

Navigating the Evolving CCS/CCUS Regulatory Frameworks of Indonesia and Malaysia: Improving Investor Confidence and Environmental Integrity

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Highlights

- Indonesia and Malaysia have emerged as leading ASEAN Member States in advancing CCS/CCUS policy frameworks, regulatory development, and enabling environments for deployment.
- In Indonesia, further acceleration of CCS/CCUS development would benefit from the establishment of a time-bound CCS taskforce to streamline multi-agency approvals, the issuance of interim guidance on tariffs and procedures, and the publication of clear frameworks for storage fees, capacity allocation, and standardised MRV protocols.
- In Malaysia, regulatory maturity could be strengthened by introducing a transparent, risk-based methodology for the Post-Closure Stewardship Fund injection levy, developing tiered liability frameworks that balance long-term state responsibility with phased reductions in operator exposure, and mandating public consultation processes for large-scale CCS projects.
- At the ASEAN level, regional coherence could be enhanced through the adoption of a minimum common regulatory package covering custody transfer, MRV data protocols, incident reporting, and dispute resolution mechanisms.

1. Introduction

The potential of Carbon Capture and Storage (CCS) and Carbon Capture, Utilisation, and Storage (CCUS) has been recognized by many regional-level statements and roadmaps in ASEAN, including the [ASEAN Joint Statement on Climate Change](#) to the 30th Session of the Conference of the Parties to the UNFCCC (COP30), the [Joint Statement of the 43rd ASEAN Ministers on Energy Meeting \(AMEM\)](#) in Kuala Lumpur, and the [ASEAN Plan of Action for Energy Cooperation 2026-2030](#). As ASEAN Member States (AMS) pursue ambitious climate targets, accelerating the deployment of CCS/CCUS technologies has become increasingly important. However, achieving large-scale implementation requires significant progress in policy and regulatory readiness. In recent years, AMS have made gradual advancements in this area, with Indonesia and Malaysia emerging as regional leaders in the development of national CCS/CCUS regulatory frameworks.

At the country level, Indonesia has positioned CCS/CCUS as a critical component of its long-term decarbonisation strategy. The technology is integrated into [Indonesia's Long-Term Strategy for Low Carbon and Climate Resilience](#) [1], and the Ministry of Energy and Mineral Resources (MEMR) [Roadmap to Net-Zero Emission by 2060](#) in the Energy Sector [2]. More recently, the strategic

importance of CCS has been explicitly reinforced in Indonesia's [National Hydrogen and Ammonia Roadmap \(RHAN\)](#) launched by the MEMR in 2025 [3]. CCS is identified as a key enabler for scaling low-carbon hydrogen and ammonia production, which is essential for decarbonising hard-to-abate industries and achieving the national net-zero target by 2060. Beyond its climate role, CCS is also framed as a driver of economic development. Indonesia is mobilising over [USD28 billion across 15 CCS projects](#) [4], with government estimates suggesting that CCS deployment could create up to [170,000 jobs annually while also attracting low-carbon industrial investment](#) into the country [5].

Malaysia has likewise made substantial progress and is widely regarded as one of the most advanced AMS in terms of CCS regulatory development. In August 2025, Malaysia [introduced the Carbon Capture and Storage \(CCUS\) Act 2025 \(Act 870\)](#) [6] [7], becoming one of only two ASEAN countries, alongside Indonesia, to establish a dedicated CCS regulatory framework at the national level. CCS/CCUS has also been embedded within Malaysia's broader policy architecture, including the [National Energy Policy \(NEP\) 2022-2040](#) [8], the [National Energy Transition Roadmap](#) [9], and the [New Industrial Master Plan \(NIMP\) 2030](#) [10]. Through

these policies, CCS is framed as both a decarbonisation tool and a strategic industry for future economic growth. With vast geological storage potential, Malaysia is positioning itself as a regional carbon storage hub. The government projects that the CCUS sector could generate [over 200,000 jobs and contribute an additional \\$250 billion to the economy's gross value over the next three decades \[11\]](#).

Across both countries, the development of a robust CCS industry is increasingly viewed as a dual opportunity to meet national net-zero targets while also stimulating new sources of economic growth. Nevertheless, for these economic and

climate projections to be realised, investor confidence must be strengthened through clear, coherent, and supportive policy frameworks. At the same time, environmental integrity must be safeguarded to ensure that CCS projects deliver emissions reductions that are measurable, verifiable, safe, and permanent.

