Financing the coal exit:

Are transition credits a hype or an effective climate tool in Southeast Asia

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CARBON MARKET WATCH

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Executive summary

Coal transition credits are being promoted as a new way to finance the early retirement of coal-fired power plants (CFPPs) in Southeast Asia. The idea is simple: retire a coal plant early, quantify the avoided emissions, and turn them into carbon credits that can be sold on voluntary or compliance markets. Advocates claim this could unlock private finance to help drive down emissions in the power sector, cover investor compensation, and even support just transition measures for workers and communities. However, implementing this is highly complex and carries substantial risks.

This report examines whether coal transition credits can play a meaningful role in Southeast Asia, drawing on a literature review and insights from a survey of 10 experts from a range of organisations. The survey results reveal widespread caution and scepticism towards coal transition credits as a credible or effective climate tool.

The experts stressed that any potential opportunities are highly conditional, and without strict guardrails, transparent governance, and alignment with no-new-coal policies, such schemes would lead to marginal outcomes or greenwashing rather than real climate impact. Overall, experts highlighted uncertainty and fundamental risks that could undermine the environmental and social effectiveness of coal transition credits.

The table below summarises the key opportunities and risks identified by the 10 experts who responded to a Carbon Market Watch survey on the topic of coal transition crediting financing the early retirement of CFPPs in Southeast Asia.

Key findings and takeaway

General Overview

Potential benefits	Risks
Mobilising finance: Coal transition credits could attract private capital to complement limited public and concessional funding in Southeast Asian countries (e.g. Just Energy Transition Partnership (JETP), Energy Transition Mechanism (ETM).	**Limited confidence:** Only two of 10 respondents viewed coal transition credits as an effective tool to accelerate the coal phase-out in Southeast Asia.

Unanswered questions

Are coal transition credits a more effective way to accelerate total retirement in Southeast Asia than established retirement mechanisms such as concessional loans, or JETPs?

Are coal transition credits a distraction from more direct and established public and private financial pathways?

Do the limited opportunities justify the high complexity and risks of establishing a new crediting mechanism for retiring coal power plants early?

Potential benefits

Conditional finance: With strict additionality, conservative baselines, and strong safeguards, credits could provide marginal support for earlier retirements.

Unanswered questions

Can leakage be effectively monitored at the grid/system level in data scarce nations like Indonesia and the Philippines?

Will methodologies evolve to require more conservative baselines as renewable costs fall and policies tighten?

How can additionality be convincingly demonstrated, especially when many coal plants may close early due to market and policy forces anyway?

Risks

Credit quality is the top concern: Eight out of 10 experts ranked this as the most significant risk, ahead of other factors such as demand uncertainty, the political situation, social safeguards and just transition considerations, and timing mismatch.

Carbon leakage risk: leakage was ranked the most significant risk for all environmental integrity criteria, ahead of additionality, permanence and double counting.

Additionality risk: coal plants may be decommissioned early anyway due to increasing availability of cheaper renewables or policy pressures, explaining why experts found regulatory and financial additionality to be high on the list of environmental integrity risks.

Double counting risk: Preventing overlapping claims depends on strong institutional capacity, which according to interviewed experts remains weak in many Southeast Asian countries.

Baseline inflation risk: Experts warned that baseline setting is highly uncertain and inherently subjective, relying on assumptions about when coal plants would retire, how much energy they would have produced, and what would replace them. The subjectivity arising from the non-application of conservative approaches to baseline setting creates a serious risk of inflating claimed reductions and overissuing credits.

Potential benefits

Methodology effort: Some experts believe that Verra's VM0052 methodology is a good faith attempt to reconcile technical feasibility with environmental integrity (Carbon Market Watch would nonetheless note that environmental integrity should not be diminished for the sake of technical feasibility, especially since such credits will be used to offset emissions).

Unanswered questions

Can methodologies adequately account for dynamic changes in energy systems and future regulatory changes?

How can structural conflicts of interest, standards earning revenue from issuing credits, auditors being paid by project developers, be overcome?

Risks

No methodology confidence: No expert expressed full confidence in current coal transition credit methodologies (e.g. Verra's VM0052) to reliably address environmental integrity risks and potential loopholes.

Trust weakened by past failures:
Over-crediting and poor leakage accounting practices across many carbon crediting projects and methodologies generate doubts over the feasibility of coal transition credits to avoid the same problems.

Risk of conflicts of interest; Only two out of 10 experts expressed confidence that standard-setters and third party auditors will enforce requirements, which can lead to rule enforcement having limited effect.

Methodology flexibility: Eight out of 10 experts warned that multiple competing carbon crediting standards could encourage developers to choose the most generous methodology, and a consequent prioritisation of higher credit yields instead of adopting more conservative estimates.

Captive coal plants exclusion: Current methodologies like Verra's VM0052 exclude captive coal plants (facilities built to supply electricity directly to industrial operations such as mining, steel, or cement production rather than the public grid). Allowing new coal to go online while paying to close existing plants presents a risk of undermining the resulting climate impact of issued carbon credits.

Energy system Impact

Potential benefits	Risks
Increase in clean energy investment: Transition credit projects may catalyse investment in renewables, grid upgrades, and storage, demonstrating that power reliability could be achieved without coal power dependence.	**Power reliability gaps risk potential leakage:** Most experts (seven out of 10) warned that renewable energy cannot replace coal on a one-to-one basis, increasing the risk of fossil backfill. This concern is particularly strong in Indonesia and the Philippines, where utilities may resist early retirements due to fears over grid stability and power reliability. Without careful planning, fossil generation could fill the gap, undermining emission reductions.

Unanswered questions

Can retired coal capacity used to generate carbon credits be matched with new renewable energy capacity so that there is no leakage?

To what extent can the project developer and the carbon market standard approving methodologies ensure this, given the presence of many other complex factors?

Governance

Potential benefits	Risks
Transparency and civil society role: In principle, public consultations and stakeholder dialogues can provide NGOs and communities on the ground with the ability to feed into methodology design and project implementation, and to monitor promised outcomes (e.g. plant closure dates or community benefit allocation) and call out any discrepancies.	**Perverse incentives risk:** Six out of 10 experts warned that coal transition credits could encourage asset owners to delay retirements or inflate baselines to maximise credit issuance. **Polluter pays principle reversed:** compensating coal plant owners for early closure risks rewarding polluters instead of holding them accountable, signalling to investors that coal remains a safe bet. **Lack of enforcement and absence of safeguards**: Experts unanimously doubted the capacity of current systems to prevent undue influence from asset owners or project developers over coal retirement decisions. They also warned that safeguards against manipulation and political lobbying are largely absent in Southeast Asia, leaving crediting schemes vulnerable to capture by vested interests. **Importance of consultation and participation:** Experts emphasised the need for genuine, inclusive consultation with affected workers and communities. They warned that participation often becomes a box-ticking exercise and stressed that all affected stakeholders must have a real voice in decisions that shape project design and implementation.

Unanswered questions

What mechanisms or rules could ensure that crediting schemes don’t reward plant owners for delaying retirements or exaggerating baselines?

How can financing structures align with the “polluter pays” principle, ensuring accountability rather than compensation for past pollution?

Potential benefits

Conditional support for just transition: Four out of 10 experts believed coal transition credits could support a just transition, but only under strict conditions.

Just transition support: Revenues (if earmarked) could fund worker retraining, pensions, and community development.

Unanswered questions

How can consultation and participation be made meaningful in highly technical, top-down crediting processes?

What mechanisms can ensure affected workers and communities have real decision-making power rather than symbolic inclusion?

How can revenues from coal transition credits be guaranteed to reach workers and communities?

Risks

Uncertainty around just transition: Four out of 10 experts were uncertain about whether coal transition credits could support a just transition, while two out of 10 did not believe they could.

Risks for workers and surrounding communities: Job displacement was identified as a key concern. In general, experts warned that severance and retraining are often treated as minimal costs, leading to inadequate support. They stressed that workers need long-term security and that surrounding communities must be properly supported and included in decision-making to avoid exclusion from transition planning.

Transparency and governance risks: Experts cautioned that coal transition credits could mirror existing transparency problems in carbon markets. Weak disclosure and oversight make it difficult to track financial flows, raising doubts that funds will reach affected workers and communities.

Demand and market dynamics

Potential benefits

Contribution, not compensation: Credits that are not used to compensate for emissions somewhere else (e.g. a company's continued emissions) but act as 'contributions', and therefore could channel finance for the coal phase-out.

Multiple initiatives to scale demand: Various public and private efforts are underway to stimulate demand for coal transition credits. Some governments are also exploring compliance links through carbon pricing and Article 6 cooperation, particularly in Southeast Asia. In principle, this could drive increased efforts to scale up demand for such credits, in theory accelerating the coal phase-out.

Risks

Uncertain demand: Seven out of 10 experts were unsure whether strong buyer demand will emerge, which in turn may impact carbon credit sale prices, among other things.

Conditional corporate interest: Any uptake depends on credibility, but the current reduction in corporate purchases of carbon credits (likely reflecting a positive shift toward prioritising direct decarbonisation over external compensation) as well as credit quality scandals make large-scale purchase unlikely. Moreover, if corporate demand for coal transition credits ends up being very strong, this may supplement internal decarbonisation efforts and therefore slow corporate climate ambition.

Market destabilisation risk: Six out of 10 experts warned that large-scale issuance of coal transition credits could depress prices in the voluntary carbon market and repeat the oversupply problems of the CDM.

Unanswered questions

Linked to demand, at what price will coal transition credits sell, and to what extent could this revenue realistically help finance the early retirement of coal-fired power plants (CFPPs)?

Is there a credible way for carbon market actors to call for increased corporate demand for coal transition credits without discouraging internal decarbonisation?

