



Shaping the Japan–Malaysia CCS Corridor

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The Opportunity

The strategic question is no longer whether CO₂ can be stored — but who will set the standards, own the corridor, and capture the value.



The Demand Is Locked In

Asia's coal fleet needs a decarbonisation path only CCS can deliver at scale.



The Window Is Open Now

The region's CO₂ standards and infrastructure are being set this decade.



The Prize Is the Corridor

Whoever anchors it captures durable value, influence and market position.

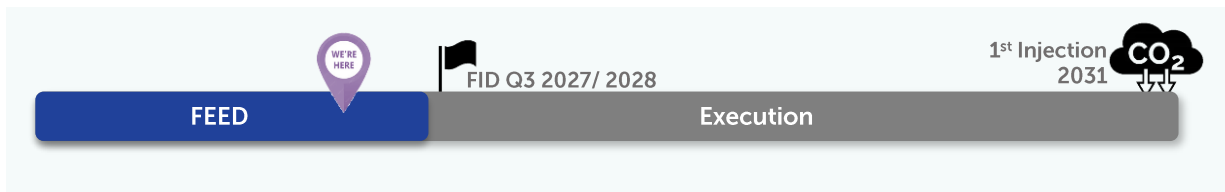
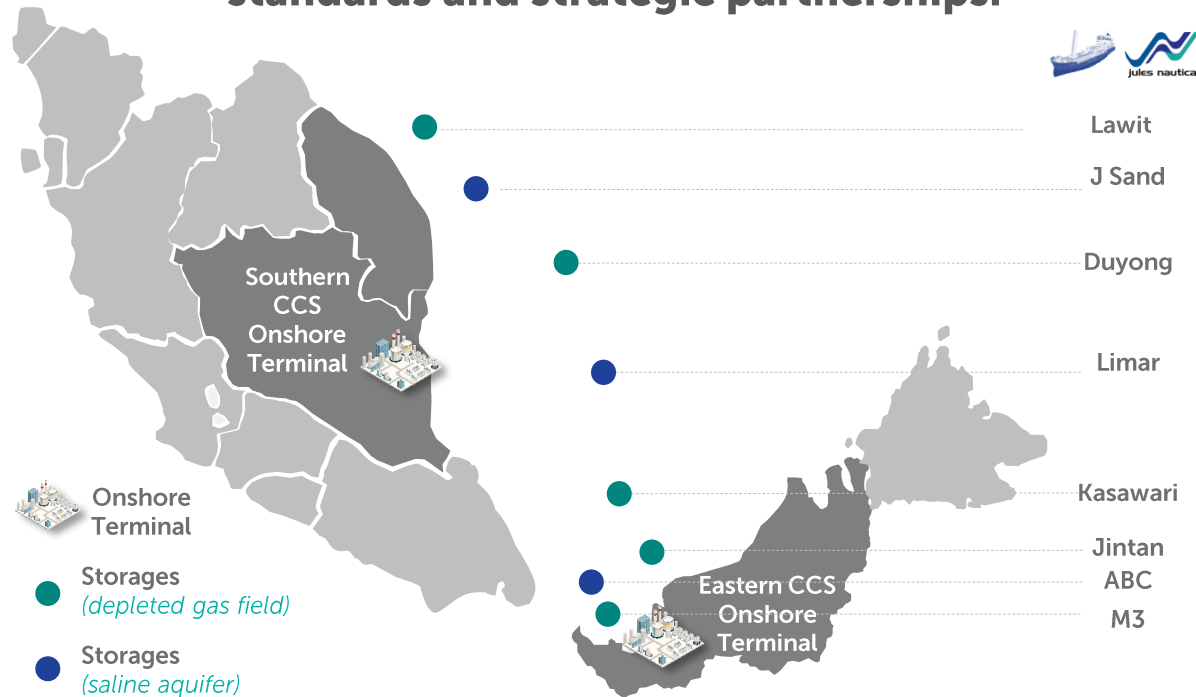


Coal is not leaving Asia's grid tomorrow — but the emissions pressure is here today.

