



Understanding the Carbon Capture, Utilisation and Storage Bill 2025

Sentiment	Positive	Frequency	Daily
Outlet Country	Malaysia	Outlet Language	English
Impressions	42,886	Circulation	21,443
PR Value	12,866	Page	52, 56

Page Location



Understanding the Carbon Capture, Utilisation and Storage Bill 2025

The sustainability agenda has become a major concern discussed globally. Malaysia is taking significant steps towards sustainability and climate action, recognising the need for collaborative efforts to protect its natural environment while driving economic growth. A key initiative is the proposed Carbon Capture, Utilisation and Storage (CCUS) Bill 2025, which aims to establish a robust legal and regulatory framework for CCUS activities across the value chain.

Unlike many countries that integrate CCUS into existing regulations, Malaysia has opted for a stand-alone legislation, modelled on the International Energy Agency (IEA) Model Regulatory Framework and the European Union's CCS Directive, albeit adapted to the local context.

The CCUS Bill comprises 10 chapters with 53 legal provisions, regulating the full CCUS cycle from carbon dioxide (CO₂) capture, transportation and utilisation to storage. Implementation will begin in phases commencing with the permanent offshore storage of CO₂ with a feasibility study on onshore storage planned for 2025-2026. The

bill aligns with national policies such as the National Energy Transition Roadmap (NETR) and the New Industrial Master Plan 2030 (NIMP), alongside the Nationally Determined Contribution Roadmap, the Long-Term Low Emission Development Strategies (LT-LEDS) as well as anticipated legislation on climate change championed by the Ministry of Natural Resources and Environmental Sustainability (NRES). Additionally, the carbon pricing instrument is seen as a critical catalyst to accelerate CCUS deployment. This initiative shows Malaysia's commitment to reducing carbon emissions while ensuring economic and regulatory clarity in its sustainability journey.

Uncovering the core legal and regulatory issues across the CCUS project life cycle

One of the most complex aspects of CCUS is the permanent storage of CO₂. A study by the Ministry of Economy highlights the importance of a regulatory approach that aligns with the project life cycle, ensuring clear allocation of responsibilities throughout CCUS operations. This model provides an efficient and structured

framework, helping regulators address risks at each stage while giving operators and stakeholders confidence in a well-regulated value chain.

The bill introduces a two-phased authorisation approach for storage, requiring operators to first obtain an assessment permit before securing a storage licence. This ensures a thorough technical assessment, covering site characterisation studies, seismic surveys, drilling and injection tests, before CO₂ injection begins.

During the operations and closure phase, operators must follow best CCUS practices, including monitoring the storage complex and surrounding environment, submitting monitoring plans, and implementing corrective and remediation measures in the event of any leakages or significant irregularities. This approach enhances safety, accountability and long-term environmental integrity.

Malaysia CCUS Agency and competent technical entity

At the core of the CCUS Bill is the Malaysia CCUS Agency (MyCCUS), tasked with administering and ensuring the effective imple-

mentation of the bill and its regulations. MyCCUS will oversee all CCUS-related activities in Malaysia, operating with a streamlined and efficient approach to minimise bureaucracy. MyCCUS will serve as the central authority for CCUS promotion, development and implementation, while also acting as the licensing authority for permits and storage activities.

Malaysia has adopted an innovative approach in recognising the vital role of technical experts in the complex field of CCUS. The CCUS Bill grants the minister authority to appoint a competent technical entity to advise MyCCUS on any technical and operational matters across the CCUS value chain, provided that they possess the necessary expertise and experience.

This approach ensures that the technical know-how of the appointed entity supports a seamless deliberation and approval process, particularly for licensing and permits under the CCUS Bill. The collaboration and synergy between the agency and the technical entity is a progressive step towards the effective deployment of CCUS projects. This is particularly crucial for the development of three CCUS hubs with a total storage capacity of up to 15 million tonnes per annum (Mtpa) by 2030, as outlined in the NETR, under which CCUS is identified as one of the six energy transition levers in supporting Malaysia's ambition to achieve net-zero emissions by 2050.



MY Say
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Enabling cross-border CO₂ transportation

To make CCUS an affordable and scaleable solution, leveraging foreign sources to achieve economies of scale is essential. Malaysia has potential to become a regional CCUS hub, with an estimated capacity of CO₂ storage of approximately 150Gt. Its strategic geographical location allows Malaysia to offer storage services to countries such as Japan, Singapore and South Korea. The CCUS Bill, alongside bilateral agreements, will enable cross-border transportation of CO₂ captured abroad for permanent storage in Malaysia.

Operators, though, must comply with the CCUS Bill's CO₂ acceptance criteria, ensuring adherence to internationally recognised best practices. The CO₂ stream acceptance criteria must consist predominantly of carbon dioxide, with no waste or other substances added for disposal. Any incidental and added substances to assist in monitoring and verifying the migration of CO₂ must not, among others, pose any significant risk to human health or the environment.

Additionally, imported CO₂ must be authorised under an import permit, ensuring it is designated solely for permanent storage. The CCUS Bill prohibits the utilisation of imported CO₂. This is to encourage the development of new industries through the innovative use of CO₂ captured within Malaysia such as CO₂-cured concrete and e-fuels.

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Data gathered crucial for reporting obligations

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Ensuring robust implementation and CO₂ reporting through registration

The CCUS Bill establishes a comprehensive framework to facilitate CO₂ reporting and ensure seamless implementation of CCUS activities in Malaysia. It introduces registration requirements for carbon capture, transportation and utilisation of CO₂, recognising the emerging nature of the domestic capture industry. Any entity owning or operating carbon capture installations must register with MyCCUS. This aligns with the government's planned carbon tax, aimed at the iron, steel and energy industry by 2026, encouraging hard-to-abate sectors to adopt carbon capture technologies.

Data gathered from CO₂ capture and storage activities will be crucial for Malaysia's reporting obligations to the United Nations Framework Convention on Climate Change (UNFCCC). Greater collaboration with NRES will be essential for integrating these datasets.

The bill also recognises various CO₂ transportation methods, including road, railway, water and pipelines, ensuring flexibility as infrastructure and technology evolve. Operators must comply with all relevant transportation regulations to facilitate smooth implementation. Regarding CO₂ utilisation, the bill mandates registration for any entity using CO₂ captured in Malaysia. This prioritisation of domestically captured CO₂ aims to accel-

erate decarbonisation through innovative applications such as synthetic fuels and sustainable building materials. To support effective implementation, the CCUS Bill also addresses legal and administrative provisions, including appeals to the minister, corporate liability and legal protections. It grants enforcement powers to existing enforcement agencies such as the Royal Malaysia Police and the Royal Malaysian Customs Department, while also allowing the minister to authorise public officers for enforcement. Additionally, the bill empowers the minister to exempt, make regulations, issue standards and guidelines, and grant exemptions, ensuring a dynamic and adaptable regulatory framework for Malaysia's CCUS industry.

Commitment towards a sustainable future

The CCUS Bill is more than just a piece of legislation; it is a bold and forward-looking commitment towards a sustainable future. With other energy transition levers at play, CCUS deployment is seen as one of the new strategies of economic growth to support the development of green and low carbon for Malaysia. A robust legal and regulatory framework coupled with an attractive ecosystem for CCUS deployment is key to positioning Malaysia as the regional CCUS hub. **E**

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