How can timing mismatches between when coal-fired power plants need to receive finance to close earlier and when credits are issued, affect future buyer demand for coal transition credits?

Slow global progress towards phasing out coal

Despite a 70% drop in planned coal power capacity since 2015,[1] coal remains the world's most utilised source of electricity.[2] In 2023, worldwide emissions associated with coal are estimated to have totaled around 15 billion tonnes CO2e, accounting for approximately 41% of global CO2 emissions from fossil fuels.[3]

While demand is expected to remain steady in 2025, the pace of growth has slowed steadily since the post-COVID rebound spike in 2021, reflecting a gradual shift away from coal power in the global energy mix.[4] Nevertheless, global coal production reached a record 9.15 billion tonnes in 2024, driven primarily by strong outputs in China, India and Indonesia.[5]

Phase out of coal power generation is happening much too slowly, and must be accelerated so that it becomes a global priority, particularly through early retirement of coal-fired power plants (CFPPs). This is essential not only to curb emissions from existing and archaic infrastructure but also to align the power sector with the Paris Agreement's 1.5°C climate target.

According to the Global Energy Monitor[6] there are currently 2,457 operating and mothballed coal-fired power plants across the globe, of which 69% do not have any plan for retirement or phaseout commitment (Figure 1).

Figure 1: Distribution of current global operating coal capacity with no announced closure or phase-out commitment.

Source: Global Energy Monitor, 2025

1 Global Energy Monitor et al,, Boom and Bust Coal 2025, Global Energy Monitor, 2025

2 IEA, *Global Energy Review 2025*, IEA, 2025, p19

3 Our World in Data, Global Carbon Budget 2024

4 BBC News (2025, October 7). Renewables overtake coal as world's biggest source of electricity.

5 IEA, Coal Mid-Year Update, IEA, 2025, p5

6 Global Energy Monitor (July 2025): Coal Phaseout: Tracking Retirements and Paris-Aligned Goals.

Southeast Asia's coal dependence

This issue is particularly pertinent in emerging markets and developing economies (EMDEs) like in Southeast Asia, where in 2023, coal generated half of the region's electricity, while accounting for 80% of power sector emissions.[7]

Unlike the United States and Europe, where coal power is gradually being reduced, many Asian economies remain heavily reliant on coal to meet growing energy demands. While China and India dominate coal-fired power generation, Southeast Asia hosts the world's fourth-largest fleet of CFPPs.[8] Indonesia, which is the third largest coal producer in the world and world's top exporter, increased output by 8% in 2024 due to high domestic demand and the volume it exports.[9]

Compared to other regions of the world, coal power plants in Southeast Asia are relatively young, averaging less than 15 years of age, half of which are 10 years old on average.[10] This makes the coal phase-out particularly challenging, since recent investments to establish these plants are yet to be paid back. Moreover, the region presents a unique combination of environmental and economic conditions that makes the discussion around early retirement of coal-fired power plants especially difficult.

Southeast Asia's persistent reliance on coal is explained by several factors. Over the past decade, steady population growth and economic expansion in the region have fueled an increasing demand for affordable energy.

Traditionally, coal has been the region's energy backbone, due to it being a cheap and reliable option. Generous subsidies and access to domestically mined coal have ensured that costs are low, often lower than imported fuels or renewables. In many Southeast Asian countries, the levelised cost of electricity from coal has remained lower than that of renewable energy, particularly when considering the cost of grid upgrades and storage requirements.[11] According to the IEA Southeast Asia Energy Outlook 2024, by mid-century energy-related CO_2 emissions in the region are projected to rise by almost a third under current policy settings.[12]

However, signs of a shift are starting to emerge. Most notably in 2022, eight out of the ten Association of Southeast Asian Nations (ASEAN) pledged to reach net-zero emissions or carbon neutrality by 2050. These long-term climate goals are starting to influence national planning and investment decisions, pushing the region, albeit slowly, toward phasing out coal power in favour of cleaner energy alternatives.[13] However, doing so in a way that is environmentally sound, economically viable, and socially just remains a complex challenge.

Barriers to early coal retirement in Southeast Asia

To align with the Paris Agreement targets, a significant portion of the world's coal power plants would need to be retired in the richest countries by 2030 and everywhere else by 2040.[14] The average lifespan of a CFPP is around 40-50 years, but the average age of existing CFPPs varies significantly across regions: around 40 years in countries classified as high-income, 22 years in China and 15 years in Southeast Asia.[15] This presents a major challenge, not only because of rising energy demands, but also due to the entrenched financial and contractual structures that underpin CFPP investments. A large portion of these plants are governed by long term power purchase agreements (PPAs) and government support agreements (GSA), which guarantee fixed returns for investors. In Indonesia and Vietnam, for instance, around 60% of coal fired assets are owned by state entities, with the remainder backed by foreign investors.[16]

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7 IEA, Southeast Asia Energy Outlook 2024, IEA, 2024, p5

8 Mike Scott, 'ESG Watch: Transition credits set to help Asia shift from coal', Reuters, 2024

9 IEA, Coal Mid-Year Update, IEA, 2025, p13

10 Nandini Das, Victor Maxwell and Thomas Houlie, Steven Bayne, Phasing-out the use of coal-fired power plants in South and Southeast Asia, ESCAP, 2023, p35

11 Xu Chen, Denise L. Mauzerall, The Expanding Coal Power Fleet in Southeast Asia: Implications for Future CO2 Emissions and Electricity Generation, Earth's Future, 2021, p2

12 IEA, Southeast Asia Energy Outlook 2024, IEA, 2024, p6

13 Nandini Das, Victor Maxwell and Thomas Houlie, Steven Bayne, Phasing-out the use of coal-fired power plants in South and Southeast Asia, ESCAP, 2023, p1

14 Global Energy Monitor, "Coal Phase-out Tracking: Retirements and Paris-Aligned Goals," Global Coal Plant Tracker, 2025, Accessed September 8, 2025.

15 IEA, World Energy Outlook 2021, IEA, 2021, p59

16 Haneea Isaad, Coal Lock-In in Southeast Asia: An Analysis of Existing and Planned Coal-Fired Capacity in Southeast Asia, IEEFA, 2021, p6

Such contracts, designed to attract and protect capital, also create a rigid framework that hinders early retirement. On the one hand, utilities are often obliged to purchase coal-generated electricity regardless of market shifts or climate policies, creating the so-called "coal lock-in effect".[17] On the other hand, if national governments attempt to accelerate plant closures through legislation or climate mandates, they might trigger compensation clauses for investors' lost revenues due to the early termination of operations.

Although exact figures are uncertain, these compensation costs are expected to be substantial. In Indonesia alone, compensation costs owed to investors and tied to early decommissioning are estimated to add up to as much as $37 billion (USD).[18] Normally, governments would be required to absorb these liabilities. However, Southeast Asian governments are currently not in the position to do so, due to high levels of public debt accumulated in previous years. This is primarily a consequence of their heavy reliance on loans, often from multilateral institutions like the World Bank or the International Monetary Fund (IMF) as well as bilateral lenders such as China and Japan.[19]

Blended finance and carbon market mechanisms for coal phase-out

Just Energy Transition Partnership (JETP)

Just Energy Transition Partnerships (JETPs) are international initiatives aimed at supporting systemic energy transition in key emerging economies. They provide a strategic policy and financing platform focused on moving away from fossil fuels and unlocking investment for renewable energy and transmission infrastructure.

In Southeast Asia, JETPs have been launched in both Indonesia and Vietnam. First announced at COP26 in 2021 with operations beginning in 2022, the pledged packages of USD 20 billion and USD 15.5 billion to those respective countries, are to be implemented over a three to five year period[20] with funding from G7 countries, the EU, and multilateral development banks such as the World Bank and Asian Development Bank. While most JETP financing is structured as concessional loans and finance linked to policy implementation, discussions are ongoing about leveraging carbon markets to help close financing gaps, particularly for early coal retirement.

Direct revenue from coal transition credit sales is expected to be far lower than headline figures suggest. Some estimates suggest an indicative price range of USD 11–52 per tonne of CO_2 based on modeling, although prices of credits are impacted by multiple factors, including market volatility and the quality (or perceived quality) of the underlying projects and methodologies.[21] Actual market prices diverge from such estimates, with many credits to be traded at the lower end of this range while higher prices are associated with projects perceived to have stronger environmental and social integrity.[22]

Even under highly optimistic assumptions, the early retirement of a single coal plant might yield USD 0.1–1.5 billion in revenues, based on avoided emissions in the range of 10–30 $MtCO_2$. Extrapolating across 20–60 projects produces headline figures by 2030 of USD 5–35 billion, with a theoretical maximum of USD 90 billion if both prices and abatement volumes align perfectly. Yet these numbers are speculative and depend on conditions that may never materialise.

17 Ramnath N. Iyer, Transition credits: A potential financial enabler for the coal-to-clean switch, IEEFA, 2025, p6

18 Seb Kennedy, Abhishek Shivakumar, Joo Yeow Lee, 'How Indonesia can get ahead of the net-zero curve', Transition Zero, 2023

19 Prateek Samal, Anthony Tin Yu To, 'Up & coming: Unpacking South Asia's growing role in global debt', World Bank, 2024

20 Irdina Batrisyia, Indira Pradnyaswari, 'Is JETP Making Progress in ASEAN Energy Transition?', ASEAN Centre for Energy, 2024.

