission allowance for CO2 leakage	<ul style="list-style-type: none"> ● Currently, Japan has neither carbon tax laws nor a nationwide carbon emission trading system for the purpose of reducing the amount of CO2 emissions calculated in the GHG inventories or achieving the Japanese NDC (Nationally Determined Contribution). 	Directly related. Therefore, the criteria to determine whether meaningful amounts of CO2 have leaked will be the same as those of the GHG Inventories.
Invalidation of issued voluntary carbon credit and supplemental obligations of voluntary carbon credit for CO2 leakage	<ul style="list-style-type: none"> ● There are no voluntary carbon credit schemes in which carbon credit is issued for CO2 injection and storage in Japan. 	Indirectly related or irrelevant. Therefore, the criteria to determine whether meaningful amounts of CO2 have leaked will not necessarily be the same as those of the GHG Inventories.

*Act on Prevention of Marine Pollution and Maritime Disasters

Long Term Liabilities for Geological Storage of CO2

Pre-Carbon Pricing and Post-Carbon Pricing

Long Term Liabilities under Pre-Carbon Pricing

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|--------|--|
| Tier 1 | <ul style="list-style-type: none"> ● Safety Liability exists for sub-seabed CO2 storage based on the APMPMD* because there is no limitation on the liability period. ● Monitoring CO2 leakage to be acknowledged as “no leakage”. |
| Tier 2 | <ul style="list-style-type: none"> ● Civil Liabilities exist based on the Civil Act and Mining Act, subject to a reasonable causal relationship with third party damages. ● Monitoring CO2 leakage to be acknowledged as “being considered insignificant”. |

Carbon Pricing in Japan

- Adoption of carbon tax or carbon emission trading system.
- Introduction of voluntary carbon credit schemes in which carbon credit is issued for CO2 injection and storage.

Long Term Liabilities under Post-Carbon Pricing

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|--------|---|
| Tier 1 | <ul style="list-style-type: none"> ● Imposition of carbon tax or loss of emission allowance for CO2 leakage. ● Invalidation of issued voluntary carbon credit and supplemental obligations on voluntary carbon credit for CO2 leakage. ● Safety Liability exists for sub-seabed CO2 storage based on the APMPMD* because there is no limitation on the liability period. ● Monitoring CO2 leakage to be acknowledged as “no leakage”. |
| Tier 2 | <ul style="list-style-type: none"> ● Civil Liabilities exist based on the Civil Act and Mining Act, subject to a reasonable causal relationship with third party damages. ● Monitoring CO2 leakage to be acknowledged as “being considered insignificant”. |

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Reconsideration of the scope of geological storage of CO2, such that it is regarded as a mining activity subject to the Mining Act and the Mine Safety Act.

- Safety Liability under the Mining Act and the Mine Safety Act is NOT too excessive for the private sector to bear. No tier 1 long-term liability exists.
- The results of the CO2 leakage monitoring conducted based on the Mining Act and Mine Safety Act can be acknowledged as “being considered insignificant”.
- Japan can start reducing CO2 emissions in GHG inventories by CCS without the legal framework of transferring long term liability for geological storage of CO2 to public institutions.



Enforcement of CCS legal framework to set forth the following items:

- I. Safety Liability for onshore subsurface CO2 storage which is consistent with that under the Mining Act and the Mine Safety Act.
- II. Safety Liability for sub-seabed CO2 storage which is consistent with that under the Mining Act and the Mine Safety Act, and which complies with the 1996 London Protocol.
- III. Transfer of long-term Safety Liabilities of items I and II above to public institutions in case that they are too excessive (like those of the APMPMD).
- IV. CO2 leakage monitoring standards which can be acknowledged as “being considered insignificant”
- V. CO2 leakage monitoring standards which can be acknowledged as “no leakage”, if necessary.
- VI. Transfer of long-term CO2 monitoring liabilities of items IV and V above to public institutions in case that they are too excessive.
- VII. Carbon tax or carbon emission trading system which facilitates the investment of CCS business by CO2 dischargers in Japan.
- VIII. Transfer of the economical Climate Change Liabilities (such as imposition of carbon tax or loss of emission allowance for CO2 leakage which arises from the introduction of item VII above) to public institutions.

Thank you for your time and attention.