2. Understanding the Regulation Framework

2.1. Overview of Indonesia's CCS/CCUS Regulation Framework

Table 1. CCS/CCUS Regulation Landscape in Indonesia

Regulation	Description	Key Provisions
Umbrella Framework		
Presidential Regulation No. 14/2024	National umbrella for CCS	Establishes legal, environmental, and operational guidelines; defines cross-border provisions; mandates implementing regulations.
Framework by Track		
MEMR Regulation No. 2/2023	Framework for CCS in upstream O&G (Production Sharing Contracts/PSC track)	Integrates CCS/CCUS into PSCs; sets requirements for pilot projects.
PTK-070/SKKIA0000/2024/S9	Technical guideline for CCS within O&G PSC	Details legal, technical, economic, environmental, and safety procedures for CCS in PSC areas.
MEMR Regulation No. 16/2024	Framework for Carbon Storage Working Area (WIPK track)	Defines permit types, tendering, financial requirements, and MRV obligations for CCS in WIPK.
Supporting Regulation		
MEMR Regulation No. 13/2024	Supporting revenue flexibility	Allows additional gross split revenue-sharing for CCS/CCUS/Enhanced Oil Recovery (EOR) operators.
Government Regulation No. 19/2025	Additional fiscal framework	Establishes CCS as a Non-Tax State Revenue (<i>Pendapatan Negara Bukan Pajak/PNBP</i>) source via bid document services.
Government Regulation No. 28/2025	Licensing & risk classification	Classifies CCS as a high-risk activity; requires NIB and an operational licence.
ISO/TC 265	International standards alignment	Incorporates standards on CO ₂ storage, MRV, lifecycle risk management, and injection monitoring into national practice.

Source: ACE analysis from [Pioneering Transboundary CO₂: Indonesia's Role in Regional CCS Initiative](#) and [ASEAN CCS Updates 2024 Vol. 1 and 2](#) and [ASEAN CCS Updates 2025 Vol. 1, 2, 3, and 4](#).

The Umbrella Framework: Presidential Regulation No. 14/2024

[Presidential Regulation \(PR\) No. 14/2024](#) [12] signifies a major transformation in Indonesia's CCS policy, treating CCS as an independent, commercially viable rather than a supplementary process to hydrocarbon extraction. It establishes designated geographic areas known as Wilayah Izin Penyimpanan Karbon (WIPK) or Carbon Storage Permitted Area for CO₂ injection and long-term storage, which require permits issued by the MEMR or proposed by enterprises, and may encompass open areas,

mining concessions, or existing oil and gas working areas.

Operators need an Exploration Permit followed by a Storage Operation Permit, awarded through competitive processes. The regulation expands CCS participation to non-oil and gas sectors like cement, steel, and power generation, encouraging broader deployment of CCS and creating a unique market. It also allows for cross-border storage, permitting imported CO₂ to constitute up to 30% of total capacity, promoting Indonesia as a regional carbon storage hub. Commercially, it shifts to a storage service fee model, where operators earn from CO₂ transport, injection,

and permanent storage to cover CAPEX and OPEX, while the government collects royalties. This structure connects government revenue to the growth of the CCS market while not shifting operational risk to the state. It also considers fiscal incentives like tax allowances and exemptions to be defined in future regulations.

Framework of The Tracks

Track 1: CCS within Oil and Gas Production Sharing Contracts

[MEMR Regulation No. 2/2023](#) [13] governs CCS within upstream oil and gas Production Sharing Contracts (PSCs), permitting contractors to incorporate CCS projects into their Plans of Development (PODs) with approval from MEMR or SKK Migas. CCS expenditures are deemed cost-recoverable, facilitating monetisation through carbon credits or storage services. While allowing the injection and storage of CO₂ from their own operations, other PSC areas, or external emitters, the regulation limits CCS to the upstream sector, leveraging existing infrastructure and industry actors but does not provide a scalable framework for broader participation.

Track 2: CCS within Carbon Storage Permitted Area

[MEMR Regulation No. 16/2024](#) [14] establishes CCS as a distinct business activity outside the oil and gas sector, expanding participation to non-oil and gas entities through WIPK operationalisation. The regulation introduces a two-stage licensing system: an Exploration License (valid for six years, extendable by four) and a Storage Operation License (valid for 30 years, extendable by 20), awarded through [auctions or tenders](#) [15]. While exploration licenses may be held by Indonesian entities, foreign permanent establishments, or consortia, operation licenses must be held by locally incorporated entities. To ensure operational viability and safety, the regulatory framework mandates strict capacity verification. Proposed Plan of Development and Operation (PDO) within a WIPK must be equipped with a formally recognised carbon storage capacity certificate from any authorised body.