21 Ramnath N. Iyer, Transition credits: A potential financial enabler for the coal-to-clean switch, IEEFA, 2025.

22 Allied Offsets (October 2025): Pricing and activity

The risks of overestimation are significant. Demand for a new and untested credit type is uncertain; stricter rules on additionality, baselines, and safeguards could greatly reduce the number of credits issued; while practical barriers such as grid stability, battery storage and the availability of clean replacement capacity may block retirements at scale. In short, these revenue numbers should be seen as best-case scenarios, not realistic expectations.[23]

Despite initial widespread enthusiasm, support for JETPs is waning. The scheme's fragility lies not in its ambition, but in the fragmented means by which its aims are expected to be achieved.[24] A lack of a unified approach on energy transition pathways, overreliance on private capital and conflicting roles among stakeholders reflect a fragmented and complex funding framework. A major blow was struck in February 2025 when the US government decided to withdraw from the initiative and terminate nearly all US foreign aid contracts.[25]

Furthermore, tensions exist between the stated objective of JETPs and the investment strategies of multinational development banks (MDBs), including ongoing direct or indirect investment in fossil fuels, repeated disregard for the fiscal realities and burdens experienced by developing countries burdened by stringent lending conditions, and limited reforms to ensure accountability and transparency.[26]

All of this is set against a macroeconomic context marked by high inflation, stagnant growth and soaring interest rates, which further hinder the systemic change urgently needed in the energy sector.[27]

Carbon retirement mechanisms and carbon credits

Alongside JETPs, a range of carbon retirement mechanisms (CRMs) using blended finance models are being developed to support the early closure of coal-fired power plants. A prominent example is the Asian Development Bank's (ADB) Energy Transition Mechanism (ETM) which aims to finance the closure of Southeast Asian coal plants earlier than planned by bridging public and private capital to refinance coal assets or provide concession loans to shorten or negotiate existing power purchase agreements.

A pilot project is underway in Indonesia, where a memorandum of understanding between ADB, the Indonesian government, and Perusahaan Listrik Negara (PLN) supports the early retirement of the 660 MW Cirebon-1[28] CFPP achieved through concessional financial backing from the Climate Investment Funds (CIF) Accelerating Coal Transition (ACT) program developed by ADB.[29]

However, while these investment mechanisms are essential, uptake has been limited. Many Southeast Asian coal plants are relatively young, so the capital needed to buy out their contract so early is unviable.[30]

In an attempt to fill this financing gap carbon retirement mechanisms have started to collaborate with operators in the voluntary carbon market to introduce the concept of 'coal-to-clean credits', also known as 'transition carbon credits' (for the purpose of this report, these carbon credits will be referred to as "coal transition credits" (CTCs)). This is a type of carbon credit generated by retiring coal plants earlier than scheduled and replacing their capacity with renewable energy. Ultimately, these aim to quantify and monetise the emissions avoided by early retirement, and provide a new revenue stream to compensate for the costs of early decommissioning.

23 Ramnath N. Iyer, Transition credits: A potential financial enabler for the coal-to-clean switch, IEEFA, 2025.

24 Freddy Daley, Charlie Lawrie, 'The Just Energy Transition Partnerships are faltering – fresh thinking is needed', Climate Home News, 2025

25 'South Africa, Indonesia say US withdrawing from climate finance deal', France 24, 2025

26 Freddy Daley, Charlie Lawrie, "J" is for "just" in JET-Ps and Country Platforms: Lessons for multilateral development banks in the energy transition, Recourse, 2025, p6

27 Freddy Daley, Charlie Lawrie, 'The Just Energy Transition Partnerships are faltering – fresh thinking is needed', Climate Home News, 2025

28 Asian Development Bank, 2024

29 Government of Indonesia, CIF Accelerating Coal Transition (ACT): Indonesia Country Investment Plan (IP) REVISION, 2023

30 IEA, *Southeast Asia Energy Outlook 2024*, IEA, 2024, p8

Carbon abatement calculations differ from project to project due to varying factors such as plant age, operational efficiency, and historical emission levels. As a result, the operability of credits will likely remain case-specific, leading to considerable variations in associated costs. While the proposal to generate coal transition credits may sound compelling, it carries significant risks that, if not properly addressed, could undermine the mechanism. Among the most significant concerns are the credit quality[31], moral hazard, and the related costs of social and just transitions.[32]

Coal transition credit initiatives – timeline

June 2023
Coal to Clean Credit Initiative (CCCI)

Launched by Rockefeller Foundation & Global Energy Alliance for People and Planet (GEAPP) with Climate Policy Initiative (CPI) and South Pole, aimed towards the creation of a coal transition credit methodology with Verra.[33]

September 2023
ETA (Energy Transition Accelerator)

The US State Department, Bezos Earth Fund & Rockefeller Foundation announced a partnership with the World Bank. Its core focus is the development of a jurisdictional coal crediting model in developing countries.

December 2023
COP28 announcements

- The Energy Transition Accelerator (ETA) framework is revealed.
- Transition Credits Coalition (TRACTION) launched by the Monetary Authority of Singapore (MAS) as a global coalition on transition credits.
- ACEN Corporation (the energy arm of the Ayala group in the Philippines), CCCI, and MAS announce a collaboration to accelerate retirement of the South Luzon Thermal Energy Corporation (SLTEC) coal plant in the Philippines by a decade from 2040 to 2030.

December 2023 – Jan, 2024

CCCI launches the first public consultation of its draft methodology for coal transition credits.

April, 2024

ACEN & Rockefeller Foundation published an update on the SLTEC pilot: assessment by the Rocky Mountain Institute (RMI) shows that early retirement by 2030 could avoid a total of up to ~19 Mt CO_2 emissions compared with 2040.[34]

August, 2024
SLTEC Credit Study

ACEN, GenZero, and Keppel Ltd. sign a memorandum of understanding (MOU) to jointly explore origin and use of transition credits to accelerate SLTEC's retirement. Under the MOU, a development study is initiated.[35]

July 2024
Gold Standard methodology

Gold Standard releases its concept paper, "Powering the Future: New methodology concept for early coal phase-out and just transition", confirming plans to develop a full methodology.

November 2024
TRACTION interim report

First report on integrity attributes and risks of transition credits. Final version planned for release at COP30 (2025).

May 2025
Scaling ambition

CCCI announces plans to support more than 60 coal plant transitions by 2030, claiming potential to mobilise up to USD 110 billion.[37]

May 6, 2025
Verra Methodology (VM0052)

Verra released the first approved coal transition credit methodology: "Accelerated retirement of coal-fired power plants using a just transition" in collaboration with CCCI. This is the first approved methodology under its Verified Carbon Standard (VCS) that sets out rules for generating credits from the early closure of coal plants, with conditions for replacement renewables and just transition.[36]

31 Carbon Credit Quality Initiative (EDF, WWF-US, Oeko-Institute), Methodology for assessing the quality of carbon credits, version 3, 31 May 2022.

32 Ramnath N. Iyer, *Transition credits: A potential financial enabler for the coal-to-clean switch*, IEEFA, 2025, pp4-5

33 The Rockefeller Foundation & GEAPP. The Rockefeller Foundation and GEAPP To Design the World's First 'Coal-to-Clean' Credit Program in Emerging Economies. June 14, 2023.

34 The Rockefeller Foundation. 2024. "ACEN and Rockefeller Foundation Pilot Could Avoid up to 19 Million Tons of CO_2 via Carbon Financing." April 17, 2024.

35 ACEN Renewables. 2025. "Transition Credits." ACEN Renewables. May.

36 Verra. 2025. "VM0052: Accelerated Retirement of Coal-Fired Power Plants Using a Just Transition, v1.0." May 6, 2025.

37 The Rockefeller Foundation. 2024. "ACEN and Rockefeller Foundation Pilot Could Avoid up to 19 Million Tons of CO_2 via Carbon Financing." April 17, 2024.

Outstanding structural concerns of carbon credits

Carbon credits were originally imagined as a tool to mobilise finance for climate action by rewarding projects that deliver real and additional emissions reductions. In theory, they should represent outcomes that would not have happened without the incentive of credit revenues. In practice, however, the history of carbon markets has shown persistent failures to meet this standard.

The United Nation's Clean Development Mechanism (CDM) demonstrated this issue clearly. Large numbers of renewable energy projects were initially approved, but later judged to be 'non-additional', as they would have been introduced anyway without the need for a revenue incentive given rapidly falling costs and supportive government policies.[38]

In the voluntary carbon market, avoided deforestation projects have highlighted similar credibility concerns: baselines have been overstated, leakage has often gone unaccounted for, and the promised climate benefits have proved far smaller than advertised.[39] Many projects have also drawn criticism for harming or excluding local communities through weak social safeguards and opaque governance.

A critical list of systemic flaws underpin these experiences including overstated baselines, weak additionality tests, leakage that cancels out claimed reductions, and a lack of robust protections for people most affected. For coal transition credits there is a clear risk that these same shortcomings will be replicated, rewarding plant owners for closures that might have happened anyway, inflating climate benefits through generous assumptions, shifting power generation to other fossil sources, and neglecting workers and communities who bear the costs of transition.

Given the track record of carbon markets, claims that coal transition credits are guaranteed to deliver high-integrity outcomes should be approached with caution, something that Reclaim Finance highlights in their recent report.[40] Without far stronger guardrails than in past crediting systems, they risk inflating climate ambition on paper while doing little to advance a fast, fair, and genuine energy transition.

This report therefore asks a critical question: under what conditions, if any, could coal transition credits be justified as a tool to support early coal phase-out in Southeast Asia?

Addressing this question requires looking beyond project design to the wider political, financial, and social dynamics that shape the region's energy transition. Without understanding and confronting these realities, there is a serious risk that credits will deepen inequalities while failing to deliver meaningful climate impact.