THE STARTING POINT

The Strategic Anchor: Malaysia and PETRONAS: Towards a Preferred CCS Destination in Asia

Position Malaysia and PETRONAS as a trusted regional CCS hub through scalable storage capacity, enabling infrastructure, harmonised standards and strategic partnerships.



Strengthening Malaysia's CCS Ecosystem



Advancing Techno Commercial Readiness

- ① 2 Completed FEED, 2 Ongoing FEED and 1 Appraisal Phase
- ② Advancing CCS Insurance and Risk Management Solutions
- ③ Policy, Regulatory and Permitting Enablement



Driving Harmonised Standards

- ① Collaboration with 29 companies under PETRONAS-JBIC CCS Cross Border Working Groups
- ② Leadership in National CCS Standard Development (NSC 26/TC 14)



Unlocking New CCS Opportunities

- ① BECCS collaboration
- ② Satellite CO₂ Terminal, LCO₂ offloading and future OCCS opportunities.



Collaborate with Confidence

- ① A Secure Foundation for Global Data Sharing via Global NDA
- ② Strategic partnerships with regional emitters and technology providers

The Control Point: Standardized Interfaces Unlock Corridor-wide Value

Storage capacity is a commodity — many jurisdictions have it.

The real value lies in harmonized value-chain interfaces, which enable market access, interoperability, and scalable corridor economics.



A shared corridor creates value for every partner who helps build it

1

CO₂ Specification

The toll gate: defines the quality that can enter the corridor.

2

Ship Interface

Aligns loading, unloading, phase, pressure and temperature.

3

Terminal Interface

Standardises receiving, metering, sampling and buffer storage.

4

HSE & Off-spec

Harmonises emergency response, rejection criteria and control.

5

Storage Acceptance

Links emitter-side conditioning to injection requirements.

The CO₂ specification is the toll gate of the corridor — shape it well, and we set both the terms of entry and the economics of scale.

The Economics: One Standard, Lower Cost

Standardizing the CO₂ specification is the single lever that drives down the cost of CCS across the corridor.



Common CO₂ specification

One spec for the region



Infrastructure to one standard

Same ships, terminals, interfaces



Volume aggregation

Combine CO₂ across many emitters



Lower unit cost

Economies of scale across the corridor

Governed by Shipping: Low Pressure Low Temperature

Today the CO₂ specification is anchored to the shipping condition — Low-Pressure, Low-Temperature liquid CO₂ — because that is what determines the economics of transport.