This framework explicitly defines CCS as a revenue-generating business. CCS operators may charge fees and enter agreements independent of hydrocarbon production, with most assets remaining with the operator but certain facilities reverting to the state upon license expiration. Operators must ensure site safety, measurement, reporting, verification, leakage prevention, and post-closure monitoring, which includes at least 10 years of site care after closure. Long-term liability can be transferred to the government following the completion of these responsibilities.

Supporting Regulations and Technical Standards

A set of regulations complements the core framework for CCS in Indonesia. [MEMR Regulation No. 13/2024](#) [16] allows for additional revenue-sharing arrangements for CCS/CCUS within the Gross Split regime, while [Government Regulation No. 19/2025](#) [17] designates CCS as a source of Non-Tax State

Revenue, enabling the collection of fees for permits, storage royalties, penalties, and auction-related information services. [Government Regulation No. 28/2025](#) [18] implements a risk-based licensing approach for high-risk activities, including CCS, and subjects it to environmental assessments and technical approvals.

To operationalise this licensing system, the regulation formally categorises CCS activities into specific [Indonesian Standard Industrial Classifications \(KBLI\)](#) [19]. Carbon storage, which covers exploration and storage operation permits, falls under KBLI 3900. Meanwhile, carbon transport is classified under specialised freight transport, encompassing rail transport, domestic sea freight (KBLI 50122), international sea freight (KBLI 50126), and pipeline transport (KBLI 49300).

Additionally, Indonesia has adopted various [ISO/TC 265](#) [20] standards as national standards, with plans to incorporate more, provide technical guidance on several key areas such as requirements and recommendations for the CO₂ storage ([SNI ISO 27914:2017](#)) [21], quantification and verification of GHG emissions and its reduction in CCS projects ([SNI ISO/TR 27915:2017](#)) [22], lifecycle risk management for integrated CCS projects ([SNI ISO/TR 27918:2018](#)) [23], and injection operations, infrastructure, and monitoring ([SNI ISO/TR 27923:2022](#)) [24].

2.2. Overview of Malaysia's CCS/CCUS Regulation Framework

The National-Level Framework: CCUS Act 2025

At the national level, Malaysia consolidated its approach with the passage of the [Carbon Capture, Utilisation and Storage \(CCUS\) Act 2025 \(Act 870\)](#) [6], adopting a single, comprehensive legislative framework governing the entire CCUS value chain. The Act represents a clear policy signal aimed at providing legal certainty, regulatory consistency, and investor confidence for large-scale CCUS deployment.

A central feature of the Act is the establishment of the Malaysia Carbon Capture, Utilisation and Storage Agency ([MyCCUS Agency](#)) [25]. This agency serves as the sole federal authority responsible for licensing, compliance oversight, and industry development, significantly reducing regulatory fragmentation and creating a single point of engagement for domestic and foreign investors.

The CCUS Act introduces a layered compliance and permitting system. All entities involved in carbon capture, transport, utilisation, or storage must first register with MyCCUS. Activity-specific permits are then required, including Assessment Permits for geological surveys and site appraisal, and Storage Licences for CO₂ injection and long-term storage operations.

Table 2. CCS/CCUS Regulation Landscape in Malaysia

Regulation	Description	Key Provisions
National-Level Framework		
Carbon Capture, Utilisation, and Storage (CCUS) Act 2025 (Act 870)	National framework for the entire CCUS value chain	<ul style="list-style-type: none"> Introduced compliance and permitting systems Established the centralised MyCCUS Agency and the Post Closure Stewardship Fund.
State-Level Framework		
Land-Code with Carbon Storage Rules (2022)	Govern carbon storage activities within Sarawak area	<ul style="list-style-type: none"> Licensing, permitting, monitoring, inspections. CCS activities are not automatically conferred by prior O&G activities. Repurposing legacy O&G sites for CCUS would be subject to regulatory approval.
Supporting Regulation		
Environment (Reduction of Greenhouse Gases Emissions) Ordinance 2023	GHG emission reporting obligations	<ul style="list-style-type: none"> O&G and energy sector (and other designated economic activities) require the operating entities to submit verified GHG emission reports according to recognised standards. It also governs voluntary mitigation measures and carbon credit generation.
Budget 2025	Fiscal incentives for CCUS activities	<ul style="list-style-type: none"> Tax allowance or tax deduction for in-house CCS projects Tax allowance or tax exemption for CCUS service providers Import duty and sales tax exemption for CCUS projects equipment