38 Carbon Market Watch (2023). Hidden in Plain Sight: Flawed Renewable Energy Projects in the Voluntary Carbon Market

39 Carbon Market Watch (2023). Error Log: Exposing the Methodological Failures of REDD+ Forestry Projects

40 Reclaim Finance (October, 2025): "Not This Way: Why Coal Transition Offsets are a Dead End." https://reclaimfinance.org/site/wp-content/uploads/2025/10/Not-This-Way-why-coal-transition-offsets-are-a-dead-end.pdf

Expert reflections on coal transition credits

Carbon Market Watch conducted a survey to gather expert perspectives on the use of carbon credits, specifically referred to as “coal transition credits”, as a mechanism to accelerate the early retirement of coal-fired power plants (CFPPs) in Southeast Asia. The objective was to determine whether such mechanisms can be considered as viable, robust, and environmentally sound by evaluating the perspectives of practitioners and researchers with experience in carbon markets, energy policy, and the power sector.

In total, 10 experts responded to the survey. Survey respondents included representatives from civil society organisations, research institutions, think tanks, and advocacy groups, as well as independent experts and professionals working in climate finance, policy, and project development. Participation was voluntary and responses have been anonymised.

Their responses help to inform and establish a more grounded understanding of the extent to which carbon crediting markets may or may not play a meaningful role in supporting the phase out of coal in the region.

The survey was structured to capture both quantitative and qualitative insights. It included:

- Multiple-choice questions where experts were asked to rank specific risks, expressing levels of confidence (e.g., “confident,” “not confident,” or “not cure”), or assigning scores on a scale of 1 (least risk) to 5 (most risk).
- Open-ended follow-up questions which allowed respondents to explain their reasoning and offer detailed commentary.
- Questions were grouped into blocks, including:
    - General views on the potential viability of coal transition credits.
    - Environmental integrity criteria determining the quality of carbon credits (e.g. additionality, permanence, leakage, double counting).
    - Governance and enforcement of carbon crediting methodologies.
    - Systemic and structural risks regarding coal transition credits (e.g. perverse incentives).
    - Just transition and social equity considerations.
    - Market design and demand.

Key Findings

The findings below reflect the key takeaways from the survey and highlight the current assessment of experts on the risks, opportunities, and challenges associated with coal transition credits.

A complete breakdown of the survey responses is provided in the annex at the end of this report.

Experts unconvinced by coal transition credits: Only two out of 10 experts consider coal transition credits to be an effective tool to potentially support the phase out of CFPPs. Overall, there is no clear support for their use. Most experts are either doubtful or undecided, or highlight various caveats and risks, reflecting limited confidence in their potential to meaningfully accelerate early coal retirement.

Credit quality

Overall, experts underscored a number of risks regarding coal transition credits, raising significant doubts about their reliability and effectiveness in phasing out CFPPs in Southeast Asia.

Credit quality is a top concern: Eight out of 10 experts ranked carbon credit quality as the most significant issue regarding the use of carbon credits to finance early coal plant retirements in Southeast Asia. Experts highlighted risks that credits may not represent real (i.e. accurately estimated) and additional, emission reductions.

Carbon leakage is a dominant quality risk concern: Leakage refers to the case where the closure of a CFPP may simply shift power generation to other coal or gas facilities, or even trigger development of a new coal power installation. Experts indicated this is a particular risk in coal-dependent countries like Indonesia. Half of the experts (5 out of 10) ranked it at the highest risk scale option of 5, and a clear majority (8 out of 10) placed it at the upper end of the risk scale. Participants expressed that leakage is difficult to monitor and cannot be fully avoided, and therefore a fundamental threat to credit integrity.

Additionality is disputed: Many experts questioned whether coal transition credits would represent genuine emissions reductions that truly lead to retiring coal plants ahead of time. With renewable energy already cheaper than coal in much of the region and governments under increasing regulatory pressure to deliver on climate targets, early coal retirement may occur regardless of carbon crediting, spurred by government regulation or limited financial viability to maintain operation of CFPPs in the near future. Methodologies that benchmark retirement against a plant's technical lifespan are deemed insufficient to guarantee additionality.

Difficulty to set a baseline: Setting a baseline scenario for what would have happened in the absence of the carbon crediting project is one of the most difficult integrity challenges since it relies on assumptions of the amount of estimated avoided emissions and the consequent quantity of carbon credits that are hugely complicated, if not impossible, to prove. Experts warned that unless baselines are defined conservatively, they risk overstating avoided emissions, including by ignoring a tightening of climate policies, falling renewable costs and the risk of CFPPs becoming stranded assets.

Insecure baselines can lead to inflated claims: Since baselines rely on assumptions about "what might have happened" – e.g. when a CFPP would have been retired, how much power it would have produced over decades to come - they are inherently uncertain, often subjective, and are prone to "gaming". Experts noted that while methodologies use formulas that give an impression of precision, the underlying choices about which assumptions to include and what values to use often remain judgment calls. This creates a significant risk of inflating claimed reductions.

Loopholes may allow new "captive" coal power plants: Experts flagged that policies meant to restrict new coal construction often contain loopholes that still allow development to go ahead of "captive" coal plants - facilities built to supply power to specific industries, such as nickel, cement, or steel production. For example, in the case of the nickel industry in Indonesia, this means that while one coal plant might be retired early (and credits issued for its closure), another new captive coal plant could be built elsewhere to serve industry. Allowing new coal to come online while paying to close existing plants risks cancelling out climate gains and prolonging fossil fuel dependency.

Methodologies

The credibility of coal transition credits ultimately depends on the strength of the methodologies used to quantify emission reductions and ensure environmental integrity. Experts reflected on key methodological aspects of coal transition credits, specifically regarding how baselines are set, additionality is proven, and social safeguards are applied.

Lack of confidence in integrity: Experts expressed deep scepticism about the ability of current methodologies (see above section Coal Transition Credit Initiatives – Timeline) to ensure environmental integrity. Not a single respondent expressed confidence, with half stating explicitly they had "no confidence" and the remaining experts indicating uncertainty.

Verra's VM0052 is viewed as hit and miss: While some experts see VM0052 as a potentially promising methodology that has been strengthened through consultations, opinions were split. Even after its review, some experts still view it as not being stringent enough and too weak on just transition and safeguards.

Past failures undermine trust: Previous experience of flawed carbon crediting methodologies in the VCM that have led to significant over-crediting and have inadequately addressed leakage has reinforced expert scepticism about whether coal transition credits can deliver favourable climate outcomes.

Methodology flexibility: Eight out of 10 experts warned that since carbon market standards are developing separate methodologies for coal transition credits, this could incentivise project developers to cherry pick whichever methodology generates the most credits, instead of selecting a methodology which best reflects conservative estimates.

Captive coal plants remain out of scope: Current methodologies (including Verra's VM0052) exclude captive or off-grid coal plants (coal power plants built to supply electricity directly to industrial facilities rather than feeding the public grid), even though they contribute a significant share of generation in countries like Indonesia, Vietnam, and the Philippines, raising risks that retirements may be offset by new captive capacity.

Weak guardrail enforcement and conflicts of interest: Only two out of 10 experts expressed confidence that standard-setters and third party auditors will enforce requirements like no-new-coal clauses or just transition safeguards. Structural conflicts of interest, for example auditors being paid by project developers, make robust enforcement unlikely at scale.

Systemic and Structural Risks

Systemic and structural risks can arise during the coal phase-out, including power supply disruptions, limited renewable capacity, and grid inflexibility, which raises questions for the viability of coal transition credits.

Experts reflected on these risks, examining how poorly designed mechanisms might encourage asset owners to delay retirements or exploit financial loopholes, weakening the overall integrity of transition efforts.

Energy Supply Constraints

Insufficient renewable energy increases risk of leakage: Potential power supply gaps from the early retirement of CFPPs increase the risk of leakage. The majority of experts (seven out of 10) believe early coal retirement is likely to create gaps in supply, given that coal plants operate at much higher capacity factors than renewable alternatives.

Moreover, experts noted that utilities in Indonesia and the Philippines, for example, have shown reluctance to back coal phase-out plans due to fear of blackouts or the high costs of grid reinforcement. These factors raise risks that credits generated by retired CFPPs may be undermined in future years by changing political and energy circumstances and could lead to greater polluting power generation. If the wider

phaseout of CFPPs and transition of the grid is not well managed in a given context, there is a real risk that fossil generation will fill the gap, raising the risk of carbon leakage. Experts therefore stressed that scaling up renewable energy generation and investing in grid upgrades and storage were essential.

Incentivising negative outcomes

Perverse incentives are a major concern: The majority of experts, six out of 10, warned that coal transition credits could encourage asset owners to delay retirements or inflate baselines to maximise credit issuance.

The polluter pays principle could be reversed: Compensating coal plant owners for early closure risks would be to reward polluters for not polluting rather than holding them accountable for continued polluting practices, potentially signalling to investors that coal remains a safe bet and may even be rewarded.

Governance safeguards could be absent: No expert believed that meaningful safeguards exist to prevent undue influence from asset owners or project developers over decisions to retire power plants. Experts highlighted the lack of safeguards – on the part of carbon crediting standards, regulators, and institutions - to ensure independence from vested interests. Ingrained fossil fuel interests were cited by experts as continuing to wield strong influence over energy policy in Southeast Asia, raising doubts about whether crediting frameworks can operate transparently.

Just transition

Experts reflected on whether coal transition credits can ensure that the shift to a low-carbon economy is fair and inclusive, and that the benefits of the transition would be shared equitably with proper support provided to workers and communities whose livelihoods are dependent on coal.

Conditional support for the just transition: Four out 10 experts thought that coal transition credits could in theory effectively support a just transition, but only if carefully designed with stipulations that revenues from the sale of such credits are directed toward worker retraining, community support, and alternative livelihoods.

Risks for workers and surrounding communities: Job displacement was flagged as a primary concern. In general, experts noted that severance packages and retraining programs could be treated as costs that could be minimised which would lead to inadequate support for affected workers. The participants stressed that compensation alone is insufficient, and that workers require long-term security and benefits. In addition, it's crucial to ensure surrounding communities are also supported and properly consulted since they risk otherwise being excluded from consultations and decision-making processes.