Higher pressure

Smaller volume per voyage



LPLT

Higher volume per voyage → lower \$/tonne

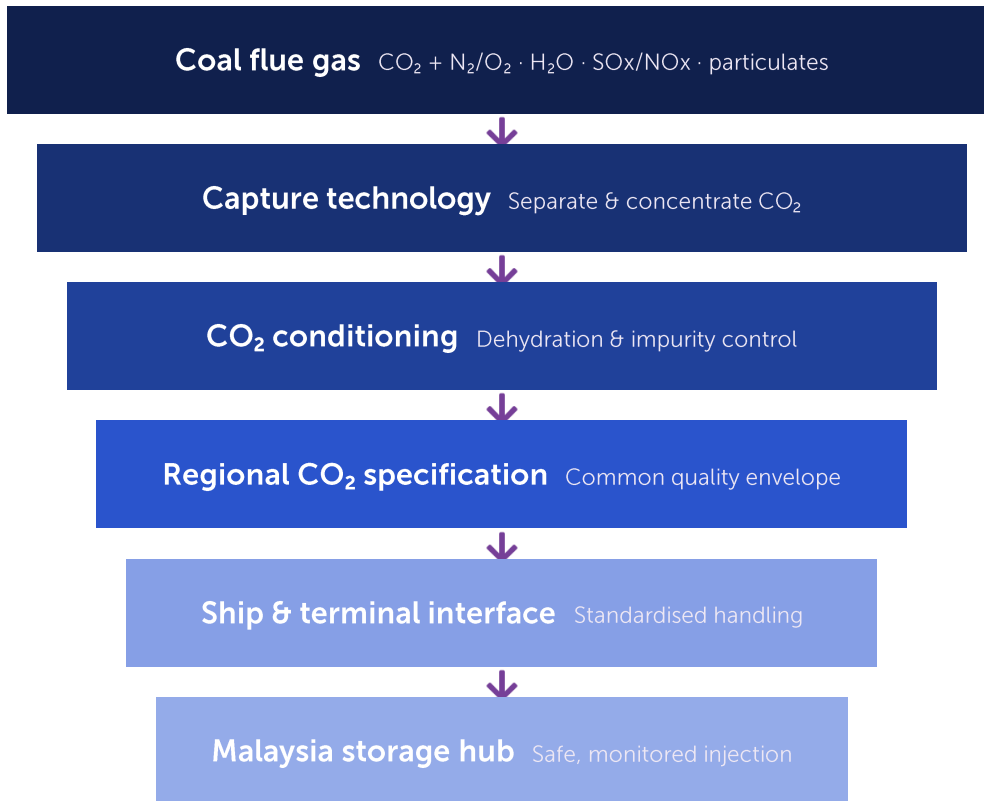


More volume per shipment → lower cost per tonne across the corridor

The Anchor Demand:

Coal Power: The Anchor Demand for the Corridor

Coal power is the anchor demand that underwrites the corridor. Anchor volume de-risks the infrastructure and starts the flywheel — scale lowers cost, drawing the next emitter.



From the angle of coal producers



Can my CO₂ be captured reliably?

Mature, retrofit-ready capture technology.



Can it meet the specification?

Conditioning, impurity control and quality assurance.



Can it access shared infrastructure?

Common export terminals, shipping and receiving terminals.



Can it be stored with confidence?

Malaysia storage acceptance, monitoring and assurance.

Source: Coal-fired flue-gas treatment review (2024); Wood CO₂ Specification JIP (2024).

Bridging The Gap: Coal Power CO₂ and Our Specification

The coal CO₂ stream is closer to spec than it appears. The few real gaps are created by the capture process, not the coal, making them a shared spec-versus-cost decision we can lead.

MOST IMPURITIES ALREADY CONFORM

3 FOCUS AREAS

The value chain is largely ready. The strategic conversation is about the last few percent, where cost and specification meet.

H₂O

Ammonia (NH₃)

Mercury (Hg)



Mostly Spec-Ready

The large majority of coal-derived CO₂ impurities already fall within our specification. The corridor is closer to viable than the debate suggests.



The Gap Is Capture-Created

The critical remaining impurities are generated by the capture process itself, not the coal. So, closing them is an engineering and cost choice we shape, not a barrier we inherit.



Calibrate Spec to Reality

A small number of targets cannot be met as written today. Specification and technology must be reconciled together, to a limit that is achievable and bankable.

The Strategic Bet: Malaysia & Japan Can Define Asia's Cross-Border CCS Future

1



Anchor the corridor

Progress storage maturation, certification, hubs and regulatory readiness — the trusted foundation others connect to.

2



Set the standard

Establish the CO₂ specification the whole region aligns to — the toll gate, the moat, and the driver of lower cost.