Source: ACE analysis from [Bridging Ambition and Action: Malaysia's CCUS Journey](#)

3. Economic-Focus Assessment

3.1. Indonesia

Indonesia’s CCS regulatory framework offers strong legal certainty. However, the primary obstacles in current CCS initiatives are execution and financial viability. Multi-agency permitting creates unpredictable lead times, the lack of an interim storage tariff/fee and government-take framework prevents lenders and investors from modelling returns with confidence, and cross-border CCS is slowed by unclear import SOPs and incomplete MRV/GHG accounting alignment. A practical near-term solution is to establish a dedicated, time-bound “one-stop” CCS taskforce with authority to coordinate approvals, issue interim guidance (tariff/fees and cross-border procedures), and publish clear timelines, so projects can reach FID while longer-term regulations are completed. Cross-border accessibility represents a major divergence between the two nations' economic strategies. Under Presidential Regulation No. 14/2024, Indonesia mandates that emissions from abroad can only be stored by foreign carbon emitters who directly invest in or are affiliated with investments within Indonesia.

Furthermore, PR No. 14/2024 references “tax and non-tax incentives” but does not provide clarity on timing, form, or scale, creating uncertainty in a market with high capital costs and weak carbon pricing. In addition, commercial certainty for third-party storage remains constrained by the absence of regulations

detailing storage fees and government royalties. Without quantitative guidelines on how such fees will be calculated, investors face difficulty in creating accurate financial models and establishing bankable project cases.

3.2. Malaysia

Malaysia's CCS framework offers [stronger fiscal clarity](#) [28] than Indonesia's, with tax allowances and deductions for in-house projects, exemptions for service providers, and import duty and sales tax waivers on equipment. These provisions reduce upfront capital costs and enhance cash flow predictability. Malaysia's cross-border approach is also notably more open. Unlike Indonesia's 30% cap on foreign CO₂ storage tied to bilateral agreements and foreign investment, Malaysia imposes no quantitative limit, and importation requires only a permit and compliance with stream acceptance criteria.

However, uncertainty remains around the injection levy administered by MyCCUS. While offshore licensees are required to pay into a Post-Closure Stewardship Fund, the absence of clarity on how the levy will be calculated, or whether it will vary based on the risk profile of different storage sites, creates a key financial uncertainty for investors. Momentum may ultimately depend on domestic demand scale and international partnership strength.

4. Environmental-Focus Assessment

4.1. Indonesia

Indonesia's framework incorporates credible elements. The liability regime, however, is considered insufficient. After ten years of post-closure monitoring without incident, liability shifts from operator to government. Therefore, it requires another regulations to mitigate the risk prior to post-transfer period that align with international standard. Click or tap here to enter text. Operators are required to maintain an escrow fund to cover monitoring and mitigation during this period, but the regulations do not specify whether such funds would be sufficient to address large-scale or unforeseen failures.

For cross-border CCS, operational clarity is absent. The framework should define the CO₂ custody "handover point" that is commonly set at the receiving terminal inlet before commingling, to establish unambiguous ownership, quality specification, metering responsibility, and risk transfer. Additionally, MRV and incident reporting obligations must align between exporting and importing jurisdictions through standardized data packages (metered volumes, CO₂ composition/impurities, chain-of-custody records, monitoring results, audit trails) with consistent triggers and timelines for reporting deviations, leaks, or abnormal operations. Without these operational definitions, cross-border transactions face avoidable disputes over inventory accounting, credit attribution, and liability allocation, materially delaying approvals and weakening investor confidence.

4.2. Malaysia

Malaysia's safeguards adopt a more conservative approach to long-term liability. Operators remain accountable for issues caused by negligence or non-compliance even after obligations have been formally transferred to the government, in contrast to Indonesia's capped ten-year liability period. This approach strengthens operator accountability but increases compliance burden for private developers.

Malaysia also requires adherence to international standards and site-specific acceptance criteria, ensuring that CO₂ injection and storage activities meet established technical integrity requirements. Still, social and ethical concerns have emerged around the process. However, Malaysia's CCUS Act has been criticised for its swift passage and limited detail on safeguards, raising fears of "carbon colonialism" and inadequate public consultation [30]. The absence of mandated public dialogue or independent environmental impact assessments for large-scale projects, particularly those involving foreign-sourced CO₂, adds another dimension of uncertainty and potential resistance from civil society.