Importance of consultation and participation: Experts stressed the need for meaningful consultation and genuine community involvement. They warned against participation being reduced to a procedural box-ticking exercise. Effective consultation must go beyond formalities to ensure that affected workers and communities have a real voice in decisions, and that their concerns meaningfully shape project design and implementation.

Transparency and governance risks: Experts warned that coal transition credits risk replicating long-standing transparency issues in the voluntary carbon market. Weak disclosure rules and enforcement make it hard to trace the directions in which finance actually flows, raising doubts about whether funds will reach affected workers and communities.

Demand

On the issue of demand, experts reflected on buyers' interest, reputational risks and the pricing and broader market dynamics of coal transition credits. They shared their perspectives on whether sufficient sustained demand, particularly from corporations or governments, could make these credits financially viable, given the uncertainty and volatility currently experienced in the voluntary carbon market.

Widespread uncertainty over demand: Seven out of 10 experts said they were "not sure" whether strong buyer demand will emerge for coal transition credits. Only two registered confidence, while one expressed doubt.

Conditional nature of demand: Experts stressed that any demand would be highly conditional and heavily dependent on the integrity of the credits and the design of the mechanism. As one expert stated, demand might be enough to support "a handful of pilot projects, but not for 60," casting doubt on the large-scale ambitions described by organisations such as in the Rockefeller Foundation's 2030 target.

Corporate backtracking and reputational risks: Scepticism is also shaped by the current political and corporate climate. Several respondents noted that companies are backtracking on climate commitments due to economic and geopolitical pressures. Others pointed out that many companies rightfully remain wary of carbon markets following recent controversies over credit quality. However, lower levels of corporate demand for coal transition credits should not necessarily be seen as backtracking, since it may instead reflect a positive shift toward prioritising direct decarbonisation instead of using risky carbon credits.

Price and market risks: Six out of 10 experts warned that large-scale issuance of coal transition credits could depress prices and destabilise the voluntary carbon market. If credits are viewed as being of low integrity, they could undermine buyer confidence and trigger price volatility, repeating oversupply issues of the Clean Development Mechanism (CDM), which still has a noticeable impact on the voluntary carbon market today.

Conclusion

Coal transition credits have been promoted as an innovative solution to finance the early closure of coal-fired power plants, especially in Southeast Asia, but our report shows that they also present significant risks. Our assessment finds that while theoretical opportunities exist, these are narrow and conditional. By contrast, in their current form, the risks are clear and substantial.

The ten experts surveyed in the context of this report raised deep concerns about environmental integrity (particularly leakage, additionality, and baselines), weak governance and enforcement, perverse incentives that reward polluters, and high uncertainty over buyer demand. Overall, there are significant doubts about the potential of coal transition credits, which risk being considerably outweighed by other shortcomings and flaws.

Beyond the technical design of coal transition credits, structural challenges such as entrenched fossil fuel interests, rigid power purchase agreements (PPAs), and energy security fears limit the practical scope for such credits to drive meaningful change. Without major reform, there is a high risk that coal transition credit projects could generate “reductions” that do not translate into real-world climate benefits, which is especially problematic if buyers use these credits to compensate for their own emissions.

Moreover, it is far from certain that coal transition credits are an effective means of accelerating the phase out of coal fired power plants relative to other financing approaches. In contexts where coal transition credits are pursued, despite these substantial risks, it’s essential that they comply with rigorous guardrails. Any scheme must demand the highest integrity standards respectful of: conservative baseline setting practices and carbon leakage deductions, rigorous additionality testing, strict no-new-coal development enforcement, mandatory renewable replacement, robust just transition plans, and transparent monitoring, reporting, and verification (MRV).

For Southeast Asian CSOs, the priority is to apply a critical lens, insist on the highest calibre of safeguards, and expose gaps, conflicts of interest and greenwashing where they occur. Maintaining pressure on governments, companies, and standards is essential to deliver a coal phase-out that is fast, fair, and enduring. At best, coal transition credits, if substantially improved, may play a limited role in closing financing gaps. They are far from a silver bullet, and focus must remain on systemic reforms and public finance to drive the energy transition.

Ultimately, however, the cornerstone of the energy transition in Southeast Asia will be strong public policies and finance that put clean energy and affected communities first. By insisting on integrity and justice at every step, civil society can help ensure that Southeast Asia’s path to a future beyond coal sets a positive precedent for regional and global climate action. One that prioritises real emissions reductions, energy equity, and the livelihoods of those most impacted by the transition.

Annex:

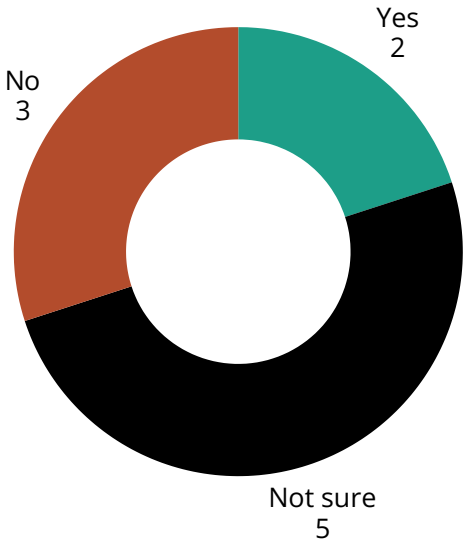
Complete survey results

The Annex provides the full detail behind the survey results referenced in the main body of the report. While the main findings are summarised in the report's "Main takeaways" section, this annex offers a full breakdown of the answers provided by experts, including rankings, risk scores, and direct opinions.

Coal transition credits are no exit strategy

Only two of the 10 experts surveyed considered coal transition credits to be an effective tool for the phasing out of Coal-fired Power Plants (CFPP). Several experts noted that while the idea of mobilising finance for the coal phase-out is appealing, the use of carbon credits raises serious doubts about whether the reductions would be real (i.e. accurately estimated), additional, and sustained over time.

Figure 1: Expert confidence in coal transition credits for financing coal phase out in Southeast Asia.

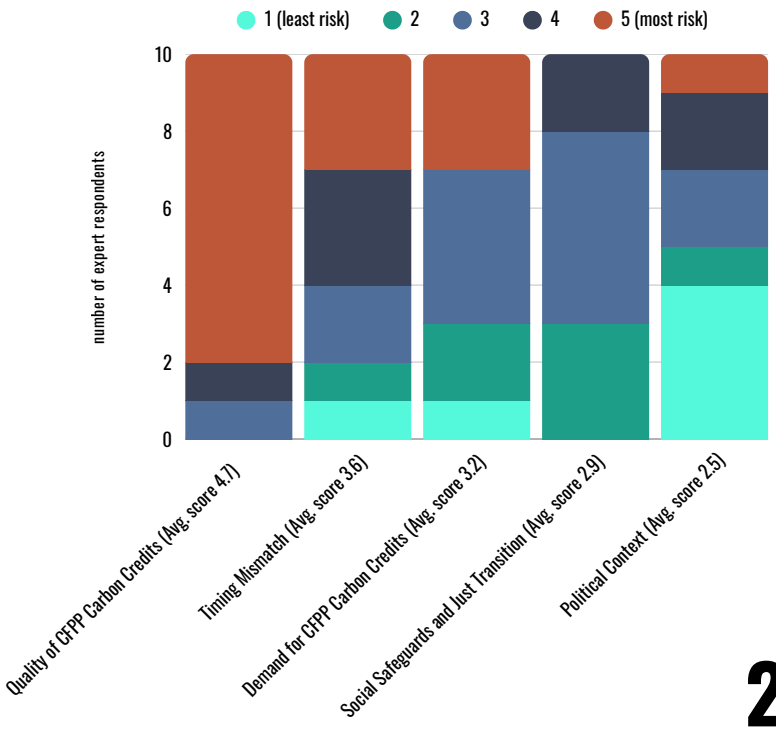


Environmental integrity concerns

Credit integrity, defined as how accurately a carbon credit represents a real, additional, and verifiable emission reduction, was ranked as the highest risk, with eight out of 10 experts awarding it the maximum possible score of 5, on a scale where 1 means least risk and 5 means most risk (Figure 2).

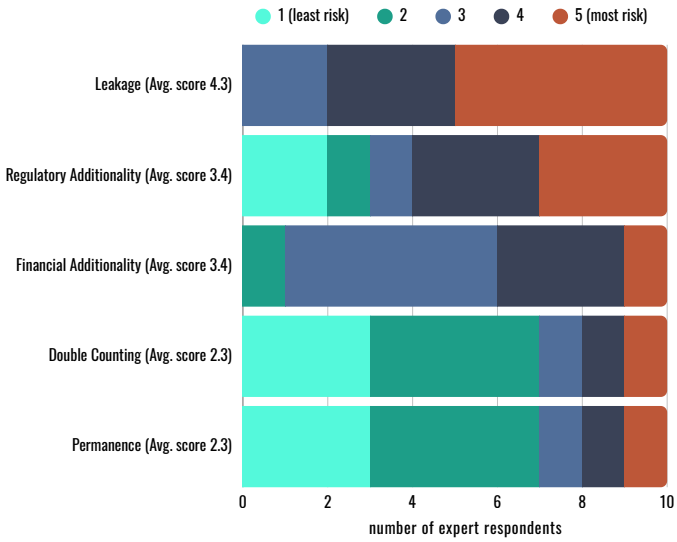
This ranked it well ahead of other risk related to the use of credits to finance early CFPP closure in Southeast Asia such as demand uncertainty, political factors, social safeguards and just transition considerations, and timing mismatches (defined as the unconnected time between when capital is needed to finance the early retirement of CFPPs and when carbon credits are actually issued and sold).

Figure 2: General risks of using carbon credits to finance early CFPP closure.