3

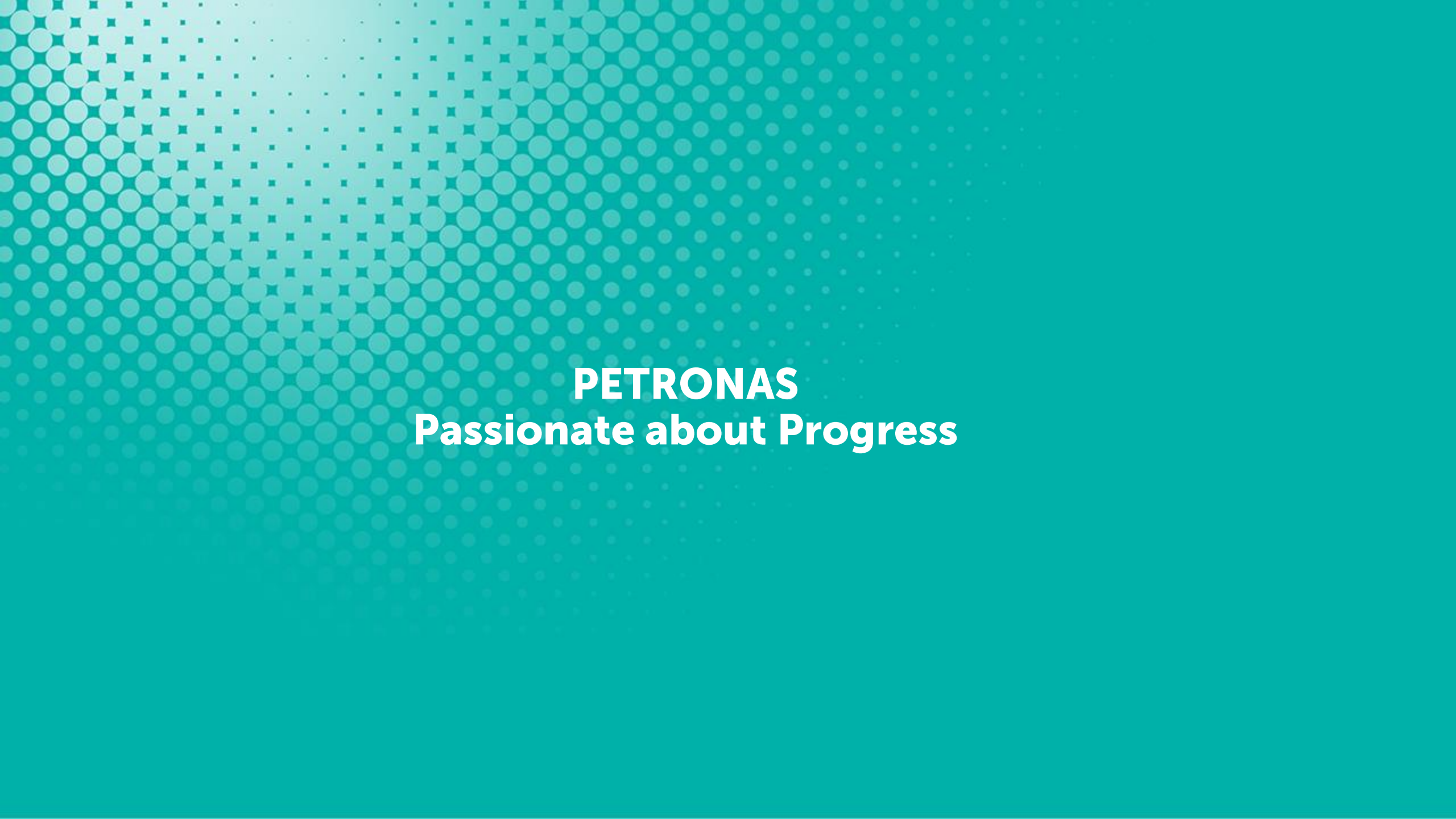


Secure anchor demand

Give coal power a clear, investable pathway to Malaysia storage — the volume that starts the flywheel.

“The first movers in CCS will not only be those who store CO₂ — but those who shape the system that lets others store CO₂ with confidence.”

Malaysia & Japan can lead — and set the terms for Asia's cross-border CCS market.



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