5. Strategic Recommendations

5.1. For Indonesia

First, the regulatory framework needs immediate clarification. The government must finalise implementing regulations under PR No. 14/2024 that spell out exactly what fiscal incentives are available, when they apply, and how much investors can expect. Equally critical are transparent rules for storage fees and royalties as investors need predictable formulas, not case-by-case negotiations. On the technical side, the current ten-year post-closure monitoring period falls short of international norms for CO₂ permanence. Extending this timeframe and establishing government-backed contingency mechanisms would strengthen public trust and align with scientific consensus. Financial safeguards also require upgrading: escrow requirements should be tailored to each site's specific risks rather than applying blanket provisions.

Second, Indonesia needs streamlined processes to reduce administrative friction. A dedicated one-stop CCS permitting taskforce could cut through the current maze of overlapping authorities by publishing clear service-level timelines for each approval stage. This would transform schedule uncertainty into manageable planning parameters. For cross-border projects, practical operational protocols are just as important as policy approval. Standard procedures covering everything from customs classification to port handling, CO₂ quality specifications, and formal handover points would prevent the contractual disputes and liability confusion that currently stall projects.

Third, capacity allocation rules must provide long-term certainty. Developers and financiers need to know upfront how storage capacity will be divided between domestic and foreign volumes, what priority principles apply, how long contracts can run, and under what conditions capacity might expand. Without this predictability, shared infrastructure investments remain too risky to finance at scale. Clear allocation frameworks would transform Indonesia's geological advantage into bankable projects.

5.2. For Malaysia

The Post-Closure Stewardship Fund represents a promising approach, but its success depends on transparent implementation. The government must publish a clear methodology for calculating injection levies that explains how contributions scale with project size, geological risk profile, and operational performance. Without this transparency, investors face open-ended financial obligations that complicate project finance and discourage participation.

Current liability provisions may be overly rigid. A tiered or phased framework could maintain perpetual accountability for negligence while allowing operators to gradually reduce financial exposure as projects demonstrate long-term stability.

This would prevent the current all-or-nothing approach from deterring necessary private capital, particularly for pioneering projects where risk perception remains high.

Finally, procedural legitimacy requires strengthening. Mandatory public consultation processes and independent environmental impact assessments should be required for all large-scale CCS projects, especially those involving cross-border CO₂ imports. Malaysia's potential role as a regional storage hub brings concerns about the perception that the country might bear environmental risks for emissions generated elsewhere. Robust, transparent stakeholder engagement would address these concerns directly, building the social license necessary for the sector's long-term success. International precedent shows that projects with strong community engagement and independent oversight face fewer delays and operational challenges than those imposed without meaningful participation.

5.3. For ASEAN

At the regional level, ASEAN must move beyond fragmented national approaches to establish genuine cross-border CCS infrastructure. Most practically, ASEAN should adopt a "minimum common package" that doesn't require identical laws, just shared standards on critical pinch points: clear handover points for custody and risk transfer, standardised MRV data packages and audit trails, aligned incident reporting triggers and timelines, defined liability transfer mechanisms for post-closure, and practical dispute resolution processes. These baseline standards would prevent regulatory mismatches from stalling projects while preserving national sovereignty.

Aggregating regional demand is equally essential for cost competitiveness. By building a shared carbon market ecosystem and pooling CO₂ volumes, ASEAN can achieve the utilisation rates and economies of scale necessary to drive down CCS service costs. Fragmented country-by-country competition keeps infrastructure underutilised and prices high. Coordinated volume creates a larger regional market that benefits all participants while maintaining healthy competition among service providers.

For cross-border projects, practical operational protocols must strictly align with international regulations to ensure technical interoperability and mitigate safety risks. The regulatory framework must establish standardised CO₂ quality specifications within acceptable thresholds for stream impurities and define formal custody handover points based on globally recognised benchmarks. Integrating international frameworks, specifically the ISO/TC 265 standards, such as ISO 27914 for geological storage and ISO/TR 27923 for transport and injection infrastructure, will provide the necessary technical baseline. This alignment is vital to prevent the contractual disputes, liability confusion, and potential infrastructure degradation that currently threaten the viability of transboundary CCS networks.