Regarding specific environmental integrity criteria - financial additionality, regulatory additionality, leakage, permanence, and double counting - experts also underscored numerous risks in the context of coal transition credits for early CFPP retirement (Figure 3), further detailed below.

Figure 3: Quality risks of CFPP credits



Leakage

Leakage was consistently identified as the highest-risk integrity concern, with half of experts assigning it the maximum score of 5, while the remaining half still assigned it a score of 4 or 3 (Figure 3). The fundamental challenge is in tracking whether lost power generation is simply replaced elsewhere by fossil fuel power generation, whether on the same grid or on a different grid. Experts pointed out that as other coal or gas plants ramp up output to fill the gap, the net climate benefit may be negligible, or even negative.

This concern is particularly acute in Southeast Asian contexts, where grid transparency is limited and energy systems remain heavily reliant on coal. In Indonesia, for example, coal plants operate at relatively low capacity, giving operators ample room to increase output if other units are retired. As one expert explained, "The most common reasons for not closing coal plants cited are that supply won't be guaranteed. So closed coal plants may lead to other coal or gas plants making up the shortfall."

Others stressed that leakage is not a problem that can ever be fully eliminated: "Leakage is a real challenge, and one that can probably not be avoided 100%. The best approach will probably be to try and be as transparent as possible and limit it."

Leakage presents a persistent and difficult to manage risk that has repeatedly compromised the integrity of carbon crediting methodologies, including avoided deforestation projects such as REDD+ (Reducing Emissions from Deforestation and Forest Degradation).

Studies show that Project-based methodologies under Verra's Verified Carbon Standard (VCS) often fail to account for, or under-report, leakage. A detailed analysis by UC Berkeley, commissioned by Carbon Market Watch, found that more than half (59%) of the 73 VCS REDD+ projects assessed applied zero or nominal leakage deductions in many instances, despite evidence of both activity-shifting and market leakage.[41] Similar issues were found in California's U.S. Forest Offset Protocol, where UC Berkeley estimated that 82% of credits from 36 projects, around 80 million tonnes of CO_2, did not represent real reductions due to underestimated leakage. These cases demonstrate that without conservative accounting and rigorous safeguards, leakage can severely inflate claimed climate benefits.[42]

Additionality

Regarding financial additionality, most experts placed the risk in the middle-to-high range: eight out of ten experts scored it 3-4, and one gave it the highest risk score of 5, with only one expert opting for a lower risk score of 2 (Figure 3). Overall, this reflects doubts over whether revenues from credit sales would be decisive in enabling early retirement of CFPPs.

41 Haya, B. K., et al. (2023). Quality assessment of REDD+ carbon credit projects. Berkeley Carbon Trading Project, UC Berkeley.

42 Haya, B., Cullenward, D., & Suresh, P. (2023). *The California Air Resources Board's U.S. Forest Offset Protocol Underestimates Leakage*. Goldman School of Public Policy, University of California, Berkeley.

Several experts noted that as renewables become increasingly cheaper than coal, financial additionality will weaken, raising the risk that credits would simply subsidise closures that would have happened anyway. As one expert explained, "financial concerns could be that operation of a coal plant might be more expensive than renewables (at some point)."

Regarding regulatory additionality, the distribution was more polarised (Figure 3). While two experts saw it as least risk (scoring 1) and one as low risk (scoring 2), six experts ranked it 4 or 5, warning that national policies and nationally determined contributions (NDC) targets could themselves drive coal retirements during the crediting period. If retirements are already mandated or become mandated, then carbon credits risk rewarding business-as-usual action which would undermine the quality of the credits.

Several experts also highlighted the structural risks of no-new-coal commitments, such as pledges by governments not to build additional CFPPs. If countries lack binding restrictions, there remains a danger that new coal plants could be built even as older ones are retired.

For example, one expert pointed out that while Indonesia has a "no-new-coal" rule, there is an exception if new captive coal plants – which are coal plants built to provide electricity exclusively for a specific industrial facility (such as to produce steel), rather than for the public grid – are deemed to be "strategically important for economic growth." For example, for industries like nickel in Indonesia, this means that while one coal plant might be retired early (and credits issued for its closure), another new captive coal plant could be built elsewhere to serve industry.[43] This loophole undermines the credibility of early retirement claims, especially since current methodologies such as Verra's VM0052[44] do not cover captive CFPPs.

Double counting

Experts considered double counting, where a carbon credit is claimed towards two or more separate mitigation targets (e.g. the country where the project occurred as well as the company buying the credit located in the United States), as a less significant risk, with seven experts ranking it least or low risk (Figure 3). Expert sentiment around double counting emphasised that this risk may vary depending on the context, such as the intentions and practices of the country where the crediting project takes place as well as the buyer of the credit.

Moreover, experts noted that the risk of double counting depends on political and institutional capacity which may also redirect available resources. As one expert stated, "Both leakage and the risk of double counting require monitoring and/or reporting resources, especially from the offtaker/utility and/or the regulator, resources which could have been better channeled elsewhere in the energy transition."

From a governance perspective, avoiding double claims in practice depends on whether host countries apply corresponding adjustments under Article 6 of the Paris Agreement.[45] Yet, some experts noted that this process requires substantial institutional capacity and credible reporting systems, which remain weak in many Southeast Asian countries. Without such systems, double counting risks erode the environmental credibility of coal transition credits.

Experts also cautioned that corresponding adjustments are only meaningful if the host country's NDC is ambitious. As one observed, "Even if corresponding adjustments are implemented, they are only effective if the country has an ambitious overall NDC, such that the sale of credits forces the country to take additional action elsewhere to cut its national emissions." If NDCs are weak or too easy to achieve, the transfer of credits may simply increase the cost of achieving existing targets or, worse, result in no additional mitigation.

43 NewClimate Institute & I4CE (2024): Financing coal phase-out: Public development banks' role in the early retirement of coal plants, p.41.

44 Verra. (2025, May 6). *VM0052: Accelerated Retirement of Coal-Fired Power Plants Using a Just Transition, v1.0*. Washington, DC: Verra.

45 Carbon Market Watch (2025): By the book: How effective are Article 6 carbon market rules?

Baseline setting

Baselines were repeatedly highlighted as one of the most challenging aspects of coal transition crediting. Experts stressed that baseline scenarios are highly uncertain, and that the application of conservative assumptions is essential to avoid over-crediting, an issue that has been highly problematic in other project types.[46][47]

They warned that proposed methods often fail to capture the dynamic realities of the power sector, such as rapidly falling renewable energy costs and increasing regulatory and political pressure to phase out coal. Static baselines that assume coal plants would otherwise operate at high capacity or until the end of their technical lifespan risk significantly inflating claimed reductions. Some experts also pointed to timing mismatches, noting that unrealistic retirement timelines embedded in baselines could further distort integrity and undermine alignment with Paris-consistent pathways.

Permanence

Permanence was not a central concern among experts, with seven experts ranking it as least or low risk (Figure 3), several of which noted that it is a less relevant issue for coal transition credits. Once a coal plant is fully decommissioned, it is unlikely to be restarted, meaning the risk of reversal is relatively low compared, for example, to projects where carbon is sequestered in natural sinks that can later be released. As one expert observed, “I don’t think plants that have gone all the way to decommissioning are likely to be restarted.”

While permanence focuses on the risk that credited reductions could be reversed, experts noted that it can also be indirectly undermined if retired coal capacity is offset by new fossil generation elsewhere. In practice, this reflects leakage concerns flagged previously, where the climate benefit of closure is displaced rather than secured.

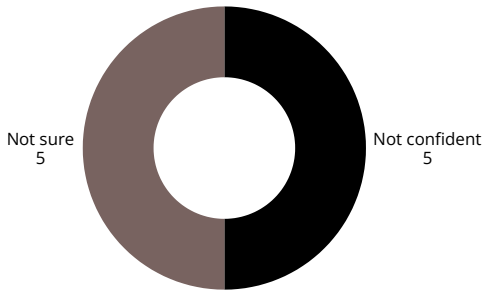
Crediting Methodologies

In addition to declaring low confidence in the integrity of coal transition credits, experts also expressed scepticism about the frameworks designed to uphold their integrity. Several carbon crediting standards are attempting to create methodologies to establish and govern the requirements for coal transition credits, including Verra[48] and Gold Standards.[49] Among these, Verra VM0052 is the most advanced crediting methodology and therefore was given most focus in the survey.

Methodologies are meant to provide the technical foundation for ensuring environmental integrity, demonstrating additionality, and embedding social safeguards. Yet experts questioned whether these frameworks can adequately address the risks identified, such as leakage, baseline uncertainty, and policy overlaps, raising doubts about their ability to deliver credible climate outcomes.

When asked about confidence in methodologies, none of the ten experts were confident that carbon crediting methodologies would be capable of ensuring high environmental integrity (Figure 4).

Figure 4: Confidence in carbon crediting methodologies in ensuring high environmental integrity



46 Haya, B. K., et al. (2023). Quality assessment of REDD+ carbon credit projects. Berkeley Carbon Trading Project, UC Berkeley.

47 Probst, B. S., Toetzke, M., Kontoleon, A., et al. (2024). *Systematic assessment of the achieved emission reductions of carbon crediting projects.* Nature Communications, 15, 9562.

48 Verra. (2025, May 6). VM0052: Accelerated Retirement of Coal-Fired Power Plants Using a Just Transition, v1.0. Washington, DC: Verra.

49 Gold Standard. (2024): Facilitating a just transition through the early phase-out of coal fired power plants

Four of the ten experts gave Verra's methodology a passing grade and consider it a good faith attempt to reconcile technical feasibility with environmental integrity, noting improvements through successive consultation rounds. Another expert stressed that it still requires stricter provisions, particularly to guarantee robust just transition safeguards.