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Annex - Full Comparison of Indonesia and Malaysia CCS/CCUS Framework


Dimension	Indonesia	Malaysia
Legal Framework	Layered, sector-evolving framework. Began as oil & gas-centric, then expanded into a national, cross-sector regime	Centralised.
Governance Body	<p>Distributed, multi-agency approach:</p> <ul style="list-style-type: none"> • Lead Authority: Minister of Energy and Mineral Resources (MEMR) <ul style="list-style-type: none"> ◦ Approving or rejecting CCS activities under both PSC-based schemes and Carbon Storage Permit Areas (WIPK). ◦ Designating, offering, and regulating Carbon Storage Permit Areas, including auction or limited tender processes. ◦ Issuing, extending, suspending, or revoking exploration and storage permits. ◦ Setting technical standards, safety requirements, and certification frameworks (including carbon storage capacity certification). ◦ Approving commercial arrangements, including storage service fees and royalty obligations. ◦ Supervising CCS operations across the project lifecycle, including monitoring, closure, and post-closure obligations. ◦ Coordinating inter-ministerial approvals where CCS activities intersect with land use, marine zones, or environmental permitting. ◦ Formulating policy for international and cross-border CCS cooperation • Upstream Regulator: Special Task Force for Upstream Oil and Gas Business Activities (SKK Migas)/BPMA à PSC-based CCS only: <ul style="list-style-type: none"> ◦ Reviews and evaluates CCS proposals and recommends approval to MEMR ◦ Assesses technical, economic, and safety implications of CCS on upstream operations ◦ Supervises CCS implementation integrated into Plans of Development ◦ Reviews CO₂ transport plans and CCS closure plans within PSC areas ◦ Advises MEMR on contract amendments, working area expansion, and partial relinquishment • Environmental Regulator: Ministry of Environment and Forestry (KLHK) <ul style="list-style-type: none"> ◦ Issuing environmental approvals (AMDAL) for CCS activities ◦ Receiving and reviewing MRV reports, including leakage monitoring and emissions accounting ◦ Ensuring alignment of CCS projects with Indonesia's NDCs and carbon economic instruments (NEK) ◦ Providing environmental recommendations for CO₂ transport permits • Transport and Spatial Authorities (Activity-Specific): <ul style="list-style-type: none"> ◦ Ministry of Transportation (Kemenhub): Issues permits for CO₂ transport by road, rail, or ship. ◦ Ministry of Marine Affairs and Fisheries (KKP): Approves CCS activities and subsea pipelines in marine zones ◦ Ministry of Agrarian Affairs (ATR/BPN): Coordinates approvals related to land use and spatial planning 	<p>Centralised national authority with state-level authority approach:</p> <ul style="list-style-type: none"> • National-Level: Malaysia CCUS Agency (MyCCUS): <ul style="list-style-type: none"> ◦ Advise the Government and the Minister on CCUS policy and implementation ◦ Recommend and implement policies, measures, and initiatives to develop the CCUS sector ◦ Administer and enforce the CCUS Act and subsidiary regulations ◦ Register all entities involved in carbon capture, transport, utilisation, and storage. ◦ Issue and manage activity-specific permits, including: <ul style="list-style-type: none"> ▪ Assessment Permits (geological surveys and site appraisal, onshore and offshore). ▪ Storage Licences (CO₂ injection and long-term storage, onshore and offshore). ◦ Approve CCS project plans and technical designs. ◦ Facilitate and regulate domestic and cross-border CO₂ transport and storage, including approvals and conditions. ◦ Oversee the management of national storage resources for permanent CO₂ storage ◦ Monitor storage integrity and report any leakage or significant irregularities to the Minister ◦ Administer post-closure obligations, including: <ul style="list-style-type: none"> ▪ Closure approval. ▪ Long-term monitoring arrangements ▪ Management of post-closure funds or levies. ◦ Impose administrative sanctions for non-compliance. ◦ Administer and control the CCUS Fund, including its benefits and investments. ◦ Collect, analyse, and publish data and information relevant to CCUS development.