One expert raised concerns about the inclusion of biomass as a form of eligible replacement capacity in the VM0052 methodology, cautioning that it could undermine the credibility of coal phase-out by substituting one contested energy source for another and introducing new environmental and social risks. Others reiterated caution regarding the exclusion of captive power plants from Verra's methodology scope as flagged in the previous section, noting that in certain geographies they represent a significant source of emissions that should be addressed.

Scepticism is also shaped by past experience. Many older and existing carbon crediting methodologies[50][51] have failed to deliver high climate integrity outcomes, therefore undermining trust. It's also worth highlighting the inherent difficulty of predicting future energy sector changes: plants may close earlier than expected as renewable prices continue to fall, complicating baselines and undermining the case for additionality.

Concerns over standard-setters

Survey results suggest that experts remain sceptical about whether standard-setters will enforce key guardrails such as no-new-coal clauses, just transition safeguards, and energy reliability requirements across host countries. Only two out of 10 respondents expressed confidence that enforcement would be effective.

Several experts pointed to structural weaknesses in the system. Standard-setters generate revenue from issuing credits, creating incentives to maximise issuance rather than restrict it: "the more credits that are issued, the more money standard-setters make to keep themselves functioning." Similarly, third party auditors (also known as Validation and Verification Bodies (VVBs)) are paid by project developers and may risk losing business if they gain a reputation for being too strict. This conflict of interest has been flagged in past carbon crediting research and remains a systemic vulnerability.[52]

Experts also stressed that enforcement is likely to vary depending on the project phase. During early pilots and demonstration projects, scrutiny is expected to be high, partly due to civil society attention and reputational risk for standard-setters. As one respondent warned, "In the medium to longer term when projects become more ubiquitous, this may no longer be the case." Once credits become normalised and traded at scale, enforcement practices could weaken and violations may slip through.

Systemic and structural risks

Systemic risk refers to the broader challenges that can arise when retiring coal plants, such as disruptions to electricity supply or increased reliance on other fossil fuels after coal-fired power plants have been closed. These risks stem from structural issues like limited renewable capacity or inflexible grids, and occur when coal is phased out faster than clean alternatives can replace it, potentially leading to higher emissions or energy access issues. It also considered risks related to financial or policy distortions that could encourage asset owners to delay retirements, inflate baselines, or otherwise exploit transition mechanisms for profit, ultimately undermining the credibility and effectiveness of coal phase-out efforts.

50 Tong, D., Cui, R. Y., Davis, S. J., et al. (2024). Coal phase-out commitments are insufficient to limit warming to 1.5 °C. Nature Communications, 15(1), Article 53645.

51 Haya, Barbara K., et al. Quality Assessment of REDD+ Carbon Credit Projects. Berkeley Carbon Trading Project, University of California, Berkeley, 2023.

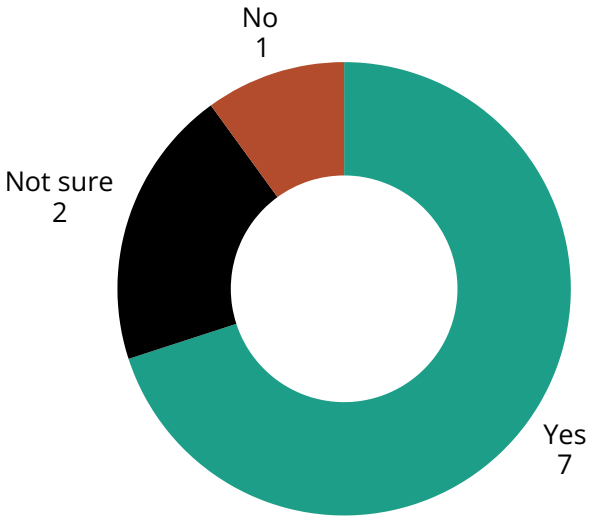
52 Giles, C., & Coglianese, C. (2025). Auditors can't save carbon offsets. *Science*, *389*(6756), 107. https://doi.org/10.1126/science.ady4864

Energy system impacts

If a plant is removed its output needs to be replaced somehow, by renewables or through demand-side reduction measures. If not, one risk is increased operation of other domestic coal or fossil fuel plants. Another risk is heavier reliance on international imports of electricity or fuel.

Experts were asked about the risks of transferring power generation from CFPPs to renewable energy systems, particularly whether early coal retirement could create power supply gaps, due to the insufficiency of clean energy sources to fill grid capacity. In the survey, a majority of respondents (7 out of 10) said early coal retirement is likely to create power supply risks if not well managed (Figure 5).

Figure 5: Expert responses on potential power supply risk with early retirement of CFPPs



The central concern is that coal plants cannot be easily replaced on a one-to-one basis by solar or wind power. One energy expert explained: "CFPPs operate at a much higher capacity factor than renewables such as solar and wind. As a result, the substantial capacity required to replace coal can discourage plant owners from investing in equivalent renewable capacity." Without sufficient investments in storage, transmission, and grid flexibility, the shortfall left by retiring coal plants could be filled by other fossil generation, creating a serious risk of leakage.

Experts stressed that this is not an abstract problem but a paramount concern for policymakers in countries such as Indonesia and the Philippines. In these contexts, grid stability and energy security are often cited as the main causes for coal phase-out hesitancy.

At the same time, several experts underlined that these risks are not inevitable. "It's very case-dependent and a risk that can be addressed at the facility or system level," said one. With careful project design, clear pairing requirements, and system-level planning, reliability can theoretically be safeguarded. Captive coal plants may even present a lower risk, as renewable replacements could be directly paired off-grid, said another expert: "An interesting option is looking at captive coal power generation, where the off-grid RE power generation can be captured entirely."

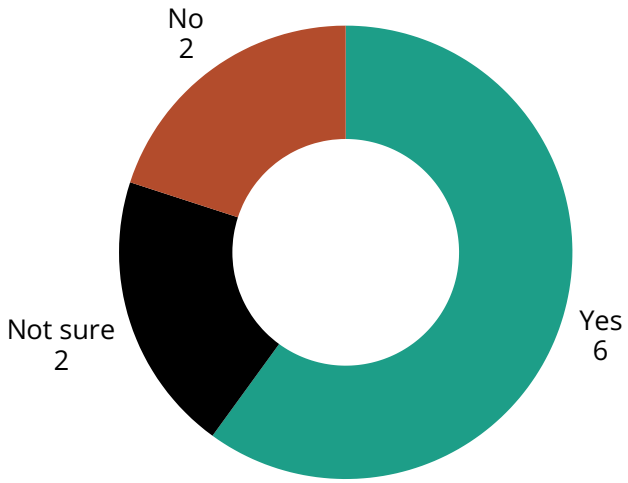
Yet a complex challenge remains to monitor whether renewables truly replace coal. Experts highlighted the importance of using data to check assumptions: "The historical power production timing of the specific coal plant could be used to compare against the modeled production timing of renewables that replace it. Ex-post the marginal emission factors pre/post project implementation could be assessed." Such approaches could help determine whether real reductions are achieved and whether leakage has been effectively limited. However, data on grid dispatch and marginal emissions factors can be incomplete, or not available publicly making it extremely difficult to track whether or not renewable energy can account for the supply shift.

Ultimately, experts cautioned that the credibility of coal transition credits will depend on how well these power system risks are managed. As one put it, "We risk weakening our argument if we don't acknowledge the legitimate complexities of wholesale system decarbonisation for these fast-growing economies." Failure to do so could undermine both climate integrity and energy security.

Perverse Incentives

When asked about perverse incentives, specifically whether asset owners might delay planned retirements or inflate project baselines in order to "game the system", a majority of experts (six out of 10) suggested that this would be cause for concern (Figure 6).

Figure 6: Risk of perverse incentives when generating coal transition credits for the early decommissioning of coal-fired power plants (CFPPs)



Several noted that asset owners may deliberately delay retirements or inflate baselines in order to maximise the credits the number of credits they can claim. As one put it, "Asset owners could be incentivised to delay early retirements… because they may be able to get 'compensated' for any economic loss through transition credits." Others highlighted the risk of mutual interest in overstating additionality: "There is a risk of course that additionality is inflated in the mutual interest of deal participants."

Beyond individual projects, experts pointed to deeper structural risks. Compensating plant owners reverses the polluter pays principle, effectively paying polluters not to pollute. One respondent cautioned that such proposals "turn this principle on its head: instead of pricing the negative externality of pollution and greenhouse gas emissions and holding polluters accountable, compensation payments pay polluters not to pollute."

Even if these incentives are small compared to the overall economics of coal decline, the mere prospect of compensation could signal to investors that coal is a safer bet, lowering the perceived risk of stranded assets and even encouraging continued coal expansion.

These risks are compounded by governance gaps. Experts were asked whether safeguards exist to prevent undue influence from financial stakeholders, such as project developers or asset owners, over host country decisions on early retirements. None believed that meaningful safeguards are currently in place. As one put it plainly, "To my knowledge there are no safeguards (regulatory, legislative, or otherwise) in place." Another pointed to the political economy of energy in Southeast Asia, noting that fossil fuel companies hold significant sway over energy policy. This ingrained influence raises doubts about whether crediting frameworks can operate independently without vested interests.

A minority of respondents were more optimistic, suggesting that methodologies and standard-setters are aware of these risks and are working to mitigate them. As one observed, "The methodologies (and the ICVCM) are very cognisant of the additionality issue. I don't expect perverse incentives to be substantial."