Dimension	Indonesia	Malaysia
Governance Body	<ul style="list-style-type: none"> • Cross-Sector and International Coordination: <ul style="list-style-type: none"> ◦ Coordinating Ministry for Maritime Affairs and Investment (Kemenko Marves): <ul style="list-style-type: none"> ▪ Coordinates inter-ministerial permitting, incentives, and capacity allocation (domestic vs cross-border). ▪ Leads joint evaluation of bilateral and multilateral CCS cooperation. ◦ Ministry of Foreign Affairs (Kemlu): Leads foreign policy and treaty-level arrangements for international CCS cooperation. 	
Who can undertake CCS Business	<ul style="list-style-type: none"> • PSC track: Upstream oil and gas PSC contractors implementing CCS/CCUS integrated with petroleum operations, including storage of CO₂ from own operations and third-party emitters. • WIPK track: Oil and gas and non-oil and gas entities (e.g. power, cement, steel), operating as licensed carbon storage service providers under WIPK, with foreign participation allowed but storage operations held by Indonesian entities. 	<ul style="list-style-type: none"> • Oil and gas companies, industrial emitters, utilities, and infrastructure developers, domestic or foreign, registered and licensed by MyCCUS to conduct CCS/CCUS across the value chain, subject to state control over land and storage rights (particularly in Sarawak)
Storage formation options	Depleted oil and gas reservoir, saline aquifer, and coal seam,	<ul style="list-style-type: none"> • Offshore geological formations: <ul style="list-style-type: none"> ◦ Permanent storage of CO₂ in geological formations within land areas of Malaysia and Federal Territories, including foreshores up to three nautical miles from the baselines.
Approvals, Licensing and Permits	<ul style="list-style-type: none"> • PSC track: <ul style="list-style-type: none"> ◦ Approval of CCS/CCUS plan within the Plan of Development (POD) ◦ Amendment to Cooperation Contract (if required) ◦ CO₂ Transportation Plan approval ◦ Environmental Approval (AMDAL or equivalent) ◦ CO₂ Transport Permit (issued by Ministry of Transportation) ◦ CCS Closure Plan approval ◦ Post-closure monitoring approval (up to 10 years) • WIPK track: <ul style="list-style-type: none"> ◦ Designation of Carbon Storage Permit Area ◦ Carbon Storage Exploration Permit (valid 6 years + 4-year extension) ◦ Environmental Approval (AMDAL or equivalent) ◦ Carbon Storage Operation Permit (valid 30 years + 20-year extension) ◦ CO₂ Transportation Permit (valid 10 years + 10-year extension) ◦ Approval of CO₂ Storage Agreement (including storage fees) ◦ Approval of CCS Closure Plan ◦ Approval of post-closure monitoring and liability transfer 	<ul style="list-style-type: none"> • National-Level: <ul style="list-style-type: none"> ◦ Registration with Malaysia CCUS Agency (MyCCUS) ◦ Offshore or Onshore Geological Assessment Permit ◦ Offshore or Onshore Storage Licence ◦ CO₂ Transportation Permit ◦ CO₂ Import Permit (for cross-border CCS) ◦ Environmental Impact Assessment approval (where applicable) ◦ Financial contribution to statutory Post-Closure Stewardship Fund (as required)
Economy focus		
Monetisation Scheme (for operators)	<ul style="list-style-type: none"> • PSC track: CCS monetised indirectly through oil and gas project economics <ul style="list-style-type: none"> ◦ CCS costs integrated into cost recovery or gross split arrangements. ◦ Potential additional income from providing CO₂ storage services to third parties, carbon credits or emission value mechanisms. 	Not mentioned.

Dimension	Indonesia	Malaysia
Monetisation Scheme (for operators)	<ul style="list-style-type: none"> • WIPK track: CCS monetised as a standalone commercial storage service <ul style="list-style-type: none"> ◦ Storage operators charge storage service fees to CO₂ emitters. ◦ Operator retains service fee revenue to recover CAPEX and OPEX. 	
Incentives	<ul style="list-style-type: none"> • Eligibility for fiscal incentives, including tax allowances and exemptions, to be stipulated in implementing regulations • Cost recovery / gross split treatment for CCS expenditures under the PSC track 	<ul style="list-style-type: none"> • From Budget 2025: <ul style="list-style-type: none"> ◦ Tax allowance or tax deduction for in-house CCUS projects (applicable to companies deploying CCUS for their own emissions reduction) ◦ Tax allowance or tax exemption for CCUS service providers (covering capture, transport, utilisation, and storage services) ◦ Import duty and sales tax exemptions for equipment used in CCUS projects (subject to approval under customs and investment incentive mechanisms) • From CCUS Act 2025: <ul style="list-style-type: none"> ◦ Cost sharing for site closure and long-term monitoring through the Post-Closure Stewardship Fund
Investor Incentives	<ul style="list-style-type: none"> • EOR and CCS/CCUS activities may be considered for additional revenue-sharing agreements in Gross Split Production Sharing Contracts. • Possibility of tax allowances and tax exemptions (details are still forthcoming) 	<ul style="list-style-type: none"> • In-house CCS: Investment Tax Allowance (ITA) of 100% Qualifying Capital Expenditure (QCE) offsetting 100% statutory income (up to 10 years); full import duty and sales tax exemption on CCS equipment; tax deduction for eligible pre-commencement expenses • CCS service providers: Choice of ITA (100% QCE, up to 10 years) or 70% income tax exemption (up to 10 years); full import duty and sales tax exemption on CCS equipment • CCS users: Tax deduction on fees paid for CCS services • Cost sharing for closure and monitoring through the Post-Closure Stewardship Fund
Government Revenue	<ul style="list-style-type: none"> • PSC track: <ul style="list-style-type: none"> ◦ Government revenue derived indirectly through existing upstream oil and gas fiscal regime (cost recovery or gross split). • WIPK track: <ul style="list-style-type: none"> ◦ Royalty collected as Non-Tax State Revenue (PNBP) from storage service activities. ◦ Additional state revenue from permit fees, area auctions/selection, and administrative charges. 	<ul style="list-style-type: none"> • National-Level: <ul style="list-style-type: none"> ◦ Injection levy imposed on CO₂ injected into license storage sites ◦ Fees and charges imposed on onshore and offshore assessment permit and storage licence holders, administered through the Post-Closure Stewardship Fund.
Cross-Border Policy	Up to 30% of storage capacity can be used for foreign CO ₂ , but only with a bilateral cooperation agreement and prior investment by the foreign emitter.	No cap for the importation of foreign CO ₂ for permanent storage. Permitted with an import permit and compliance with specific stream acceptance criteria.
Environmental focus		
Requirements (pre)	<ul style="list-style-type: none"> • Have a correct corporate status (PT/PMA) and Business Identification Number (NIB) • Participate in WIPK tender (if outside PSC) • Exploration + Storage Operation Permits (WIPK-track) • POD approval & PSC amendment (PSC-track) • Conduct geological studies, submit MRV plan, conduct EIA • Financial & technical capability assessments • Compliance with SKK Migas & MEMR regulations 	<ul style="list-style-type: none"> • Mandatory site suitability and safety assessment prior to approval of a storage licence and permit • Submission of detailed storage development plans • Entities must register and submit baseline GHG emissions reports

Dimension	Indonesia	Malaysia
Requirements (post)	<ul style="list-style-type: none"> Conduct continuous monitoring of reservoir integrity, CO₂ plume movement, and potential leakage after injection stops. Maintain long-term subsurface and geomechanical surveillance to confirm permanent CO₂ containment. Continue environmental monitoring required by AMDAL even after operations cease. Submit post-operation reports to MEMR and related agencies. Operators remain responsible for leakage, reservoir issues, and remediation actions during the post-closure liability period. Liability is maintained until the government agrees that the storage site is safe for handover. After meeting all long-term monitoring and safety criteria, operators may apply to transfer site responsibility to MEMR. Provide final records of injected and stored CO₂ volumes, MRV data, environmental monitoring results, and site closure documentation. In decommissioning, to plug and abandon injection wells according to regulatory standards. 	<ul style="list-style-type: none"> Continuous monitoring, reporting, and verification (MRV) throughout operation and post-closure. Mandatory incident reporting and corrective action in the event of leaks, unsafe conditions, or environmental harm. Post-closure obligations include long-term monitoring, containment assurance, and remediation, until closure criteria are fully met and the permit is formally terminated Annual emissions and mitigation reporting required, including reporting on quantities of CO₂ captured and stored.
Asset Ownership	<ul style="list-style-type: none"> Assets and equipment used during exploration and storage belong to the permit holder but may be transferred to the state when the permit expires. Government evaluates safety, containment, and compliance before accepting the transfer. 	<ul style="list-style-type: none"> Storage licences grant use rights, not ownership, over land or subsurface storage formations. Rights to use abandoned petroleum sites for CCS do not automatically transfer from prior petroleum operations and require explicit relicensing and approval.
Long-Term Liability	<ul style="list-style-type: none"> Operators must set aside funds to cover MRV costs for 10 years after project closure. The operator's rights, obligations, and responsibilities end after this period, provided no CO₂ leakage is detected. 	Operator remains liable for issues arising from negligence or non-compliance even after transfer of obligations to the government.
Financial Stewardship	Operators are required to reserve "post-operation funds" in a joint account to cover monitoring and mitigation costs.	An injection levy is paid by offshore licensees into a Post-Closure Stewardship Fund administered by MyCCUS.

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The views expressed in this policy brief are those of the author(s) and do not necessarily reflect those of ASEAN Centre for Energy (ACE) as an institution, any associated ASEAN Member States/Institution/Individuals, or partner institutions.

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