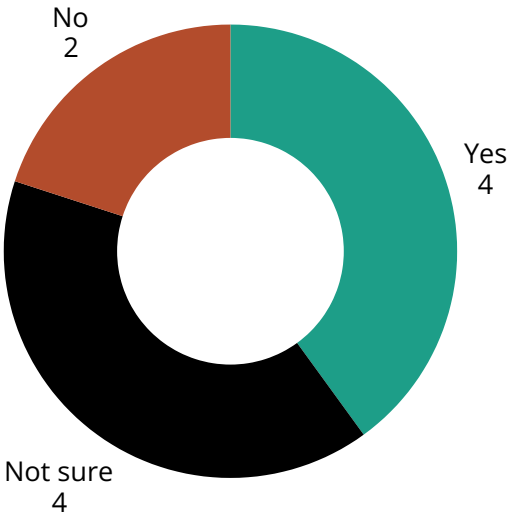
Still, the prevailing view was that the potential for gaming, distorted investment signals, as well as the political situation will represent a serious integrity challenge for coal transition credits.

Just transition

The just transition in this context refers to the process of ensuring that societal and economic benefits of the energy transition to a low carbon economy are shared equitably, while providing support and opportunities for workers and communities dependent on coal power plants for their livelihood are not left behind (United Nations Committee for Development Policy, 2023).

Risks related to just transition safeguards, including protections for workers, community involvement, and compensation for affected populations, were viewed as important but relatively lower than technical risks which relate more to design, quantification, and implementation of methodologies. Experts suggested that while important, these concerns may become more relevant in the project implementation phase and may be perceived as less acute than other coal retirement mechanisms.

Figure 7: Expert views on coal transition credits being able to support a Just Transition in Southeast Asia?



The central message from experts was that credits could support a just transition (Figure 7), but only under strict conditions. Some argued that high-integrity credits may help bridge the financing gap for early retirement by channeling funds into worker retraining, community support, and alternative economic opportunities.

One expert explained that this would be possible, "If it is designed so intentionally. These credits could channel private finance into worker retraining and community support." Another stressed, "Only if there are stipulations for profits from the credits being used to finance just transition efforts in the facility."

Others emphasised that design and governance will be decisive. For credits to achieve meaningful just transition outcomes, spending must be transparent, monitored closely, and implemented at the local level with public oversight. Yet the voluntary carbon market has long been criticized for lacking such transparency. Its decentralised governance structure, combined with weak financial disclosure requirements, makes it difficult to track where money actually flows. As Carbon Market Watch has repeatedly highlighted, these transparency gaps undermine confidence in the system.[53][54][55] In addition, experts stressed that without tested models, enforceable safeguards, and earmarked finance, confidence in positive outcomes would remain low.

This uncertainty was reflected in responses on the biggest challenges for workers and surrounding communities. For those directly employed by coal plants, the primary risks are job losses and inadequate support during the transition. Severance payments or retraining schemes may be offered, but experts cautioned that companies often see these as costs to be minimised, making them vulnerable to cutbacks. They stressed that financial compensation alone is not enough: "Support for workers in job seeking should go beyond skill development, ensuring they receive at least the same level of benefits and are guaranteed long-term job security." Others added that retraining will only be effective if there is genuine political will, careful planning, and adequate funding to create real long-term opportunities, rather than short-term fixes.

53 Carbon Market Watch (2023): Secretive intermediaries: Are carbon markets really financing climate action?

54 Carbon Market Watch (2024): Due south: Geographic disparity of project actors in the voluntary carbon market

55 Carbon Market Watch (2024) A fair share of the voluntary carbon market?

Surrounding communities face a similar set of risks. Early retirement can bring significant economic disruption, from lost jobs and reduced local revenues to potential instability in electricity supply. Several experts warned that without government and corporate follow-through, communities could be left behind: "the challenge will be sharing that knowledge to local levels, and building capacity from the bottom up." Experts warned that carbon crediting schemes are often highly technical and financially complex, making it difficult for local communities and civil society organisations to engage meaningfully. This creates a real risk that affected workers and residents are excluded from the decision-making process, as such processes are typically dominated by regulators, standards, and power plant owners.

Experts underlined the need for proper consultation, community participation, and adequate funding, conditions that have often been weak or absent in past project-based crediting schemes under the voluntary carbon market. Research by the University of California Berkeley[56] on project based REDD+ projects, has shown that stakeholder consultation processes are frequently treated as a procedural box-ticking exercise rather than a meaningful mechanism for community participation.

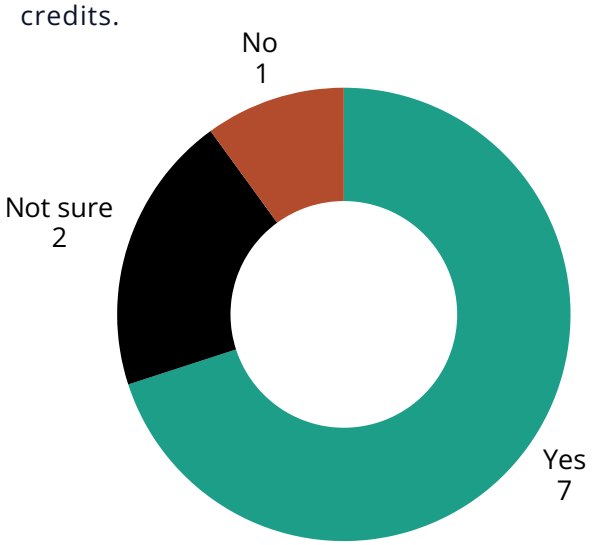
Several stressed that ensuring governments and companies actually follow through on their commitments is a persistent challenge, particularly in countries with limited regulatory enforcement. A real-world case in the Philippines was highlighted by an expert, illustrating the consequences of weak safeguards and unmet promises. In 2017, civil society organisations filed a complaint with the OECD against several banks for financing coal power plants in the country.[57] The complaint argued that financing arrangements failed to properly assess environmental and social impacts, did not involve meaningful consultation with affected communities, and contributed to negative health, livelihood, and environmental impacts.

Demand

The survey's final section explored how coal transition credits might perform on the demand side, covering buyer appetite, reputational risks, price impacts, and broader market dynamics. Demand refers to whether there will be sufficient and sustained buyer interest, particularly from corporations or governments, to make the mechanism financially viable.

Survey results revealed no clear confidence in there being strong buyer demand for coal transition credits. A large majority of experts (7 out of 10) responded "Not Sure", and only two expressed confidence in demand, while one expressed doubt (Figure 8). This pattern reflects widespread uncertainty about whether sufficient interest exists, and at what price levels would coal transition credits emerge as a viable financing tool.

Figure 8: Experts views on if there will be strong buyer demand for coal transition credits.



56 Haya, B. K., et al. (2023). Quality assessment of REDD+ carbon credit projects. Berkeley Carbon Trading Project, UC Berkeley.

57 The Philippine Movement for Climate Justice et al. vs. Standard Chartered. Complaint to the UK OECD National Contact Point, 26 February 2024.

A recurring theme in responses was that demand would be highly conditional. Experts emphasised that buyers to enter the market will depend on the design of the mechanism and the integrity of the credits. As one explained, "It is hard at this stage to quantify how much demand would materialise, and if sufficient demand would materialise to support a sufficient price." Another added that demand might be enough to support a handful of pilot projects, "but not for 60," underscoring doubts over Rockefeller Foundation's 2030 ambition.[58]

Some experts identified potential demand from specific jurisdictions and sectors, particularly where Article 6 frameworks are advancing. One noted "interest from big companies and also from governments like Singapore," referencing its recent memorandum of understanding (MOU) with the Philippines on carbon trading under Article 6.[5960] This reflects Singapore's broader strategy of aligning domestic, regional, and international policies to cement its role as a hub for global carbon markets. Domestically, its carbon tax creates compliance demand for "high-quality credits", which coal transition credits could potentially meet. Internationally, Singapore co-chairs the Coalition to Grow Carbon Markets, a government-led initiative alongside the UK and Kenya, which aims to expand demand for "high-integrity" credits and scale market value to as much as US$250 billion by 2050.[61] However, whether or not coal transition credits would be used by this coalition remains uncertain.

Despite these potential drivers, scepticism prevailed. While some experts see potential demand from companies seeking to demonstrate climate action, others questioned whether purchasing coal transition credits would reflect genuine ambition. Buying such credits does not necessarily translate into deeper corporate decarbonisation; it may instead serve as a substitute for reducing companies' own emissions. Several experts noted that companies are increasingly wary of being associated with offset-based claims, especially as regulators and courts scrutinise misleading "net-zero" and "carbon neutral" advertising.[62] In this context, companies face growing legal and reputational risks if they use coal transition credits to compensate for their emissions rather than as a form of contribution finance.

Others added that corporations may gravitate toward "credits that are already established" rather than take on the reputational and technical risks of a newer, more complex crediting scheme like coal transition credits.

Concerns about demand were also closely tied to fears about price dynamics. Several experts warned that large-scale issuance could depress prices or undermine market confidence if credits were perceived as low quality. "Really this will relate to the quality of credits and how they are perceived by buyers once they begin to enter the market. [It] could have a negative effect if the credits are lower quality," explained one expert. Another cautioned that "flooding of the market" could repeat the oversupply issues of the Clean Development Mechanism (CDM), which still weighs negatively on the voluntary carbon market today.

Taken together, these findings highlight that demand for coal transition credits is highly uncertain. Even if some demand emerges from governments or niche corporate buyers, there is a risk that introducing large volumes of credits could destabilise prices and undermine confidence in an already fragile voluntary market.

58 The Rockefeller Foundation. "The Rockefeller Foundation Announces Latest Steps to Accelerate Community-Focused Energy Transition Projects." September 19, 2023.

59 Ministry of Trade and Industry, Singapore. Singapore and the Philippines sign Memorandum of Understanding to collaborate on Article 6 to accelerate climate action. August 15, 2024

60 Carbon Market Watch (2025). Are Article 6 carbon market rules fit for purpose?

61 National Climate Change Secretariat (2025, June 24): The Coalition to Grow Carbon Markets.

62 The Guardian (2025): Rise in Legal Challenges over Carbon Credit Schemes

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